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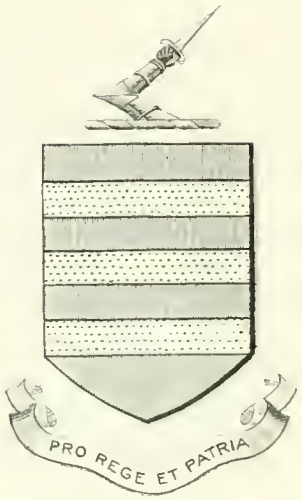

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MEDICAL RECORD

A Weekly Journal of Medicine and Surgery

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Original Articles.

THE MEDICAL ASPECTS OF MODERN LIFE INSURANCE.

BY FREDERICK L. HOFFMAN,

NEWARK, N. J.

STATISTICIAN, THE PRUDENTIAL INSURANCE COMPANY.

THE medical considerations which underlie the assumption of risk in life insurance practice are deserving of much more scientific and extended consideration than has heretofore been the case. A review of the various textbooks on medical examinations published during the last fifty years proves conclusively that insurance medicine has not shared, to anything like the desired degree, in the enormous advances made by general medicine and operative surgery during this period. For reasons which do not require to be considered at this time, it has always been difficult to maintain a periodical in the United States exclusively devoted to insurance medicine in all its branches, although several such publications have been quite successful in Germany and elsewhere. For many years the general medical periodical press of the United States has given attention to questions and problems of life insurance medicine and practically the whole field has been covered by occasional contributions accessible through large medical libraries and the convenient medium of the Index Medicus and the Catalogue of the Surgeon General's library. The extent to which this has been the case is made evident by the fact that the title "Life Insurance," not to mention some of the sub-titles of the subject, takes up nearly fourteen closely printed columns in Vol. IX of the second series of the Index Catalogue of the Surgeon General's library, including hundreds of valuable articles of a highly practical nature, aside from numerous theoretical discussions. The subject is divided into examinations for life insurance and the methods for proceeding in such examinations, examinations for testing the urine, examinations for life insurance in relation to disease, habits, heredity, sex, age, duties and responsibilities of life insurance examiners, instructions to life insurance examiners, jurisprudence of life insurance, statistics of life insurance, life insurance in relation to race and climate, life tables, etc.

The large aspects of life insurance medicine include, however, much more than questions and problems, methods and results, of medical examination. Differentiating precisely between the functions of the examiner and the medical director, it is obvious that the latter requires to consider the many aspects of life insurance from a much broader and more comprehensive point of view than the former. All that is summed up in a company's mortality experience involves medical considerations of a most delicate and involved nature, comprehending practically the entire field of general medicine and physical diagnosis. At least all of the larger companies are giving an increasing amount of attention to the qualified analysis of their mortality experience by causes of death, duration of insurance, etc., with the necessary distinction of locality, age, sex, race, occupation, family history, physique, etc. Concerning any one of these questions a vast amount of most useful information is contained in the periodical medical press which, if properly utilized, must needs prove of material aid in the successful administration of the medical department of a life insurance company. Opinions will probably always differ as to what constitutes the ideal risk and there will perhaps never come a time when standardized or uniform principles of selection will govern in the acceptance or rejection of life insurance applicants. The practice of the different companies must necessarily vary according to their size, their length of experience, their territory of operation, their class of applicants and methods of solicitation, so that any given individual risk not suitable for one company may be properly accepted by another. The medical policy of every company must be largely governed by the facts of its own experience rather than by the results of the combined experience of many companies, the statistical and medical interpretation of which is often a most difficult task for ordinary office requirements. In determining its medical policy it is, therefore, of the utmost importance that the medical department of each company should be as fully informed as possible concerning all of the numerous factors which have reference to its own experience and the required information must chiefly be obtained through the medical periodical press.

It would carry me too far to illustrate the foregoing suggestions to the extent as I have had occasion to do in my address on "The Mutual Relations of Life Insurance and the Medical Press."* I can here only refer to a few recent articles which will emphasize the point of view that the medical periodicals are the most valuable source of information concerning practical suggestions for a further improvement in the science of life insurance medicine. In the Journal of the *American Medical Association* for February 23, 1907, appeared an interesting article by S. J. Meltzer, M.D., of New York City, on "The Factors of Safety in Animal Structure and Animal Economy." The article throws much light upon some of the most obscure problems in risk selection, where a well-established impairment may be sufficiently compensated for by obviously and equally well established physiological advantages.

Another illustration is an address by Dr. George M. Gould, read at the 51st Annual Meeting of the American Medical Association in 1900, on " A System of Personal Biologic Examinations and the Condition of Adequate Medical and Scientific Con-

*Proceedings of the American Medical Editors' Association, 1910.

duct of Life." In the discussion by Gould are included considerations of heredity, development, adolescence, anthropometric examination, the physiological record, including the testing and tabulation of all the significant reactions and functions, etc., foreshadowing the work of the Eugenic Institute at Cold Springs Harbor, New York.

There can be no more serious error than to assume that all of the fundamental principles of longevity have been ascertained, when, rather to the contrary, it is a question of reasonable doubt whether any of the factors which determine the length of human life have been precisely established by modern methods of scientific research. In the MEDICAL RECORD for December 24, 1910, is an interesting discussion of the probable duration of human life, by Dr. A. H. Stewart, of Lawton, Oklahoma, which reopens the debatable question as to accuracy and trustworthiness in the accounts of extreme longevity, so ably and impartially discussed by T. E. Young in his treatise on Centenarians, published in 1899.

Young also was one of the first to raise the question of probable error in the mortality curves as used for life insurance purposes at the age period of 20 to 29, holding that, according to the experience of the Society of Friends, the death rate is higher at ages 20 to 24 than during the succeeding interval from 25 to 29.

As bearing upon this question, an interesting but brief discussion appeared in the *Journal of the American Medical Association* in 1910, on "Change of Life in Man," by De Fleury, who reported 201 cases representing a form of neurasthenia in men approaching 50, in which the nervous and mental symptoms had been proceeded by signs of sluggish nutrition, auto-intoxication and lower vitality.

In this manner, every branch and subject of insurance medicine could be illustrated by citations from the medical periodical press, often contributing most valuable hints and suggestions applicable to everyday practice, not to be derived from the textbooks on examinations for life insurance, nor could it be expected that books of this character would contain the required information, since, as previously stated, the distinction is obvious between the field of the medical examiner and the medical director. To the former the field of opportunity is largely unrealized, and students of general medicine might well give more attention to more rigid requirements of intelligent and conclusive examinations, not only for life insurance purposes, but also for the recruiting service of the Army and Navy, the Pension Office, large industrial establishments, transportation lines, etc. The adoption of a system of medical examination of school children has materially enlarged the field in which such knowledge could be utilized to pecuniary advantage in present-day recognition of the truth that not only is prevention of disease better than cure, but that such prevention is a social duty, incumbent alike upon the individual and the State.

Suprarenal Tumors and Precocity.—Glynn and Dun state that the evidence at their disposal suggests that the internal secretion of true malignant hypernephromata in children tends to increase the male primary and secondary sexual characters at the expense of the female; as is seen in the occurrence of beards in several of the female children, the hypertrophy of the clitoris, and the earlier true sexual maturity of the male children.—*Liverpool Medico-Chirurgical Journal.*

ON THE MECHANISM OF THE PRESYSTOLIC MURMUR.*

By T. STUART HART, A.M., M.D.,

NEW YORK.

ASSOCIATE IN MEDICINE, COLUMBIA UNIVERSITY.

In 1843 Fauvel[1] described the presystolic murmur and advanced the view that it was due to abnormal blood currents caused by obstruction at the mitral orifice during the systole of the auricle. A few years later Gairdner[2] supported this view with much force and originality. Since Gairdner's time clinicians have been practically agreed that this short rough crescendo murmur terminating with the first sound of the heart and usually audible over a very limited area near the apex, is indicative of mitral stenosis, but the forces which are active in its causation have been the subject of extensive controversy.

Ormerod[3] claimed that the musculature of the auricle was not powerful enough to produce a murmur of the character of the presystolic and Barclay[4] put forward the view that the murmur was systolic in time and was caused by a portion of the ventricular contraction which preceded the first sound. These views have been further amplified by Dickinson,[5] Brockbank,[6] and others.

However, up to the present time it would seem as if the arguments of the supporters of the view that the auricular systole is an important element in the production of the presystolic murmur have been generally accepted.[7] For example, Sansom[8] in the closing paragraphs of a full discussion of the presystolic murmur, asserts "it manifests a heightened intensity at its close due to the contributory expulsive force of the auricle." And Gibson[9] says "that the explanation of Fauvel and Gairdner is correct cannot in my opinion be doubted for a moment."

In his recent study of the heart by graphic methods the rôle of the auricular systole in the production of the presystolic murmur has been emphasized by Mackenzie,[10] who has made use of the disappearance of the presystolic murmur as an argument for the absence of an auricular contraction at the normal period in the cardiac cycle. It seems evident, therefore, that Mackenzie holds the view that the presystolic mitral murmur is due to auricular systole.

Some time ago our attention was attracted by the fact that in certain cases with evident mitral stenosis with well marked presystolic thrill and presystolic murmur at the apex, the jugular pulse was of the ventricular type, the tracings conformed in detail to the type designated by Mackenzie as the "nodal rythm."

In some of these the mitral valve only was affected, in others there was either a certainty or a suspicion of an aortic insufficiency complicating the picture of pure mitral disease.

The following are instances of mitral involvement only:

CASE I.—P. W., salesman, thirty-seven years of age, was admitted to the Presbyterian Hospital on March 26, 1909. He had been accustomed to consume large quantities of beer and whisky and had suffered from one or two slight attacks of rheuma-

*Presented to the Society of Internal Medicine, February 15, 1911.

From the service of Professor James at the Presbyterian Hospital, New York.

The presystolic murmur associated with aortic insufficiency, the "Flint murmur," is not considered in the present discussion.

tism (?). He denied syphilis. For four years he had suffered from dyspnea on exertion, for the six months preceding his admission he had a cough with expectoration sometimes streaked with blood. He complained of dyspnea, edema of the legs, pain in the shoulders, cough and constipation.

On examination he appeared quite cyanotic and apathetic. His pulse was one of complete irregularity, rate about 128; some of the apex beats could not be felt at the wrist. The apex of the heart was in the sixth space 17 cm. to the left of the midsternal line, dullness extending 2.5 cm. outside of this point, there was abnormal dullness in the second and third left spaces where a systolic pulsation could be felt, and there was some dullness to the right of the sternum. There was heard a loud first sound at the apex, with *a short, rough, rumbling murmur preceding it;* also a blowing systolic murmur transmitted to the axilla. The second pulmonic sound was accentuated. The lungs showed signs of congestion at the bases. The liver was pulsating and tender. There was edema of the legs and arms.

rheumatism, but was conscious of no after effects. One year ago after much running upstairs in his position as office boy he suddenly became short of breath. Since that time he has been unable to work. He has had some precordial pain, a cough with brown expectoration, and occasional vertigo. His dyspnoea and precordial pain had been much worse for the two weeks preceding his admission to the hospital.

His physical examination showed a moderate degree of cyanosis. Respiration, 40. The lungs showed a few crepitant râles over the left upper lobe. The apex of the heart was in the fifth space 10 cm. to the left of the midsternal line, its action was very irregular, thrusting and forcible. At the apex there was a marked thrill and *a loud crescendo rumble preceding the first sound* which was followed by a short systolic whiff. There was a soft diastolic murmur heard in the third left space. The sounds at the base were both loud, but the pulmonic was the more intense and at times was reduplicated. The radial pulse was small, rapid, and irregular in

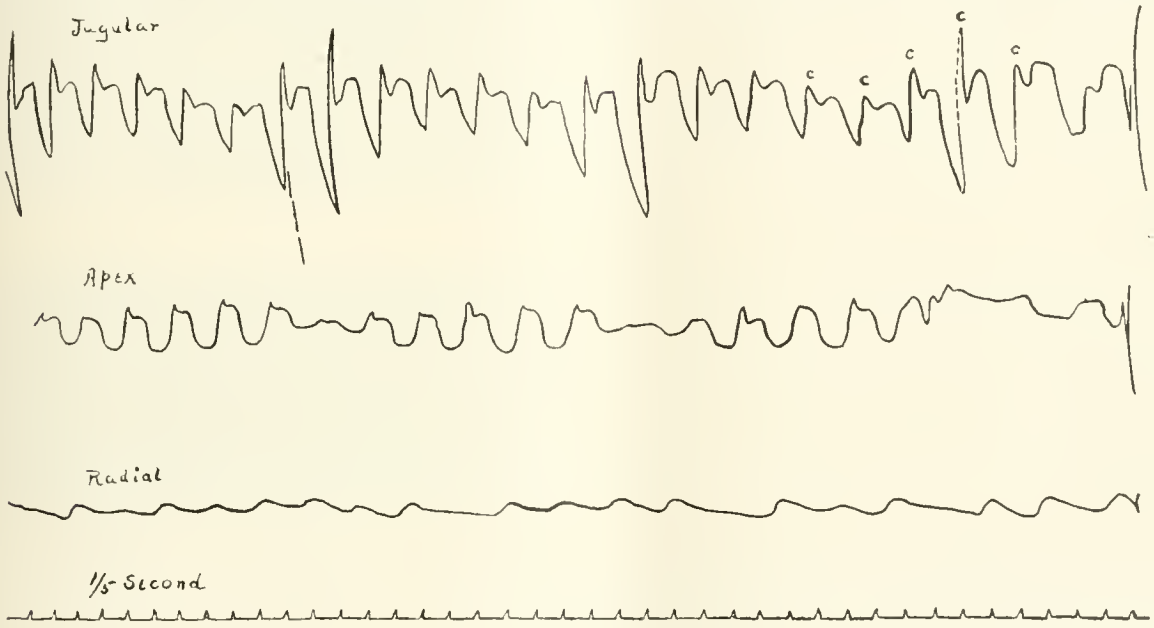


Fig. 1.—Jugular apex and radial tracings in Case I. Note absence of *a* wave and ventricular form of venous pulse; complete irregularity.

The tracing Fig. 1 was taken on March 27, when his condition had not materially changed; at this time the presystolic murmur was present. It is to be noted that the tracing shows a jugular pulse of ventricular form with no evidence of an *a* wave and that the radial pulse is characterized by complete irregularity.

Case II.—J. K., an office boy, twenty years old, was admitted to the hospital on May 4, 1910. He denied syphilis and the use of alcohol. When eight years of age he had an attack of acute articular

force and time. During his whole stay in the hospital, until July 15, the thrill and murmur preceding the first sound were never absent.

Figure 2 is a tracing taken on May 11, when the physical signs were as above described.

The tracing shows a jugular pulse of the ventricular form and the brachial shows complete irregularity.

In the earlier period of these observations we were led to suspect that the absence of the *a* wave in its normal position in the venous pulse was due

Fig. 2.—Jugular and brachial tracings in Case II. Note absence of *a* wave and ventricular form of the venous pulse; complete irregularity.

to technical defect, but repeated attempts in obtaining tracings* confirmed our impression that the venous pulse was of the ventricular type. Therefore in spite of the generally accepted theory of Fauvel and Gairdner that the abrupt increase in the intensity of the murmur preceding the first sound in mitral stenosis is due to auricular contraction, and in spite of the evidence of Mackenzie of the presence of an auricular form of venous pulse when a presystolic murmur is present we were led to suspect that there might be cases of mitral stenosis (without aortic insufficiency) in which the presystolic murmur was associated with a ventricular form of venous pulse.

Recently Professor Evans called our attention to a case of mitral stenosis with a presystolic murmur, complete irregularity and the ventricular form of venous pulse which had been under his observation at the City Hospital for some months. He was good enough to allow the patient to be transferred to the Presbyterian Hospital for polygraph and electrocardiographic records and it is through his courtesy that we are now reporting this case.

Case III.—M. G., hack driver, thirty-six years of age, a native of Russia. Family history good. He denied syphilis. He has been accustomed to use tobacco and beer in moderation. Ten years ago he had a severe attack of rheumatism; a year after this he had some cardiac palpitation, but no dyspnoea or other circulatory disturbances. Five years ago when apparently in good health he suddenly "vomited some bright red frothy blood." He lost consciousness and was taken to Bellevue Hospital, where he remained for seven weeks. He was then well until two years ago, when he had a similar attack and was in the hospital six weeks. After this he noticed shortness of breath during the cold weather, but not in summer. At this time he was able to walk only on the level. Sometimes after exertion he had a sharp pain which "ran through his heart" and made him stop his work. Recently his ankles have been swelling and he has had some epistaxis. He was admitted to the service of Professor Evans at the City Hospital, who made a diagnosis of mitral stenosis with decompensation. On December 20, 1910, he came to the Presbyterian Hospital, where records were taken with the polygraph and with Einthoven's string galvanometer.

At that time the heart showed enlargement to both left and right, the action was very rapid and tumultous, the apex beat was thumping and varied greatly in force and time. There was a loud first sound *preceded by a thrill and a short, sharp crescendo murmur* and followed by a musical systolic murmur. In the longer diastolic pauses a low pitched soft murmur could occasionally be heard in the third left space near the sternum. The second pulmonic sound was accentuated. The radial pulse was small and completely irregular, the veins of the neck were pulsating.

Figure 3 shows a tracing of the brachial and jugular pulses; the jugular is clearly of the ventricular form.

Figure 4 is his electrocardiographic record taken at the same time. Leads one and two are reproduced together with a short control which shows that the galvanometer was practically free from vibration. The electrocardiograms show complete irregularity, the *P* wave characteristic of auricular contraction is absent, but the small uneven waves clearly indicate that the auricle is in a state of fibrillation.

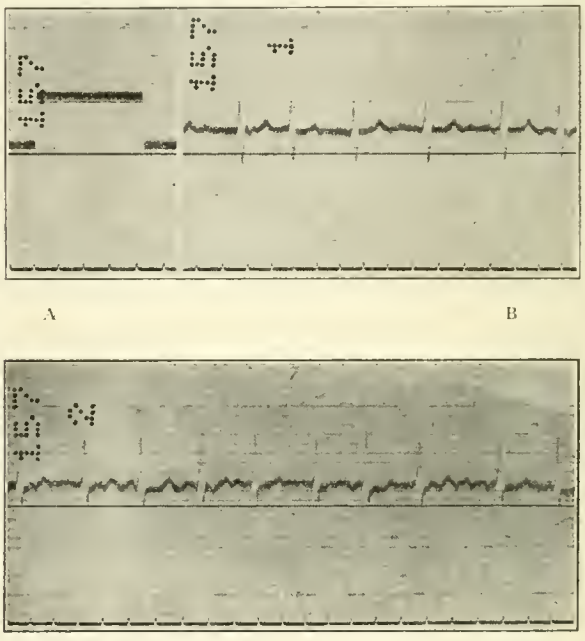


Fig. 4.—Electrocardiogram in Case III, taken December 20, 1910. A, control; B, Lead I; C, Lead II; time of each, 1/5 second. Note the absence of P wave and oscillation characteristic of auricular fibrillation.

On the same day he returned to the City Hospital and was put on large doses of digitalis. On January 8 he was again transferred to the Presbyterian Hospital and remained there until his discharge, greatly improved, on January 23.

The electrocardiogram taken in association with the venous tracing on January 9 shows the heart action after it had been quieted by rest and digitalis. Fibrillation, complete irregularity and the ventricular form of venous pulse are all evident.

*The polygraph records were taken either with a Ludwig kymograph (Fig. 1) or with the sphygmotonograph of Uskoff (both instruments manufactured by Zimmermann). The brachial tracings were obtained by means of the cuff attachment of the Uskoff instrument.

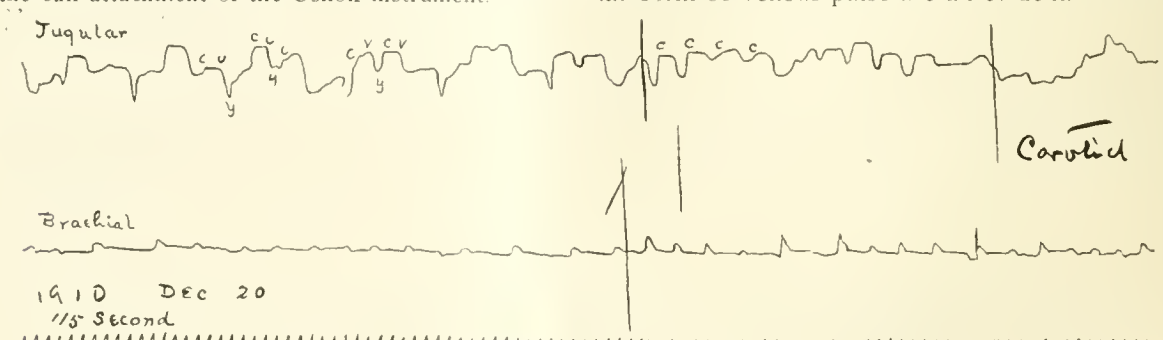
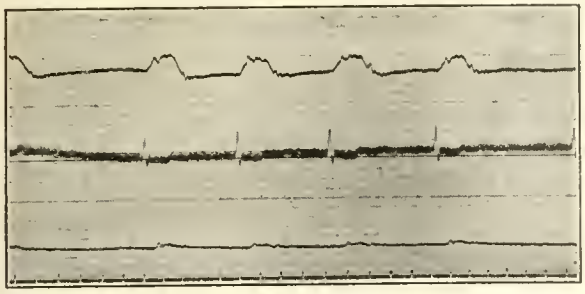
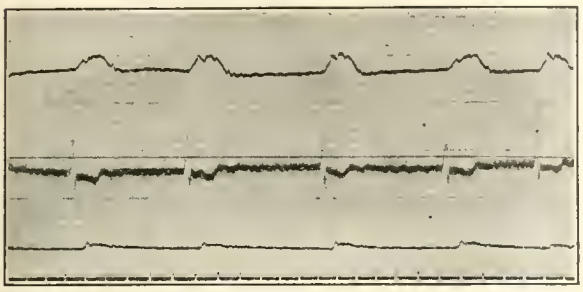


Fig. 3.—Jugular and brachial tracings in Case III. Note absence of *a* wave and the ventricular form of the venous pulse; complete irregularity.

At this time the apex beat was in the fifth space 11.5 cm. to the left of the midsternal line, dullness extended 15 cm. to the left in the fifth space, 8 cm. to the left in the third space and 4 cm. to the right in the fourth space. At the apex the first sound was loud and sharp and preceded by a thrill, at the base



Lead I, time, 1/5 second.



Lead II, time, 1/5 second.

Fig. 5.—Electrocardiogram in Case III, taken January 9, 1911, after rest and digitalis; the upper line is the jugular tracing, the lower line the radial pulse. Note absence of the P wave, complete irregularity, fibrillation.

the pulmonic sound was accentuated and occasionally there was reduplication. The murmurs were as described in the note of December 20, but were more easily differentiated during the slow action of the heart. They are shown graphically in the diagram Fig. 6.

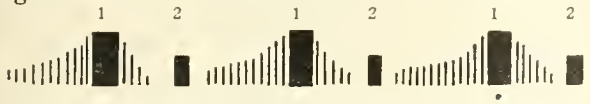


Fig. 6.—Diagrammatic representation of murmurs in Case III.

The thrill and murmur preceding the first sound could be greatly increased by mild muscular movements. The radial pulse was small and irregular; there was no capillary pulsation.

about two weeks, of shortness of breath with palpitation and considerable difficulty in climbing stairs. Three months ago an attack came on and was so severe that he could not walk far, even on the level. Since then he has been unable to work, he has had dyspnea, orthopnea, a sense of fullness after eating, and occasional nausea. There has been no swelling of the legs, but some puffiness of the face in the morning. One month ago he was jaundiced and had pain and tenderness in the region of the liver. The jaundice has now nearly disappeared.

The physical examination on January 12 showed a well nourished man slightly jaundiced, not anemic or cyanotic. There was marked pulsation of the veins of the neck. The apex of the heart was localized and palpable in the fifth space 9.5 cm. to the left of the midsternal line, dullness extended 0.5 cm. further to the left. Rate, 106, irregular in force and time. At the apex there was a short, sharp, snappy first sound *preceded by a thrill and a short, harsh crescendo murmur* (these could be markedly increased by slight muscular exertion). There was a blowing systolic murmur heard at the apex and a systolic murmur harsh and prolonged heard at the costal margin and along the left edge of the

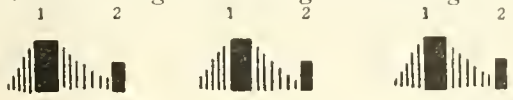


Fig. 7.—Diagrammatic representation of murmurs in Case IV.

sternum. In Fig. 7 the murmurs are represented diagrammatically. The second pulmonic sound was accentuated. The radial pulse was small and corresponded to the apex beat in force and rythm. The liver extended from the fourth space in the right midclavicular line to 3.5 cm. below the costal margin; it was pulsating and tender. There was no edema of the extremities.

Figures 8 and 9 exhibit the records of Case 4 on admission January 12.

The venous pulse is of the ventricular form, the evidence of the absence of gross auricular contractions is complete, there is an absence of the *a* wave in the venous tracing and of the *P* wave in the electrocardiogram, which shows small oscillations due to auricular fibrillation; there is complete irregularity.

The patient was put in bed and given digitalis. During his stay in the hospital numerous records were taken of which Fig. 10 was taken on January

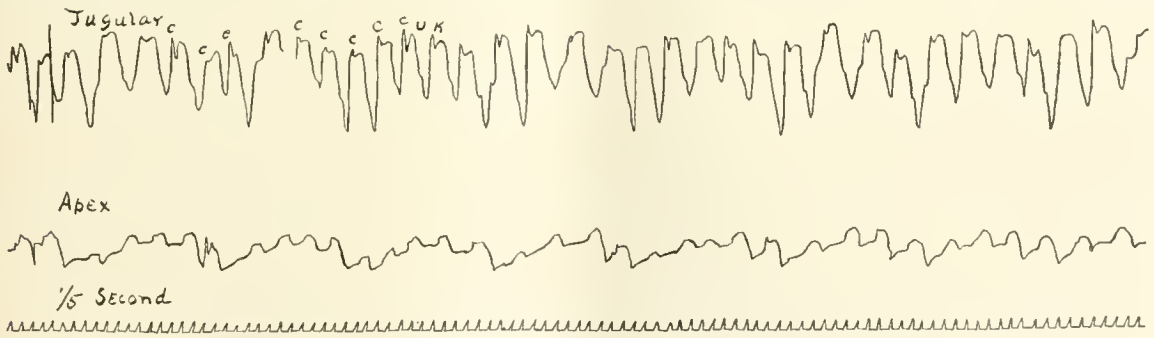


Fig. 8.—Jugular and apex tracings on admission in Case IV. Note ventricular form of the venous pulse; complete irregularity.

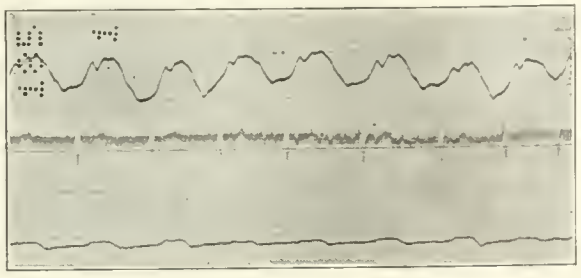
Case IV.—A. F., a barber, thirty years old, born in Poland, was first seen at the Vanderbilt Clinic on January 11, 1911, and was admitted on the next day to the Presbyterian Hospital. His family history was good. He denied syphilis and rheumatism and the use of alcohol and tobacco. About once a year for the past ten years he has had attacks, lasting

22. All these records showed auricular fibrillation, complete irregularity and the ventricular form of venous pulse.

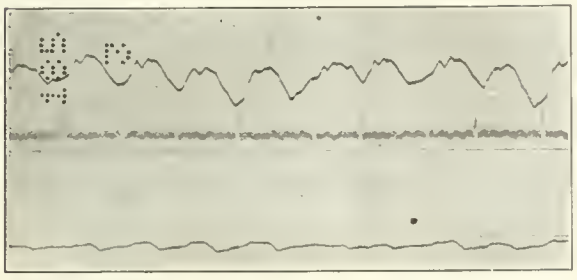
We have presented here in detail four cases with well marked clinical signs of mitral stenosis, and we have records of a number of others which could be included in this group. The physical signs in all

of these cases have been verified by Professor James and other competent observers.

In two of these cases the presence of a diastolic murmur might suggest the presence of an associated aortic insufficiency, but since there was an appre-



Lead I.



Lead II.

FIG. 9.—Case IV on admission, January 12, 1911. Records from above downward; jugular pulse of ventricular form, absence of *a* wave; electrocardiogram, absence of *P* wave and fibrillation; brachial pulse, complete irregularity.

ciable interval between the second sound and the beginning of the murmurs in question, since the enlargement of the left ventricle was very moderate, since the arterial pulse was exceedingly small and showed no collapsing quality, and since there were no capillary phenomena or other signs characteristic of aortic leakage we feel reasonably assured that we are dealing in all of these cases with mitral lesions only.

At no time during the observation of these cases was there an absence of the so-called presystolic thrill and presystolic murmur. Many graphic records of these cases were secured; they invariably exhibited complete irregularity, the ventricular form of venous pulse and an entire absence of evidence of gross auricular contraction. From Cases 1 and 2 no electrocardiograms were obtained, but from the character of the polygraph tracings we have no doubt that had these been secured they would have shown auricular fibrillation.

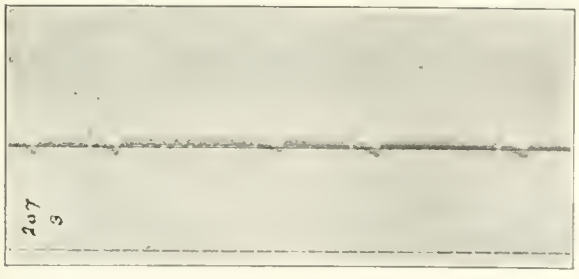


FIG. 10.—Electrocardiogram in Case IV, taken January 22, 1911, after rest and digitalis; fibrillation. Lead III, time, 1/5 second.

The conclusion is obvious that, *in certain cases at least, the short crescendo murmur preceding the first sound in mitral stenosis is not due to auricular activity.*

While we are not prepared to assert that this murmur is never due to auricular activity, our findings are certainly exceptions to the theory of Fauvel and Gairdner and as such tend to materially weaken it.

The arguments in favor of the view that the murmur in question is due to ventricular activity may be found in the papers of Dickinson[5] and Brockbank.[6] While there are some facts which this theory does not (to our way of thinking) satisfactorily meet, our observations favor it in so far as they deny the necessity of auricular activity for the production of this murmur.

To Professor James, who has allowed me the freedom of his wards, has placed the means of this study at my disposal and has encouraged and aided its prosecution by personal aid and suggestion, and to Dr. H. B. Williams, who has assisted me in taking the records, I wish to express my obligation and thanks.

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130 WEST FIFTY-NINTH STREET.

THE RADICAL FRONTAL SINUS OPERATIONS.

TYPE OF OPERATION BEST ADAPTED TO THE CURE OF SINUS DISEASE WITH THE LEAST EXTERNAL DEFORMITY.

BY JOHN E. MACKENTY, M.D.,

AND

GERHARD H. COCKS, M.D.,

NEW YORK.

RECENTLY, both in this country and abroad, Killian's radical frontal sinus operation has become deservedly popular. This is due partly to the recognition always afforded any operative procedure advocated by this eminent teacher, and partly to the excellent results Killian has achieved. The main objection to the method, especially in America, is the inevitable facial deformity resulting from the removal of the anterior bony wall of the sinus.

It has been our experience, from a series of cases operated by a somewhat different method, that a cure of the underlying disease may be attained with much less—or, indeed, practically no—external deformity. For this reason we are prompted to publish our results and give a brief description of the operation we have employed.

It need hardly be said that all cases should be carefully selected before they are subjected to any radical external operation. Unless prompt interference is indicated, the usual intranasal methods for the establishment of free drainage by the natural passages should first be given a fair trial for several months.

Excluding the osteoplastic flap operations which have gained little recognition in this country, the

radical operations on the frontal sinus may be divided into three groups:

(*a*) Operations where the anterior wall of the sinus is removed: (1) Method of Nebinger-Praun. (2) Method of Luc-Ogston. (3) Method of Kuhnt.

(*b*) Operation with removal of floor of sinus: (1) Method of Jansen.

(*c*) Operations with removal of both anterior wall and floor: (1) Method of Riedel. (2) Method of Killian.

Of the methods directed at the obliteration of the frontal sinus by the removal of its anterior wall, that of Kuhnt is perhaps the best known. The anterior bony wall is completely removed; the mucous membrane lining the sinus is thoroughly curetted away, but the nasofrontal duct is undisturbed. The external wound is left open, the cavity packed with gauze, and the wound made to heal from the bottom. Needless to say, the resulting deformity is great, and the ethmoidal cells—which are practically always involved in chronic frontal sinus suppuration—Kuhnt leaves undisturbed.

Jansen was the first to attack the frontal sinus by way of the floor, and his method has much to recommend it. He makes a curved skin incision below and parallel to the eyebrow, and continues it down on the side of the nose through the periosteum to the bone. After separating the periosteum from the roof of the orbit, Jansen removes the floor of the sinus and opens the ethmoid cells. The skin incision is closed and drainage into the nose established. In his published description of his operation, Jansen makes no mention of care in the dislodgment of the pulley of the superior oblique muscle for the purpose of avoiding post-operative diplopia, and he does not resect a window in the anterior wall in cases of high sinuses.

Killian's operation is performed as follows: A curved skin incision is made through the eyebrow from its temporal end toward the median line of the head and down on the side of the nose, to the base of the nasal bone. The periosteal incisions are two in number. The upper is made parallel to the supraorbital margin and 5 mm. above it, and extends from the temporal line of the skin incision as far as the nasal bones. The second periosteal incision begins just internal to the superior oblique pulley, passes inward, and then downward and outward, following the direction of the incision of the skin at the inner side of the eye. The periosteum is separated from the anterior wall of the sinus, with the exception of that covering the superciliary ridge. The periosteum is elevated from the inner portion of the floor of the sinus and from the inner wall of the orbit. Killian then removes the entire anterior wall of the sinus except a narrow bridge of bone at the orbital arch. He also removes the inner part of the sinus floor and the nasal portion of the superior maxilla. He completely exenterates the ethmoid labyrinth. His successful results are due largely to the broad free opening which he makes into the nose. The external wound is closed.

The chief disadvantage in Killian's operation, as mentioned above, is the cosmetic deformity which results, especially when dealing with high and deep sinuses, like those of the first patient reported in this series. In such a case the skin sinks into the cavity above the orbital arch and an unsightly depression occurs. Mainly for this reason—to avoid bad cosmetic results—we determined to try the operation described by Dr. A. Knapp in the *Journal of the American Medical Association*, July 28, 1908, and have found the method so satisfactory that we determined to report some of the cases. The operation, in brief, is as follows:

After the insertion of a post-nasal plug, a semilunar incision is made from the outer angle of the orbit through the unshaved eyebrow, and down on the side of the nose to the level of the floor of the orbit. This incision is through the periosteum to the bone. The periosteum is then separated from the anterior wall of the sinus, and from the roof and inner wall of the orbit. The pulley of the superior oblique is separated from its bony attachment and pushed aside with the periosteum of the orbit. The bulb is held aside with a blunt retractor. The lacrymal sac is elevated from the lacrymal groove, care being taken not to injure the duct. The entire floor of the frontal sinus is removed, as well as the nasal process of the superior maxillary bone, the lacrymal, and, if necessary, a portion of the nasal bone. The entire ethmoidal labyrinth is taken away, including the plate of bone forming the inner wall of the orbit. If indicated, the anterior wall of the sphenoid is removed. Thus we get a large and free opening into the nose.

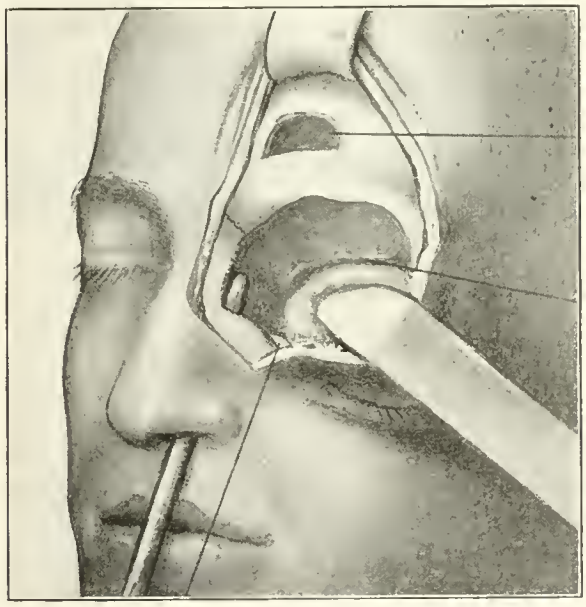

Fig. 1.—Radical operation on frontal sinus and ethmoid; A, instrument passed through nostril to show the wide opening into the nose. B, lacrymal duct. C, edge of floor of the sinus which has been removed. D, window in the anterior wall.

In small sinuses the removal of the floor usually suffices, but when dealing with high sinuses, like those of Case I. of our series, it is generally necessary to make a window in the anterior wall, in order to inspect and curette all parts of the cavity. In any event, a wide bridge of bone, at least as wide as the breadth of the index finger, should be kept at the supraorbital margin, to preserve the normal contour. The entire mucosa lining the frontal sinus is carefully curetted away, and all septa are broken down. The middle turbinate, unless previously removed, is resected at the time of the frontal sinus operation. The external wound is closed by sutures. At least one buried stitch should be placed in the periosteum at the inner angle of the eye, to hold the superior oblique pulley in its proper position. All the skin stitches but one at the inner corner of the eye should be removed in twenty-four hours to avoid stitch scars. A cigarette drain from the sinus into the nose is allowed to remain until the following day. No external drainage is necessary.

This operation differs from Killian's in: (1) The manner of incising the periosteum; (2) The treatment of the anterior wall; (3) The method of handling the superior oblique pulley; (4) The total removal of the floor of the frontal sinus.

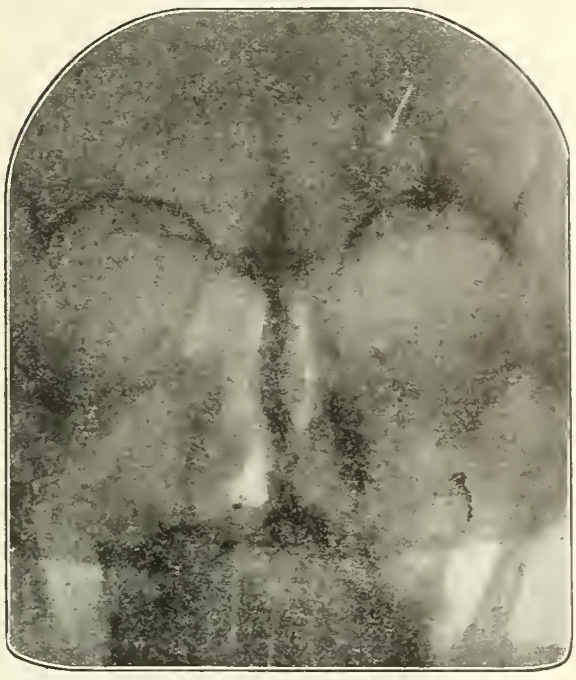

Fig. 2.—Case I—Photograph shows very high frontal sinuses. Arrow points to dark spot in left frontal due to thickening of mucosa. The left ethmoidal and maxillary cavities are darker than the opposite side, and are diseased.

The following are some of our more interesting cases. All these patients were operated in Dr. W. F. Chappell's service at the Manhattan Eye, Ear, and Throat Hospital:

Case I.—C. J., a robust man of 39 years, came to the clinic in December, 1909, with a history of bilateral mucopurulent nasal discharge and headache since childhood. During the past three years he has had repeated intranasal operations for the cure of his nasal trouble in several of the large European cities. His pain has always been over the frontal sinus, with one exception, when he had a bad attack of pain in the occipital region, relieved by intranasal opening of the sphenoid. His last operation was performed eleven months ago in Hamburg. Since then he has been free from pain over the right frontal, but his left-sided trouble has continued. When first seen, a little over a year ago, he sought relief from periodic attacks of dull supraorbital pain, left side. These attacks usually lasted about two weeks. Then there was a free discharge of muco-pus, followed by relief. He was having one of these attacks when he came under observation, and stated that the supraorbital pain began every morning about 9 A. M. and lasted until 3 P. M. He was very drowsy and forgetful, and slept most of the time.

A radiograph, taken in the anteroposterior direction, shows a dark spot in the left sinus, indicated by the arrow (see Fig. 2). This was thought to be due to diseased and thickened mucosa. The same photograph shows that the left antrum is also diseased. Fig. 3, which is the lateral view of the same patient, demonstrates the great distance between the anterior and posterior walls of the vertical portion of the sinus.

Examination of the nose showed that both middle turbinates had been removed, and the ethmoids and sphenoids of both sides opened. Operation was decided upon, and the method of operating described above was carried out. Owing to the height of the sinus, which is well shown in the *x*-ray print, it was necessary to make a window in the anterior wall. The mucosa lining the frontal sinus was thickened, diseased, and polypoidal. The same condition was present in the ethmoid cells, which were completely exenterated.

Following the operation the patient had diplopia while looking at objects in the upper part of the visual field, due to involvement of the superior rectus muscle. This disappeared in two weeks. Otherwise the patient made an uneventful recovery, and is now completely relieved of his pain. His photograph, taken fourteen months after operation, shows the excellent cosmetic result obtained. The scar is no longer noticeable.

Case II.—Mrs. Mack. Came to the clinic seeking relief from left-sided nasal obstruction and purulent discharge. About five years ago was operated upon for the same condition in another institution, with temporary relief. At that time the left middle turbinate was removed. On December 9, 1910, a few polypi were removed by one of the men in the clinic. That same night the patient experienced severe pain in the left eyeball, accompanied by edema of upper and lower eyelids and pronounced exophthalmos. The temperature rose to 104° F. and the edema extended over the lateral aspect of the face as far back as the auricle. The following day, forty-eight hours after the polyp operation, the floor of the frontal sinus was removed and the ethmoids exenterated.

The findings were rather unusual. There was a

Fig. 3.—Case I. Lateral view. Shows great distance between anterior and posterior walls of vertical portion of frontal sinuses.

defect in the region of the ethmoid cells, which were filled with pus. By this path the pus had found its way into the orbital fat, which contained two small abscesses. The frontal sinus itself contained pus under pressure and was filled with polypi. The

sinus was only about one inch high. It was therefore unnecessary to resect a window in the anterior wall. The patient is relieved of both pain and nasal discharge, although a sinus at the upper angle of the orbit has persisted, due to a small piece of

Fig. 4.—Case I. Taken about one year after operation on the left frontal sinus.

dead bone. Consequently, another operation for the removal of the necrotic bone will be necessary.

Case III.—H. H., a middle-aged man, has suffered from periodic attacks of pain over the region of the left frontal sinus for the past fifteen years—at first, every two to four months; recently, every two weeks. The pain lasted one to two days.

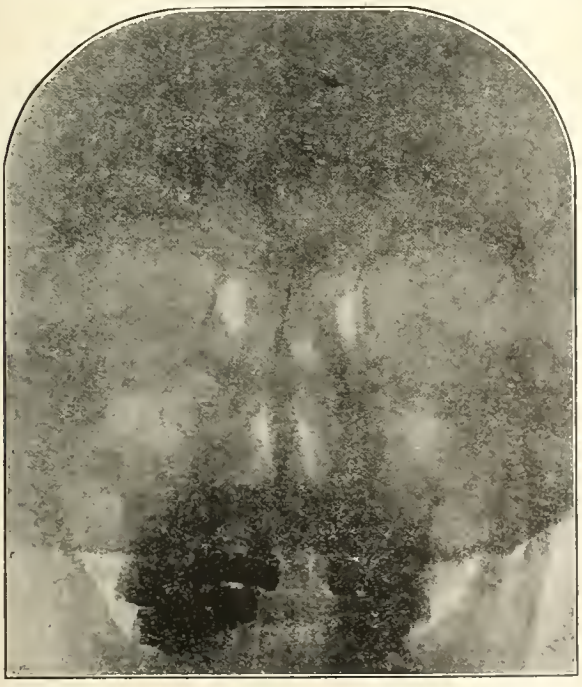

Fig. 5.—Case III. Showing dark shadow in floor of left frontal and in ethmoid region. The left antrum shows enormous thickening of its lining mucosa.

There has never been a purulent discharge, merely a few drops of watery material running out of the nose during the attacks. The last attack was accompanied by a slight rise of temperature. An intranasal operation on the middle turbinate and ethmoids a few years ago, in another institution, failed to give relief. Washings from the left maxillary antrum demonstrated clumps of mucopus. The *x*-ray shows a dark shadow over the left frontal and ethmoidal regions, with enormous

Fig. 6.—Case III. Taken about eight weeks after operation.

thickening of the mucosa lining the left maxillary antrum.

Operation December 21, 1910. Floor of sinus removed, ethmoids and sphenoid opened through inferior meatus, a large hole being made in the nasal wall. The mucosa lining the frontal sinus, especially about the duct, was thickened and inflamed. A small amount of mucopus was present in this region. The ethmoids and sphenoid were filled with degenerated mucous membrane, polypoidal in character. Recovery was uneventful except for secondary infection of skin and deeper structures, necessitating external drainage for a short time. This patient is now completely free from his attacks of pain. The nose is dry. His photograph, taken two months after operation, is here shown.

Case IV.—Jacob S. Chronic purulent pansinusitis. History: Bilateral purulent nasal discharge since January, 1910. Came under observation in September, 1910. Both antra opened through nose and ethmoids operated intranasally. Headache and discharge persisted in spite of these measures, and a radical operation was advised. After three months' observation and treatment, the floor of the right frontal sinus was removed by the external route and the ethmoids and sphenoid opened. The frontal sinus was filled with thick yellow pus and polypi. There was a defect in the bony septum between the two sinuses, through which pus oozed from the left sinus into the cavity of the opposite side. This defect was enlarged by removing the bony septum; thus the left frontal was drained into the right nostril. The cosmetic result is excellent, and the patient's right-sided headache is cured. As he has had some pain over the left sinus, since operation, it will undoubtedly be necessary to do a complete operation on his left frontal and ethmoid before he is entirely cured.

Case V.—Sam H., 32 years old. Pain and left-sided mucopurulent nasal discharge for nine years. Pain is bilateral in supraorbital regions and occiput.

The patient had intranasal operations in the region of the middle turbinate in 1906 and again in 1908. He suffered from epileptic seizures, which came on at the time of the attacks of frontal sinus pain. He was referred by Dr. Joseph Collins, who noted that the epileptic attacks were diminished in number by the nasal operations.

A radical operation was advised, and in November, 1910, the floor of the frontal sinus was removed and the ethmoids opened. The mucosa in the floor of the frontal sinus was thickened and inflamed, and it was apparently this condition which caused the periodic attacks of pain due to the temporary closure of the excretory duct of the sinus. The ethmoids were filled with polypoidal mucous membrane. The cosmetic result is excellent. It is somewhat early to judge of the effect of the operation on the number and severity of the epileptic seizures at the present writing.

Case VI.—E. P., lady's maid; age 28. Well nourished but anemic. Bilateral nasal discharge, yellow and thick; began at the age of fifteen. From that age until she came under observation in the clinic

Fig. 7.—Case VI. Taken over two years after operation on right frontal sinus.

she underwent repeated operations for nasal polypi. One year prior to the present history she began to have bilateral pain over the frontal and occipital regions. This pain was constant, with exacerbations during the day time. It was sometimes so severe at night that she was unable to sleep. Examination showed the ethmoidal regions of both sides filled with polypi. She requested a radical operation. Nevertheless, the left side was operated intranasally, as it seemed the lesser affected, the ethmoidal cells being as far as possible removed. The left antrum was opened intranasally at the same time.

After a short interval the floor of the right frontal sinus was removed and the ethmoids exenterated. The frontal contained pus and polypi, and the ethmoids and sphenoid were filled with polypi and degenerated mucous membrane.

She made a good recovery and her pain was entirely relieved; the discharge from the right side, however, persisted. This came entirely from the antrum. Three months later the antrum was opened through the canine fossa and was found to be filled with polypi and degenerated mucous membrane. Counter-drainage into the nose was accomplished by making a window resection of the inner antral wall, extending from the floor to the middle turbinate. This method gives drainage both above and below the inferior turbinate, does not destroy the latter, and leaves an opening so large that subsequent cicatricial closure is impossible. The mouth wound was closed with silver wire, no drainage being used through either the nose or mouth. The discharge has entirely ceased. The patient has gained in weight and the anemia has disappeared. Her photograph shows the excellent cosmetic result obtained.

Conclusions.—We claim no originality for the operation we have used. It is simply a combination of the best methods. It accomplishes drainage and cures the disease equally as well as Killian's, which is, in our opinion, its only competitor.

The only valid excuse for removing the entire anterior bony wall of the frontal sinus is the presence of necrotic bone, a condition very rarely encountered in this locality.

The advantages of this operation over Killian's are: (1) Avoidance of facial deformity. (2) The dislodgment of the superior oblique tendon facilitates the removal of the floor of the sinus, especially where it extends backward a considerable distance over the orbit. (3) It is a method peculiarly suited to the treatment of cases which have perforated into the orbit with the production of orbital cellulitis. If diplopia results, it is transitory, usually clearing up in from ten days to two weeks.

We are indebted to Dr. W. F. Chappell for his courtesy in placing the cases on which this paper is based in our hands for operation.

FATALITY OF TEXTBOOK HYDROTHERAPY—A WARNING.

By SIMON BARUCH, M.D.,

NEW YORK.

A retrospect of half a century at the bedside, during which the writer has had the opportunity to make a control experiment in the uses of water in private and hospital practice, is his warrant for presenting this clinical demonstration of the danger arising from the lack of interest which characterizes the attitude of the average practitioner on this important branch of therapeutics. The control experiment referred to is the result of twenty-five years' practice without a clear knowledge of the physiological and therapeutic action of water and twenty years' observation of its effects in those diseases in which it could be advantageously utilized.

Only conviction reached in this practical manner by one who was not only a sceptic himself, but who in his early medical career was prejudiced against that misguided sect, the hydropaths, would tempt the writer to present his views so persistently to his colleagues. He is encouraged, too, by the hope of their ultimate acceptance of the truth. Again and again have I urged in many of our medical centers the vital need of more complete instruction in the remedial uses of water, based, as are other agents, upon physiological action and clinical evidence.

That these efforts have borne some fruit is gratifyingly evident in recent communications from eminent teachers, the latest of these being from Professor McRae of Johns Hopkins and Professor Billings of the Northwestern University. The latter writes: "Hydrotherapy according to your

methods is taught in our school and hospitals. All the State hospitals in Illinois practise it." That the medical profession is becoming more deeply interested in hydrotherapy is evident also from the fact that, whereas the first edition of my book was the only original treatise in the English language, there are now five American works on hydrotherapy.

The textbooks, however, are, as a rule, woefully delinquent in their presentation of water as a remedial agent. While I have repeatedly demonstrated this fact, I have hitherto refrained from pointing out that *many lives have been lost by reason of the faulty teaching of textbooks*, their reiteration of conventional methods, their indefinite statements regarding the technique, and, what is most damaging, their failure to take cognizance of published results of hydrotherapy. The following flagrant example may serve to arouse the attention of our authors on therapeutics and practice of medicine to a deeper interest in the achievements of water as a remedial agent and their more thorough presentation. That in thermic fever* many lives have actually been sacrificed by reason of unfamiliarity with the simple principles and methods of hydrotherapy I am loth to confess, but clinical records gathered in our best hospitals compel this conclusion. They are reluctantly published as a warning that faulty hydrotherapy may result as seriously if not so fatally in other diseases which are more frequent, and that writers on practice need to search the literature of hydrotherapy for additions to their resources. It would seem inexcusable temerity on my part to venture this assertion, did not the interests of humanity and of our calling demand that the truth be spoken and that the faults of conventional methods be clearly demonstrated. Moreover, the lesson from the fatality of these faulty procedures may serve to enforce my frequent pleas for the application of water on strictly physiological principles, in accordance with the indications in each individual case, and for the crying need of instruction on this subject in our schools. It is a noteworthy fact that the prevailing water treatment of thermic fever is an almost exact repetition of the false hydrotherapy of typhoid fever in vogue from 1880 to 1890. Reduction of temperature was the chief therapeutic aim and the coldest bath was erroneously regarded as the most efficient antithermic bath. The introduction of reliable antipyretics dispelled the false and fatal idea that hyperpyrexia was the chief lethal element in typhoid fever. When bedside observation established the further important fact that these antipyretics damaged the heart and excretory organs, the just anathema visited upon them was visited upon the cold bath also (as I reported in a letter from Europe to the MEDICAL RECORD in 1890). The unfortunate result was that the cold bath was modified out of all semblance to the true *antifebrile* bath devised by Ernst Brand, who was the first to inveigh against the irrational antithermic baths of Liebermeister and others and to emphasize the nerve and heart-sustaining action of the cold friction bath systematically applied.

For twenty years I have striven to establish the Brand bath as the ideal of typhoid fever management whenever the patient's reactive capacity did not forbid it. The result was gratifying, as indicated by the following brief excerpts, which may be read with advantage by doubters.

Dr. James Tyson writes: "The Brand treatment is the best available method in typhoid fever, subject to the limitations which good sense and experience demand" (*Therapeutic Gazette*, July 15, 1895). In a recent letter Dr. Tyson says: "I still use the Brand method whenever possible. Its effect is practically to make serious cases mild and mild cases much milder. My statistics to January 1, 1906, showed a mortality of 7.3 per cent., which is astonishingly like that of Osler and Wilson."

The late Dr. H. P. Loomis presented a report to the New York Clinical Society (MEDICAL RECORD, January 10, 1903) concluding: "To the Brand bath is rightly given a great deal of the credit for the decrease (50 per cent.) of typhoid mortality in New York hospitals."

Dr. Gilman Thompson ("Text Book of Practical Medicine," 1902, page 45) writes: "The Brand system of bathing as applied in this country gives astonishingly uniform results. Hence it must be admitted that cold bathing reduces the general typhoid mortality fully one-half, which certainly more than compensates for the discomfort, trouble, and expense attending this process." This is striking testimony from one who has personally experienced the latter.

History is repeating itself in thermic fever therapy. For twelve years I have endeavored to wean the medical profession from the prevalent antithermic ideas and practice in thermic fever. So far in vain. This article is written in order to achieve the consummation of my endeavors, as well as to illustrate the defective hydrotherapy of our standard works on medicine.

A review of the literature of therapeutics reveals the fact that the textbooks of to-day present the same erroneous view on the action of the cold bath in thermic fever which characterized the books in the eighties with regard to typhoid fever. A few brief excerpts from our standard works bear me out; they are worthy of being thoughtfully considered. (1) "Heat stroke, especially the hyperpyrexial forms, must be promptly treated by the application of the ice bath (ice floating in a tub of water), temperature 40° F.-4.4° C., etc." (2) "The treatment of sunstroke must be bold and vigorous; first, the temperature must be reduced until it is at a safe level by the application of ice-water or ice, etc." (3) "In the severe febrile cases the first indication is to reduce the temperature. The patient should be immediately placed in a bathtub containing ice water and pieces of ice; he should be literally packed in ice." (4) "The success in the treatment of thermic fever depends altogether on our ability to lower the temperature. For this end the patient should be placed in a bath of water to which ice is freely added to keep the temperature down as low as it can be." (5) "In true sunstroke treatment should be active and energetic, the indication being to reduce the temperature of the overheated centers. Hyperpyrexia must be combated by rubbing with ice, placing him in a tub of water with lumps of ice." (6) "In the hyperpyrexial form the vital indication is the reduction of temperature. The cold bath with ice floating in it and occasionally rubbing with ice is in my experience the best."

These excerpts are obtained at random from the most popular works on practice; they guide students and practitioners. The latest edition of another

*Deaths from sunstroke in New York City numbered 1,098 in 1896, 1,229 in 1901. During the week ending August 15, 1896, 648 deaths (one-third of the entire mortality) occurred in this city.

textbook, which has been justly honored by several translations, states: "In thermic fever the indication is to reduce the temperature as rapidly as possible. This may be done by a bath of 70° F. (duration is not mentioned). At the Pennsylvania Hospital in 1887 the ice pack was used with great advantage. Of 31 cases, 12 died, a result probably as satisfactory as can be obtained."

The idea that the coldest bath is the most antithermic and therefore the most useful has been demonstrated to be as fallacious in thermic fever as it has proven in typhoid fever. I propose to establish by absolutely reliable clinical data cited from the record made by an unprejudiced observer that textbook hydrotherapy is misleading and that its abandonment may result in as favorable a change in the prognosis of thermic fever as the same course has accomplished in typhoid fever. An unbiased review of the history of this subject leaves no room to doubt that the recognition of vasomotor depreciation as the chief danger in typhoid fever and the clinical fact that this menace to life may be most effectively met by the systematic cold friction bath administered with a view to sustain the nervous system and circulation, rather than for temperature reduction, has resulted in the reduction of mortality from 20 per cent. to 2.7 per cent. (Vogl). That a corresponding favorable change in the mortality of thermic fever has been achieved by a similar judicious change of water treatment is proven by the following report on 520 cases of thermic fever published in the *Medical News* of July 24, 1897, by Dr. Alexander Lambert, physician to Bellevue Hospital. These 520 cases represent the largest statistical record extant. Considering that 38 cases form the only statistics cited in the seven textbooks quoted above, the significance of this array of reliable data becomes evident.

Homœopathic Hospital in Brooklyn: 49 cases treated with baths of 90°, reduced gradually to 72° F., gave a mortality of 41 per cent. The same hospital in a later series treated with the needle sprays connected with the cold faucet until rectal temperature fell decidedly.

Bellevue Hospital: 200 cases treated with ice baths, mortality 33 per cent.

Flower Hospital: 26 cases treated with needle sprays connected with the cold faucet, until rectal temperature fell to 101° F., mortality 11.5 per cent.

St. Vincent's Hospital (O'Dwyer): 197 cases treated with affusions of ice water and frictions to stimulate, stopping when rectal temperature reached 102° F., mortality 6 per cent.

It appears from this record that under incorrect (antithermic) treatment the mortality ranged from 33 to 41 per cent., while under correct (stimulating) hydrotherapy the mortality was 6 per cent to 11 per cent.

From an analysis of these, the largest records on the subject ever published, the deduction is inevitable that the most efficient procedures were those directed to neutralizing the vasomotor depreciation. In conclusion I desire to dwell on the fact that the most popular American textbook on practice has reiterated in each of its six editions the statement that a mortality of 12 out of 31 cases (treated in 1887 by ice packs) is "the best result to be expected in this grave disease," and that the vastly superior achievement of a mortality of 6 per cent. in 197 cases (treated in 1896 by cold affusions) appears to be unknown to all authors within my reach, despite the publication of these data in a prominent medical journal and their emphatic reproduction in three editions of my book.* Nor do these remarkable statistics receive mention in a series of prize essays on sunstroke published in the *New York Medical Journal* in 1908. It goes without saying that if such remarkable results had been achieved by a medicinal agent or serum they would have been heralded in every book on therapeutics and practice of medicine.

The futility, nay the reprehensibility, of depending upon the average textbook for information on hydrotherapy is clearly demonstrated. The material and humane interests of medical men would doubtless be furthered by resorting to some good book on hydrotherapy when in search of counsel in the treatment of any disease. By scanning the index of such a work the practitioner may obtain information of great and unsuspected value to himself and his patient. This is the only direct and simple way for the physician to familiarize himself with a subject which has been neglected or treated faultily in his books of reference, and which is just beginning to be taught properly in our schools.

Authors of textbooks also would render their works more complete and satisfying if they would take cognizance of hydrotherapeutic literature, selecting the golden grain from the inevitable chaff, as they do with regard to other remedial agents.

135 West Seventy-third Street.

THE TREATMENT OF PULMONARY TUBERCULOSIS BASED ON THE ASSUMPTION THAT THE DIETETIC CAUSE OF THE DISEASE IS LIME STARVATION.

SECOND REPORT OF RESULTS.

By JOHN F. RUSSELL, M.D.,

NEW YORK.

The preliminary report of results was published in the Medical Record, November 27, 1909, and the hypotheses upon which the treatment is based in the Medical Record for December 18, 1909. The reader is referred to these papers for a full description of the treatment, classification of patients, arguments in support of the hypotheses, etc. For the better understanding of this article a few of the facts are briefly reviewed in the following:

The patients are self-supporting working people and are treated without interruption to their work, the dispensary hours being arranged with this end especially in view. Patients with uncomplicated pulmonary tuberculosis, in any stage of the disease, are admitted whose evening temperature is below 101° and who are clearly not too weak to make the journey from their homes twice daily; who can provide proper food, clothing, and shelter and who live within reasonable distance of the dispensary. When other symptoms are favorable patients whose evening temperature is 101°, or more, are accepted provisionally because it has occasionally been found that, after one or two weeks of treatment, the temperature falls and remains in the neighborhood of 100°. An evening temperature of 100° and 100.5° is not a bar to treatment. No patient with laryngeal tuberculosis in the stage of ulceration is admitted for treatment. No patient is admitted whose sputum does not show the presence of tubercle bacilli. Patients are considered apparently cured when physi-

*"Principles and Practice of Hydrotherapy," Wm. Wood & Co., p. 384

cal signs of disease are no longer present and tubercle bacilli have disappeared from the sputum. Tubercle bacilli are considered to have disappeared when six consecutive examinations, two weeks apart, fail to show their presence.

RESULTS
Thompson Street Dispensary

Class.	Number.	Per Cent.	APPARENTLY CURED.	
			Number.	Per Cent.
Incipient	0	0	0	0
Moderately advanced	34	72.3	19	55.8
Far advanced	13	27.6	7	53.8

The most important question next arises, "Do these people, apparently cured under these circumstances and still continuing to work and live in the city, hold their improvement?"

The National Association for the Study and Prevention of Tuberculosis defines "cured" as follows: "All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life." According to this definition sufficient time has elapsed to report the ultimate result upon 20 of these apparent cures.

REPORT OF REEXAMINATION OF PATIENTS TWO YEARS OR MORE AFTER APPARENT CURE.

Case No.	Date of Re-examination	Condition of Lungs	Present Weight	Tubercle Bacilli in Sputum*	General Health	Present Occupation	Remarks
15	May 27, 1909	No abnormal signs	145½	Absent †	Good	Foreman	Ischiorectal abscess September, 1907. Healed.
2	May 29, "	Signs of disease	141¼	Present	Fair	Mechanic'l jeweler	Joints occasionally enlarged and give pain.
57	June 16, "	No abnormal signs	139¾	Absent	Good	Housewife	
3	June 23, "	No abnormal signs	182	Absent	Good	Clerk	
29	June 20, "	No abnormal signs	96	Absent	Good	Shopgirl	
24	June 30, "	No abnormal signs	137	Absent	Good	Housewife	Delivered of baby Nov. 8, 1908. Weight of baby at birth, 9 pounds. Nursed baby one month, part feeding, 3 months. Two teeth at six months. Weight at eighth month (July 8) 23 pounds. Perfectly healthy. Third child. First child, empyema when five years old. Operation. Came under writer's care end of 5 months, sinus discharging. Entirely healed end of thirteen months. Present condition, no cough, no signs of disease. Present weight (seven years old) 54 pounds. Second child died of tuberculous meningitis at the age of twenty months.
33	June 30, "	No abnormal signs	165	Absent	Good	Outdoor salesman	
13	Aug. 16, "	No abnormal signs	175½	Absent	Good	Wood carver. W	Still wears spinal brace. Says there are no symptoms referable to lungs, spine, or testicles. Scars in scrotum have remained healed since Nov., 1908, when all discharge ceased.
88	Oct. 1, "	Uncertain signs	134½	Absent	Good.	Housewife	Married Mar. 8, 1908. Ischiorectal abscess Aug., 1909. Incised after one week. Still discharging.
58	Oct. 1, "	Signs of disease	116	Present†	Fair	Clerk	
26	Oct. 1, "	No abnormal signs	150	Absent	Good.	Housewife	
37	Oct. 13, "	No abnormal signs	197	Absent	Good.	Lawyer	
1	Mar. 12, 1910	Fibroid condition unimproved	133	Absent	Much dyspnea	Salesman	
69	Jan. 18, 1911	No abnormal signs	157	Absent	Good	Salesman	
74	Jan. 18, "	No abnormal signs	142	Absent	Good	Clerk	
121	Jan. 20, "	No abnormal signs	106	Absent	Good.	Housekeeper	
133	Jan. 20, "	No abnormal signs	163	Absent	Good.	Court officer	
21	Jan. 24, "	No abnormal signs	113¼	Absent	Good.	Housekeeper	
107	Jan. 24, "	No abnormal signs	154	Absent	Good.	Salesman	
130	Apr. 30, "	No abnormal signs	134	Absent	Good.	Saleswoman	

* Sputum examined each day for three successive days.
† These patients are able to work and are again under treatment.

There remain 21 patients still to be reported upon.

Even though the work of the experiment is not yet finished the percentage of cures so far obtained is greater by this method of dispensary treatment, carried on without interruption to work, than the percentage of cures obtained at sanatoria, as shown by the following table. This table is compiled from an article by E. W. Bullock, M.D., in collaboration with C. T. Sands, M.D., published in the *Journal of the American Medical Association* June 19, 1909:

As there are no incipient cases in the Thompson Street Dispensary statistics, no comparison of results of treatment in this class can be made.

Patients in the incipient stage are not commonly seen in dispensary practice, and such as applied at the Thompson Street Dispensary failed to show tubercle bacilli in their sputum and were, on that account, denied treatment. The reason for declining to admit such patients for treatment is that, in an investigation of this kind, undertaken with the object of determining the merits of a particular treatment, the selection of patients whose sputum contains tubercle bacilli at the beginning of treatment and insisting that they shall have disappeared at the end is an essential safeguard against error in classifying patients as apparently cured. The great majority of tuberculous patients who apply to all physicians for treatment are advanced in disease. The extensive lesions found in the patients here reported upon are typical of those commonly observed in general practice. A much more reasonable comparison of results between sanatoria and the Thompson

COMPARATIVE RESULT OF TREATMENT IN SANATORIA AND THE THOMPSON STREET DISPENSARY.

	CLASS						APPARENTLY CURED					
	Incipient		Moderately Advanced		Far Advanced		Incipient		Moderately Advanced		Far Advanced	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Fort Bayard, N. M.	124	4.9	1089	43.4	1282	51.1	42	41.9	72	6.6	3	0.23
Fort Stanton, N. M.	17	5	99	26	227	66	7	45	16	15	12	4
Adirondack Cottage San.	61	9	94	60	1	1	23	38	5	5	0	0
Rhode Island State San.	20	21	61	64	13	13	11	55	6	9	0	0
Sharon Sanatorium.	8	44	8	44	2	11	3	37	0	0	0	0
Massachusetts State San	230		312		77		76	33	25	8	0	0
New Mexico Cottage San.	47	19	48	19	146	60	39	83	24	50	19	13
Loomis Sanatorium.	42	17	115	43	106	40	27	62	19	16	4	3
Thompson St. Dispensary.	0	0	34	72.3	13	27.6	0	0	19	55.8	7	53.8

Street Dispensary, therefore, would be the percentage of apparent cures in all patients treated, without regard to the stage of the disease.

COMPARATIVE RESULTS IN ALL PATIENTS TREATED WITHOUT REGARD TO STAGE OF DISEASE, BETWEEN SANATORIA AND THE THOMPSON STREET DISPENARY.

	Number of Cases.	APPARENTLY CURED	
		Number	Per Cent
Fort Bayard, N. M.	2,504	127	5.07
Fort Stanton, N. M.	343	35	21*
Adirondack Cottage Sanatorium.	157	28	18
Rhode Island State Sanatorium.	94	17	18
Sharon Sanatorium.	18	3	16
Massachusetts State Sanatorium	619	101	16
New Mexico Cottage Sanatorium	241	82	34
Loomis Sanatorium	263	50	11*
Thompson Street Dispensary.	47	26	55.3

*These figures are evidently a misprint.

It is possible that the comparison between the advanced cases of the sanatoria and those of the Thompson Street Dispensary is unfair to the sanatoria because some of their patients may have had continuous fever, while those at the dispensary had not. A patient with continuous fever cannot properly be treated at a dispensary. When, however, it is considered that all the incipient cases, many of whom did not show tubercle bacilli in the sputum, are included in the statistics of the sanatoria, it is more than probable that this error is offset, and the comparison, as a whole, is fairly accurate. It is manifest that the cases classified as incipient are ideal subjects for dispensary treatment, and the results so far obtained in the dispensary treatment of advanced cases leave no room for doubt as to the result to be obtained in the treatment of incipient cases.

The table given above shows that the highest per cent. of apparent cures in all patients treated at sanatoria is 34, the lowest 5.07, while at the Thompson Street Dispensary the per cent. is 55.3. The sanatorium showing the highest per cent. of apparent cures in all cases is the New Mexico Cottage Sanatorium, where the average cost per patient for nine months' treatment is said by the physician-in-chief to be nearly $1,000.

In view of these comparative results certain ideas at present current concerning the management of the tuberculous should be radically modified. Obviously an immense amount of industry and money are being misdirected.

The care of the dependent and the well-to-do is arranged for, but there is no provision for wage-earners. So far as treatment which wage-earners may follow is concerned, this class is as completely ignored as if the disease were considered never to exist among them. For example, it is taught that rest and an outdoor life are necessary conditions for the successful treatment of tuberculosis.

In "The Campaign against Tuberculosis in the United States," published under the direction of the National Association for the Study and Prevention of Tuberculosis, 1908, there are mentioned 250 special sanatoria and hospitals, and more than 150 dispensaries. Wtih the possible exception of one or two dispensaries wage-earners cannot receive systematic treatment in any of these institutions unless they cease to be wage-earners.

It does not appear that dispensaries suggested by the National Association for the Study and Prevention of Tuberculosis are intended for the treatment of curable cases. In a leaflet describing briefly the aims of the National Association the following statement appears under the heading "Hospitals and Sanatoria." "By procuring the establishment, on an adequate scale, of hospitals for advanced cases of consumption, sanatoria for the cure of curable cases, and dispensaries for early diagnosis and as centers of visiting, nursing, and instruction in the homes of the poor."

This same leaflet under the heading "Results" says they have established over "15,000 beds for curable cases in 400 sanatoria for the open air treatment, the opening of nearly 300 dispensaries with more than 500 physicians in attendance, and with over 500 visiting nurses giving instruction in the homes of the patients."

There are 549 patients classified as incipient cases in the tables of the sanatoria just quoted, all of them presumably wage-earners, or who certainly were in condition to work, who might be treated at home without interruption to their work, or business, maintaining their familes, and holding their place in the struggle of life.

The only logical conclusion to be drawn from these tables is that all ambulant cases should be treated in dispensaries and the work of sanatoria restricted to the care of advanced cases with continuous fever or complications which necessitate rest.

"A smith, reply'd I, when he falls sick, thinks it fit to take from the physician some potion, to throw up his disease or purge it downward, or by means of caustic or amputation to get quit of his trouble; but if any one prescribe for him a long regimen, putting caps on his head, or other such things, he quickly tells him that he hath not leisure to lye sick, nor doth it avail him to live in this manner, attentive to his trouble and negligent of his proper work; and so, bidding such a physician farewell, he returns to his ordinary diet, and, if he recovers his health, he continues to manage his own affairs, but if his body be not able to support, he dies, and is freed from his troubles."

"It seems proper, said he, for such an one to use the medical art in this manner."

"Is it not, said I, because he hath a certain business, which, if he doth not perform, it is not for his advantage to live?" Plato's "Republic."

185 Madison Avenue.

THE TECHNIQUE OF URETHRAL EXAMINATIONS.*

By WALTER S. REYNOLDS, M.D.,

NEW YORK.

CHIEF OF CLINIC AND INSTRUCTOR IN GENITOURINARY DISEASES, COLLEGE OF PHYSICIANS AND SURGEONS (COLUMBIA UNIVERSITY).

In the presence of a chronic urethral discharge, perhaps so slight as to be found at the meatus only on awakening in the morning, and giving rise to flakes and shreds in the urine, the diagnosis of chronic urethritis is ordinarily easily made. Such a diagnosis is seldom, however, sufficient for a proper and efficient treatment, and if we are to be successful in the application of remedial measures we must go further in our endeavor to determine, not only what the condition of the urethra is, but also the location and extent of the process. It would be about as reasonable to treat a sore throat, without a preliminary examination, as to treat a chronic urethritis without knowing the condition of the urethra. And

*Read before the Society of the Alumni of the City (Charity) Hospital, February 8, 1911.

yet, in spite of all that has been written and said on the subject, and the ease with which it is possible for a correct diagnosis to be made, if only a few simple measures are intelligently carried out, we are frequently seeing cases of this sort where apparently little effort has been made to correctly diagnose the cause of the trouble. I propose, therefore, to again bring to the attention of those who are interested in obtaining results in the treatment of such cases, a method of examination which I have been for some time in the habit of using, and which, I can assure those who will follow it, they will find satisfactory. All methods of examination are subject to modification at times to suit particular requirements, and at times this will be necessary in the method which is advocated here. But ordinarily the method is one requiring little or no modification.

Before proceeding to any examination a full and complete history should be obtained covering the following points: Previous history as to urethritis or syphilis; present history as to duration and history, incubation, and present condition. In this form I have followed one which has been in use at

Irrigation of urethra, recumbent position.

the Vanderbilt Clinic for some time and serves admirably where details are filled in with sufficient fullness.

Taking up first the previous history, this should cover the following points: Number of attacks? First attack how long ago? Duration? Mild or severe? Complications? Treatment? Cured? Each subsequent attack or relapse must be fully covered in the same way. I wish again to emphasize the importance, as I have done in other publications, of learning the *facts* regarding a man's syphilitic history. When a man says he has had a chancre we must not immediately jump to the conclusion that he has had syphilis. Learn all that is possible concerning it; how he knew it was a chancre; its incubation (this is seldom possible to learn, and one can usually only say that the lesion appeared so long after the last intercourse); how it looked, and what course it followed. The treatment should be inquired into, and most important of all, whether the chancre was followed by a secondary rash (and whether this was ever looked for by the physician in attendance). In this connection it is important to learn whether treatment was begun as soon as the lesion appeared, as this might influence the evolution of the secondary manifestations. If all these points are inquired into one will frequently be surprised to learn in what sort of manner this disease is treated.

Having learned as much as possible concerning the previous ailments, we are in a position to begin the consideration of the present trouble. This should cover much the same ground as in the previous attacks. More especially the things we wish to learn and the reasons are as follows: The duration: Providing the duration has been short (in the absence of former attacks), the less likelihood of stricture formation and, therefore, the greater expectation of prompt results. The severity: The greater the severity the more damage to the urethra. Frequency of urination: During the early stage this is generally proportional to the severity of the inflammation. If there was an increased frequency of urination, occurring also *at night,* it is an indication of inflammation of the posterior urethra. In the first week of a urethritis, when the posterior urethra is not involved, painful erections are frequent and will awaken the man; urination relieves the erection, and this may seem like posterior urethritis to a careless observer. Posterior urethritis in a large proportion of cases, if not all, is accompanied by prostatitis or seminal vesiculitis. The discharge: It is essential to determine the character and amount of the discharge. The patient's statement should not be accepted for this, but an inspection of the parts should be made so that the physician can be assured of their correctness. For the proper estimate of both the character and amount of discharge, the examination should be made a considerable time after urinating. A discharge which is markedly purulent indicates a more inflammatory lesion than one which is more mucoid in character. The more abundant the discharge the more extensive the lesion.

Method of Examination.—A sufficient length of time having elapsed since urination, the physical examination can be begun. The examination should never be undertaken when the man has only recently urinated. Four or five hours is usually sufficient time after having urinated, but if possible, I prefer to have the man report in the morning without having urinated. The man stands before the doctor—having removed his coat and vest and letting the trousers fall to the knees, and rolling the shirt well up above the abdomen. In this way one can see at a glance whether there is any abnormal condition showing. The inguinal glands, the cords, the epididymis, and the testicles are next examined. Two clean glass slides and a sterile platinum loop having been made ready, the meatus is examined to see the amount of gluing present. Next the character and amount of discharge is observed. If there is none present at the meatus, gently stroking the urethra from behind forward will be sufficient. A loopful of secretion is collected and transferred to the two slides and spread evenly in a thin smear over them, and reserved for future examination. The next step consists in washing out the anterior urethra and freeing it from all secretion which has accumulated there. A warm solution of boric acid or sterile salt solution having been prepared (12 to 16 ounces is usually sufficient), the man stands, holding a clean basin beneath the penis with one hand, while the penis is supported by the fingers and thumb of the other hand. A small, sterile, straight,

soft rubber catheter of about No. 10 or 12 F. is lubricated with a soluble lubricant and passed gently into the urethra until the eye of the catheter rests in the bulbous portion. The nozzle of the syringe is now attached to the end of the catheter and the solution injected through the catheter escaping from the eye and flowing forward, washing out the urethra, and being caught in the basin which is held by the patient. In selecting soft rubber catheters for this purpose it is preferable to have one about six or seven inches long. It should be of good-sized caliber and yet have sufficient rigidity. I prefer one with funnel end, and have catheters of this sort especially for this purpose. In like manner I prefer a hand syringe of four ounces capacity, Professor Hayden's being an admirable one for the purpose. It is especially useful, as it is furnished with a stopcock which controls the flow of the fluid. A syringe is not necessary, as an irrigating jar can be used instead. Whatever form of apparatus is used, the irrigation should be continued until the fluid returns clear. Too much force must not be used lest the resistance of the compressor urethra muscle be overcome and the fluid carried into the bladder. After the urethra has been thoroughly washed out, the fluid collected in the basin is poured into a clean glass cylinder and set aside for examination. In some cases, where the man is nervous, the examination should be made with the man lying down. The anterior urethra being absolutely free of all secretion, the man passes into a clean glass cylinder only a small quantity of urine. This is examined for flakes and shreds by being held up to the light, and if not absolutely clear a further specimen is obtained. This being clear, and the man having some urine still in the bladder, the prostate and seminal vesicles should be examined, and gently massaged. The massage is performed with the man standing, his body bent forward at a right angle, one hand resting on a stool and the other hand holding beneath the penis a small graduate with a good-sized opening. The index finger, protected with a rubber finger cot, is well lubricated, and gently inserted into the rectum. The prostate is mapped out: its size, shape, and consistency determined, and the amount of tenderness ascertained. A gentle massage, from the base to the apex, is done, and the vesicles examined in the same way. If any fluid presents at the meatus it is caught in the graduate or on a glass slide. The balance of the urine is finally passed into another cylinder for examination. The result of the examination is as follows: Specimen No. 1: Two slides with secretion from meatus. Specimen No. 2: Cylinder containing washing from anterior urethra. Specimen No. 3: Cylinder containing urine and secretion from posterior urethra. Specimen No. 4: Cylinder containing clear urine. Specimen No. 5: Secretion from prostate Specimen No. 6: Cylinder containing urine and secretion from prostate.

So far the urethra has been examined to determine only what areas are affected; that is, whether it is confined to the anterior urethra or whether both the anterior and posterior urethra, and perhaps the prostate and vesicles, are involved. The further examination will depend somewhat upon the history of the case and the result of the examination. Examining the cylinders, we find that cylinder No. 1 is very faintly turbid, and contains numerous flakes and shreds. This indicates that there are areas in the urethra from which the flakes and shreds have been washed, and in the absence of marked discharge and only faint turbidity of the fluid, indicates a chronic anterior urethritis. This fluid should be centrifuged and examined microscopically to determine whether the turbidity of the fluid is due to mucus or pus, and also stained and examined for microorganisms. Cylinder No. 2 contains the secretion from the posterior urethra. It will contain flakes and shreds in a clear urine if there is a chronic posterior urethritis. The specimen should be centrifuged and examined microscopically in the same way as cylinder No. 1. In some cases this specimen may be found markedly cloudy. If specimen No. 4 is in the same condition it should be examined for the ordinary things causing cloudiness of the urine. These are: Phosphates, carbonates, urates, pus, and bacteria. The urine in the third cylinder was obtained to be sure that the posterior urethra was freed from secretion. This leaves specimens Nos. 5 and 6 for examination; these are specimens of prostatic secretion. No. 5 is the secretion which has been expressed at the meatus as the result of the massage. No. 6 is the secretion which has been washed out by the passage of the balance of urine in the bladder. These specimens are to be examined in the same manner as the previous ones.

If the disease is of recent origin and a first infection we would hardly expect to find evidence of stricture formation; if, however, the attack has been a prolonged one and there have been several previous attacks, the urethra should be explored for the presence of stricture. This should always be done whether there are symptoms of stricture or not, for stricture of large caliber may give rise to no marked urinary symptoms. For exploring the urethra for stricture a bougie-à-boule and sounds are necessary. If the meatus is small a preliminary meatotomy is necessary. A bougie-à-boule as large as the meatus will comfortably accommodate is sterilized and lubricated with a soluble lubricant, and carried down the urethra until it reaches the bulbous portion. If any obstruction is found to its passage a smaller instrument is taken, and passed in the same way. If this passes the obstruction we have determined the site and size of the stricture of the anterior urethra. A good-sized sterile steel sound is now passed to determine whether there is any obstruction in the bulbomembranous region. To determine the exact condition of the urethral mucous membrane, urethroscopy must be done. This is perhaps a little difficult for one who has not had very much experience in this branch of work, but with the very simple and ingenious instruments now manufactured it should not offer very great difficulties. If thought best, the exploration of the urethra by bougie-a-boule, sound, or urethroscopy may be left to subsequent visits, and frequently this is a wise thing to do. As has already been stated, in recent cases of first infection an examination of the urethra for stricture is seldom indicated, the infiltration in these cases being soft and usually gradually absorbed as recovery takes place under treatment. Specimens Nos. 1 and 5 are to be stained and examined in the manner already described. Specimen No. 1 consists of two slides. If the first one examined contains intracellular diplococci a second slide can be stained and decolorized to determine whether or not they are gonococci.

This examination may seem somewhat long and difficult and hardly worth the time and trouble entailed in its execution. If, however, we are to treat these cases in an intelligent manner, our diagnosis must be founded on some conception as to what has taken place in the urethra. For those who compare urethritis to a hard cold it can have no interest.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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A DEPARTMENT OF INSURANCE MEDICINE.

DURING the past fifty years a very important specialty in medicine has been developed quietly and almost unnoticed by the profession at large. It is practically ignored in the curriculum of many colleges, notwithstanding the fact that it is a highly developed science and one that demands peculiar qualities and special training on the part of those engaged in it. It has not even a definite name, insurance medicine being perhaps the term most nearly expressing it, yet it embraces more than that implies, since it may be held to include everything relating to the determination of the physical and even mental fitness of men for the various positions of life. It includes not only the examination of applicants for life insurance and the determination of their acceptability as good risks, but also the examination of recruits for the army and navy, of candidates for appointment to the municipal police and fire departments, of railway employees, pilots, and even college athletes. The qualities it demands in those who follow it are of the highest order. Not only must they be diagnosticians and experts in physical examination, but they must possess a discriminating judgment enabling them to deal not alone with the individual *per se*, but with his relation to the mass of humanity. They must know the law of averages as well as the constitution of the individual man. In medicine pure and simple it is the man himself who is to be considered primarily; the practising physician should indeed be acquainted with the broad principles of disease, but in treating his patient in any individual case his first care must be for the individual, and his study must be how the individual reacts to the adverse forces which threaten his well-being or his life. The insurance physician, on the other hand, though not ignoring the individual, pays most attention to the disease. He has to deal largely with averages. Though he knows that an individual may recover from a certain disease, he is obliged to overlook that possibility and to regard rather the general history of the disease in question and its usual effect in the shortening of life. But his is no fixed science, for with the advance in therapeutics and hygiene, the averages with which he deals are constantly changing, and a risk which, in the present state of medical knowledge, may to-day be rejected will perhaps, in ten years or in five, be regarded in an altogether different light. Insurance medicine is, therefore, constantly changing, keeping progress with the advances in general medicine, just as are all the other specialties.

These and other considerations, which cannot now be dwelt upon, but will be taken up from time to time as occasion demands, have led us to believe that the reestablishment of a department of Insurance Medicine in the MEDICAL RECORD would be welcomed by our readers. Thirty-eight years ago we introduced such a department, which was continued for some years. It was favorably received and awakened much interest among those of our readers who were connected with life insurance, either as medical directors or as examiners. In an address before the American Medical Editors' Association last year, Mr. Hoffman of the Prudential Insurance Company referred with appreciation to this department, and said that "even to-day, more than thirty years after, some of the discussions upon questions of insurance medicine contributed to that journal at that time remain a source of useful information not otherwise accessible, even in the textbooks on the subject." The number of insurance examiners at that time was comparatively small and the science was in its infancy, and although there was no lack of interest manifested by the contributors to it, their number was too small to warrant its continuance. To-day the conditions are different; it is estimated that there are eighty thousand physicians in this country and Canada regularly engaged in making insurance examinations; the medical directors of insurance companies do not, as a rule, combine private practice with their insurance work, but are pure specialists, working with the actuaries and statisticians in developing a science of medico-insurance, closely allied to and dependent upon, yet distinct from, the science of medicine in its practical relation to the treatment of disease. The insurance examiners, however, are, as a rule, physicians in actual practice, who often do not fully understand the science of medical insurance developed by the medical directors of their respective companies. It is evident that a fuller understanding of this science and an appreciation of the mutual relation between the examiners, scattered throughout the country, and the medical directors in the home offices of their companies will bring the two branches of this specialty nearer together, and will lighten the labors of both.

With the object, therefore, of bringing these two classes of workers in medical insurance in closer accord, and of promoting their common interests, the MEDICAL RECORD has reestablished the Department of Insurance in its columns. It is proposed to devote such space as may be necessary, each week, to original communications and editorial articles treating of insurance matters, to abstracts of articles on this specialty appearing in other journals, to news relating to the medico-insurance world, and to correspondence from medical directors and examiners on topics of mutual interest. The department will include all subjects relating to health and accident, as well as life insurance, to the physical

examination of recruits in the army and navy of this and other countries, of candidates for appointment in municipal fire and police departments, of railway employees, etc., to fraternal societies and medical clubs; in a word, to anything bearing upon this specialty in medicine. We promise to do our part in furnishing our readers with full abstracts, constituting an index medicus of articles appearing in journals throughout the world which bear upon insurance medicine and physical examination, and we trust to our readers who have to do with the subject to contribute articles and correspondence which will further this most important branch of the science of medicine.

CAUSATION OF AMENORRHEA.

While our knowledge of the conditions under which amenorrhea occurs is doubtless on the increase, we are still in almost complete ignorance of the causation and nature of the phenomenon. These were once supposed to be self-evident, and it is the increased number of conditions in which amenorrhea is now known to occur that has changed the problem from a seemingly simple to one complex and obscure.

At a recent session of the Aerztlicher Verein of Munich, Rosenberger dealt exhaustively with this subject (*Münchener medizinische Wochenschrift*, April 25). It is necessary, he said, to study the amenorrheas of pregnancy and the climacteric—the so-called physiological types—in connection with the pathological types. Glycosuria is common at some period of the reproductive sequence, including the puerperium and lactation, and tends to recur in subsequent pregnancies of the same subjects. The author sees some relationship between this phenomenon and the suppression of the menses. It is also well known that the diabetes which sets in at the menopause is chiefly of a benign type. Another metabolic disturbance is the notable gain in weight in early pregnancy which is in accord with the same phenomenon at the menopause. These gains are often transitory. Hypertrophy of the turbinate bones is common in gestation. To explain this feature it is necessary to invoke the aid of phenomena noted in prehistoric and savage man, the primates, etc., extending in the evolutionary ladder as far back as fish, to wit, a tendency to hypertrophy of the cranial and facial bones during the period of sexual activity. This may be brought in relationship with certain disturbances of the optic nerve, such as hemianopsia, amaurosis, and in rare cases retrobulbar neuritis and optic atrophy. These disturbances have no necessary relationship with albuminuria and the toxemia of pregnancy. On the contrary, the author traces a purely mechanical connection between the ocular phenomena and enlargement of the hypophysis.

We have thus far a tetrad of symptoms associated with physiological suppression of menses, viz., glycosuria (nondiabetic), obesity, hypertrophy of the facial bones, and ocular disturbances. The author now seeks to connect all these phenomena with the physiological hypertrophy of the hypophysis. Acromegaly, which results from such hypertrophy, is becoming increasingly frequent. It is accompanied by suppression of the menses and is the most striking type of pathological amenorrhea. Enlarged hypophysis explains the turbinal hypertrophies, the ocular symptoms, and probably the other symptoms.

Rosenberger's paper received a very full discussion. The old view that the presence or absence of menstrual bleeding was due solely to the maturing or failure to mature of an ovum is necessarily sidetracked by such a theory, although not necessarily controverted. The view of Rosenberger makes of menstruation more than a phenomenon peculiar to women, and suggests an analogy with the periodicity of mental activity in man, concerning which much of interest has been written. Writers and artists have days in which work is easy or difficult, respectively, dependent in all likelihood on wavelike alterations in the circulation. Fluctuations occur not only in the mental activity of man, but simultaneously in certain other functions.

TYPHUS FEVER.

The recent occurrence of epidemics of typhus fever in the vicinity of Odessa resulted in a thorough discussion last March of that disease by the Society of Russian Physicians of the said city (*Münchener medizinische Wochenschrift*, May 16). Professor Levashoff is said to have discovered in 1892 the *Micrococcus exanthematicus* in the bodies of patients dead of the disease. The discovery attracted little attention because cultures could not be obtained. In 1909 Potgsenko, assistant to Professor Levashoff, succeeded in obtaining a pure culture of the micrococcus from human bone-marrow; and two years later he was able to detect the same in the blood.

Potgsenko sees no evidence that the disease is transmitted by the clothes louse, a hypothesis put forth by Gamaleïa. The cultivation of the micrococcus, accomplished after many years of patient study, is pronounced by Levashoff one of the greatest of bacteriological feats. Cultures may be made in routine from the bone marrow, but it is only occasionally that blood cultures are successful. The micrococcus is exceedingly small, sometimes requiring a magnification of 3,500 diameters to make it visible. Its natural habitat as a pathogenic agency appears to be the blood. The contagiousness of this disease is extreme, he says, and in its ability to attack every member of a household, and every family in a village, it is surpassed, if at all, by the bubonic plague alone, to which also it is second in its percentage of fatalities. The contagion is believed to depend, as in the pulmonary form of bubonic plague, upon the massing of germs in the respiratory, especially in the nasal and conjunctival, mucosæ.

That the Russian physicians would test 606 in typhus fever was a foregone conclusion, and this is now being thoroughly done. Thus far the outlook seems highly encouraging, and it is believed that the drug has a natural bactericidal power over the germ. The exhibition has been wholly intravenous. Uskoff reports fourteen recoveries, apparently 100 per cent. Nine patients had the disease in a severe form. The Ehrlich-Hata preparation would seem

to be an heroic remedy, for more or less severe collateral effects were commonly seen after individual injections. The heart was distinctly weakened for the time being. The fourteen patients received twenty-four injections, the highest individual dose was 0.9 gram. A few patients received two or three injections. Defervescence followed the exhibition of the remedy after some hours. The drug has already been tested in bubonic plague, and is said to bring about prompt defervescence and disappearance of bacilli from the sputum. The patients, however, invariably have succumbed to heart failure. Typhus fever is an affection of much longer natural duration and may, therefore, be more amenable to treatment. The Odessa results seem better than those obtained under any other method hitherto employed except possibly the open air treatment.

FAMILIAL KERATITIS.

The French expression familial, as applied to disease, is usually synonymous with family, hereditary, ancestral, and the like, and has become Anglicized. Thus when either a disease *per se*, or a disease with so-called equivalents, occurs in members of several successive generations of a large stock of individuals it may be termed by one author "familial," by another "family," by a third simply "hereditary," by a fourth "ancestral," a lay expression. There is a well-known incidence of disease in which the children, all or part, of perfectly healthy parents and other ascendants, without so-called equivalents of any sort, may alone suffer. If these children grow up and marry, the disease may be transmitted to the descendants, although the possibilities of such transmission have yet to be studied. It would perhaps be well to restrict the term familial to designate a taint in numerous generations, while unifamilial might be employed to denote the incidence of a disease in the children of one family.

At a meeting of the Berlin Ophthalmological Society, recently held (*Berliner klinische Wochenschrift*, April 10), Clausen reported a case of "familial keratitis." In 1905 Fleischer had first described a "family degeneration of the cornea," evidently the same condition. The affection appears in the first decade of life, is bilateral, and occurs in either sex. A considerable number of examples have now been reported, and the affection is probably more common than has been believed. This would be suggested by its polymorphous character (nodes, macules, etc.) The lesions progress and reach the limbus. The condition seems to be due to the deposit of hyalin in the cornea, but the nature of the process is quite obscure.

It is not stated whether the affection was unifamilial or multifamalial. In this connection it might be well to emphasize the possibility that a unifamilial affection may have no connection whatever with an ancestral taint. There may be neither skipping of generations nor hereditary equivalents. In such a condition we are reminded irresistibly of Mendelism in as far as this deals with the formation of new species. A unifamilial affection should, therefore, by all means be looked after in the descending generations.

A Simple Measure of the Normal Size of the Heart.

The *x*-ray study of the heart has rendered possible the determination with a greater degree of exactness than hitherto possible, of the normal size of this organ and of the correlation of this size with the body weight and height, and with the sex and age. Useful tables have been constructed, by means of which it is possible to recognize with greater ease certain variations from the normal size of the heart. A method that will render the consultation of these tables unnecessary, has been worked out by Levy-Dorn and S. Mäller, who describe their results in the *Zeitschrift für klinische Medizin*, Volume 72, Nos. 5 and 6. The former of these observers had announced this method one year ago, but at that time his studies were based upon scant material. More recent and extensive observations have confirmed the earlier findings. There are two means of determining the normal length of the heart. In the first of these, the patient is required to close his right hand like a fist, with the interphalangeal joint of the thumb resting on the first interphalangeal joint of the index finger. The distance from the ulnar border of the meacarpophalangeal joint of the little finger to the dorsum of the interphalangeal joint of the thumb is measured by means of a vernier or calipers; this distance, if multiplied by one and a half, gives the length of the heart. The second method consists in adding to the breadth of the hand, as measured between the metacarpophalangeal joint of the index finger and that of the little finger, the length of the first phalanx of the middle finger. This sum gives the length of the heart. Both of these methods furnish a simple and practical measure of the size of the healthy heart, the length of the latter being about one centimeter less than the figures obtained by the hand measurements. The relationship between the heart and hand remains constant irrespective of the age or sex of the person examined. The value of the above methods of estimating the normal size of the human heart is obvious, particularly as a means of comparing the actual size of the diseased heart, as mapped out by percussion, with that of the normal organ.

Chloride of Ethyl as a General Anesthetic.

Aristide Malherbe, assistant surgeon to the National Institute for the Deaf and Dumb, Paris, writes in the *Medical Press and Circular*, May 3, 1911, in praise of chloride of ethyl as a general anesthetic. He has administered it since 1900, by the compress method, and emphasizes his belief that even for long operations chloride of ethyl can be employed, and that it will eventually supersede chloroform and ether owing to the greater margin of safety. Malherbe and Boureau have together administered chloride of ethyl as an anesthetic in 6,275 cases without a death or without any disquieting symptoms. All the phenomena accompanying anesthetization by chloride of ethyl are fugitive, and the subject at once "comes to himself" with a clear brain and with no unpleasant symptoms. Furthermore, the drug does not seem to have any effect on the digestive tract. Another point in its favor is that it is tolerated as well by infants as by adults and old people. Malherbe employs the compress method exclusively, preferring it to any of the various forms of application in use. A compress or handkerchief, folded in four thicknesses, is held

in the palm of the right hand, which is hollowed out to receive it. Into the hollow a jet of chloride of ethyl is projected from a graduated tube made for the purpose. The compress is then at once firmly applied over the mouth and nose of the patient, who is instructed to breathe deeply. The head and lower jaw are supported by the left hand. It is necessary not to allow any air to be breathed. The lack of untoward results from the administration of this agent in 6,275 cases of anesthesia is a good record and would seem to indicate that the use of this anesthetic may be advisable in certain cases if it is properly and carefully administered.

Permanent Tonsil Infection.

The tonsils have long been accused of causing the greatest variety of systemic affections either through serving as passive ports of entry or as themselves the seat of a local infection which can become general. Among the alleged results of tonsillar infection are tuberculosis, acute rheumatism—including cardiac complications and chorea—sepsis, appendicitis, etc. Pässler (*Münchener medizinische Wochenschrift*, May 2, page 977) applies the term permanent infection to chronic tonsillar cryptites, with formation of secretion and tonsil plugs, which condition he believes may be responsible in part for the above mentioned infections. The chief argument against the tonsillar hypothesis has always been the very small percentage of positive findings. There is no doubt that after tonsillectomy certain chronic or recurring lesions at remote localities have often improved, and tonsils in a condition of permanent infection should certainly be cured on general principles. Every crypt should be destroyed, although this may be sometimes effected without extirpation. Pässler evidently does not regard the tonsillar condition as in any way specific for causing general infections. We extirpate pyogenic foci here just as we should in and about the alveoli of the teeth, the nasal sinuses, pharyngeal tonsil, uterine adnexa, appendix in recurrent appendicular suppuration, etc.

News of the Week.

Charitable Gift.—The New York Milk Committee has received a gift of $7,000 for the support of its central office and for its general educational work.

Antityphoid Precaution.—The New York State National Guardsmen who are scheduled for camp duty at Pine Plains, N. Y., during the summer, are to be inoculated with antityphoid serum on their arrival at camp as a precautionary measure. While the inoculation is not obligatory it is believed that at least 90 per cent. of the men will submit to it.

Cholera in New York Port.—Two steamships arriving from Mediterranean ports were held at Quarantine in New York during the past week because of cases of cholera. On the *Duca degli Abruzzi* which arrived on June 20 there were four cases, one child dying at sea, and two others after arrival at Swinburne Island.

School for Midwives.—The Bellevue Hospital School for the Training of Midwives will be opened by the trustees of Bellevue and Allied Hospitals July 15, 1911. The teaching will be under the direction of a Resident and an Assistant Resident Obstetrician, who will receive respectively salaries of $1,200 and $900 per annum, with maintenance. No civil service examination is required. A knowledge of German and other foreign languages is very desirable, but not absolutely essential. Candidates may apply by letter, giving qualifications, to the president of the Board of Trustees, Bellevue Hospital, New York.

Smallpox in Yukon.—Governor Clark of Alaska has appealed to the Federal Government for aid in preventing the spread of the epidemic of smallpox in Dawson City south into American territory. Officers of the public health service in Alaska have been instructed to establish quarantine at Eagle City and Skagway. The epidemic is regarded as serious, particularly as at this time of the year prospectors from Yukon Territory are going into Alaska in large numbers.

Inoculated Monkeys Escape.—Two monkeys which had been inoculated with scarlet fever escaped from the Willard Parker Hospital, New York, on June 23, and their escapade created great excitement. One was finally recaptured in a shop on East Fourteenth street, while the other was found on a barge in Gowanus Canal.

Infant Mortality.—Commissioner Lederle of the New York Department of Health announces that all of the public school nurses have, with the closing of the schools, been assigned to duty under the Division of Child Hygiene of the Department in the effort to prevent the usual high infant mortality during the summer. The work will be carried on in special districts where the mortality has been the highest. For the first five months of 1911 the death rate from all causes of children under one year was 120 per thousand, exactly what it was for the same period of 1910. The deaths from diarrheal diseases, however, increased 35 per cent. during this time, a corresponding decrease in the deaths from congenital and infectious diseases taking place. During the week ending June 10 there were 37 deaths from diarrheal diseases among babies under one year of age in the entire city, as compared with 43 for the corresponding week of last year, while for the week ending June 17 the figures were 50 deaths for 1911, and 91 for 1910.

Christian Science Healer Held.—Mr. W. B. Winslow, a Christian Scientist, who was arrested in New York on April 7 on the charge of practising medicine without a license was held for trial by Magistrate Kernochan in the Yorkville Court on June 19. Magistrate Kernochan thus concurs in the opinion recently given by Magistrate Freschi in the Cole case that such practice is a violation of the law.

A "Sane Fourth".—The Department of Health of New York announces that because of the small amount of tetanus antitoxin which was used last Fourth of July it will be unnecessary to prepare an additional stock this year. Enough is on hand to treat any cases requiring antitoxin, and Commissioner Lederle has asked that in cases of injury the department be immediately notified.

Dr. William Osler, Regius Professor of Medicine at Oxford University, England, and formerly Professor of Medicine at Johns Hopkins University, Baltimore, was among the recipients of coronation honors recently, the rank of baronet being conferred upon him. Dr. Osler went to England from Baltimore in 1904.

The President on Patent Medicines.—In a message sent to Congress on June 21 President Taft recommends the enactment of an amendment to the pure food law so as to prevent the shipment

in interstate commerce and the manufacture and sale in Territories of what he aptly characterizes as "worthless nostrums labeled with misstatements of fact as to their physiological action." The President says: "An evil which menaces the general health of the people strikes at the life of the nation. In my opinion, the sale of dangerously adulterated drugs or the sale of drugs under knowingly false claims as to their effect in disease constitutes such an evil and warrants me in calling the matter to the attention of Congress." In a recent decision the Supreme Court held that the present law does not cover the knowingly false labeling of patent medicines as to curative effect, and that inquiry under this statute does not by its terms extend in any case to the inefficacy of preparations to work the cures claimed for them on the labels. The President is impressed with the desirability of immediate action on a law which will prevent the perpetration of such fraud.

Dr. William Henry Howell, formerly dean of the Johns Hopkins Medical School, received the honorary degree of doctor of science from Yale University at the commencement exercises on June 21.

Yale Medical School.—In his annual report on the University recently, President Hadley of Yale devoted some attention to the needs of the Yale Medical School, declaring that this was the point at which a large endowment was most immediately needed. An endowment of $2,000,000 for the school is in his opinion imperatively necessary if Yale is to continue to take part in the work of general medical education. Without such an endowment it cannot be a place for the education of physicians; with it it can give medical training of the very best kind. The Yale Medical School will celebrate its hundredth anniversary in 1913.

Sea Breeze, Junior.—As for several years past, the institution known as Junior Sea Breeze was opened on June 19 on the grounds of the Rockefeller Institute overlooking the East River, New York. The institution has accommodations for sixty babies, and also a dispensary and a shelter for mothers and children, where talks on the proper care of infants are given. The work will be continued until September 1, funds for carrying it on being supplied by Mr. John D. Rockefeller.

Marine-Hospital Service.—The Senate on June 20 passed the bill increasing the salaries of the officers of the United States Public Health and Marine-Hospital Service, and otherwise increasing the efficiency of the corps.

Cholera in Naples.—The Italian steamship *Europa*, which arrived in New York on June 14 from Genoa and Naples, brought into port a steerage passenger ill with cholera, while the North German Lloyd liner *Berlin*, which arrived the day before, reported the death of one of the steerage passengers at sea from the same disease. In both cases the diagnosis was confirmed by bacteriological examination. The steerage passengers on both ships were detained at Quarantine for observation. Surgeon-General Wyman of the Public Health and Marine-Hospital Service has been notified by Surgeon King, at Naples, of the outbreak of cholera in that city and of the precautions which are being taken to enforce the health requirements with respect to emigrants from that port. Surgeon J. M. Eager has been ordered to Naples to assist Dr. King.

The British Census.—Further census returns show that the excess of females over males in Great Britain amounts to 1,178,317. This would be decreased, however, if the soldiers and sailors serving abroad were included in the census.

Dr. Samuel B. Lyon, superintendent of Bloomingdale Asylum, New York, for the past fifteen years, has resigned his position, and on July 1 will become superintendent emeritus.

Obituary Notes.— Dr. Isaac W. Blackburn of Washington, a graduate of the Medical Department of the University of Pennsylvania in 1882, professor of morbid anatomy in the University of Georgetown, District of Columbia, and chief pathologist to the Government Hospital for the Insane, Washington, died at his home on June 19, aged 60 years.

Dr. John Law of Denver, Col., a graduate of the Northwestern University School of Medicine, Chicago, in 1868, died at his home on May 28, aged sixty-seven years.

Dr. Benjamin Perrine Marsh of Bloomington, Ill., a graduate of the Hahnemann Medical College and Hospital of Chicago in 1875, died at his home after several weeks' illness on May 30, aged seventy years.

Dr. Robert Lee O'Brien of Akron, Col., a graduate of the Baltimore University School of Medicine, Maryland, in 1904, secretary of the Eastern Colorado Medical Association, and county physician, was killed in an automobile accident on May 30, at the age of thirty-five years.

Dr. David W. Collins of Pueblo, Col., a graduate of the medical department of the University of Louisville, Kentucky, in 1882, died at his home on May 25, after a long illness, aged fifty-seven years.

Dr. Albert S. Green of Rockford, Ill., a graduate of the Northwestern University Medical School, Chicago, in 1878, and a member of the American Medical Association and the Wisconsin State and Illinois State and Winnebago County Medical Societies, died at his home on June 1, aged fifty-eight years.

Dr. J. E. Jewell of Portland, Ore., a graduate of the College of Physicians and Surgeons of Baltimore, Md., in 1881, died suddenly on May 24.

Dr. John W. Watenpaugh of Weaverville, Cal., a graduate of the Hahnemann Medical College of the Pacific Coast, San Francisco, in 1901, died suddenly in St. Caroline Hospital, Redding, of typhoid fever, on May 26, aged thirty-five years.

Dr. George D. Miller of Boydsville, Mo., a graduate of the Missouri Medical College, St. Louis, in 1885, died at his home from the effects of an overdose of morphine, on June 5, aged 60 years.

Dr. Horace B. Cole of Sedalia, Mo., a graduate of the Baltimore Medical College in 1893, and a member of the staff of the Maywood Hospital, died at home of typhoid fever, on June 3, aged 49 years.

Dr. Frederick Adam Powell of Sioux City, Iowa, a graduate of the Jefferson Medical College of Philadelphia in 1891, attending oculist to St. Joseph's Hospital, and a member of the American Medical Association, the Iowa State and Woodbury County Medical Societies, and the Sioux Valley Medical Association, died at his home, on June 7, aged 44 years.

Dr. Norman Rhinehart Hook of Oskaloosa, Iowa, a graduate of the College of Physicians and Surgeons of Keokuk, Iowa, in 1874, died suddenly of heart disease, on June 3, aged 68 years.

Dr. John Franklin Fargo of Los Angeles, Cal., a graduate of the Hahnemann Medical College and

Hospital of Chicago in 1881, died at his home after a short illness, on June 6, aged 76 years.

Dr. Solomon Sargeant Stearns of Washington, D. C., a graduate of the Medical Department of the University of Georgetown, D. C., in 1868, died suddenly at his home, on May 31, aged 72 years.

Dr. William P. Brierly of Albany, N. Y., a graduate of the Albany Medical College in 1886, and a member of the New York State and Albany County Medical Societies, was struck by a trolley car on the Schenectady turnpike and instantly killed, on June 22.

Dr. Madana F. DeHart, the first woman physician of Jersey City, N. J., a graduate of the New York Medical College and Hospital for Women in 1868, died at her home in Mount Freedom, N. J., on June 22, after a short illness.

Dr. George W. Bailey of Elizabeth, N. J., a graduate of the Hahnemann Medical College of Philadelphia in 1862, a surgeon in the United States Army during the Civil War, and a trustee of the Presbyterian Hospital of Philadelphia, died at his home on June 21, aged 71 years.

Dr. Carl H. Lellmann of New York, a graduate of the University of Göttingen, Germany, in 1854, and a member of the New York State and County Medical Societies, died in Karlsruhe, Germany, on June 21, aged 80 years.

Correspondence.

OUR LONDON LETTER.

(From our Regular Correspondent.)

THE INSURANCE BILL—FRIENDLY SOCIETIES ON THE BILL AND ON DOCTORS—CONFERENCE ON DESTITUTION; HEALTH SECTION—TUBERCULIN AND TUBERCULSIS DISPENSARIES, THEIR DIFFERENCES—LIVERPOOL TROPICAL SCHOOL—OBITUARY.

London, June 9, 1911.

The state insurance bill continues to intrude into all conversation. The friendly societies have been meeting during the week and on many points they are dissatisfied. In some speeches Mr. Lloyd George was accused of having quite deceived their leaders. In others fear was expressed that he had his eye on their reserve funds, which amount to millions, and the societies resolved in several cases to retain full control of their property—a natural resolve—for it is the accumulation of their thrift. Most of the societies are equally determined to keep, if possible, the administration of the benefits in their own hands. Some of them make a demand that they shall have the appointment of the doctors and "make rules and regulations in respect to their duties." One speaker was applauded for denying that the societies had ever made hard bargains with the doctors and asserting on the contrary that they had done much to popularize the medical profession! Another went so far as to call the doctors "avaricious" and compared them to "vultures after carrion." The key to this abuse is probably furnished by the assertion of another speaker that the doctors "were out for all they could get and whatever they did get would come out of the workers' pockets." The meetings as a whole seem disposed to accept the scheme on condition that the government consent to some important amendments which they emphatically insist on. They are therefore engaged in careful examination of the numerous clauses affecting them with a view of formulating their demands. No doubt Mr. Lloyd George will give way on some points rather than risk the votes of the labor and trade union parties. Whether such a fear will affect him with regard to the medical profession is doubtful.

The national conference on destitution has been held and has attracted more attention than usual, the five sections being numerously attended each day. Sir Clifford Allbutt was president of the Public Health Section and in his address remarked as to overlapping, which was likely to occur. It was well to cherish variety in the administration of charitable agencies in order to avoid falling into the monotonies of rigid officialism. The hospital, he said, was but a patch on disease; charity organization a patch on pauperism: the refuge a cloak for the ineffectual; state subsidies a patch on destitution. Could they expect much more in the long run from reformatories than that they would become patches on grown up violence, shuffling, plausibility, and depravity? Some trustworthy statistics as to births and deaths had been accumulated but it was more important to gather those of invalidity, morbid incidence, and proclivity, about which mortality returns gave no data. But the state must lay no more unpaid or half-paid tasks on the unfortunate medical practitioner.

Dr. Sourfield, M. O. H. for Sheffield, read a paper advocating the compulsory notification of tuberculosis in order that steps might be taken to deal with the danger of infection. The system had been in operation in Sheffield for over seven years and no practical objection had been made. It enabled them to organize visitation of homes and workshops, provide hospital accommodation and select cases for sanatorium treatment. If tuberculin turned out as valuable as anticipated it could easily be grafted on to their scheme.

Dr. Bostock Hill, professor of hygiene at Birmingham University and M. O. H. for the county, said the object of the sanatorium was to put the patient under the best conditions and instruct him how to prevent the spread of the disease in his family or to those around him. The question of cure mostly depended on treatment at an early stage. Voluntary notification had been tried but compulsion was necessary to secure the full benefit. Buildings should not be costly but mere shelters, such as are now used for administration blocks. Funds were needed, outside the poor law, to help the families of patients in the sanatorium.

Dr. J. Niven, M. O. H. for Manchester, would have instruction given in schools on the subject of phthisis. Moreover he would have separate schools for tuberculous children.

Dr. D. J. Williamson of the Paddington and Kensington dispensary for consumption said pretty well all the tuberculous of the district came to that institution and its officials could at any time point to the spots calling for improvement. All other health factors should range round such centers.

Dr. Mearns Fraser, M. O. H. for Portsmouth, made perhaps the most important contribution to the section. Under his advice the Portsmouth town council has agreed to open a municipal tuberculin dispensary, the first health authority to do so. They felt it hopeless to rely on sanatoria, for each case sent cost £20 and the patient's family had often to be supported during his absence. But he had assured them that consumptives could be, and had been, successfully treated by attending at tuberculin dispensaries without practically interfering with their work. The importance of this he said could

not be exaggerated. In these dispensaries there was no loss of self-respect, the man continued to be independent, supporting himself and family throughout the treatment. Though as a municipal institution it was an innovation, there had been such dispensaries in London and elsewhere.

I told you last January something about the one in London. It was founded and has been worked by Dr. Carnac Wilkinson, who insists on very exacting conditions to test the value of tuberculin both in diagnosis and treatment. Many practitioners have attended his dispensary and watched his proceedings during the past few months and probably the majority have been favorably impressed. One of the most important considerations is that the system does not require the patient to give up his work and so lose his wages. Dr. Wilkinson thinks that the work does no harm provided it is not too laborious or the hours too long. The tuberculin treatment can thus be carried on without any interference with the victim's occupation and is in that a striking contrast to the sanatorium plan. So it is in regard to the cost. Again it is capable of coping with all the cases, whereas the sanatorium can only be resorted to in a small percentage.

You will observe that the tuberculin dispensary must not be confounded with those established some time ago and spoken of as tuberculosis or anti-tuberculosis dispensaries of which we have several here and I think you have also on your side. These attempt to meet infection in the homes of the victims. The anti-tuberculosis dispensary is open to all and its medical officers and nurses visit the patients and instruct them and their families on the open air treatment and the precautions to be observed to prevent the spread of infection. The contacts are, of course, examined. Cases are also selected for sending to a sanatorium, others to hospitals. Tuberculin is, I believe, employed both for diagnosis and treatment, though it is not generally credited with such curative effect as Dr. Wilkinson believes it to possess.

The meeting of the General Medical Council has passed by without exciting the slight attention it has obtained of late years. I told you last week of its report on the insurance scheme, which many condemn as half-hearted. Its only other action talked of is the condemnation of the registered practitioners who lent their support to Sandow's Institute. It is a roundabout way of dealing with quackery but the only one open to the council. Sandow suffers nothing but official medical repudiation of the claims to cure which he advertises and the people will pay no attention to the condemnation unless to call it professional jealousy. Counsel for the accused did not hesitate to supply this key to the proceedings though he probably would not dare to do so could a parallel case occur in his own profession.

Professor Newstead of the Liverpool Tropical School was to embark yesterday for Nyanaland to study the tsetse fly. He will arrive in advance of the expedition and assist local authorities in the choice of a spot for establishing a permanent laboratory. He lately issued "The Tsetse Fly Pest" dealing chiefly with the anatomy of the males. Last year he discovered four species not previously described. One of these is thought to be carrying a disease of cattle in German East Africa which the observers there think is allied to sleeping sickness in man. On Wednesday evening a banquet was given by the Liverpool Tropical School to Professor Newstead and to Professors Todd and Wolback, who have just returned from an expedition to the Gambia and Senegal.

Dr. Alexander Bruce, F. R. S. E., of Edinburgh has died at the age of 56. After studying on the Continent as well as in Edinburgh he took his M.D. at the last named with first class honors in 1879. He was physician to the Royal Infirmary and held other important appointments. His works on the brain and spinal cord will be well known to you as well as many of his valuable papers on neurological subjects at different societies and in the *Review of Neurology and Psychiatry* which he edited.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

PREVALENCE OF SCABIES—IMPORTANCE OF SOCIAL MEASURES IN FIGHTING DISEASE—SYPHILIS IN RABBITS—CHRONIC CASES IN HOSPITALS.

BERLIN, April 15, 1911.

AT the first meeting of the Society of Social Medicine, Hygiene, and Medical Statistics, for the year 1911, an address of quite extraordinary interest was delivered by A. Gottstein. The subject was the effect of therapy upon epidemics, together with a contribution to the epidemiology of scabies. The speaker stated that the first impression one obtained by a consideration of Ehrlich's new remedy was the thought that at last the spread of syphilis would greatly diminish. That this result is more than questionable may be noted on comparison with scabies. For exactly in this disease are to be noted the two conditions necessary for the annihiliation of disease, namely, the communicability from individual to individual without the intermediation of an animal host and without any independent existence outside of the human body, and also the use for decades of rapid and certain methods of cure. Statistics teach, however, that in the public hospitals of Germany, from 1886 to 1901, reckoning by periods of three years each, the number of cases of scabies per thousand of all diseases were as follows: 43.3 43.7, 71.4, 60.5, and 35.8. There was therefore no marked reduction in the incidence of scabies. That this disease is widespread is noted by an examination of the statistics of admissions to all hospitals in Prussia. While pulmonary tuberculosis takes first rank with 60 per cent., scabies comes second with 42 per cent. Although for the past 50 years the world has possessed rapid and certain as well as cheap remedies for this disease, the figures indicating its prevalence do not show any pronounced diminution. On the other hand, in the Army, from 1882 to 1908, as the result of a systematic medical supervision, the cases of scabies have diminished from 13.1 per thousand to 7.2 and even to 3.3 as recently recorded. Among the laboring classes the results of uncleanliness and indolence are noted among the immigrants from Russia, Galicia, and Italy. Even in the better circles, with all the facilities for unlimited medical advice and care, the prevalence of scabies is an extraordinary one. At the local health insurance office at Leipsic, among 100,000 males, there presented themselves for treatment 118 affected with syphilis and 99 with scabies. Ignorance and indolence are therefore two factors that render illusory the most advanced individual treatment in the eradication of disease. In every ailment, in addition to the individual care, there is the social factor. The teacher and parent, next to the laboratory worker, are indispensable aids.

March 29, 1911, Uhlenhuth and Mulzer presented before the medical society an interesting address upon experimental inoculation syphilis in rabbits. Serum obtained from human roseola spots was injected by means of a fine capillary tube into the testes of rabbits. After passage through 16 animals a very powerful virus was obtained. The period of incubation was four weeks. In very many cases the results were positive. Rabbit syphilis occurs in three different forms: 1. Primary syphilitic erosions and ulcerations with spirochetes. 2. Chronic diffuse or circumscribed inflammation of the testicles. 3. Diffuse or circumscribed periorchitis. The Wassermann reaction gives no definite information, for it may be present in normal animals. The later manifestations of syphilis in the rabbit are keratitis, anal vegetations, general cachexia, gumma of the cartilaginous septum, caudal tumors, cutaneous ulcers, chiefly of the lobule of the ear, and of the chin and eyebrow, small tumors in the eyelids, conjunctivitis with abundant secretion, paronychia with loss of the nails. General glandular enlargement was not observed. But local enlargement of the lymph nodes was observed, with the presence of spirochetes. These were also obtained from the circulating blood. Rabbit syphilis can be communicated to monkeys, guinea-pigs, and goats. Atoxyl and salvarsan proved to be good remedies. An immunity was not demonstrable. Healthy offspring of diseased animals were observed.

Hospital physicians in Berlin have for many years endeavored to relieve the hospitals of the care of chronic cases, chiefly of tuberculosis. The necessity of this relief is noted in an examination of the last report by Stadlmann of the medical division of the Friedrichshain Hospital. The number of cases of tuberculosis has increased from 450 in the year 1909 to 554 in 1910. Most of these cases are incurable and remain in the hospital many months until their death. In addition, the hospital harbors alcoholics with delirium tremens, and cases of cirrhosis of the liver, nephritis, and arteriosclerosis. All of these patients would do better in homes and special hospitals, thus affording more room for acute cases, the need for which is most pressing in time of epidemics.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

SUNLIGHT IN THE TREATMENT OF TUBERCULOSIS— PHYSIOLOGICAL EFFECTS OF HIGH ALTITUDES— LABYRINTHINE SUPPURATIONS — BIOLOGICAL STUDIES ON THE OVARIES.

VIENNA, May 1, 1911.

THE solar treatment of surgical tuberculosis was recently made a special study by Max Jerusalem. The fundamental principles of this treatment are divided into two catagories: the one operative, the other conservative. The former is more adapted for adults, the latter for children. The operative treatment when carried out in children suggests particularly palliative measures; tapping and injection of iodoformglycerin, and the removal of circumscribed foci. Extrarticular foci indicate operation, for the tuberculous process may invade the joint. Not only at the operation but also in the after-treatment strict asepsis must be observed in order to prevent a mixed infection. The conservative treatment consists in the fixation of the diseased member; the treatment by means of passive hyperemia is of advantage in the case of open fistulous processes, but has no value in the case of fungous growths. The iodine and soft soap method of treatment is well known. Favorable results have been reported from the use of the *x*-rays; but tuberculin has given varying results, in some cases having made the condition worse. Bismuth paste has demonstrated its value in fistulous tracts. Neither the operative nor the conservative methods of treatment have been entirely satisfactory. The solar treatment has been carried out by Rollier in Lucerne. He has applied conservative methods. Closed tuberculous foci have not been opened, only the infected cases have been widely opened and the wounds exposed to the direct action of the sun's rays. The patients are exposed outdoors during the day, and in some instances also during the night. The diseased area has been exposed to the sunlight, as the result of which treatment pain has disappeared, appetite has improved, tuberculous foci have cleared up, and the mobility of the joints has been restored. The curative factors in the Lucerne treatment are sunlight, abundant diet, and fresh air. Ulcers heal not only at the periphery but also in the center, so that the contraction of scars rarely occurs. The area exposed to the sun's rays becomes deeply pigmented. Glandular tuberculosis reacts to the sunlight less favorably than does tuberculosis of the bones. The solar treatment is favored by a dry atmosphere, which explains the advantage of high altitudes over the seashore in the treatment of tuberculosis.

The physiological action of high altitudes of various regions and of various degrees has been investigated by Arnold Durig, who has found that the composition of the air, particularly its oxygen and carbon dioxide content is practically constant at different localities, showing variations only to the extent of hundredths of a per cent. Bacteria, even those of pneumonia and of septic angina are found at the highest altitudes. The bodily metabolism in conditions of absolute rest is influenced neither by temperature, light, humidity, nor by the velocity of the winds. The change in the atmospheric pressure at high altitudes is a weighty factor. The belief that the red blood corpuscles increase in number at high altitudes has not been confirmed; their number varies, however, considerably during the day. An increase in hemoglobin and an increase in the oxygen-binding capacity has not been proved, nor does the iron-content of the blood show a constant figure. The frequency of the pulse rises at an altitude of about 4,500 meters, and a descent to an altitude of 1,500 meters causes a diminution in the pulse to the extent of 40 beats. A prolonged residence at high altitudes causes a decrease in the initial acceleration of the pulse. In the case of a normal heart there is no substantial change in the pulse-form, nor in the blood pressure, while cutaneous cyanosis is to be regarded rather as the result of the influence of external temperature and of diminished oxidation. Muscular exercise causes a change in the respiration. At high altitudes there is a diminution in the carbondioxide pressure of the blood, so that a slighter influence than usual is exerted upon the respiratory center, as a result of which the respiratory rate is diminished, and in consequence the carbondioxide content of the blood increases with an increased stimulation of the respiratory center and an increase in the pulse-rate. According to the degree of work and the altitude, the oxygen-need varies between 280 and 2,800 cubic centimeters. At high altitudes

there occurs a storage of nitrogen in the form of protein. This cannot be circulating albumin, for on descent to lower altitudes there is no immediate increased albuminous excretion. Some of the unpleasant effects of high altitudes are insomnia and headache. To a certain degree high altitudes have a stimulating effect, beyond which the influence is a harmful one. Chlorosis is not cured alone by residence at a high altitude.

New observations on labyrinthine suppuration have been reported by Prof. Adam Politzer before the Practitioners' Society. Eighteen fatal cases of otitic complications that had been carefully studied during life, showed at autopsy in ten cases marked anatomical changes in the labyrinth, while in eight cases, in spite of profound changes in the middle ear no demonstrable changes in the labyrinth were found. The following lesions were found: 1. Perforation of both fenestra of the labyrinth, with penetration of the pus into the interior of the labyrinth. 2. Fistulous openings in the semicircular canals and on the inner wall of the tympanum. 3. Destruction of the epithelial framework of the labyrinth, and of the organ of Corti. 4. Disappearance of the bony wall of the labyrinth and of the modiolus of the cochlea with perforation into the inner auditory canal. 5. Inflammatory changes in the latter and suppurative infiltration of the auditory nerve. 6. Connective tissue and osseous neoplastic formation in the cochlea as the result of an old inflammatory process that had run its course in the labyrinth. As otitic complications with lethal outcome there were evident meningitis, extradural abscess, cerebellar abscess, temperosphnoidal abscess, and sinus throbbosis. According to the statistics of Politzer's clinic the fatal outcome in more than half of the cases was due to a meningitis resulting from an infection by way of the labyrinth. Politzer has shown that this complication proceeds preferably through the cochlea. He rejects those operative methods that are confined to a breaking down of the semicircular canals and an opening up of the vestibule, and lays down the postulate that the operative clearing out of the cochlea, and, therefore, the eradication of the dangerous focus of suppuration in the labyrinth, are necessary. In the presence of extradural abscess and of intracranial complications, the method of Jansen-Neumann is indicated, namely, the removal of the posterior pyramidal wall and the opening up of the labyrinth from the median side. On the other hand, in the case of labyrinthine suppurations without cerebral complications, Politzer recommends the removal of the wall of the promontory and the wide opening up of the vestibule and cochlea, which are to be thoroughly cleared out. The advantage of this method is the impossibility thereby of wounding the facial nerve.

Biological studies of the ovaries have been made by J. Neumann and E. Herrmann, who have come to the following conclusions: The lipoid content of the blood is subject to cyclic variations in the sexually mature woman and in the bitch, which variations consist in a diminution during the menstrual perod and during the period of rut. During and after the climacteric there is lipoidemia. Castration in the human being, dog, and rabbit causes the same condition. In the rabbit treatment of the ovaries with the *x*-rays causes lipoidemia. This is also associated with normal pregnancy, from which one may conclude that during the latter there is a gradual functional alteration, in other words, there is a functional disappearance of the follicular apparatus of the ovaries.

In the blood of pregnant animals there have been found crystals that possess the following properties: Even in small quantities of blood an abundance of these crystals may be obtained. They are long, fine needles that taper like hairs, are easily bent, and give one the erroneous impression of plant threads. Upon pressure being applied to the cover-glass they break without a smooth line of fracture. In polarized light they are illumined between crossed Nicol prisms. The isolated crystals were recrystallized from acetone, and gave the reaction of cholestrinester, and showed a melting-point of 77° C., which is identical with that of cholesterin-palmitinacidester. This cholesterinester was observed in normal serum by von Boudet in 1833, and von Hüsthle in 1895 The blood of pregnant animals apparently contains an increase of this substance.

Progress of Medical Science.

Boston Medical and Surgical Journal.

June 15, 1911.

Obstetrics in General Practice. A. Worcester.
Hexamethylenamine as a Possible Preventive of Pneumococcus Empyema. F. C. Shattuck.
"Fibrositis" as a Cause of Chronic Hypertrophic Spondylitis and Possibly with a Heretofore Undescribed Sign in Intestinal Auto-Intoxication. N. S. Yawger.
The Treatment of Gastric Hyperacidity with Hydrogen Peroxide. G. W. Hall.
A Case of Vertigo Cured by Treatment of the Eustachian Tube. E. M. Holmes.
A Case of Nerve Deafness Due to the Toxemia of Diabetes. W. H. Merrill.
Lateral Deviations of the External Nose. A. Coolidge, Jr.
Plaster Casting from Life to Show External Deformities of the Nose Before and After Correction. I. D. Kerr.

Obstetrics in General Practice.—A. Worcester reviews a series of five hundred obstetric cases occurring in his practice in the course of fifteen years. He believes that the Crédé method of expressing the placenta is the cause of a large percentage of postpartum hemorrhages. The author entrusts the management of the first stage of labor almost always to a nurse. He uses a mixture of chloroform and ethyl bromide to dull the suffering from second stage pains. To help on the progress of the delivery he has often dilated the cervix, flexed the baby's head, and rotated it into a more favorable position. Two cases of death from pulmonary embolism are reported in addition to two reported in a former series, in all four deaths in a series of 1,000 cases. These fatalities occurred in the course of thrombosis of the iliac veins, the patients having been allowed to sit up too soon.

Hexamethylenamine as a Possible Preventive of Pneumococcus Empyema.—F. C. Shattuck has found that the administration of this drug has no influence in preventing the incidence of empyema in the course of pneumonia.

Fibrositis as a Cause of Chronic Hypertrophic Spondylitis.—N. S. Yawger believes that chronic hypertrophic spondylitis is often but the spinal localization of a very common general condition, the result of intestinal autointoxication.

Hydrogen-Peroxide in Gastric Hyperacidity.—G. W. Hall has found that hydrogen peroxide diminishes the amount of hydrochloric acid in the stomach. Its administration to patients with hyperchlorhydria greatly relieves their symptoms and causes a gain in weight. It does not appear to benefit cases with active ulcer. This method of treatment is a useful addition to the methods already in use.

Vertigo.—E. M. Holmes reports a case of vertigo cured by treatment of the Eustachian tube.

Nerve Deafness in Diabetes.—W. H. Merrill reports

a case which illustrates the fact that the acetonemia of diabetes, in common with the toxemia of syphilis, influenza, malaria, etc., can easily produce a neuritis of the eighth nerve as of others which are rather frequently involved.

Lateral Deviations of the External Nose.—A. Coolidge discusses the various types of this condition and the operative procedures for their relief.

Plaster Casting from Life.—I. D. Kerr describes the different methods for making plaster casts from life to show external deformities of the nose before and after correction.

New York Medical Journal.

June 17, 1911.

Prescriptions Old and New. J. J. Walsh and J. P. Walsh.
Twilight Talks with the Doctor. G. F. Butler.
The Effects of Certain Chemicals on the Type of Tissue Resulting from Chronic Irritation. G. L. Rohdenburg and F. D. Bullock.
An Obscure Case of Miliary Tuberculosis (Pulmonic Type) Diagnosticated by the *X*-Ray. G. Rosenbaum.
Mortality from Venereal Diseases. H. A. Brown.
Side Lights on the Social Peril. M. Glasgow.
Foramitti's "Tubulization" Method of Nerve Suture. G. Torrance.
Rupture of the Intestine from a Blow on the Abdomen. H. A. Royster.
Amygdalotomy or Amygdalectomy. M. Lubman.

Prescriptions Old and New.—J. J. and J. P. Walsh describe one of the oldest prescriptions extant, namely, an inscribed stone in the Egyptological department of the Metropolitan Museum of Art, New York. The date of the prescription was probably not far distant from that of the Ebers papyrus. The prescription called for a remedy to be used as a fumigation, the important ingredient of which was some form of precious green stone. The authors describe some of the favorite prescriptions of Galen, which for about fifteen centuries constituted the model after which most prescriptions were written.

Twilight Talks.—G. F. Butler discusses the futility of contentions which he believes frequently mar the harmony of the medical profession.

Type of Tissue Resulting from Chemical Irritation.—G. L. Rohdenburg and F. D. Bullock performed a series of experiments to determine if there are substances in the body, the result of metabolic processes, which stimulate cell division. They found that substances of which xanthine is a type produced marked proliferation of cells, more so than the lipoids. It is suggested that perhaps other products of protein metabolism, more especially the end or intermediate products, may have a similar and perhaps more profound effect, not alone on connective tissue, as xanthine apparently has, but also on epithelial structures.

X-Ray Diagnosis of Pulmonary Tuberculosis.—G. Rosenbaum reports a case which illustrates the inestimable value of the *x*-ray in cases in which the physical signs are indefinite, frequently showing only a moderate bronchitis.

Mortality from Venereal Diseases.—H. A. Brown notes the fact that the actual number of reported deaths from venereal diseases is comparatively small. The great majority of these deaths are due to syphilis. Nearly fifty-three per cent. of the deaths occur in children under one year.

The Social Peril.—M. Glasgow quotes the report of the Chicago Vice Commission which states that "prostitution can be suppressed by persistent efforts through a long period of years, and that constant and persistent repression must be the immediate method, absolute annihilation the ultimate goal."

Nerve Suture.—G. Torrance reports a case of successful suture of the musculospiral nerve. He utilized Foramitti's "tubulization" method, by means of which the nerve ends are sutured in a tube of absorbable material such as a specially prepared vein or artery taken from a freshly slaughtered calf.

Rupture of Intestine.—H. A. Royster reports a case of rupture of the intestine resulting from a blow on the abdomen.

Tonsillotomy or Tonsillectomy.—M. Lubman advocates the total enucleation of the tonsils when the tonicity of their epithelium is lost.

Journal of the American Medical Association.

June 17, 1911.

Diet in Acute Infectious Diseases. F. S. Meara.
Gastric and Duodenal Adhesions in the Gall-Bladder Region and Their Diagnosis by the Röntgen Rays. G. E. Pfahler.
A New and Apparently Successful Method of Treating Metabolic Osteoarthritis, So-called Arthritis Deformans. P. W. Nathan.
Abdominal Pain and Tenderness, Muscular Rigidity, etc., in Thoracic Disease—Pneumonia and Pericarditis. A. R. Edwards.
The Historical Collection of Medical Classics in the Library of the Surgeon-General's Office. F. H. Garrison.
Report of a Case of Traumatic Rupture of the Umbilical Cord within the Abdominal Wall at Birth; Recovery. M. J. Press.
A Large Lipoma of the Laryngo-Pharynx: Removal Extraorally Under Cocaine. E. L. Kenyon.
Glass Tube in the Male Urethra. N. Evans.
The Status of Salvarsan in Pellagra, Based on the Reports of Twenty-one Collected Cases. H. P. Cole and G. J. Winthrop.
Experiments on the Transmission of Scarlet Fever to Monkeys. L. Hektoen and G. H. Weaver.
The Cultivation of Tissues in Salt Solutions. M. R. Lewis and W. H. Lewis.
The Effect of Injections of Indol and Tyrosin in Experimental Animals. P. G. Woolley and L. H. Newburgh.
Conjugal Tubes Dorsalis. A. A. Fshner.
The Gastric Weak Line in Wounds of the Abdominal Wall. R. T. Morris.
Chronic Lead Poisoning: Report of a Case. C. H. Snover.
A New Method of Diagnosis of Acute Intestinal Obstruction by the Stomach Tube. G. H. Watson.
Trephining for Apoplexy. J. D. Milligan.
A Simple Technique for Salvarsan Injection. M. A. Reasoner.

Diet in Acute Infectious Diseases.—F. S. Meara criticizes the exclusive use of milk in infectious diseases and points out that to meet the caloric needs in fever of the ordinary individual, one would have to administer over a gallon of milk, which would contain almost twice as much protein as necessary. There are four problems entering into the feeding in acute infectious diseases: gastrointestinal disorders, pyrexia, toxemia, and starvation. The last of these it is the plea of the author to prevent. Fat and carbohydrate, especially the latter, are sparers of body proteids, and when enough of these two are taken nitrogen equilibrium has been obtained.

Gastric and Duodenal Adhesions.—G. E. Pfahler concludes that gall-gladder disease is liable to give rise to adhesions, which cause a definite displacement of the stomach and duodenum which is recognizable by the *x*-rays. The evidence of adhesions is best obtained fluoroscopically in the upright position, in which the errors of pressure must be eliminated, but plates should also be made in every case for record and for more detailed study.

Treatment of Arthritis Deformans.—P. W. Nathan has found in the treatment of the metabolic form of osteoarthritis that continuous administration of thymus extract sooner or later led to definite improvement. It is only when it is taken for months that the joint disability begins to disappear and in some of his patients he has been able to demonstrate the action of the thymus, since when it was discontinued the symptoms began to reappear. The dosage of thymus extract was five grains three times a day after meals.

Abdominal Symptoms in Thoracic Disease.—A. R. Edwards states that pneumonia, pleurisy, and pericarditis at their very onset may present absolutely no symptom other than the abdominal findings. These phenomena of invasion may completely resemble appendicitis, peritonitis, even the collapse of perforation. Diagnostic errors and unnecessary operations may be unavoidable.

Medical Classics.—F. H. Garrison describes the collection of medical classics in the library of the Surgeon-General's office at Washington.

Rupture of Umbilical Cord.—M. J. Press reports a case of rupture of the umbilical cord within the abdominal walls of an infant at birth, treated successfully by compression.

Laryngopharyngeal Lipoma.—E. L. Kenyon reports

the removal of a large lipoma embarrassing the functions of respiration, swallowing, etc., but giving no evidence of its presence in the appearance of the outer surface of the neck.

Salvarsan in Pellagra.—H. P. Cole and G. J. Winthrop in reviewing twenty-one cases of pellagra treated with salvarsan state that this drug offers no better results than other methods of treatment.

Glass Tube in Male Urethra.—N. Evans reports his success in removing a piece of glass tubing 3/16 of an inch in diameter and 5 inches long from the male urethra.

Scarlet Fever.—L. Hektoen and G. H. Weaver, in reporting their results in the feeding of monkeys with milk containing secretions from the throats of scarlet fever patients, state that there was no conclusive evidence that the monkeys contracted scarlet fever.

Artificial Cultivation of Tissues.—M. R. and W. H. Lewis find that this can be effected in various salt solutions as well as in plasma.

Indol and Tyrosin.—P. G. Woolley and L. H. Newburgh found that after the injection of these substances into rabbits the medullas of the adrenals were hyperplastic and apparently hypertrophic, and that the evidences of chromaffin activity increased in proportion to the number of injections, until in the last of the series the medullas showed a volume three times the normal, while the cortices were not increased. The suggestion is made that such hyperactivity of chromaffin and like substances may be a cause, if long continued, of diabetes on account of a change in the chromaffin-pancreas equilibrium.

Conjugal Tabes Dorsalis.—By A. A. Eshner. See MEDICAL RECORD, Volume 79, page 1073.

Abdominal Wounds.—By R. T. Morris. See MEDICAL RECORD, Volume 79, page 1023.

Chronic Lead Poisoning.—C. H. Snover reports a case of this condition occurring in a girl employed in a milk condensery sealing cans.

Diagnosis of Intestinal Obstruction.—H. G. Watson suggests, as an aid to diagnosis in this condition, that the stomach tube be passed from hour to hour, and the contents carefully examined. If they are of a dark brown color with a fecal odor, ruling out peritonitis and other acute conditions, then a definite diagnosis of acute intestinal obstruction can be made and immediate operation advised.

Trephining for Apoplexy.—J. G. Milligan advocates operative interference in cases of hemorrhage of the brain. After the first seventy-two hours, the patient having survived the shock, he is in better condition for operation than is the usual case of cerebral traumatism.

Salvarsan.—M. A. Reasoner describes a simple technique for the intravenous injection of salvarsan.

The Lancet.

June 10, 1911.

The Progress of Dermatology Since Hunter's Time. J. H. Sequeira.
The Rôle of Fat in the Etiology and Progress of Cancer. Sir George T. Beatson.
The Position of the Present Reform Movement in Anesthetics. F. W. Hewitt.
The Use of Explosives in Coal Mining and Their Effect upon Miners. Sir Thomas Oliver.
Ten Cases of Operation for Ménière's Disease (Aural Vertigo). R. Lake.
Twenty-two Consecutive Cases of Extrauterine Pregnancy Successfully Treated by Operation. J. A. Kynoch.
Prophylactic Inoculation Against Hay Fever. L. Noon.
A Case of Suppurative Arthritis of Knee-joint, due to Influenza Bacillus, occurring in a Baby Aged Six Months. E. T. Fraser.
A Case of Acute Phthisis Following Typhoid Fever. W. Scarisbrick.
Endemic Tetany in the Gilgit Valley. R. McCarrison.

Progress of Dermatology.—J. H. Sequeira describes the progress of dermatology since Hunter's time. The first years of the nineteenth century really marked the beginning of the scientific study of diseases of the skin.

Rôle of Fat in the Etiology of Cancer.—Sir George T. Beatson believes that fat plays an important part in the etiology and progress of cancer. Duncan has observed that there is a decided difference in human fat before and after puberty, the low percentage of 44.477 of non-saturated fatty acids between nine and eleven years of age being replaced by the high one of 60.88 from sixteen to nineteen years. Further, a similar increase takes place in the fat of cancer patients, the percentage rising from 62.1 in health to 72.62 in that disease.

Reform Movement in Anesthetics.—F. W. Hewitt states that when anesthetics are administered only by qualified persons it will be far easier than it is at present to improve the conditions under which anesthesia is conducted.

Explosives in Coal Mining.—Sir Thomas Oliver states that miners suffer by inhaling the fumes given off after detonation of cartridges of the higher explosives. Occasionally miners are found in the pit in a state of collapse, of complete powerlessness, or of unconsciousness, and when brought to bank they frequently vomit, thereby obtaining relief. Taken home, placed in bed, and surrounded by warmth these men gradually recover, and in a day or two, although apparently shaken, they are found back at work again. By some men, owing, it is supposed, to the nitrous compounds present in the cartridges, complaint is made of throbbing headache and rapid action of the heart.

Operation for Ménière's Disease.—R. Lake states that relief may be promised with certainty in those cases of aural vertigo, which must otherwise render life a burden to the sufferer, by an operation which in itself has no risk to life.

Extrauterine Pregnancy.—J. A. Kynoch reports twenty-two consecutive cases of this condition successfully treated by operation.

Prophylactic Inoculation Against Hay-Fever.—L. Noon has found as the result of experiments with pollen extracts prepared according to Dunbar's method that the sensibility of hay fever patients may be decreased by properly directed dosage at least a hundredfold, while excessive or too frequent inoculations only serve to increase the sensibility.

Influenzal Arthritis.—E. T. Fraser reports a case of suppurative arthritis in the knee-joint in a baby aged six months. Pfeiffer's bacillus was isolated from the pus.

Acute Phthisis Following Typhoid Fever.—W. Scarisbrick reports a case of this condition.

Endemic Tetany in the Gilgit Valley.—R. McCarrison states that this disease is a common one in India, having a peculiarly local distribution and corresponding more or less with the distribution of goiter.

British Medical Journal.

June 10, 1911.

On Preventive Medicine: The Medicine of the Future. Sir James Barr.
The Importance of Pneumonia as a Cause of Death. F. M. Pope.
Some Features of Aortic Regurgitation in Young Subjects. J. M. Clarke.
Blood-Pressure in Mental Disorders. S. G. Longworth.
The Interpretation and Significance of Some Irregularities of the Pulse. W. E. Hume.

Preventive Medicine.—Sir James Barr states that in future medical men must point out the lines along which the nation is to be improved, by encouraging the multiplication of the fit, and controlling the increase of the unfit. Tuberculosis is one of Nature's methods of getting rid of the unfit; nevertheless this disease is to be combatted, for, even if it disposes of the weaklings, it inflicts permanent injury on the survivors, and carries off many an individual who would be a worthy citizen in a better environment.

Pneumonia as a Cause of Death.—F. M. Pope notes that pneumonia stands alone (or only with cancer) in its steady increase. Other respiratory diseases which seem

to be subject to the same conditions have not followed a similar course.

Aortic Regurgitation in Young Subjects.—J. M. Clarke states that aortic regurgitation in young subjects is a more serious disease and runs a shorter course than in adults. In the former pain in the precordial region is the most frequent and prominent symptom. Next in order of frequency come palpitation and dyspnea. Attacks of syncope may occur. Of the various forms of hemorrhage that are not infrequent, epistaxis is by far the most common. Great enlargement of the heart is an even more marked feature of aortic disease in children than it is in adults. With this goes pronounced dilatation of the aorta.

Blood-Pressure in Mental Disorders.—S. G. Longworth concludes that maniacal and melancholic states are not associated with any constant modification of the arterial blood-pressure, nor any marked departure in it from the normal. The same applies to other types of mental disorder with the exception of congenital states, in which the pressure tends to be low. The pressure bears some relation to the bodily tone, and increases as age advances. As melancholia is on the whole a disorder of more advanced years than mania it is associated with higher manometer readings only on this account. Sedative drugs have a slight influence in lowering blood-pressure. The manometer readings bear a fairly close relation to the sclerosis of the vessel wall.

Irregularities of the Pulse.—W. E. Hume states that an irregular pulse may have an important bearing in disease, as during an attack of pneumonia it may be the first sign of a fatal termination. An irregular pulse may be a family peculiarity, as in an instance cited in which all the sons of a family shared with the father a cardiac irregularity due to ventricular extra-systoles. A pulse may appear quite regular to the palpating finger, but the heart may be grossly irregular. This is observed in certain cases of heart block. The factors which govern the normal beat of the heart are stimulus formation, excitability, contractility, conductivity, and tonicity. In a normal heart these five properties of heart muscle fibers are interdependent, but in pathological conditions they may be affected independently of one another.

Berliner klinische Wochenschrift.

June 5, 1911.

Statistics of the Carbolic Acid Treatment of Tetanus.—Prof. Baccelli analyzes the reports of 190 cases of tetanus treated by his method. These are grouped under four classes, viz.: mild, medium, severe, and fulminating. In order to characterize cases properly from this viewpoint, the author makes use of the length of the incubation period (the shorter the period the graver the prognosis); the frequency, severity, diffusion, and duration of the paroxysms: the temperature; the age of the patient, and the individual resistance to the disease. Leaving out the mild and medium cases, which have a tendency to spontaneous recovery, the figures show that there were ninety-two cases of severe tetanus which were treated with a combination of the author's method and serotherapy. Of this large number but two patients died, a mortality of but 2.12 per cent. There were thirty-eight cases of very severe tetanus. Of this number some are rejected because the dosage was not high enough for the author's standard. Of twenty-seven cases in which the reporters injected the quantities of phenol recommended by the author, twenty-two recovered, a mortality of 18.5 per cent. In fifteen other cases of severe tetanus, in which the course could be described as fulminating, the results of treatment were practically negative (although there was a single recovery following an intraspinous injection). The author claims, however, that the doses of phenol injected were far too small. The combined mortality for the 190 cases was 17.36 per cent. The material from which these cases come is almost wholly Italian, although the author's method has been tested in other countries. The method has not undergone any notable modifications since its original introduction and is to be found in any standard work on surgery.

Rare Case of Anosmia.—Safranek sums up his case as follows: A girl aged fourteen years, with an acquired leucoderma, began to lose her sense of smell, which at the end of two years was entirely absent. The condition was bilateral and sense of taste for aromatic substances was also lost. Rhinological and neurological examination failed to reveal the nature of the disorder. Hysteria could be excluded as could also local or central organic disease. The author found two similar cases in the literature in which there was a suspicion that the association of anosmia and absence of cutaneous pigment (leucoderma) was not a coincidence. Such an association seems, however, to have escaped the attention of dermatologists.

Anesthesia in Obstetrics.—Strassmann concludes his study with a consideration of the scopolamine-morphine narcosis and analogous procedures. The number of recorded cases in which scopolamine and morphine have been given combined in various proportions is now very large, and the indications and conclusions naturally differ in different clinics. The author's personal experience is as follows: The women fell asleep and the physiological action of the scopolamine was in evidence. Some women, however, showed excitement. Pain was not fully abolished, and the patients cried out somewhat, but in from 60 to 80 per cent. of cases there was no recollection of pain. Scopolamine may be found in the breast milk until the third day. The action of the narcosis on the infants is notable. Many are born oligopneic. They do not stir themselves, breathe infrequently and cry but little, are pale and flaccid. Such infants must be treated like those born to eclamptic mothers who have received large doses of morphine (warm baths, massage, etc.). Scopolamine is present in the infantile urine and a drop of the latter will dilate the pupil of a frog, although an infinitesimal quantity of the alkaloid suffices for this result. The percentage of children who become oligopneic under scopolamine is somewhat under twenty. Strassmann advised the general practitioner to use the drug tentatively if at all. It is best to wait until the clinicians come into closer agreement as to indications, dose, etc.

Münchener medizinische Wochenschrift

May 30 and June 6, 1911.

Salvarsan Milk.—Jesionek uses this term to denote human breast milk from a mother who has received salvarsan by injection or the milk of cows, goats, and other animals which have been similarly treated. Children with hereditary or acquired syphilis who ingest this milk are said to recover, temporarily at least, with remarkable promptitude. Unlike the tests of his predecessors those of the author readily showed the presence of arsenic in the milk. From experiments on animals as well as clinical experience it appears that the arsenic which enters the milk is able to cause toxic as well as salutary phenomena. The milk should also contain the endotoxins which result from the death of the spirochetes in consequence of the action of the salvarsan in the syphilitic mother. Salvarsan milk may be termed "syphilitic" or "nonsyphilitic," according to conditions which obtain. The author would much prefer to use the latter in treating a syphilitic child. It would be obtained by injecting a wetnurse or a milch animal.

Treatment of Infantile Paralysis.—Pürckhauer calls attention to the fact that some of the muscles in this affection are quite sound but have lost their elastic tension

from overstretching. Such muscles behave as if they were actually paralyzed. By shortening these muscles by approximating their insertions the elastic tension is restored and the muscle again becomes useful. Several cases are upon record (Wittek, Jones) in which muscles which had seemingly been paralyzed for years were restored to usefulness by simply flexing the limb and bandaging it in that position. The author's own material of nineteen cases of paralytic clubfoot was found to comprise no less than eight cases in which the muscles were overextended. In four of these tenotomy was required in addition to bandaging in the flexed position, but in the other four the condition recovered under mechanical correction alone.

Salvarsan in Anemia.—Leede refers to those cases of apparent pernicious anemia which actually depend on syphilitic infection. This etiological relationship he believes to be far less infrequent than might be believed. It must be borne in mind that the anemias caused by the bothriocephalus and ankylostoma were once placed under the head of pernicious anemia. Much care must be exercised in differential diagnosis for salvarsan seems to be contraindicated in true pernicious anemia.

Labyrinth Syphilis as an Early Secondary Manifestation.—Hintze of Bangkok, after citing a few cases of this lesion from literature, gives a personal case in which the labyrinth syndrome appeared in a man about nine months after the chancre was recognized. The patient had received a course of mercurial injections before the syndrome appeared and the treatment was pushed from that time on with iodide of potassium. In order to throw some light on this localization the author calls attention to the highly nervous temperament of the patient which invites a nervous localization. Syphilis is also far more widely diffused in tropical parts than in many localities in temperate zones, so that one looks for an infinite variety of lesions.

Shiga-Kruse Bacilli Carriers.—Boehncke states that carriers of dysentery bacilli are commonly believed to be unimportant from a sanitary standpoint, at least when compared with carriers of the germs of some other diseases. Referring to a petty epidemic of diarrhea in troops in which there was a suspicion of dysentery, it was found later that both typhoid and dysentery were present in the regiment, and that no less than twenty-five healthy soldiers presented the Shiga-Kruse bacilli in the stools. In the proved absence of infected water, milk, etc. it was assumed that carriers must be at fault. The lesson is not to discharge dysentery patients as cured unless a bacteriological study shows absence of germs from the bowel of the convalescent.

Familial Hypertrophic Neuritis.—Boveri first mentions the great infrequency of hypertrophic interstitial neuritis and our meager knowledge of the condition. It was described by Déjerine and Sotta in 1893 as an affection of children, a muscular atrophy in all the extremities, altered sensibility—including lightning pains—and distinct enlargement and induration of nerve trunks. Trophic disturbances were absent. Ataxia and the ocular symptoms of tabes were added later. At a still earlier period Gombault had described tabes in childhood of a character permitting identification with the newly described disease, so that the present author terms it the Gombault-Déjerine-Sotta type. Déjerine regarded it as true tabes developing in patients with interstitial neuritis. In 1906 Marie described a form of hypertrophic neuritis which differed from the preceding, and which he requested Boveri to investigate. The Marie syndrome is thus for a familial disease affecting six members of a given family, the mother and five children. In early childhood there is a difficulty in standing erect and walking. Toward puberty a pes equinovarus develops, apparently as a result of progressive muscular atrophy. The oldest child also developed a kyphoscoliosos. Nevertheless in the Marie type, while the consequences of muscular atrophy were in evidence, that deformity was not pronounced *per se* save in a flattening of the calves. In the Déjerine type the muscular atrophy was both universal and pronounced. Neither did the phenomena of ataxia develop in the familial cases, although the pupils were sluggish. Boveri was fortunate enough to obtain an autopsy upon the eldest child, through which it became apparent that the two types of disease had even a wide difference in their anatomical substratum. Aside from the tendency of the original type to extend to the ganglia, posterior roots, and cord, it was also a much more diffuse affection. In Boveri's case the muscles of the upper extremities were almost intact, and the chief muscular lesions were seated in the lower extremities. In other words, in Marie's type the neuritis is much less likely to be followed by muscular atrophy.

Typhoid Sepsis.—Jores uses this term for a pure sepsis due to the typhoid bacillus. In a given case a diagnosis could hardly have been made during life. The patient had early symptoms pointing in part to acute rheumatism and in part to acute gout (acute otitis externa). The temperature was high and a severe angina and rash suggested scarlatinal infection, although patient was forty-five years old. Sepsis of whatever origin seemed present eventually, but the slowness of the pulse apparently negatived such a diagnosis. The patient died somewhat suddenly in coma sixteen days after admission. The naked eye autopsy find was largely negative, but biological tests gave abundant evidences of typhoid sepsis. So little had typhoid been suspected in life that there is no mention of a Widal test in the history. The literature of pure typhoid sepsis is very scanty and the cases on record do not form a coherent type. The author believes that his patient was a germ carrier who in some manner infected himself (autobacterial reinfection). He hardly finds a parallel case among those on record.

Melanuria without Melanotic Tumor.—Zoeppritz, after relating a case in point, states his belief that it is extremely rare. There are indeed cases of blackened urine on record in which no evidence is adduced to show that the discoloration was due to melanin. In some cases it is expressly stated that melanin tests were negative. Some of the older clinicians (Senator, Garrod), who taught that melanuria was absolutely diagnostic of melanotic tumor, sought to show that when tumor formation was absent the blackened urine was due to some other coloring matter. While the author's patient had no melanoma he was suffering from a non-pigmented cancerous adenoma of the bowel, with secondary peritonitis. The ante-mortem diagnosis had naturally been melanotic tumor in the abdomen. There were absolutely no pigmentary anomalies anywhere in the body.

Deutsche medizinische Wochenschrift.

June 1 and June 8, 1911

Sensitiveness of the Tuberculous to Toxins Other Than Tuberculin.—Sorgo has tested tuberculous subjects in respect to their cutaneous sensitiveness to the toxins of cholera, dysentery, and diphtheria. In 1908 Entz had announced that von Pirquet's cutaneous tuberclin reaction was positive both in tuberculous and nontuberculous subjects, in children as well as in adults; and that both groups also reacted positively to all other disease toxins tested. The results were incomplete and no conclusions were drawn. The author took toxins of a certain concentration, testing them first on animals and injected them intracutaneously. He inoculated tuberculous subjects simultaneously with old tuberculin and the toxins of other diseases. It was apparent that the

patients reacted to all the various toxins more or less evenly. The generalization seems warranted that tuberculous subjects are allergic not only to tuberculin alone, but to bacterial toxins in general. This find antagonizes the doctrine of von Pirquet that his cutaneous reaction denotes specific allergy. It was further learned that heating the toxins to the point of robbing them of their toxicity to animals does not interfere with the occurrence of the reaction. The chief causal element then lies in the extreme supersensitiveness of the skin present in tuberculous subjects (who have not yet reached the cachectic stage). The substance which provokes the reaction cannot be the specific toxic principle hut some component present in all toxins.

Serodiagnosis of Pregnancy.—Mosbacher refers to the significance of the so-called epiphanin reaction in the diagnosis of pregnancy. This appears to hold good in the case of laboratory animals, but in its application to the human species the same objections obtain as in other recently described biological reactions; that is, the inconstancy in the results may be due to defective technique. There appears to be no doubt that the syncytial cell albumin of a given species of animal behaves as an antigen in the blood of an animal of the same species; and that a normal animal may be rendered anaphylactic thereby. An animal which has just become pregnant corresponds to a non-pregnant animal which has been sensibilized by the placental albumin. The sensibility of the pregnant animal appears to increase with pregnancy; and late in gestation the blood serum depresses the toxicity of the syncytiotoxins.

Radium in the Treatment of Scleroderma.—Benczur reports a case of scleroderma in a girl of eighteen, of four years standing, which yielded notably to radium emanations. The patient had chronic arthritis of the fingers and feet, together with scleroderma of the face, hands, legs, and breast. She was first treated unsuccessfully with fibrolysin, and eventually received 1,000 Maché units daily of radium emanations. For the first few days of treatment the pain in the joints increased, afterwards abating in severity, although it usually returned upon exposure to the radium. The patient perspired profusely during the treatment. The latter extended over five weeks and the hidebound skin loosened up to such a degree that patient could wrinkle her forehead, smile, etc., while in all localities other than the face the scleroderma vanished entirely. Owing to the production of hemoptysis the treatment had to be discontinued. Since fibrolysin has given some favorable results in this affection the author believes that a combination of the two new resources ought to prevail over certain cases of the malady.

Wassermann Reaction in Saturnism.—Schnitter corroborates the find of Dreyer that subjects with lead poisoning may at times react positively to the Wassermann reaction. He obtained four positive results in sixteen cases, but in one there was a possibility of old syphilis. The reaction probably appears only at a particular stage of development of the poisoning, at which the state of the blood is conceivably like that present in syphilis. In each positive result basophilic granular erythrocytes were present in abundance, and in each case the patient had been exposed to the toxic action of the lead for some months.

Influence of Dyspnea on Diabetes.—Von Mazyary-Kossa induced phloridzin diabetes in rabbits and then caused them to respire carbon dioxide. The excretion of water by the kidneys was but little affected, but the urinary sugar was reduced about 50 per cent. The author explains this action of the gas by the assumption that it paralyzes the renal nerves or their centers. That these nerves exert a powerful influence on glycosuria is shown by the fact that when divided in animals with phloridzin diabetes the sugar percentage is greatly diminished, even at times to the point of complete cessation. If the cord is divided urinary sugar is cut down, often as much as 90 per cent. The author believes that phloridzin diabetes is originally set up by the action of that substance on the renal nerves or their centers.

Aorta Angusta.—Krabbel refers to a congenital malformation and not to acquired aortic stenosis. Up to 1901 there were about 100 cases on record, all of autopsy material. Much light has gradually been thrown on obscure clinical phenomena, so that to-day aorta angusta is a well-known condition, clinical as well as pathological. This may, of course, complicate acquired disease of the heart and great blood-vessels, and *a priori* we should expect that such a malformation of the aorta would tend to accentuate a beginning cardiac lesion. The author's patient was seen but a day before his death. He was a young man, with the most marked evidences of cardiac insufficiency. The diagnosis was stenosis and insufficiency of the mitral valves. From older hospital records it was learned that nine months before the same diagnosis had been made, and that the personal history was negative beyond the fact that his heart had been affected for years and that he had gone through a probable pneumonia. Autopsy showed a greatly enlarged right heart, which included the apex and was much dilated. The left ventricle was notably small. The mitral orifice was only permeable to one finger. The aorta was very narrow, and its valves thin and fragile. The thoracic aorta barely admitted the little finger, the abdominal aorta being somewhat larger. There was chronic endocarditis at both the mitral and tricuspid valves and fatty degeneration of the myocardium. This case was fairly typical and illustrated the fact that patients with congenitally narrow aorta pass through childhood and adolescence very well, but that at the outset of the third decennium the heart begins to undergo rapid dilatation and insufficiency. The affection of the valves was superadded in the author's case, and prevailed over the mere aortic syndrome. Its relationship to acute rheumatism was obscure, there being no history of such an affection. Hence the clinical picture of mitral disease and the extreme hypertrophy and dilatation of the right heart.

Does Pregnancy Predispose to Carcinoma?—Lindstedi answers his own query by making the following points, based on statistics: Patients with the combination of cancer of the stomach and gravidity seem to show a lower age than would be accounted for by mere coincidence. Women with cancer of the stomach and uterus respectively occurring during the reproductive years quite frequently manifest the first symptoms of these lesions during a pregnancy. Cancer of the stomach, naturally more common in men than in women, shows in the reproductive period alone a greater incidence in women and a greater incidence in married than in single women.

An Assumed Pathognomonic Sign of Malarial Infection.—Carlo Mars has experimented on the presence, stated by Uroila, of a black pigment to be found in the urine of patients having malarial infection. The author tested seven cases for this pigment in various kinds of malarial infection. He finds that the malarial pigment found free in the blood, enclosed in the phagocytes, or fixed in the tissues does not pass into the urine. Hemosiderin, a substance less complex than melanin, may pass through the renal tubes and be present in the urinary sediment. He found no melanin in the urine tested, but a brown pigment similar to hemosiderin. This may be similar to that found in the blood of anemic patients, those who have parasitic hemoglobinuria, or poisoning with pyrogallic acid. The finding of malarial pigment in urine is not a diagnostic sign of value.—*Il Policlinico.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

INTRODUCTORY REMARKS.

The quality of the work achieved by medical men interested in life insurance has not failed to share in the advance of general medicine, and it naturally follows that the medical directors are alert in securing better information and expect more efficient service than would have been possible in the earlier days of life insurance. These two bodies of men, the home office staff and the examiners in the field, have hitherto worked apart, and in order that they may be brought nearer to each other for a mutual exchange of ideas, it is proposed to devote space in this column to a series of contributions from those who have made this subject their life work. There was little to say in the old days when the companies were smaller, the examiners fewer in number, and the vast amount of valuable material in possession of the companies had not been threshed out. Even the home office staffs had not learned fully to realize the importance of the great quantities of valuable material lying dormant on the shelves. During those years the business of life insurance was conducted on profitable lines, but as competition became keener it behooved each company to do its best to keep up with the rival concerns. A more potent factor, however, than the prodding of competition was the natural progressive spirit of those to whom the welfare of the various companies was intrusted. As the experience of each company was gradually worked out, it became evident from time to time that considerable modifications of the old views were needed. In getting at these facts the companies did not work together. On the contrary, each one had its own corps of trained assistants and retained nearly all the information gained through its efforts for its own individual use. As time has gone by, however, a tendency has grown toward an interchange of views between the representatives of the companies, and there is now more than ever a combined effort to base the selection of risks on a definite and scientific foundation. This is found to be especially true of the medical and actuarial officers, and has been effected through the meetings of associations devoted to their special interests. These meetings have been profitable to the members, but there has been a very limited distribution of the proceedings among the general profession. While, then, a large amount of work has gone on and important results have been obtained, the field worker has had but little opportunity to derive much benefit from them.

The only practical way to reach the medical examiner is through the columns of a regular medical publication to which all contributors have equal access. Previous attempts in this direction have been either unwisely directed, or sporadic and short lived. The text books for life insurance examiners, while some of them are excellent, necessarily treat the subject in a more or less didactic way, many of the everyday but important practical points being outside of their range. It will be the object of a series of informal contributions under the head of "Suggestions to Medical Examiners" to present not only the practical side of insurance medicine, but also to explain the meaning of many of the requirements of the home office. It is frequently found that an examiner is at a complete loss to understand why certain additional information is wanted. As an examiner, he has had to work out his own salvation, assisted only by brief, concise communications from members of the busy home office staffs, too pressed for time to explain the bearing of their requests. Like other people, medical examiners dislike to work in the dark, and it is not a cause for wonder if they sometimes fail to grasp the point and even show signs of irritation over, what seem to them, useless questions. The conditions under which they follow their general practice differ widely from those which confront them as examiners, and it is only fair to them to take advantage of every opportunity to make them more familiar with the many intricacies involved in modern methods of selecting risks for life insurance. By the possession of a more complete understanding of the subject, they will recognize the importance of the requests from medical directors, many of which formerly seemed unreasonable and even irrelevant, and furthermore they will make their examinations with the demands of modern life insurance in mind, thereby lessening the call for subsequent communications from the main offices. And, still further, when the requests for additional requirements do come, they will cheerfully give the extra services called for. If success is attained in bringing the forces of the home office and the field closer together, in bringing them to work harmoniously, and in augmenting the good feeling already existing, the labors of both will become lighter and more pleasant.

The Medical Aspects of Modern Life Insurance.—By FREDERICK L. HOFFMAN. (See page 1.)

A Department of Insurance Medicine.—(See page 17.)

American Association of Medical Examiners; Eleventh Annual Meeting.—(See page 52.)

Defects and Anomalies Without Influence on Expectation of Life or Earning Capacity.—Grohmann says that if an applicant suffering from an unimportant defect or anomaly is refused insurance on the advice of the medical examiner both he and the insurance company suffer. It is therefore worth while to discuss what defects and anomalies are of no importance from insurance standpoint. Such defects may be divided into congenital and acquired, the latter being subdivided into those acquired through accident or injury, and those produced by disease. "Cripples" are included in the first division, such as persons lacking one or more fingers or toes, or even an arm or a leg, or simply persons having the misfortune of being born with lame or crooked limbs. In case the organism of such a person is otherwise normal there is no reason for refusing him or her insurance; on the other hand, freedom from paying premium in case the applicant becomes an invalid should seldom be included in the conditions of the policy for the existing defect or anomaly may predispose to such a helpless state.

Some general rule should hold true in case of defects or anomalies of special senses, for example, one-eyed applicants, persons hard of hearing, near-sighted, or far-sighted persons whose vision can be easily corrected by proper glasses. Complete blindness or deafness is different, of course, because of the increased risk of death or injury through accidents; dumb persons, on the other hand, should not be refused insurance.

Cretins and weak-minded persons should be excluded, this being really commanded by the civil law. Persons possessing defects or anomalies of the genital apparatus should not be excluded, if the excretory functions are not damaged; such defects are no obstacles to long life. Grohmann knew three such persons that lived beyond sixty

years. Congenital hernias are usually easily corrected and should not militate against insuring a child; the rare anomaly, transposition of the viscera, is of no significance. Various warts, fibromata, and naevi of the skin are likewise unimportant; nævus pigmentosee is a partial exception, because of possible malignant degeneration. Benign tumors, especially if easily removable, should likewise be treated with indulgence.

Acquired defects are easier to value from the insurance standpoint. Loss of a limb, in case of complete recovery from shock of operation may simply necessitate higher premium for a policy. Incomplete restoration of function in limbs, if it does not leave a person helpless or an invalid, should be treated in the same fashion. The older the person at the time of an accident the more likely is the latter to shorten his life. Uncomplicated fractures usually leave little or no trace; if lameness results this should not militate against an applicant. Acquired hernia should call for higher premium, even after cure, for predisposition remains. If not cured there is always the danger of complications. Burns should be judged according to extent and site; some time should pass before insuring an applicant who has just recovered from extensive burns.

Defects in consequence of disease are the hardest to deal with. Frequently the causative sickness cannot be diagnosed from the history or the physical examination. Loss of fingers or toes after a short inflammatory process is of no significance; if the process shows no inclination to end the matter should be judged differently. Fistula due to a local tuberculous disease should be judged in each individual case, for persons suffering from them may be healed and attain advanced age. Operation scars from excision of cervical glands should likewise be neglected, if no evidence of latent tuberculosis be discovered. Goitre is to be judged according to mechanical disturbance its presence produces or may produce. Hemorrhoids and other varices should be judged according to the cause of obstruction in circulation. Any evidence of syphilis, however quiescent the disease may have become, should always be considered as of great possible importance in shortening the applicant's life or diminishing his earning capacity. The presence of any general disease, together with a defect or an anomaly should, of course, exclude an applicant from participation in insurance.—*Blätter für Vertrauensärzte der Lebensversicherung*, March and April, 1911.

Urine Examination in Life Insurance—A Farce.—Henry R. Harrower says that examination of the urine, when careful and complete, is one of the best means of diagnosis that we possess. It is therefore easy to understand why uranalysis should be required of applicants for life insurance. The usual method pursued, however, results in farcical conclusions. Frequently the medical examiner analyses a specimen voided at the applicant's visit for physical examination. No pains are taken to obtain a sample of twenty-four hours' urine; some companies even prefer that a specimen voided in the presence of the physician be examined, so that deception may be prevented. Specific gravity is usually measured by the cheap urinometers, found in physicians' offices. The urine is then boiled and occasionally Heller's test for albumin is used in addition. Fehling's or Haines' test is used for sugar. Most insurance companies are satisfied with the examination such as sketched above. The specific gravity may be higher than the limits set in the instructions for medical examiners, yet it is possible that a single specimen taken in summer time may normally show a specific gravity between 1025 and 1030. Or the individual may have taken in his food little protein and much table salt, and thus raised the specific gravity of the urine. On the other hand, a low specific gravity might exist in a single specimen, depending upon the amount of water taken. As to examination for albumin, the tests used are frequently negative when a manifest disease of the kidney exists, or traces of albumin are shown in the absence of a serious disease. Could there not be an alimentary aluminuria? Could not urine contain occasionally traces of albumin, just as its content in phosphates or chlorides varies daily? Harrower has seen the appearance of albumin and casts depending upon high acidity of the urine, the correction of which resulted in the disappearance of the abdominal elements. It may therefore be concluded that the presence of albumin may be neglected unless the albuminuria is a constant phenomenon. So far as sugar is concerned, it has been shown that Fehling's reagent may be reduced by many other substances in addition to sugar. The phenylhydrazin and the fermentation tests have, therefore, been proposed, but even then, when but a single specimen is examined, alimentary glycosuria is not excluded.

Harrower proposes that in cases of policies of $1,000 and more the urine should be examined by a specialist, who should perform chemical tests for albumin, sugar, bile pigments, blood, and indican, and, in addition, quantitative tests for urea, acidity, ammonia, and perhaps phosphates and chlorides. Then a careful microscopical examination of sediment should follow. Such a test would show whether the individual is in normal condition of metabolic equilibrium; whether or not a disturbance of the kidney or other parts of the genitourinary apparatus exists; whether a high degree of intestinal putrefaction is present. Harrower concludes that this would allow the insurance of many who are now excluded, and would exclude others who now prove to be bad risks.—*Zeitschrift für Versicherungsmedizin*, February, 1911.

Urine Examination in Life Insurance—A Farce?—Leopold Feilchenfeld answers an article by Harrower with the above title. He grants that there is some truth in Harrower's statements, only they are exaggerated and wrongly applied. The usual examination of urine for life insurance purposes is not scientifically complete, but it is not the aim of the examiner to discover any small abnormalities, the practical significance of which is not at all definitely known. For instance, what would be the meaning of increase in phosphates, chlorides, urea, or uric acid? The insurance companies want simply to exclude serious illness, and especially diabetes and nephritis. Special methods would show "traces of albumin" in otherwise quite healthy persons. Harrower is right in condemning Fehling's test, but most examiners have already substituted Nylander's reagent for Fehling's. The writer warns against making the medical examinations too complicated, in any case, as there is a growing tendency among life insurance companies to do as much as possible without medical advice; for instance, a certificate from the applicant's family physician is now rarely called for. It may be that in the future even the medical examiner's services will be only exceptionally called for. Feilchenfeld concludes that the present method of having the medical examiner perform the uranalysis is quite acceptable. The services of a specialist should be required only if the results obtained by the examiner require control in any particular and difficult case.—*Zeitschrift für Versicherungsmedizin*, April, 1911.

The Physiology and Pathology of Senescence.—H. E. MacDonald not only agrees with Minot that senescence is not in itself a diesase, but declares that the process is certainly intended to be beneficent. It is harmful only when carried too far, when it assumes all the characters of disease. Like inflammation, senescence is pathological only when carried to excess. Moreover, MacDonald believes that the two processes are identical as the result of both inflammation and senescence is fibrosis, and the natural inference is that inflammation is simply accelerated senescence. According to Weismann, unicellular organisms which propagate by cleavage are potentially immortal. Germinal cells are immortal, while somatic cells are protec-

tive, and have lost the germinal property. The higher the evolution of the animal the longer the life. The cells set apart to combat parasites, isolate the infected region with a wall of connective tissue, but the toughening process characteristic of senescence is accomplished at the expense of functioning cells and thus the same agent which protects ultimately destroys.

The child has less combative powers against disease, but greater recuperative powers than the adult. The prevalence of infections among the young indicate that senescence both protects the body from microbes and produces degenerative diseases. Men who age slowly are longer susceptible to zymotic diseases, and those who inherit a tendency to become prematurely old are very refractive to infection. It is evident that in the matter of resistance families may be divided into two classes, which may be termed the tender and the indurated. Members of the tender families are in danger for a longer period of contracting bacterial diseases, but, these escaped, senescence does not destroy them until they have reached a very old age. On the other hand, members of indurated families resist infections well, but grow senile early. Insurance companies look with suspicion upon the applicant whose family history gives indication of his belonging to a tender family. This is not the right mode of regarding the question. A man with tuberculosis in the family history is a decreasing risk—dangerous for term insurance; much better for a whole life policy. Individuals with apoplexy in their parentage belong to the indurated class—good risks while young, but hazardous as the years go by; safe for term insurance, but dangerous for life. Indians and negroes belong to the tender class, but are the most apt to produce centenarians. Civilized people are the most highly indurated. It is true that through natural selection inherited immunity has increased, but cirrhotic diseases, which are the end results of immunity, have increased at the same rate. MacDonald argues that those who would lessen infection by producing immunity are putting the cart before the horse. In the same ratio as the number of microbes are decreased will senescence decrease.—*Southern California Practitioner,* May, 1911.

Diatheses from the Modern Viewpoint.—A symposium on this subject was held at the recent German Congress for Internal Medicine in Wiesbaden. His, representing the internists, defined a diathesis as a basic condition due to inheritance or individual disposition, which is expressed in manifold ways. Thus there is a diathesis expressed by gout, obesity, and diabetes, and more distantly by cholelithiasis, arteriosclerosis, and certain dermatoses and psychoses. Children of such stock exhibit concentrated urine, bed-wetting, chlorosis, migraine, asthma, and psoriasis. The diathesis underlying all these affections is the arthritism of French clinicians, a condition believed to be peculiar to the intellectual and the sedentary, and to degenerating races. To gout in this diathesis should be added chronic arthritis. Another basic condition to be regarded as a diathesis is that known variously as rachitis, in the broadest sense of the term, and also as the exudative or the spasmophilic diathesis. A third is infantilism in its widest sense. A group of affections, all of which are characterized by eosinophilia is believed to indicate a special diathesis. The neuropathic constitution or diathesis is well known. Pfaundler spoke for the pediatrists. Scrofula, he said, is not in itself a diathesis, for it rests upon a more deeply seated condition, the so-called status thymicolymphaticus, the "pasty" diathesis. This notion is so expanded as to embrace a large proportion of infantile ailments—enlarged lymph nodes, catarrhal processes, dermatoses, vasomtor disturbances, neuropathies, dystrophies, spasmophilia, etc. The author alludes to this polymorphism as representing a "colossal mutation." The exudative diathesis is naturally comprised under the preceding. Bloch represented the dermatologists. The most important diathesis to the latter is the arthritism of the French. This he believes to be due to allergy or supersensitiveness to certain irritants, both exogenous and endogenous. He applies the term physiological diathesis to puberty, gestation, and the climacteric. Mendelssohn, speaking for French medicine, laid most weight on the inborn element which represents sluggish nutrition. The life of the arthritic is often one long clinical history. The infinite variety of individual disorders best illustrates the intimate nature of the underlying disposition. —*Deutsche medizinische Wochenschrift,* May 4, 1911.

Insurance Nursing in Rochester.—Nellie C. Linsay, R.N., outlines the work which she is called upon to do in her capacity as visiting nurse for the Metropolitan Life Insurance Company in Rochester, N. Y. The actual treatment and care given by the nurse is the least of her activities. From the standpoint of prevention her value consists in the education, along sanitary and hygienic lines, which she spreads broadcast among the homes that she visits. Miss Linsay began her insurance work in Rochester, on September 1, 1910. In the six months following she made 1118 visits on 278 patients. These are industrial policyholders, and many of them are very poor, as well as ignorant. The agent, in one of his periodical calls finds something wrong, and the nurse is sent to investigate. If she finds a child is really ill, and the parents are unable to pay for medical attendance, the overseer of the poor is notified and he sends a physician or has the patient admitted to hospital. In other cases of serious illness a special nurse is detailed to the case. The people grow to regard the visiting nurse as a confidant, and often call upon her for advice in sanitary and other matters, even when there is no illness in the family.—*The American Journal of Nursing,* May, 1911.

Increasing Insurance.—Twenty years ago the average life insurance policy was for $2,500; now it is more than $3,000.—*Baltimore American.*

Accident Days.—Statistics based upon the results of an investigation into the causes of accidents among industrial workers, carried on for a number of years in Germany, show that the greatest number of casualties occur on Saturday, while Monday is a close second. The large number of accidents on Saturdays is generally explained by the fatigue of the week telling on the men, but it is noted also that the Monday accidents are about as numerous. This gives rise to the suggestion that the day of rest is sometimes not too wisely spent.

Age and Sex in Relation to Accidents.—German statistics, recently published, of accidents among laborers of all classes show that the percentage of the number of injured increases progressively from 4 in each 1,000 male workers between the ages of 18 and 20 to 16 per 1,000 among those between 60 and 70 years. At no time of life, however, is the average number of women workers injured greater than 3.25 per 1,000.

Causes of Death.—Naturally, applicants for life insurance may be expected to put as good a face as possible on the reports concerning relatives and the causes of their deaths, but they sometimes make rather amusing statements. Some one has collected a few of these which were originally published in the *British Medical Journal:* "Mother died in infancy." "Father went to bed feeling well, and the next morning woke up dead." "Grandfather died suddenly at the age of 103. Up to this time he bid fair to reach a ripe old age." "Applicant does not know cause of mother's death, but states that she fully recovered from her last illness." "Applicant has never been fatally sick." "Applicant's brother, who was an infant, died when he was a mere child." "Grandfather died from gunshot wound, caused by an arrow shot by an Indian." "Applicant's fraternal parents died when he was a child." "Mother's last illness was caused from chronic rheumatism, but she was cured before death." "Father died suddenly; nothing serious." There is a delightful innocence about some of these. Take the last, for example. This has a Western flavor, as though the applicant appreciated father's having made little fuss about it. When the time came he simply went, that was all.—*Journal of the American Medical Association.*

Book Reviews.

Practical Dietetics. With Reference to Diet in Disease. By Alida Frances Pattee, Graduate, Department of Household Arts, State Normal School, Framingham, Mass.; late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City; former Instructor at Mount Sinai, Hahnemann, and the Flower Hospital Training School for Nurses, New York City; Lakeside, St. Mary's, Trinity, and Wisconsin Training Schools for Nurses, Milwaukee, Wis.; St. Joseph's Hospital, Chicago, Ill.; St. Vincent de Paul Hospital, Brockville, Ont., Can. Sixth Edition. $1.50. New York: A. F. Pattee, 1910.

This book is now in the sixth edition, and covers the field very thoroughly. The large number of clear and intelligible recipes for the preparation of various dishes for the patient should make it indispensable to those who have occasion to prepare food for the sick. The special diets drescribed for certain diseases, and the tabular estimates of food values, etc., go to make an invaluable book of reference for nurses. The writings of well-known physicians who are authorities on the subject have been wisely consulted in the preparation of the second portion, "Diet and Disease."

American Practice of Surgery. A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors: Joseph D. Bryant, M.D., LL.D.; Albert H. Buck, M.D., of New York City. Complete in Eight Volumes. Profusely illustrated. Volume VIII. New York: William Wood & Company, 1911.

With this volume is completed this great system of surgery, the largest and most exhaustive work on this branch, so far as the reviewer knows, in any language. The volume opens with the concluding portion of Regional Surgery. The first article is on Intrathoracic Surgery, by Joseph and J. Louis Ransahoff of Cincinnati. In this the authors describe the method of operating in the differential pressure chamber as modified and improved by Willy Meyer. Then follow articles on the surgery of the adominal organs: the spleen, by A. E. Garrow of Montreal; the kidneys and ureters, by James Bell of Montreal; the pancreas, by G. D. Stewart of New York; the liver, gallbladder, and biliary passages, also by Stewart; urinary bladder and prostate, by A. H. Ferguson of Chicago; the ovaries and Fallopian tubes, by B. R. Schenck of Detroit; the uterus and its ligaments, by John B. Murphy and F. W. Lynch of Chicago. Two brief but very valuable articles, on "Extrauterine Pregnancy" and "The Cesarean Section and Its Substitutes," are contributed by Lewis S. McMurtry of Louisville. With these closes what may be called the practical portion of the work.

The remaining half of the volume contains a number of valuable and interesting articles, beginning with one entitled "The Law in Its Relations to the Practice of Surgery," by Stephen and Sidney Smith of New York, in which the mutual obligations of the surgeon and his patient are discussed at length. Part XVIII, with which the volume closes, is entitled "Administrative Surgical Work," the first article being a timely one on "Hospitals and Hospital Management, More Particularly with Reference to the Surgical Needs of These Institutions," by C. R. Holmes of Cincinnati. The author condemns the recent movement to abandon the pavilion plan of hospital construction and adopt the "sky-scraper" in its place, the only argument in favor of which is the economy of ground. The new Rudolph Virchow Hospital in Berlin is described by him at length as being a type of what a large urban hospital should be. An article on "Military Surgery" by Major Charles Lynch treats of the military medical organization of the United States, the personnel, the rank and pay of the medical officers, their duties; field hospitals, convalescent camps, transportation of the wounded, and everything that is peculiar to this branch of medicine. It is illustrated with a number of interesting photographs of the Japanese military hospitals, hospital cars, supply depots, etc., during the war with Russia. Following this is another excellent article on "Naval Surgery," by Surgeon-General C. F. Stokes, U. S. N., in which the peculiar difficulties of caring for the wounded on shipboard during an engagement are well described and illustrated by photographs of the wounded in the Russo-Japanese war. One picture, in particular, of the boat deck of the *Orel* after the battle of Japan Sea, shows how impossible it often is to give first-aid to the wounded during a battle.

An appendix contains an article on "The Relation of Blood-Pressure to Surgery," by J. E. Sweet of Philadelphia, in which this new subject is excellently treated, and the indications for the administration of vasoconstrictors (not alcohol) are demonstrated. A very full and well arranged general index completes the volume.

It is impossible to review adequately a work of this character in the limited space at command, for it is really a collection of over one hundred monographs, embracing the entire domain of surgery, each one of which is important enough to claim a critical notice for itself. One is struck, in studying the volumes of the series, by the discriminating sense of proportion displayed by the editors in fixing limits to the work of the various authors. It is seldom that one feels that too much space is given to a comparatively unimportant subject or that the treatment of an important subject has been kept within too narrow compass. This is no doubt due to the ideal editorial association of a practical surgeon, himself a writer and an acknowledged authority, with an editor of the widest experience and reputation. The illustrations are numerous and of a superior order, consisting of half-tones, line drawings, and full-page plates, and the typography, paper, and binding make the volumes most pleasing to the eye.

Diseases of the Anus, Rectum, and Sigmoid. For the Use of Students and General Practitioners. By Samuel T. Earle, M.D., Professor Emeritus of Diseases of the Rectum in the Baltimore Medical College, Surgeon in Charge of Rectal Diseases at St. Joseph's Hospital, the Hebrew Hospital, and the Hospital for Women. With 152 illustrations in the text. Price, $5.00 net. Philadelphia and London: J. B. Lippincott, 1911.

In preparing this book the aim of the author has been to include the most recent and effective methods of cure and to give these comprehensively and succinctly, so that they may be readily available to the busy practitioner. There are many conditions in the province of rectal surgery that the general practitioner is frequently compelled to treat unaided, and that he is none the less competent to treat. With these guiding thoughts the author has succeeded in presenting an eminently useful book, available both for study and reference. As an example of the comprehensive manner in which the various subjects are discussed may be mentioned the chapter on constipation. All the available methods of treatment are given: massage, hydrotherapy, electricity, medicinal and operative treatment, and psychotherapy. The subjects of anorectal fistula and hemorrhoids are covered in satisfying detail. The rarer conditions affecting the lower end of the alimentary tract, such as infection by *Bilharzia hematobia*, actinomycosis, spontaneous gangrene of the rectum, hysterical or irritable rectum, and neuralgia of the rectum, are all described in addition to the more common disorders. The author advocates the use of general anesthesia in operative work on the rectum, although he describes the method of applying local anesthesia. He apparently ignores the utility of sterile water anesthesia, although he devotes several pages to the subject of quinin and urea hydrochlorid as a local anesthetic and to the subject of spinal anesthesia. The most recent writings on various subjects are quoted in full. The illustrations are numerous and contribute to the lucidity of the text. The author has succeeded in covering this extensive field in a satisfactory manner.

Les Appareils Plâtrés. Par le Docteur Jean Privat, Assistant a Paris du Dr. Calot, de Berck. Préface du Dr. Calot. Avec 268 figures originales dans le texte. Prix, 6 fr. Paris: A. Maloine; Toulouse: Edourd Privat, 1910.

This volume presents every little detail connected with the subject of plaster of Paris apparatus. The text is accompanied by a surprisingly large number of original drawings showing every step in the preparation and application of the apparatus. Apparently nothing of value that relates to this subject has been omitted. The book is divided into three parts. The first treats of the preparation of the apparatus and of the patient. The second part deals with the manner of applying various forms of plaster of Paris apparatus, the indications and technique of each kind being presented in great detail. The third division of the book takes up the subject of the care of the apparatus and the means that may be employed to add to the comfort of the patient. One notes the simplicity of the author's technique. This is particularly manifested in the large numbers of improvised methods of suspending the patient preparatory to the application of a plaster jacket. This work may be recommended to all those who do only a little of this kind of work as well as to those who frequently employ plaster of Paris apparatus, as an eminently useful book that cannot fail to offer many valuable suggestions.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

NEVADA STATE BOARD OF MEDICAL EXAMINERS.

May 1, 2, 3, 1911.

ANATOMY.

1. Locate Peyer's patches or glands. Of what are they composed?
2. What muscle closes the lips?
3. Name the seven openings of the pharynx.
4. Name the duct or canal of the pancreas.
5. What is the action of the cremaster muscle?
6. Where is the coracoid process? Of what bone is it a part?
7. Describe the diaphragm; name its openings and what passes through them.
8. Give origin, termination, and division of the large intestine.
9-10. Name the cartilages of the larynx, the single ones and the pairs.

PHYSIOLOGY.

1. Give the average number of red corpuscles per c.mm. in the human blood. (*a*) What is the function of red corpuscles, and upon the presence of what substance does that function depend?
2. Give approximate weight of blood to weight of human body.
3. What secretion contains a free acid?
4. What are the principal functions of the medulla oblongata?
5. What do you know about the circulation of the lymph?
6. What is the general physiological importance of bile?
7. What is the final fate of fat in the tissues?
8. Where is urea formed in the body?
9. What percentage of urea does normal urine contain?
10. Give the structural changes in the uterus during menstruation. (*a*) Upon what organs does the periodicity of these phenomena depend?

MATERIA MEDICA AND THERAPEUTICS.

1. Give six methods by which medicines are administered.
2. Give general principles governing the dose as to sex, age, weight. Give exceptions to the rule.
3. Give rules for converting apothecaries into metric weights and measures; metric into apothecaries.
4. Give rule as to time and frequency of administration of remedies.
5. Give general rules for dosage of tincture; fluid and solid extracts.
6. Give three methods of action by which a drug may slow the heart action. Three by which it may quicken the heart action.
7. What is a specific? What is bromism? What is iodism?
8. Describe the difference of action of a saline and a vegetable cathartic.
9. Give the probable course of a dose of iron. What quantity is absorbed daily?
10. What is aconite? Describe its physiological action

CHEMISTRY AND TOXICOLOGY.

1. Name the abnormal constituents of urine.
2. With what class of drugs are the heavy metals incompatible?
3. Define a chemical compound; a mixture. Give examples.
4. What are the constituents of pure air? Note changes that take place in overcrowded room. Give test for excess of carbonic oxide.
5. Where and in what form is salol absorbed? How eliminated?
6. Give symptoms of poisoning by coal tar antipyretics.
7. Give symptoms of chloral poisoning. What commonly used proprietary articles may produce chloral poisoning?
8. Give symptoms of acute and chronic arsenical poisoning.
9. Describe a case of phenol poisoning. Give danger signal when used in medicinal doses or locally.
10. What are the symptoms of the cumulative effect of digitalis?

BACTERIOLOGY.

1. Give the principles of the methods of examining and staining for bacteria.
2. Given a specimen of sputum describe the steps taken to find the presence or absence of the tubercle bacillus.
3. Describe the preparation of and the varieties of culture media.
4. What is a bacterial vaccine, and how it is made?
5. How do bacteria multiply?
6. Differentiate between the *B. coli communis* and *B. typhosus.*
7. How would you obtain a culture from a case of diphtheria, and describe method used in staining?
8. Give in detail the method you would use to control an epidemic of scarlet fever.
9. What microorganisms are most commonly associated with suppuration?
10. Describe the *Bacillus anthracis.*

PATHOLOGY.

1. Describe the steps necessary to mount a specimen for pathological examination.
2. Describe the appearance, under the microscope, of a healed tubercle.
3. Differentiate microscopically between carcinoma and sarcoma.
4. Give the pathology of myxedema.
5. Give the pathology of syringomyelia.
6. Give the pathology of scurvy.
7. Describe the process of hyaline degeneration; fatty degeneration.
8. Describe the conditions of the intestinal tract during an attack of summer diarrhea.
9. What are local infections?
10. Define anemia, hyperemia, immunity.

PRACTICE OF MEDICINE.

1. Give the symptoms and treatment of sciatica.
2. What is chlorosis, and how should it be treated?
3. Give the symptoms and treatment of cirrhosis of the liver.
4. Give the symptoms, diagnosis, and treatment of influenza.
5. Give the etiology, symptoms, and treatment of acute peritonitis.
6. Define vocal fremitus, and state its significance in pulmonary disease.
7. Define bronchiectasis, and give symptomatology and treatment.
8. Differentiate a hemic murmur from a murmur of organic disease.
9. What is acute ascending paralysis, its etiology, symptoms, and treatment?
10. Poisoning by what drug would be indicated by the following symptoms: Flushed face, thirst, dry fauces, double vision, dilated pupils, giddiness, delirium, and stupor? What treatment should be employed?

OBSTETRICS.

1. How would you distinguish a primiparous from a multiparous woman?
2. Of what use is the "bag of waters"? When would you rupture it?
3. What is the hour-glass contraction? How would you overcome it to remove the placenta?
4. What is meant by "prolapsus of the funis"? What are the dangers, and how would you treat it?
5. What means would you employ to prevent laceration of the perineum when the head is well down and the expulsive pains strong?
6. Give symptoms of pregnancy and their relative importance.
7. Name the external and internal female organs of generation.
8. Give cause and treatment of flatulent distention of the abdomen following labor.
9. What do you understand by a "dry labor," and what disadvantages may result from it?
10. How long after the child is born would you wait for the placenta to pass?

SURGERY.

1. Give as many of the causes as you know of for delayed union or nonunion of the fractures. (*a*) Give a method of operation for ununited fractures.
2. Describe your operation for the radical cure of inguinal hernia.
3. What is a Colles' fracture?
4. Give diagnostic signs of fracture of neck of the femur.
5. Give the symptoms of abscess of cerebrum.
6. Name and describe two operations for the removal of hemorrhoids.
7. Give surgical treatment for volvulus.

8. Name and describe two methods for the removal of vesical calculus.
9. Symptoms and radical treatment for gastric ulcer.
10. Etiology and treatment of lymphangitis.

GENITOURINARY SURGERY AND DERMATOLOGY.

1. Differentiate uremic coma.
2. How would you treat a case of renal colic?
3. What are the symptoms and treatment of chronic urethritis?
4. What are the causes, symptoms, and treatment of neuralgia of the testicle?
5. What is the predisposing cause and treatment of epithelioma of the scrotum?
6. What is lepra?
7. What is erythema hyperæmicum?
8. What are the causes and treatment of a carbuncle?
9. Describe the salvarsan treatment for syphilis.
10. Differentially diagnose tinea tonsurans from alopecia areata.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

NEVADA STATE BOARD OF MEDICAL EXAMINERS.

May 1, 2, 3, 1911.

ANATOMY.

1. Peyer's patches or glands are situated in the small intestine, chiefly in the ileum. They are opposite the mesenteric attachment. They are composed of solitary follicles (of lymphoid tissue).
2. The orbicularis oris muscle closes the lips.
3. The *seven openings of the pharynx* are: Two Eustachian tubes, larynx, esophagus, mouth, and two posterior nares.
4. The duct of the pancreas is Wirsung's duct.
5. The cremaster muscle raises the testicle and draws it towards the external abdominal ring.
6. The coracoid process may be felt about an inch below the junction of the middle and outer thirds of the clavicle; it is a part of the scapula.
7. The *diaphragm* is a musculofibrous septum which divides the thoracic from the abdominal cavity; it is fan-shaped; the broad elliptical portion is horizontal, and the crura are vertical. It is attached to the ensiform, to the internal surfaces of the lower six costal cartilages, to bodies and intervertebral substances of first, second, and third lumbar vertebræ. Its *openings* are: (1) The aortic, transmitting the aorta, vena azygos major, and the thoracic duct; (2) the esophageal, transmitting the esophagus, pneumogastric nerves, and some small esophageal arteries; (3) the opening for the vena cava, transmitting the inferior vena cava, and small branches of the right phrenic nerve; (4) the right crural, transmitting the right splanchnic nerves; (5) the left crural, transmitting the left splanchnic nerves and the vena azygos minor.
8. The large intestine begins at the termination of the ileum, in the right inguinal region, and terminates at the anus. It is divided into: cecum, colon (ascending, transverse, and descending), sigmoid flexure, rectum, and anal canal.
9 and 10. There are *three single* cartilages of the larynx: thyroid, cricoid, and epiglottis; and *three pairs:* arytenoids, cuneiforms, and cornicula laryngis.

PHYSIOLOGY.

1. There are about 5,000,000 red corpuscles per c.mm. in the male, and about 4,500,000 in the female. The function of the red corpuscles is to carry oxygen to the tissues; this depends on the presence of hemoglobin.
2. The weight of blood is approximately about 1/13 of the body weight.
3. The gastric juice contains a free acid (hydrochloric acid).
4. The *functions of the medulla oblongata* are: (1) It is a conductor of nervous impulses or impressions from the cord to the cerebrum, from the brain to the spinal cord, also of coordinating impulses from the cerebellum to the cord; (2) it contains collections of gray matter which serve as special nerve centers for the following functions or actions: respiration, salivary secretion, mastication, sucking, deglutition, vomiting, voice, facial expression; it also contains the cardiac and vasomotor centers.
5. The lymphatic circulation is, strictly speaking, not a circulation at all; since the lymph flows only in one direction, namely, toward the heart. The lymph capillaries take up any excess of the blood plasma which is not required for the nutrition of the tissues. These capillaries consist of a single layer of epithelium, and empty themselves into vessels very like the veins. The lymph vessels are well provided with valves, which are so closely approximated as to give the vessels a beaded appearance. All the lymphatic vessels, except those of the right upper half of the body, empty into the thoracic duct, which terminates in the left subclavian vein, where the left internal jugular vein also enters. Those from the right upper half of the body discharge into the right lymphatic duct, which, in turn, empties into the right subclavian vein at its junction with the right internal jugular vein.
6. *The functions of the bile* are: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.
7. *The fate of fat in the tissues:* "(1) It may be oxidized with the formation of heat energy; (2) it may be stored in the tissues as part of the body fat; (3) it may be synthesized with other substances to form some more complex constituent of the body, such as lecithin; (4) according to some authors, it may serve under certain conditions as a source of sugar."—(Howell.)
8. Urea is formed chiefly in the liver; probably also in some other organs or tissues not yet determined.
9. The urine contains about 2 per cent. of urea.
10. See Williams' "Obstetrics" (1909), page 82; or Hirst's "Obstetrics" (1909), pages 57 and 65.

MATERIA MEDICA AND THERAPEUTICS.

1. *Medicine can be administered:* (1) By the mouth; (2) by the rectum; (3) by inhalation; (4) by inunction; (5) hypodermically; (6) by intravenous injection; (7) by fumigation; (8) by cataphoresis.
2. As a general rule women require smaller doses than men; and heavy people larger doses than slight ones.
To determine the proper dosage for a child: Let x = the age of a patient; then $\frac{x}{x+12}$ = the fraction of the adult dose which the patient should receive. Thus, a patient of four years old should receive $\frac{4}{4+12} = \frac{4}{16} = \frac{1}{4}$ of an adult dose.
Children bear opiates badly; but they can take relatively large doses of belladonna, calomel, ipecac, arsenic, rhubarb.
3. Roughly, 1 gram may be said to be equivalent to 15½ grains; 1 grain to be equivalent to 0.06 gram; and 1 minim to be equivalent to 0.06 c.c.
4. Often it is immaterial when a medicine is given; often too, the needs of the body (such as sleep and meals) indicate the time when the medicine should be administered. As a rule medicines intended to act on the stomach should be given before meals; others an hour or two after meals. Irritant medicines (such as arsenic) should be given soon after meals. Slowly acting purgatives are given at bedtime, hypnotics at or before bedtime, santonin at night.
The frequency must depend on the action of the drug and the therapeutic effect desired. Generally, "three times a day," with reference to meals, is a good rule; but drugs with transient effect (such as nitroglycerin, ammonium carbonate, hydrocyanic acid) may be given more frequently; and those which have a sustained action (such as quinine, digitalis, arsenic) may be given less frequently.
5. As a general rule, *tinctures* may be given in doses of from 5 to 60 minims; *extracts*, 5 grains; *fluid extracts*, 10 minims. But the exceptions are so numerous that these rules have little or no value.
6. *A drug may slow the heart action* by: (1) Depressing the cardiac muscle; (2) by stimulating the inhibitory mechanism of the heart; (3) by depressing the accelerator mechanism of the heart.
A drug may quicken the heart action by the opposite of the above methods.
7. A *specific* is a remedy which has a definite curative action in relation to a particular disease, such as quinine in malaria.
Bromism is a condition which results from the long-continued use of bromids. This condition is characterized by headache, coldness of the extremities, feebleness of heart action, somnolence, anorexia, apathy, pallor of the skin, an acne eruption, and lowered sensibility of the fauces. There may be loss of sexual power, with atrophy of the testes and mamma.

Iodism is the term applied to the condition produced by the prolonged use of iodin and its compounds. It is characterized by violent coryza, headache, a metallic taste in the mouth, increased salivary secretion, gastric irritation, and an acne rash.

8. *Salines* "act by stimulating the intestinal glands to increased secretion, and by their low diffusibility impede reabsorption, causing an accumulation of fluid in the intestinal tract which, partly from the effect of gravity and partly by gentle stimulation of peristalsis excited by distention, reaches the rectum and produces a copious evacuation."—(Potter.)

A *vegetable cathartic* causes active peristalsis and increased secretion of the intestinal glands, with irritation.

9. "In the stomach all iron preparations are changed to the chloride by the hydrochloric acid of the gastric juice, and in the duodenum to an alkaline albuminate. The greater portion is carried on through the intestinal canal, where it is converted into a sulphide, which blackens the feces; a part, however, is absorbed by the intestinal epithelium in solid form and perhaps in solution. After reaching the blood by way of the lymph channels this small quantity of absorbed iron is deposited in the spleen, where it may undergo some changes, is again taken up by the blood and deposited in the liver and perhaps in the bone marrow. In the liver the originally inorganic iron is converted into higher forms and eventually into hemoglobin, ferratin being probably one step in the series. When there is no deficiency of iron in the system the liver slowly yields its store to the blood again, to be carried to the cecum and large intestine, by the epithelium of which it is finally excreted."—(Potter's *Therapeutics, Materia Medica,* etc.)

10. Aconite is the dried root of *Aconitum napellus.* It first stimulates and then paralyzes the heart and also the sensory nerves. it lowers blood-pressure, dilates the peripheral blood-vessels, is a respiratory sedative, reduces body temperature, and is a diuretic and diaphoretic.

CHEMISTRY AND TOXICOLOGY.

1. *Abnormal constituents of urine:* Albumin, sugar, blood, pus, bile, mucus, chyle, bacteria, casts, parasites.

2. Alkaloids.

3. A *chemical compound* is a substance containing two or more elements chemically united in definite proportions, as chloroform, phenol. A *mixture* is the product obtained by uniting into a more or less homogeneous whole two or more substances, whether elements or compounds, and without any chemical union, as milk and water.

4. The *constituents of pure air* are: Oxygen, nitrogen (including argon, etc.), and carbon dioxide. In an overcrowded room the oxygen is diminished, the nitrogen remains about the same, the carbon dioxide is increased, various organic products appear.

The changes produced in the *air* by respiration are:

	INSPIRED AIR.	EXPIRED AIR.
Oxygen	21 per cent.	16.6 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	0.04 per cent.	4.4 per cent.
Other gases	Rare.	Often present
Watery vapor	Variable.	Saturated.
Temperature	Variable.	That of body.
Volume	Varies.	Diminished.
Bacteria	Always present.	None.
Dust	Always present	None.

Carbonic oxide is *carbon monoxide.*

5. Salol is decomposed in the small intestine into phenol and salicylic acid. It is absorbed in the small intestine and eliminated in the urine.

6. Lividity, restlessness, dyspnea, cold perspiration, chills, convulsions, lowered blood-pressure, slow respiration, vomiting, motor paralysis, and coma.

7. *Symptoms of chloral poisoning:* Deep sleep, accelerated pulse, dilated pupils, deep and irregular respiration. Later the face becomes white or livid, the pupils contracted, body temperature falls, circulation and respiration become weaker.

Chloral poisoning may be produced by: Chloralose, chloralamid, dormiol.

8. The *symptoms of acute arsenical poisoning:* "In acute cases the symptoms usually begin in from 20 to 45 minutes. Nausea and faintness. Violent, burning pain in the stomach, which becomes more and more intense, and increases on pressure. Persisting and distressing vomiting of matters, sometimes brown or gray, or streaked with blood, or green (Paris green). Purging. More or less severe cramps in the lower extremities."

In *chronic arsenical poisoning:* "Inflammation of conjunctivæ with intolerance of light. Irritation of the skin, with eruption (eczema arsenicale), local paralysis, great weakness and emaciation, exfoliation of the skin, and falling out of the hair."—(Witthaus' *Essentials of Chemistry.*)

9 *Symptoms in carbolic acid poisoning:* Buccal mucous membrane is whitened and hardened; vomiting; burning pain in mouth, esophagus, and stomach; pulse and body temperature are lowered; the pupils are contracted; collapse, and finally death. The urine may become dark. The following symptoms indicate over-absorption of carbolic acid (from a surgical dressing): The urine becomes of a smoky or greenish or black color, and is apt to contain albumin; the temperature becomes subnormal, the respirations and pulse feeble; this is followed by muscular weakness and vertigo.

10. *Symptoms of cumulative effect of digitalis:* Weak, dicrotic pulse, perspiration, nausea, vomiting, lowered reflexes, lowered body temperature, vertigo, muscular tremors, lassitude, delirium, stupor.

BACTERIOOGY.

1. See French's "Practice of Medicine" (1910), page 1257.

2. To demonstrate the existence of *tubercle bacilli* in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbolfuchsin and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue.

3. See French's "Practice of Medicine" (1910), page 1264.

4. A bacterial vaccine is an emulsion of dead cultures of specific bacteria in a saline solution.

5. Bacteria multiply by fission. A bacterium about to divide seems to be larger than normal, and if it is a coccus it becomes more ovoid; changes occur first in the nucleus, and the bacterium just falls in two. Cocci may divide in one, two, or three directions of space; bacilli divide transversely to their long axis, and spirilla divide transversely to their long diameter.

6. *To distinguish the typhoid bacillus from the colon bacillus:* (1) On gelatin plates the colonies of typhoid develop more slowly than those of colon bacillus. (2) The colon bacillus causes fermentation with production of gas in media which contain sugar; the typhoid bacillus does not. (3) The colon bacillus produces a strong acid reaction and coagulates milk within twenty-four to forty-eight hours; the typhoid bacillus does not coagulate milk. (4) In peptone solution the colon bacillus produces indol; the typhoid bacillus does not. (5) The typhoid bacillus gives the Widal reaction with typhoid serum; the colon bacillus does not.

7. A sterile swab is rubbed over any visible membrane on the tonsils or throat, and is then immediately passed over the surface of the serum in a culture tube. The tube of culture, thus inoculated, is placed in an incubator at 37° C. for about twelve hours, when it is ready for examination. A sterile platinum wire is inserted into the culture tube, and a number of colonies of a whitish color are removed by it and placed on a clean cover slip and smeared over its surface. The smear is allowed to dry, is passed two or three times through a flame to fix the bacteria, and is then covered for about five or six minutes with a Loeffler's methylene-blue solution. The cover slip is then rinsed in clean water, dried, and mounted. The bacilli of diphtheria appear as short, thick rods with rounded ends; irregular forms are characteristic of this bacillus, and the staining will appear pronounced in some parts of the bacilli and deficient in other parts. *Methods of culture:* The bacillus of diphtheria grows upon all the ordinary culture media, and can be readily obtained in pure culture. Loeffler's blood serum, particularly with the addition of a little glucose, is an admirable medium for the rapid growth of this bacillus. The medium should be alkaline and not less than 20° C. *Method of staining:* It stains with any aqueous solution of an aniline dye, and quite characteristically with Loeffler's alkaline methylene blue. Neisser's stain is also recognized. The bacilli also stain well by Gram's method.

8. See French's "Practice of Medicine" (1910), page 324; or Osler's "Practice of Medicine" (1909), page 138.

9. *Bacteria most commonly found in suppurative processes: Staphylococcus pyogenes aureus, Staphylococcus pyogenes albus, Staphylococcus pyogenes citreus, Strepto-*

coccus pyogenes, Streptococcus erysipelatis, typhoid bacillus, gonococcus, tubercle bacillus.

10. The *Bacillus anthracis* is a large, rod-shaped microorganism, with slightly thickened ends; it is from 5 to 20 mikrons in length, and a little more than one mikron in breadth; it has a tendency to form long threads; it is nonmotile and nonflagellated; it is aërobic, and stains by all the alkaline aniline dyes and by Gram's method.

PATHOLOGY.

1. The object is first placed in some fixing fluid, then it is washed, then hardened by immersion in alcohol, then treated with some clearing agent, then placed in paraffin; it is then ready for the section cutter. After the sections are cut the next process is staining, after which the object is ready for examination.

2. See French's "Practice of Medicine" (1910), page 342

3. *Carcinoma* is apt to occur at a later age; is found in structures derived from the epiblast or hypoblast; possesses a fibrous stroma, in which are found both blood-vessels and lymphatics; metastasis is by the lymphatics.

Sarcoma is apt to occur earlier; is found in structures derived from the mesoblast; there is no stroma between the cells; the blood-vessels are in direct contact with the tumor cells; there are no lymphatics; metastasis is by the blood-vessels.

4. See French's "Practice of Medicine" (1910), page 562; or Osler's "Practice of Medicine" (1909), page 768.

5. See French's "Practice of Medicine" (1910), page 1095; or Osler's "Practice of Medicine (1909), page 943

6. See French's "Practice of Medicine" (1910), page 543; or Osler's "Practice of Medicine" (1909), page 751.

7. See French's "Practice of Medicine" (1910), pages 36 and 33.

8. See French's "Practice of Medicine" (1910), page 799; or Osler's "Practice of Medicine" (1909), page 506.

9. Local infections are such as are confined to a part, and are characterized by profound intoxication.

10. *Anemia* is a condition in which the blood is reduced either in quantity or in number of red cells, or in amount of hemoglobin.

Hyperemia is excess of blood in a part of the body.

Immunity is the power of resistance of cells and tissues to the action of pathogenic bacteria. Immunity may be either natural or acquired.

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), pages 1031 and 1032; or Osler's "Practice of Medicine" (1909), pages 1039 and 1040.

2. See French's "Practice of Medicine" (1910), pages 521 and 523; or Osler's "Practice of Medicine" (1909), pages 721 and 730.

3. See French's "Practice of Medicine" (1910), pages 845 and 847; or Osler's "Practice of Medicine" (1909), pages 558, 561, and 562.

4. See French's "Practice of Medicine" (1910), pages 133 and 137; or Osler's "Practice of Medicine" (1909), pages 153 and 155.

5. See French's "Practice of Medicine" (1910), pages 881, 882, and 886; or Osler's "Practice of Medicine" (1909), pages 580, 582, and 591.

6. By *vocal fremitus* is meant a vibration felt on the surface of the chest when the patient speaks. It is *increased* in lobar pneumonia, phthisis, and bronchopneumonia; *decreased* in pleural effusions, emphysema, collapse of the lung, pulmonary edema and tumors.

7. See French's "Practice of Medicine" (1910), pages 672 and 673; or Osler's "Practice of Medicine" (1909), pages 607 and 608.

8. *Organic murmurs* are due to stenosis or incompetency of one or more of the valves of the heart.

Functional murmurs are not due to valvular disease.

Organic murmurs may be systolic or diastolic; may be accompanied by marked dilatation or hypertrophy, and there will probably be a history of rheumatism or of some other disease capable of producing endocarditis. Whereas a murmur, usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient, is a *hemic* or *functional* murmur, and denotes as a rule an impoverished condition of the blood.

9. See French's "Practice of Medicine" (1910), page 1072; or Osler's "Practice of Medicine" (1909), page 918.

10. Belladonna poisoning.

The stomach should be washed out; strong coffee may be given; the patient should be kept awake; stimulants, pilocarpine, and artificial respiration are also indicated.

I. OBSTETRICS.

PRIMIPARA.	MULTIPARA.
The fourchet is present.	The fourchet is missing.
The perineum is tense and deep.	The perineum is relaxed and probably torn.
The labia are in apposition.	The vulva is frequently patulous.
The vagina possesses tonicity, and is rough and rugous, with a granular feel.	The vagina is relaxed and smooth.
The cervix is long, soft, and conical; the os is undilated.	The cervix is large, cylindrical, short, not so soft, and probably lacerated; the os is patulous.
The abdomen is full, rounded, tense, and resisting to the touch.	The abdominal walls are relaxed and non-resisting to the touch; the skin is loose and wrinkled.
Dark, purplish-red striæ appear late in pregnancy.	The striæ may be both white and livid, the former being present from the beginning of pregnancy.
The breasts are full, firm, and sensitive to pressure.	The breasts are flabby, pendulous, and non-sensitive to pressure.
The nipples are usually small and undeveloped or even inverted.	The nipples are large and well developed.
Striæ are absent from the breast.	Striæ are frequently to be found.

—(From Dorland's *Obstetrics.*)

2. *Use of the bag of waters:* (*a*) *During Pregnancy:* (1) As a protection to the fetus against pressure and shocks from without. (2) As a protection to the uterus from excessive fetal movements. (3) It distends the uterus, and thus allows for the growth and movements of the fetus. (4) It receives the excretions of the fetus. (5) It surrounds the fetus with a medium of equable temperature, and serves to prevent loss of heat (6) It prevents the formation of adhesions between the fetus and the walls of the amniotic sac. (7) It has been supposed, by some, to afford some slight nutrition to the fetus.

(*b*) *During Labor:* It acts as a fluid wedge, and dilates the os uteri and the cervix; it also slightly lubricates the parts.

See Williams' "Obstetrics" (1909), page 313.

3. See Williams' "Obstetrics" (1909), pages 664 and 477.

4. See Williams' "Obstetrics" (1909), page 842; or Hirst's "Obstetrics" (1909), page 625.

5. See Williams' "Obstetrics" (1909), page 317; or Hirst's "Obstetrics" (1909), page 335.

6. *Positive signs of pregnancy:* (1) Hearing the fetal heart sound; (2) active movement of the fetus; (3) ballottement; (4) outlining the fetus in whole or part by palpation; and (5) the umbilical or funic souffle.

Doubtful signs of pregnancy: (1) Progressive enlargement of the uterus; (2) Hegar's sign; (3) Braxton Hick's sign; (4) uterine murmur; (5) cessation of menstruation; (6) changes in the breasts; (7) discoloration of the vagina and cervix; (8) pigmentation and striæ; (9) morning sickness.

Subjective signs of pregnancy, in the order of their appearance, are: Cessation of menstruation, morning sickness, increased frequency of urination, active fetal movements.

Objective signs of pregnancy, in the order of their appearance, are: Softening of the cervix, changes in the mammary glands, discoloration of the vulva and vagina, pulsation in the vaginal vault, Hegar's sign, active fetal movements, ballottement, palpation of the fetus, intermittent uterine contractions, hearing the fetal heartbeat, rate of growth of the uterine tumor.

7. See Williams' "Obstetrics" (1909), pages 26 and 38; or Hirst's "Obstetrics" (1909), page 43.

8. See Hirst's "Obstetrics" (1909), page 686.

9. A *dry labor* is one in which the membranes have ruptured prematurely, and the liquor amnii has escaped before the cervix was dilated.

See Williams' "Obstetrics" (1909), page 659; or Hirst's "Obstetrics" (1909), page 570.

10. See Williams' "Obstetrics" (1909), page 300; or Hirst's "Obstetrics" (1909), pages 344 and 434.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), page 485; or

Da Costa's "Surgery" (1908), pages 459, 460, and 466.

2. See Rose and Carless' "Surgery" (1908), page 1081; or Da Costa's "Surgery" (1908), page 978.

3. See Rose and Carless' "Surgery" (1908), page 521; or Da Costa's "Surgery" (1908), page 505.

4. See Rose and Carless' "Surgery (1908), page 537; or Da Costa's "Surgery" (1908), page 514.

5. See Rose and Carless' "Surgery" (1908), page 782; or Da Costa's "Surgery" (1908), page 718.

6. See Rose and Carless' "Surgery" (1908), page 1152; or Da Costa's "Surgery" (1908), page 1015.

7. See Rose and Carless' "Surgery" (1908), page 1115; or Da Costa's "Surgery" (1908), page 841.

8. See Rose and Carless' "Surgery" (1908), pages 1212 and 1215; or Da Costa's "Surgery" (1908), pages 1142 and 1139.

9. See Rose and Carless' "Surgery" (1908), page 991; or Da Costa's "Surgery" (1908), pages 827 and 829.

10. See Rose and Carless' "Surgery" (1908), page 358; or Da Costa's "Surgery" (1908), page 1075.

GENITOURINARY SURGERY AND DERMATOLOGY.

1. The following table (from Eisendrath's *Surgical Diagnosis*) gives the diagnosis:

TINEA TONSURANS.	ALOPECIA AREATA.
1. Slow and insidious onset.	1. Rapid onset.
2. Patches are—	2. Patches are—
(*a*) Covered with "broken-off stumps."	(*a*) Totally devoid of hair.
(*b*) More or less reddened.	(*b*) Pale and whitish.
(*c*) Rough and scaly.	(*c*) Smooth and soft.
(*d*) Follicles prominent; goose-flesh appearance.	(*d*) Follicles contracted.
3. Fungus present.	3. Absence of fungus.
4. Occurs almost exclusively in children.	4. Common in adolescence and adult life.

—(Schamberg.)

COMA FROM INTRACRANIAL INJURY.	APOPLECTIC COMA.	UREMIC COMA.	ALCOHOLIC COMA.	OPIUM POISONING.
Deep coma; may have history of onset after fall or injury. Evidence of fracture of vertex or base.	Deep coma; sudden onset. If any injury, only a scalp wound.	Deep coma. Slow onset unless convulsions have preceded the coma.	Can be aroused by supraorbital pressure unless very profound.	Can be aroused unless very deep.
Pupil dilated on side of lesion Choked disc.	Pupils unequal or dilated. Contracted in hemorrhage into the pons.	Albuminuric retinitis.	Pupils normal or somewhat dilated.	Pupils contracted to pinpoint size.
Pulse very slow.	Pulse full and slow, often arteriosclerotic high-tension pulse.	Pulse rapid.	Pulse more rapid than normal and full.	Pulse rapid, may be irregular.
Respiration slow and stertorous.	Respiration slow and irregular.	Respiration, frequent and irregular.	Regular respiration.	Respiration very slow —may be 6 to 8 per minute.
Temperature higher —101°.	Temperature higher on paralyzed side, but lower in rectum.		May be low or normal.	
Urine normal or contains trace of albumin.	Urine contains trace of albumin, but may be same as in uremia.	Urine shows albumin, casts, and low urea percentage.	Normal.	Normal.
Hemiplegia on opposite side to that of injury. If contusion of brain is also present, may have generalized convulsions.	Hemiplegia with convulsions on one side.			

2. See Rose and Carless' "Surgery" (1908, page 1178; or Da Costa's "Surgery" (1908), page 1111.

3. The usual symptoms are a very slight discharge, with the passage of shreds in the urine. The discharge is most noticeable in the morning; the shreds are composed of epithelium and a few pus cells sometimes containing gonococci. The treatment consists in stretching the urethra with sounds, followed by irrigation with some mild antiseptic solution. Astringent injections of solution of sulphate of zinc, potassium permanganate, etc., are advisable. If any unusual patches are discovered on examination with the urethroscope they should be brushed with nitrate of silver (gr. 20-℥j). Internally santal oil or balsam of copaiba will be found useful.

4. See Rose and Carless' "Surgery" (1908), page 1272.

5. See Rose and Carless' "Surgery" (1908), page 1275.

6. See French's "Practice of Medicine" (1910), page 409; or Osler's "Practice of Medicine" (1909), page 359.

7. *Erythema hyperamicum* is a form of erythema in which there is redness of the skin but no swelling and usually no subsequent desquamation.

8. See Rose and Carless' "Surgery" (1908), page 309; Da Costa's "Surgery" (1908), page 1057.

7. *Salvarsan,* also called arsenobenzol, "Ehrlich-Hata," or 606.

It is a bright yellow powder, slowly soluble in water, has an acid reaction, contains about 34 per cent. of arsenic, is used in the treatment of syphilis, but is in the experimental stage only. It would be well not to give up the older remedies yet, and not to believe all the newspaper reports on this remedy. Up to the present it seems to be uncertain whether to use the substance in a solution or in an emulsion, also whether it should be administered into a muscle, into a vein, or under the skin. Further, there are certain contraindications; and bad results have followed its use (or abuse).

Influence of Starvation and Potassium Iodide upon the Suprarenals.—Vernulet and Dmitrowsky found that in rabbits starvation is associated with a disappearance of the chromaffin substance of the suprarenals and that potassium iodide inhibits the action of the suprarenal secretion. The latter fact probably explains the property possessed by potassium iodide of diminishing blood pressure and its therapeutic value in arteriosclerosis.—*Archiv für Experimentelle Pathologie und Pharmakologie.*

Early Diagnosis of Cancer of the Uterus.—Armand Siredey states that the symptons generally considered diagnostic in cancer of the uterus, pain, fetid discharge, and hemorrhage, do not appear in the beginning of the disease, but only when it has advanced to the period of ulceration. The pain in the early stages is of the character that is met with in metritis, heavy, located in the lumbar region, and extending to the legs and pelvis. The lancinating neuralgic pains begin only when the tissue outside of the uterus containing the nerves become involved. The discharge is like ordinary leucorrhea, without the fetor that is expected until the late stages of necrosis of the growth. The symptom of hemorrhage varies much with the type and location of the growth. Hemorrhage that is repeated in the intermenstrual stage is of more value than excessive flow at the menstrual period. Extreme fetor is more apt to occur in senile metritis, due to the action of anaerobic bacteria. The only really accurate method of diagnosis is curettement and examination of the scrapings. The author advocates dilatation of the cervix, and such examination in every case of suspected cancer of the fundus.—*Le Bulletin Médical*

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Sixty-second Annual Meeting, Held at Los Angeles, Cal., June 26, 27, 28, 29, and 30, 1911.

(Special Report by Telegraph to the MEDICAL RECORD.)

HOUSE OF DELEGATES.

Monday, June 26—First Day.

DR. WILLIAM H. WELCH OF BALTIMORE, PRESIDENT, IN THE CHAIR.

President's Address.—Dr. WILLIAM H. WELCH, after calling the meeting to order, said, among other things, that the creation of the House of Delegates was one of the greatest improvements that had been brought about in the history of the association. The transaction of business had been made much easier and the fact that it was now possible for all manner of things to gain a hearing carried greater possibilities both for evil and for good. This implied a larger responsibility. Too much emphasis could not be laid on the duty of sections to select the best and wisest men as represented in the House of Delegates and these in turn should be willing to assume their share of responsibility and should select for their activities such lines of work as were of broad national interest, such lines as offered the greatest possibility of obtaining the very best results with the resources and means at hand, and they should avoid duplication of works. The methods most appropriate for the association to follow and best calculated for a thorough study of the conditions and remedies were to be found in the reports of conferences and pamphlets as set forth in the work of the association. It was customary for the president to review the work of the association and to point out important matters requiring action. The former of these would be brought to notice in the reports presented, and in regard to the latter he wished to suggest the following: First, as president he had received a letter from Major Davis, president of the American Red Cross Society, requesting that a committee from the American Medical Association be appointed to consult with a committee from the Red Cross Society as to the best methods to follow in times of distress or disaster. Dr. Welch submitted this letter and expressed the hope that the House of Delegates would take action on it. Secondly, he wished to call their attention to a suggestion made by the late Dr. Ellis of Maryland that in connection with the exhibition in celebration of the completion of the Panama Canal there should be a fitting celebration of the triumphant solution of the sanitary problems connected with the completion of the canal as no less wonderful or less important than the achievements of engineering. Dr. Welch thought that an international congress of tropical medicine would be a fitting way of bringing these sanitary achievements to the notice they deserved and recommended the appointment of a committee to make arrangements for such a congress and for the appropriation of funds for the maintenance of this desired end.

Report of the General Secretary.—DR. GEORGE H. SIMMONS of Chicago submitted this report which showed that the membership of the American Medical Association on May 1, 1910, was 34,176; on May 1, 1911, it was 33,960; a net loss for the year of 216. This loss was due to the fact that until last year continued efforts were made to get those who were taking the Journal as subscribers and who were eligible for membership in the association to have their names transferred to the rolls. For the past year they had made repeated efforts in this direction on account of the uncertainty of the final ruling of the Post Office Department regarding the mailing of the Journal to members as such. The total membership of the component State associations was 71,118, an increase over the number reported in 1910 of 972. The secretary made an urgent appeal for the adoption of a plan for the transfer of membership from one component society to another, in any State, and for a uniform system of recording membership in the various States. Another matter which deserved careful consideration was in regard to the Judicial Council. Questions of an ethical nature were constantly presenting themselves to the association and this led to the appointment of a Judicial Council in 1874. It was presumed that this council would hold meetings between the sessions of the association but no such meetings were held. The chairman of the council a few years ago reported to the House of Delegates that it was almost impossible for a case to reach the Judicial Council because of the difficulty of getting a quorum at an annual meeting. Need for such a council was greater to-day than ever before, as, with the exception of one or two States, there was no control of membership by either the State or the American Medical Association. The questions of secret division of fees, contract practice, advertising, etc., should be met and given careful consideration. The secretary, therefore, urged that the Judicial Council be reelected; that its functions be broadened; that it adopt such methods of procedure as it deemed best, with the approval of the House of Delegates; that the secretary of the association should be *ex officio* secretary of this council; and that the trustees be requested to appropriate the funds necessary to defray the expenses of the members of this council going to their meetings.

Report of the Board of Trustees.—Dr. M. L. HARRIS of Chicago presented this report in which he announced that the association had moved into its new building in January. This building was a model of construction and as perfect in its appointments as it was possible to make it. The prosperity which was theirs increased their responsibilities and these rested not only on officers of the association and on committees but also on every member of the House of Delegates. These responsibilities did not cease with the adjournment of the annual session. Resolutions passed by the House of Delegates would do little good unless members carried home the spirit and intent contained therein and labored in local societies until they were read and approved by every individual member throughout the land. It was the duty of this body to consider carefully all questions which had a material bearing on the welfare of the profession and of the people along health lines and sufficient time should be devoted to them so that conclusions reached would show that they were the result of mature deliberation. The trustees recommended a discussion as to what regulations governing membership in this association should be adopted and they recommended that the by-laws be amended so as to admit of the appointment of a Judicial Council such as was needed. The regular weekly issue of the *Journal of the American Medical Association* averaged 56,523 copies and the total number of copies issued during the year was 2,905,726. The *Archives of Internal Medicine* had a circulation of 2,133, which was satisfactory, considering the technical character of the publication. The *American Journal of Diseases of Children* was first issued in January, 1911, and on June 1 had a paid circulation of over 1,600.

Report of the Treasurer.—Dr. FRANK BILLINGS of Chicago submitted this report which showed that the value of the plant and property of the association was $288,833, and the surplus, $148,529, an increase of $51,994 over the previous year. The accounts had been audited and the auditors reported that the accounts were kept in a careful and efficient manner.

Report of Council on Health and Public Instruction.

—Dr. Henry B. Favill of Chicago made a report for this council, which was created at the 1910 session. He considered the work of the council under two heads: 1, the work of the various bureaus subordinate to the council; 2, the work of various subcommittees subordinate to the council. He first spoke of the organization work of the council which had been done as heretofore by Dr. J. N. McCormack, who during the year had visited ninety-seven cities in eleven States and had delivered addresses in each. The value of these meetings in educating the public sentiment was becoming more apparent every year. The council was considering the advisability of putting a number of speakers in the field as the work was too great for one man. (2) *Bureau on Protection of Medical Research:* This bureau had continued the publication of articles and pamphlets giving reliable information regarding animal experimentation. During the past year the following pamphlets had been published: "Animal Experimentation in Relation to Practical Medical Knowledge of the Circulation," by Joseph Erlanger; "The Relation of Animal Experimentation to Our Knowledge of the Plague," by Geo. W. McCoy; "Medical Control of Vivisection," by Walter B. Cannon; "Immunolgy, a Medical Science Developed Through Animal Experimentation," by Frederick P. Gay; and a number of others. The plan of the bureau to control laboratory procedures in a manner satisfactory to the people by regulations adopted by the corporate bodies, which included the laboratory workers, had been given wide publicity during the year. (3) *The Bureau of Medical Legislation:* What work this bureau had done had been done without the advantage that might have accrued from the work of a special committee created for the purpose of formulating a bill for the organization of Federal health work, services which would receive the unqualified support of all interested in the conservation and improvement of the public health. However, the sixty-first annual Congress has adjourned without anything having been accomplished, but fortunately no obstructive legislation was enacted. The Congress now in special session was not taking up any general legislation. This bureau also reported the legislation that had been secured in the various States during the past year. The council had cooperated with tate legislative committees, sending them information and material whenever requested. Attorneys for the association had prepared an exhaustive brief on "chiropractice." This contained an argument based on Supreme Court decisions to the effect that "chiropractice" was the practice of medicine and that followers of this cult were amenable to medical practice laws. The compilation of Supreme Court decisions on medical practice acts had been practically completed and was in the hands of the printer. They now proposed to prepare a digest of over 300 Supreme Court decisions for the guidance and assistance of officers of medical examining and licensing boards and a similar volume of public health laws. (4) *Bureau of Public Health:* This bureau had taken up no new work as yet. (5) *Bureau of Public Instruction*: Probably the most important line of work taken up by the council had been the preparation and distribution of regular bulletins to the newspapers of the country on public health matters. The mailing list to which these bulletins were sent regularly numbered 4,818 publications. The most gratifying feature of press bulletin service was the readiness with which editors had utilized material sent to them. In sending out pamphlets they had endeavored to cooperate with State boards of health so as to avoid duplication of work. As a means of effective cooperation the council had under consideration the preparation of a standard series of public health pamphlets to be printed in the association office and to be supplied to State and municipal boards of health, philanthropic organizations, etc., free of cost. 2, Reports of Subordinate Committees: Dr. Favill said that, in addition to the above, the council wished to present reports of chairmen of committees which had been placed under the council. The report of the Public Health Education Committee, of which Dr. Rosalie S. Morton was chairman, reviewed the education work done by men and women physicians throughout the country. Last year they reported 2,250 lectures given to 102,575 people; this year over 2,800 lectures had been given to 230,600. Beside the educational work valuable work in the prevention of disease had been done along other lines. The physicians who were selected to give lectures were selected by their county medical societies or State health officers and 1,800 members of the American Medical Association had assisted in giving lectures. This report also referred to help that the committee had rendered other organizations which were working in the interest of public health.

Report of Committee on Uniform Regulation of Membership.—The report of this committee reviewed its efforts made in the past to secure uniform provisions regarding membership and again set forth reasons why this was desirable. It was the experience of the committee that this work could not be done by correspondence or by attempts to modify the by-laws or frame recommendations during the rush of an annual session, and they recommended that the present committee be continued or another appointed, and that the trustees be requested to appropriate a sufficient amount to enable it to hold the meetings at the headquarters of the association in Chicago, and that they present, if possible, to the House of Delegates at the next annual meeting a complete plan regarding the regulation of membership throughout the entire organization.

Report of the Director of Post-Graduate Study.—Dr. John H. Blackburn presented to the council this report, in which it was stated that the plan in operation would be continued. The increase in the number of societies taking this work and in the interest taken was rather more marked during the first three years than during the last. The cause of failure to get the usual number of new societies to take up this work was probably because Dr. McCormack had been unable to visit as many societies as had been his custom.

Report of Committee on Visual Standards for Pilots.—This committee, of which William Campbell Posey was chairman, reported to the council that they had conferred with the Department of Commerce and Labor with the view of obtaining the adoption of suitable standards for the examination of the eyes of navigators operating under Federal law, and that after conference with the secretary of the department, at which the Board of Supervising Inspectors of Steamboat Inspection Service were present, the Department of Commerce and Labor had adopted the recommendations of this committee with one slight modification, and that after July 1 of this year all navigators under control of the department would be examined by standards which this committee submitted to them. Standards were determined on after careful study of foreign standards and after due consideration of the minimum degree of vision a candidate might have and yet be a safe pilot under all conditions of weather. It was desired of this committee that it be continued for another year for the purpose of obtaining, if possible, the enactment of proper Federal or State laws to control the examination of large numbers of navigators who still continued to ply their vocation without adequate test of visual and aural capacity.

Report of Committee on Prevention of Blindness.—This committee, of which Dr. F. Park Lewis of Buffalo was chairman, reported that they had done their work by the appointment of a series of subcommittees on ophthalmia neonatorum, toxic amblyopia, wood alcohol am-

blyopia, trachoma, congenital blindness, hygiene of eyes, and industrial conditions affecting the eye. The most important movement during the past year for the prevention of blindness and the conservation of vision was held under the auspices of the Russell Sage Foundation in December, 1910, when a national association was formed. In order that the work, which was so rapidly progressing under the various State commissions, associations, health boards, and other bodies, might be crystallized into one effective effort, this committee proposed that a special day in October, 1913, be chosen as a "conservation of vision day," and that then all these forces be combined in emphasizing the practicability and importance of sight saving. Such a movement would fix the attention on the various phases of unnecessary blindness, and there should be actual demonstrations of the best methods of lighting homes, schoolrooms, and workrooms. The committee recommended that the work as outlined by the subcommittees be continued, and that the American Medical Association Committee on Hygiene and Sanitation approve of a uniform law for the control of ophthalmia neonatorum, and that its enforcement be urged on health authorities in every State and city in the country. The report of the subcommittee on ophthalmia neonatorum stated that in Indiana and Dakota laws had been enacted which made any claim on the mother illegal unless the question, whether or not a prophylactic had been used, had been answered by the attendants. The law seemed to be objectionable because it deprived the attendant of remuneration for services performed as a penalty for neglect of another duty which he had omitted. It would seem better that the reporting of births and of existing cases of ophthalmia neonatorum be required by law under penalty, and that if failure to observe the requirements of the law were rigidly prosecuted and the results widely published it would place departments of health in a position to take right measures for the protection of babies' eyes at the right time. The report of the subcommittee on the toxic amblyopias, exclusive of methyl alcohol, showed that the committee had made very extensive investigations as to the frequency of this condition in America. The literature pertaining to this project from January, 1904, to August, 1910, revealed 249 references. Of these 249 references 211 were general, that was to say, they discussed the toxic action of various poisons on the human system without specific record of ocular complications, and 38 were direct references, that was to say, those which were limited to a discussion of the effect of toxic agents on the visual apparatus. The comparatively small number of cases reported did not give any adequate idea of the frequency of amblyopia in this country, but did give an idea of the substances which most frequently caused this condition. The most frequent cause of toxic amblyopia was ethyl alcohol or some substance in which ethyl alcohol was the active agent. Other causes operating occasionally were lead, quinine, antipyrine, iodoform, formaldehyde, coffee, and salicylate of sodium. Reports from eleven hospitals extending over a period of six years among a total of 471,975 patients showed that 523 had sought relief from visual defects depending on the action of some toxic substance. But these reports did not indicate what toxic substance was responsible. There were no available statistics showing the number of cases treated in private practice, but it was the conviction of the committee that there were many more than was generally supposed. The committee closed its report with an appeal to those having charge of hospital statistics to make an endeavor to increase the accuracy of hospital records. The report of the subcommittee on blindness produced by the ingestion of methyl or wood alcohol, after showing the harmful effects of this substance and its very extensive use in commercial products used in manufacture, asked that it be continued in order that further investigations might be made to inquire the reasons for partial failure to accept denatured alcohol as a substitute for poisonous wood alcohol; to devise ways and means for the removal of obstacles to the general use of denatured alcohol; to enforce the use of the poison label on all retail packages of wood alcohol, and to disseminate a wider knowledge of the poisonous character of every form of methyl alcohol; and, finally, to procure such legislation as would prohibit the manufacture or sale of every form of purified or deodorized methyl alcohol. The report of the Subcommittee on Blindness from Trachoma called attention to trachoma as an alien disease. They might gain some idea of the probable annual importation of trachoma prior to 1897, when laws to prevent its entry became effective, from the annual reports of 1910 of the Commissioner-General of Immigration, which showed that 6,400 persons with trachoma were debarred from embarking and 2,600 were debarred from landing and were deported. There were localities in the United States where this disease was endemic. After considering efforts, social and legislative, directed against trachoma the committee suggested that those States in which this disease was endemic should follow the example of New York and establish trachoma dispensaries in different parts of the State and a centrally located trachoma hospital. The subcommittee on congenital blindness submitted a preliminary report, based on a review of the literature, and from statistics collected it might be said that 5 per cent. of all blind persons suffered from some form of congenital blindness. If the number of cases reported was taken as a standard by which to judge the relative frequency of the occurrence of each lesion the list would be headed by microphthalmus, followed closely by aniridia and by coloboma of the iris. Anophthalmus and the different forms of cataract also ranked high. Most infrequent were the tumors, especially the teratomas. The report of the subcommittee on hygiene of the eyes showed that they had decided on a definite plan of procedure, and with the cooperation of the Illuminating Engineering Society and several large electric and gas illuminating companies they would study the effect of various forms of artificial illumination. The actual work of investigation would be begun early in the autumn. The reports of the subcommittee on industrial conditions had limited their investigations to the consideration of common accidents which were preventable; to accidents occurring while handling high explosives; accidents due to bursting locomotive oil and water gauges; accidents due to scalds, caustics, or exposure to irritating fumes; diseases due to excessive light; and diseases due to occupations requiring prolonged and peculiar use of the eyes; and then discussed the prophylactic measures and methods of securing the interest of the public and the cooperation of the employer and employee in applying such measures.

Report of the Council on Medical Education.—Dr. Arthur Dean Bevan of Chicago submitted a report in which he called attention to the annual conferences of the Council on Medical Education which had been held every year since 1904, which were largely attended by members of State licensing boards, deans of medical schools, presidents of universities, and other prominent educators. This work had been effective in bringing about rapid and marked improvement in medical education during the past seven years. Among these advances were: (1) The number of medical schools in the United States had been reduced from 166 in 1904 to 129 in 1911. This reduction had been due to closing of poor schools or to merger of two or more colleges, forming in each instance one invariably stronger and better medical school. (2) Medical schools requiring one or more years of collegiate work for admission had been increased from four

in 1904 to 42 in 1911. (3) Although the number of medical students in the United States had been reduced from 28,142 in 1904 to 21,526 in 1910, on the other hand the number of students enrolled in higher standard medical colleges had increased from 728 in 1904 to 4,230 in 1910. (4) In 1904 only 2.4 per cent. of all medical colleges were requiring one or more years of college work for admission, now 32.6 per cent. of all colleges were requiring that preparation. (5) Since 1904 preliminary educational requirements had been adopted in sixteen more States; a four year high school education had been made the standard in twenty more States, and nine States had adopted as their minimum requirement one or two years of college work. (6) Six State licensing boards were now to a limited extent using practical tests in their State license examinations. (7) Since 1904 reciprocal relations had been established by nine more States, making a total of thirty-six which now had such relations with other States. After pointing out advances still needed the council made the following definite recommendations: (1) Men best qualified for the work should be urged for appointment on State licensing boards. (2) The public and educators should be educated regarding the necessity of a single portal of entry to the practice of medicine for the right to treat human ailments by whatever methods. (3) The need of private endowment or State aid for medical education should be emphasized. (4) For medical colleges they recommended the adoption at earliest possible time of one or two years devoted to physics, chemistry, biology, and modern languages, in addition to four years' high school education. (5) The securing of more expert full time instructors, particularly of the laboratory branches. (6) The development of better library and museum facilities. (7) The development of more extended and careful study by senior students of patients in dispensaries and hospitals. (8) The adoption at the earliest possible moment of a fifth year to be spent by the student as an intern in a good hospital. (9) They recommend for State licensing boards the adoption of the requirement that each applicant should possess the higher preliminary qualifications as outlined above. (10) The provision for a more careful valuation of the preliminary credentials presented by all applicants. (11) The adoption of thorough and practical tests at State license examinations. These were now employed by England, Germany, Hungary, Norway, and other leading countries of Europe. (12) The extension of reciprocal relations with other States, but this provision should be safeguarded by a careful scrutiny of the applicant's credentials and by more strict use of the boards' discretionary powers. This committee also called attention to the too high percentage of failures on the part of graduates from certain localities, when they took examinations in States other than those in which they had graduated. Illinois, Kansas, Maryland, and Tennessee were distinctly localities responsible for the worst medical schools. If they continued to make progress during the next eight or ten years as rapidly as they had during the past seven years the standard of medical education in this country would be equal to that of any other country in the world.

Dr. WELCH congratulated the Council on Medical Education on the work they had done. This work had been of a very delicate nature and it was also a marvel of thorough investigation. The publicity given this work had impressed every one with its possibilities for good. The methods pursued were worthy of commendation.

Report of Committee on Scientific Research.—This committee, of which Dr. ALFRED STENGEL was chairman, reported that it had made for the current year four grants of $200 each for work to be reported at the present meeting as follows: (1) Dr. R. M. Pearce of Philadelphia for "Studies on Experimental Blood Infection," by H. T. Karsner and J. H. Austin; "The Relation of Toxic Doses of Horse Serum to the Protective Dose of Atropine in Anaphylaxis," by H. T. Karsner and J. B. Nutt. (2) A grant to Dr. E. C. Rosenow of Chicago for work on "Autolysis of Pneumococci." (3) A grant to Mary Rawley Lawson of Boston for work on the "Development of the Tertian Malarial Organism." (4) A grant to Dr. Karl K. Koesser of Chicago for work on "Antibodies in Scarlet Fever."

Report of Committee on Scientific Exhibit.—Dr. FRANK B. WYNN of Chicago in this report stated that there was a fallacy prevalent to the effect that only large exhibits would be acceptable; small ones were equally desirable and sometimes more instructive. The committee suggested that the work done by public health exhibits which they had initiated had been so effective that the time seemed ripe for the infusion of health problems into novels and plays and they proposed to have a play next year presented as a part of the scientific exhibit.

Report of the Committee on Nomenclature and Classification of Diseases.—This committee, of which Dr. FRANK P. FOSTER of New York was chairman, reported that they had been favorably impressed with the Bellevue Hospital nomenclature of diseases and conditions which first appeared in 1903, and had since been twice revised. They recommended that this system of nomenclature be made a part of whatever publication on the subject the American Medical Association might decide to issue. They thought it would be well to publish also a Latin list, if only for the purposes of international correspondence. It might be well for the American Medical Association to provide for cooperative work with the profession in other countries to the end that they might eventually have a uniform nomenclature and classification.

Report of the Committee on Memorial to Medical Officers Who Died in the Civil War.—This committee, of which Dr. WILLIAM C. GORGAS was chairman, reported progress and proposed to appeal in the near future to the several State medical societies for their influence and material help in the erection of this monument, and perhaps subsequently to Congress. They recommended that the committee be continued with the same privileges and appropriations that were authorized at the Atlantic City meeting in 1909.

Report of Committee on Relief Fund and Physicians' Sanatorium.—This committee, of which Dr. Edward Jackson of Denver was chairman, reported that after a thorough discussion of the subject they would recommend the following: (1) That the House of Delegates endorse the proposition to organize a corporation for the collection and administration of a fund to be used as a relief fund and to support a tuberculosis sanatorium, which should be located in an elevated region of the United States west of the hundredth meridian of logitude. (2) That a committee of five be appointed with authority to add to their number one member from each State society and from the government medical services to bring the subject before local societies, to receive money, and to pay it to the designated custodian. (3) They recommended that the Board of Trustees of the American Medical Association be appointed custodian of funds and that a committee of five be appointed to prepare a plan of incorporation.

Report of Committee on National Health Organization.—Dr. WILLIAM H. WELCH, as chairman of this committee, reported that pursuant to resolutions adopted at the St. Louis meeting he had appointed a committee of seven members which met in New York in March and, after a careful consideration of the situation, the skeleton of a bill for the establishment of a Department of Health was outlined. The committee met on April 1, and appointed a subcommittee to gather information from vari-

ous countries with respect to the national health organizations of each with a view to enabling the committee to perfect its work.

Report of Committee on Davis Memorial.—The secretary read a letter from Dr. H. O. Marcy of Boston, chairman of this committtee, in which he begged that his resignation which he had presented last year might be considered final. As they had not been successful in raising the funds necessary for this memorial he suggested that a memorial letter be issued by State societies and that as the American Medical Association had contributed $5,000 toward this memorial it seemed fitting that the chief hall in the new Association building should be considered as a memorial hall and a bronze bust of Dr. Davis be placed there. All of these reports were referred to the appropriate reference committees appointed by the President of the House of Delegates.

Tuesday, June 27—Second Day.

Report of Reference Committee on Medical Education.—Dr. H. D. Arnold of Massachusetts, in making this report of the work of the Council on Education, said that they felt sure that this work would prove of permanent value. It was most gratifying that Dr. P. J. Eijkman of The Hague had listed the Council of Medical Education among the organizations of the world which were exerting an international influence on the standards of medical education. While the council disclaimed credit for all of the improvements that had come since it began work, others felt that it was to its efforts that improvements were largely due. The increase in the number of students in the high grade schools and the decrease in the number in the poor schools showed that the intelligent medical student was quick to take advantage of the opportunities offered by the high grade medical schools. The committee recommended that the House of Delegates approve of the work done and provide for another inspection of medical schools as soon as this was deemed advisable. They endorsed the suggestion that Mr. Frederick G. Hallet, secretary of the Conjoint Board of Examiners in England, who had done so much to develop the efficiency of that board, be invited to attend the next conference on medical education. It was desirable that public sentiment should be educated as to the needs of reform in the methods of medical licensure and they suggested that cooperation between the Council on Medical Education and that on Health and Public Instruction would prove effective. The chief new feature was that requiring that the student spend a fifth year as intern in a hospital or, in the case of those who expected to enter the field of teaching, one year in the laboratory. It was hoped that the time was not far distant when this requirement could be made mandatory. It was also suggested that cooperation between the Council on Medical Education and that on Pharmacy and Chemistry could be of assistance in finding a solution whereby the time spent in the study of many unused drugs might be reduced or eliminated.

Report of Reference Committee on Legislation and Political Action.—Dr. H. J. Hurty of Indiana, after pointing out how inefficient the Pure Food and Drug Law had proved in view of a recent Supreme Court decision, offered resolutions in the form of a petition asking that this law might be amended so that it would no longer be possible to label articles with false and misleading statements, and providing that a copy should be sent to the President, the Vice-President, the Speaker of the House of Representatives and to each of the Senators.

Reference Committee on Amendments to the Constitution and By-laws.—Dr. A. T. Mc Cormack of Tennessee introduced a resolution providing for the appointment of a Judicial Council to consist of five members which was to have original jurisdiction in all controversies involving questions of ethics in the association itself or its constituent societies; in other cases it should have appellate jurisdiction. This committee offered a resolution amending the by-laws in reference to the admission of associate members. At the 1910 meeting, in amending the by-laws, dentists and pharmacists had been recognized as eligible but scientists had been omitted; this was found to interfere with the work of several of the sections and the by-laws required amendment restoring scientists to the right of associate membership. This amendment was adopted.

Reference Committee on the Reports of Officers.—Dr. G. W. Guthrie of Pennsylvania in accordance with the suggestion made by the president introduced a resolution providing for the appointment of a committee from the American Medical Association to cooperate with a committee from the Red Cross Society, with a view of considering what would be the best methods to employ in times of war. Dr. Guthrie also introduced a resolution providing for the appointment of a committee of seven to formulate plans for the celebration of the completion of the Panama Canal.

Other Resolutions.—In view of the fact that much apparatus used by physicians and laboratory workers had to be imported and in view of the fact that the duty on such articles was unwarrantably high, Dr. R. M. Funkhouser of Missouri presented a resolution that these excessive tariffs be adjusted on a reasonable basis and providing that copies of this resolution be sent to the President and the Sixty-Second Congress now assembled. A resolution was also presented providing for the creation of a section on hospitals and hospital work.

Wednesday, June 28.—Third Day.

The President called a special meeting to dispose of some unfinished business. An announcement of the prize awards was also made and the meeting then adjourned.

GENERAL SESSIONS.

Tuesday, June 27—First Day.

The meeting was opened by an invocation by the Right Reverend Joseph H. Johnson of Los Angeles.

Address of Welcome.—Dr. W. Jarvis Barlow, President of the Los Angeles County Medical Association, welcomed the association in behalf of the local profession. He dwelt particularly on the benefits that accrued to any locality from a meeting of this kind and said that if the leaders realized how great an inspiration their coming had been they would more often choose new localities. The inspiration had affected both lay and medical people. The extent to which it had affected the latter was shown by the fact that the local society had increased its membership by 100 new members during the past year. They felt their separation from teaching centers and thanked the association most heartily for the opportunity its presence afforded.

Dr. Thomas W. Huntington of San Francisco, president of the Medical Society of the State of California, welcomed the association in behalf of the medical profession of the State.

Hon. George Alexander, Mayor of Los Angeles, in his address of welcome, begged physicians not to send patients in the last stages of tuberculosis to California to die unless the patients had the means of being cared for. Many came who went directly to the county hospital and died there in from ten to thirty days. This was imposing an undue burden on the people of California.

Dr. Welch responded to the address of welcome and introduced the President-elect, Dr. John B. Murphy of Chicago.

Address of President.—Dr. Murphy said that it was

the purpose of most men to do something worthy of the recognition and appreciation of their fellow-men. He was gratified with the honor conferred upon him. The span of life was so short that many deserving of it could not receive it. In return he would give his best energy, thought, and judgment to the affairs of the association. Dr. Murphy proposed two innovations: the first an experiment inaugurated at this meeting of giving popular lectures with lantern and graphic demonstrations, and the second, of giving clinical demonstrations before and after the meetings. In regard to the first of these, he said that it was not a good economic proposition that they should meet in a place and not leave a lasting impression. Such a course of lectures on health and disease, carefully planned, sustained by lantern demonstrations, photographs, etc., and presented in a simple, comprehensive, and attractive manner, should become a permanent feature of these meetings. As to the second suggestion, that of having clinical days before and after the meeting, Dr. Murphy said that most members devoted a week to the meeting and these days would not involve any loss of time. They would not interfere with the work of the sections, but they would form an attractive, instructive, and inspiring means of advancing, coordinating, and standardizing medical knowledge. This plan had been adopted by the Association of Military Surgeons at the 1910 meeting. An ever-increasing number of practitioners came to clinics and operating ampitheatres in order to familiarize themselves with recent developments in diagnosis and treatment and it should be the aim of these clinics to give recent methods of diagnosis and treatment, but not to lay emphasis on rare cases unless they aided in this general aim. Cases and materials for demonstration could either be furnished at the place of meeting or transported there. Methods of teaching should be particularly emphasized. Dr. Murphy felt sure that this innovation would double the attendance at the meetings. In regard to the question as to how the American Medical Association could be made more serviceable to the profession and to the American people, Dr. Murphy said his first suggestion would be that they should increase their membership and thereby their funds and to do this required the influence of all respectable members of the profession in remote and distant localities as well as in the popular centres. There were at present at least 140,000 medical men in the United States, and at least 100,000 of these should belong to this association. Doubling the membership from 34,000 to 70,000 should not be a difficult matter. There were at least 40,000 men in State societies who should belong to the organization. The association must be active in many diverse ways, direct and indirect. The indirect work of the councils was not appreciated by the average medical man. The fixed charge for the support of the work of these councils should not be decreased, but rather increased in order to advance their efficiency. Dr. Murphy referred to the policy of the Journal in acccepting only clean advertisements and this policy had had an influence on the press throughout the country. By a vigorous advertising policy the Journal might take care of a larger circulation and make a reduced rate for subscriptions. Possible public instruction in medicine was one of the most important functions which the American Medical Association had to perform. The patient was the point about which all medical interest centered. The great question was what was best for him. The profession criticised the public for its employment of quacks, not alone by ignorant foreigners, or the poor and untaught, but by the so-called better classes of educated and seemingly intelligent people. They gave more enthusiastic support to these quacks than to the regular profession because when they treated them they gave some plausible reason for the methods followed, while the regular profession had demanded acceptance in blind faith, and the age of blind faith had passed. What beacon had they set for the layman whereby he might select a physician? The people should be educated in the basic principles of medicine. Articles should be carefully prepared so that they would present subjects in a manner both scientific and clear. The Council of Public Health and Instruction should supply information on the true nature, etiology, transmission, and early signs of disease. If this were done the amount of sickness would be greatly decreased, as the outcome of many diseases depended upon their early recognition. Hitherto the patent medicine almanac, "Leaves of Healing," etc., had been the only instruments furnishing information to the public and in these truth and science were libeled in every line. If the American Medical Association gave the people correct information it would follow them. When they took this course they would get the support that true work always commanded in regard to compensation for physicians. Dr. Murphy said that there were a few of the profession better remunerated than ever before in the history of the world, but the compensation of the average physician was less to-day than it was twenty years ago and in the general average of a large number of physicians less than that of day laborers. The physician had to keep up a standard of efficiency and he could not do this unless he received adequate compensation. If he did not receive a sufficient compensation to buy books and to have sufficient leisure to read them the public suffered. Dr. Murphy advocated a national standard for medical educational institutions and for medical practice acts, corresponding to those of interstate commerce. He also urged legal suppression of incompetent medical colleges. Dr. Murphy referred to the work of the Council on Medical Education and said that this work should receive the moral support of all members of the association. A note of warning should be sounded lest medical education should be too much influenced by faddists. Professors for medical schools were formerly chosen because they had been successful practitioners and for various personal or extraneous reasons, regardless of any special ability to impart knowledge. Many able men had been selected in this way, but they had looked to the university to correct this custom. The era of the university had arrived and the head of a department was usually a man of world-wide fame and reputation; he had accomplished great things in the laboratory, but he was often incapable of imparting information in an acceptable manner even in a third-class school. Original investigators were apt to ride hobbies even in the classroom. The elder faculty of a medical school should be chosen because of special ability to impart knowledge. The laboratory idea had dominated medical education for a decade and a department controlled by purely scientific men without any practical clinical knowledge failed to fill the gap between laboratory and clinical findings. The clinical side of medical education was now receiving more attention and a fifth year added to the course in medical education as an intern in a hospital was now suggested for all, and the opportunity for this was seized by the student whenever possible. A fifth year clinical course should be arranged with more care than any other course. License to practice medicine should be limited to five years, when the individual should be compelled to return to the university for a further course of instruction. Dr. Murphy recommended the establishment of a lay health journal as an additional means of educating the public, and he recommended that the House of Delegates appoint a committee to attend the National Educational Association, which would meet in July in San Francisco. The teachers had been planting the seeds of health knowledge in the minds of the children and they all recognized how important this was and it was fitting that a committee should bear them thanks for this work. Dr.

Murphy heartily approved the plan of proposal to establish a judicial council to deal with ethical questions. He did not think that the medical profession was overcrowded; physicians and surgeons were not in competition with their fellows, but with the medical standard of the time. He who kept above the standard desired companionship. The ideal of the medical profession must be stimulation of individual effort and for each to assist the other in his upward progress. The individual was responsible for his own position and in a limited degree for that of his brother. By superior intelligence, fidelity to purpose and indefatigable labor some had become leaders.

Communication from Senator Owen.—Dr. Geo. H. Simmons read a letter from Senator Owen to the association in which the latter regretted his inability to accept their invitation to address the meeting. He stated that the American Medical Association had not had anything to do with the introduction of the first bill providing for the establishment of a National Department of Health in an official capacity. He referred to the activities of the league for medical freedom and added that he hoped the time would come when some method would be devised of compensating physicians for work in preventive medicine, as the work that they were doing would necessarily lessen the amount of sickness and correspondingly the income of the physician. The maintenance of high ideals was the first duty of the physician; he should present himself to his clinetèle as a fine specimen of humanity, the result of good health and a good life.

SECTION ON MEDICINE.

Tuesday, June 27—First Day.

Dr. Allen A. Jones of Buffalo in the Chair.

Verruga Peruana or Carrion's Disease.—Dr. H. A. Giltner, U. S. N., said that verruga peruana was an inoculable disease epidemic in certain districts of Peru. It was characterized by slow onset, fever, muscular and arthritic pains, profound anemia, and a peculiar sarcomatous eruption showing a strong tendency to hemorrhage. This disease caused many deaths among the ancient Incas and among the followers of Pizarro during the conquest of Peru. Since 1730 various writers had described the disease. Carrion was a Peruvian medical student; he inoculated himself on each arm with blood from a tumor of a case of verruga, death occurring 39 days after inoculation, after he had passed through all the stages of oroya fever. Infected districts were limited to certain deep valleys of high altitude on the Western slope of the Andes. An organism, apparently a bacillus, was found in the red blood cells during the febrile period, and in the tissues of the local lesions. At autopsy enlargement of the liver, spleen, lymph nodes, and Peyer's patches was found. Anemia was very great, the red cells being reduced to 1,000,000 or 500,000; the polynuclear leucocytes were increased. Verruga, from which the disease took its name, was the most noticeable symptom. Two forms were recognized, the miliary and nodular. On section, verruga somewhat resembled sarcoma, had a stroma resembling embryonic tissue and a circumscribed adherent wall. The blood vessels were large and sinus-like. The prognosis was serious, according to some authorities the mortality was as high as 90 per cent. Some cases ended fatally in 20 to 30 days, while others ran a more chronic course. The therapeutic resources were limited and consisted principally of symptomatic and supportive treatment. Verruga had not been widely investigated as yet and it was believed that a further study of this interesting disease would prove it to be insect-borne and would perhaps throw some light on other diseases whose etiology and transmission were not yet understood.

The Simultaneous and Cyclical Appearance of Epidemics of Pneumonia, Grippe and Enteritis on the Northern Hemisphere and Their Synchronism with Cycles of Solar Activity.—Dr. C. M. Richter of San Francisco said that epidemics of acute diseases of the respiratory organs had as a rule appeared simultaneously during the last 25 to 40 years in different cities and countries on the northern hemisphere (Berlin, Italy, Chicago, Philadelphia, Cincinnati, Milwaukee, New Orleans, San Francisco, Victoria, B. C.) They recurred in cycles of about three to four, eight and eleven to twelve years, similar to the cycles of solar activity and polar lights. Likewise epidemics of acute diseases of the intestines occurred in certain cycles of a very similar but generally longer period (Berlin, New York, Chicago, San Francisco). The general prevalence of the first of the two groups of diseases depended on the presence of anticyclonic weather, while the latter depended on its absence. An ultraviolet solar radiation showed a synchronism inverse to the solar periods and as anticyclonic weather was the distributor of the upper air, which was ever modified by such solar activities, it appeared to be a logical conclusion that a further study and analysis of the air during anticyclonic weather and at different parts of our hemisphere should prove to be a fruitful research. Numerous charts were on exhibition at the "Scientific Exhibit" to support these views.

Successful Treatment of a Typhoid Bacillus-Carrier by Vaccination.—Drs. Walter Brem and F. C. Watson of Cristobal, Canal Zone, reported the case of an American girl, four and a half years old, who had typhoid fever in Colon Hospital in August, 1910. She was given three grains of hexamethylenamin three times daily for two weeks during convalescence. Shortly afterward her father and mother developed typhoid fever. On December 7 and afterward, numerous typhoid bacilli were found in the child's urine; the stools were negative. She was vaccinated nine times with autogenous vaccines between December 10, 1910, and February 1, 1911. The doses were gradually increased from 25 to 1,500 million. As vaccination proceeded, the number of bacilli gradually decreased until on February 15 the cultures were negative. The agglutination of the patient's serum reached one to one thousand against the typhoid stock culture and her own organism. The time during which typhoid bacilli were present was about six months. The phenomena suggested a chronic lesion slowly healing under the influence of vaccination.

Dr. Frank Billings of Chicago reported the case of a woman, 44 years old, who positively denied ever having had typhoid fever or anything that could be considered as typhoid fever. Yet she gave a positive Widal reaction and the feces gave a pure culture. She suffered from a chronic cholecystitis, was operated on and in the gall bladder were found calculi and living typhoid bacilli. One should be on the alert to discover these cases. A lesson should be learned: patients should not be turned out of the hospitals because they suffered from no symptoms without a very careful examination of the stools and urine. Many of these patients were a menace to the community. He treated his typhoid fever cases with enormous doses of urotropin, giving 120 grains a day. It certainly did have some effect upon the bacilluria. One could not depend upon the effect of this agent on the intestinal canal. Vaccination seemed to him to be a most valuable measure.

Major Percy M. Ashburn, U. S. A., reported an interesting case of a sergeant of the Fifth Field Artillery who was admitted to the hospital in San Francisco in November, 1909. He had had typhoid fever in October at Vancouver barracks. His stools were examined weekly during his stay, and always they found an abundance of typhoid

bacilli in the stools and practically in pure culture. In June, 1910, he was treated with autogenous vaccines and exposures to the *x*-ray, but without effect. This treatment was stopped then and the patient was given sodium salicylate every four hours. After taking this for two weeks his stomach became much disturbed and he complained of palpitation. But the number of bacilli in the stools had markedly diminished. The salicylate was stopped, but the diminution in the number of bacilli continued and about the last of May the stools were entirely free from them. He also reported another case of a typhoid carrier who was sent home from the Philippines and who, after eight months, was returned to duty.

Dr. William Litterer of Nashville, Tenn., reported a case in which the pus from a wound contained so many bacilli that to count them was almost impossible. After the first injection there were about 1,000 bacilli; after the second injection the number was reduced about one-half. The patient was finally cured. In another case he reported there was a pure culture of the typhoid bacilli. He had now under observation three typhoid fever carriers of the intestinal type and treatment so far had been unsuccessful. He had not been able to decrease the number of bacilli in the stools.

Causation and Treatment of Fever in Tuberculosis.—Dr. F. M. Pottenger, Monrovia, Cal., held that the former belief that pure tuberculosis fever did not exceed 100 or 101 degrees F., and that all high fevers were due to mixed infection, was probably erroneous. The actual causes were the toxins of the tubercle bacillus and other bacteria, as well as the toxins produced by the destruction of the body cells as a result of autolysis. Physical exertion, mental perturbation, complication, themometric and barometric changes were modifying factors. The treatment must be based on an accurate diagnosis.

Dr. Edward F. Wells, of Chicago, said that many years ago he had occasion to observe closely several cases of early tuberculosis in which this point was clearly brought out; the temperature curve continued for about one week, then became quiescent for two, three, or four weeks, and then began to rise again gradually. His observations were published several years ago and had particular reference to diagnosis. One point he wished to bring out as supplementary to his former observations was this: If tuberculin should be given for diagnostic purposes at the beginning of one of the febrile curves, the reaction following might be of value both in diagnosis and in prognosis.

Streptothricosis (Actinomycosis) of the Lungs.—Dr. Norman Bridge of Los Angeles read this paper and briefly summarized as follows: (1) The fungus was found to be markedly pleomorphic, occurring in (a) the classical grain or tuft, in culture, and in tissue: (b) fragmentations, bacillary, or even smaller, like granules, in tissues and discharges and some cultures (solid media), and very variable in size of mycelium. (2) The very young mycelium was resistant to all stains, the old threads likewise failed to stain. (3) In cultures and tufts the mycelium masses always showed large numbers of small Gram-positive organisms (spores). Fine branching mycelia in the very early stages started from these structures, demonstrated in hanging drop and smears. They were negative to Moeller's method for staining spores of ordinary fission fungi. They were not demonstrated in the tissues. (4) The active infectious agent in tissues was apparently the rod-segment. Cultures in bouillon always gave positive results, in the absence of fungus in the sputum visible to the naked eye. By the two methods, moreover, the Gram stain and the bouillon culture, a case that had been under observation for diagnosis was suspected and proved to be positive to culture. In a few days, with severe coughing and profuse expectoration, the microscopical granules appeared, clinching the diagnosis. If continued observations showed these two methods to be absolutely trustworthy, it would be possible to make an early and reliable diagnosis for this disease. The simplicity of the bouillon culture and hanging drop examination, together with some Gram-stained films, brought it within the reach of all who were near any sort of laboratory facilities.

Hemorrhagic Erosions of the Stomach, with a Report of the Autopsy Findings in a Case of Einhorn's Disease.—Dr. N. W. Jones of Portland, Ore., stated that of 600 consecutive cases the fasting stomach was examined as part of the general diagnosis, and this gave 35 cases with definite erosions (5.6 per cent.), including cases of pernicious anemia, general asthenia, carcinoma of the stomach, carcinoma of the esophagus, cardiospasm, dyspepsia nervosa, Schmidt's fermentation dyspepsia, Einhorn's disease, chronic gastritis, anacidity, subacidity and hyperacidity, chronic gastrosuccorrhea, chronic gall-bladder disease, chronic intestinal catarrh, spactic obstipation, chronic salpingitis, chronic ulcer of the stomach, etc. The cases grouped themselves into: (*a*) those without clinical symptoms, and (*b*) those with distinct clinical symptoms. (*a*) Thirteen of the 34 cases were found in chronic gastritis. The inflammatory change, the retching and stomach contraction, together with trauma of the tube, constituted etiological factors. Two of the cases were associated with malignancy. The remaining 19 cases were seemingly produced by retching and trauma of the tube alone. The study of the fragments microscopically gave no further light on the etiology. (*b*) There were two types of hemorrhagic erosions with distinct clinical significance: (1)the simple erosion of Dieulafoy; this was not discussed except to emphasize the importance of its recognition and of employing radical medical means and not of resorting to surgical measures. (2) Einhorn's disease, in which there was an absence of all post-mortem evidence of underlying pathology. He reported a case that came to autopsy which threw light on this disease. A brief résumé of the pathology was as follows: There was the picture of a form of chronic gastritis characterized (*a*) by a dense, small round-cell infiltration in the interstices of the glandular elements which when extensive obliterated the gastric glands by pressure; (b) by the disintegration of the cuticular portion of the mucosa, as the crypts were displaced by the same round cells; and (*c*) by the fact that with the disintegration of the cuticle and crypts the congested vessels were exposed and ruptured, which accounted for the gastric hemorrhages occurring in the clinical course of the disease. The absence of proliferation of connective tissue elements, the engorgement of the superficial blood capillaries, and the manner in which the gland cells were destroyed sharply differentiated the process from chronic gastritis. It was neither ordinary chronic gastritis with the element of erosion formation added to it, as had been claimed, nor a distinct disease entity, as claimed by others, but a chronic non-proliferative hemorrhagic gastritis, and presented probably a uniform pathological picture.

Dr. Robert T. Morris of New York said that these cases of hemorrhagic erosion were not cases for the surgeon. Surgery did not at all comprehend the question and failed to give relief because the original condition was not removed by operation. Again there were the shock and other features which were incidental to the operation which were not desirable. There was one point, however, that Dr. Jones had not brought out, and this was a very important one. The patients should have treatment when the erosions occurred. They should keep trace of the toxic history in these cases. They should remember that hyperchlorhydria and hypochlorhydria were symptoms like coughing or sneezing, that was all. The hormones had sent the wrong message to the secreting glands. What

reason had they for believing that the toxins excreted were basic factors in the causation of these erosions? What was met with in the abdomen might give them a clue. They often found peritoneal adhesions so general that they must assign some significance to them. They often met with cases of adhesions, "cobwebs in the attic of the abdomen," due to the excretion of toxins by the liver; bacteria chiefly of the colon bacillus group passed the liver unharmed, but they set up trouble in the bile-tract. The endothelium desquamated, lymph was excreted, coagulation occurred, and then adhesions were formed. All this resulted not only in erosions and hemorrhages from the stomach and pylorus, but the toxins influenced the spasm of the terminal arteries of this region.

Dr. J. F. Hultgen of Chicago said that the question of the erosion of the stomach had not been considered enough in connection with the constant anemia found in all these cases. He thought that possibly the symptom complex might be due to the anemia itself. As a matter of fact the anatomical basis, so far as was shown by Dr. Jones, was not sufficient to explain the clinical course of the disease. He believed that gastric hemorrhage from the erosion was nothing but a symptom and not the underlying disease, which might be of hemolytic nature, toxic or of unknown origin.

Dr. Philips King Brown of San Francisco said that so long as there was associated with the hemorrhage pain, it might be the result of chronic disease of the appendix which had been described so fully and best by Moynihan several years ago. He reported 12 cases, the symptoms of which were the classical ones of gastric ulcer; at operation no ulcer was found. In each case, however, there was a diseased appendix. The removal of the appendix caused all the symptoms of gastric ulcer to disappear.

Immuno-Diagnostics in Internal Medicine.—Dr. W J. Butler of Chicago considered the theories of immunity, especially in its relation to the development of immuno-diagnostics. He called attention to the necessity for conservatism in making deductions from positive and negative results in all immunity tests.

The Leucocytology of Typhoidal Diseases as a Group Phenomenon Within the Typhoid-Colon Family of Bacilli.—Dr. J. F. Hultgen of Chicago read this paper and concluded as follows: (1) There existed a typical typhoid and paratyphoid blood picture throughout the course of these diseases: (2) This blood picture was characteristic of the obligate parasites of the typhoid-colon group and constituted probably the counterpart to that usually found in colon bacillus infection. (3) The leucocyte reactions of typhoid and paratyphoid infections must be interpreted as group phenomena. (4) In the pathogenesis of this typhoid-paratyphoid blood picture the germs and lymphatic tissues played a joint rôle, but the character of the intoxication determined the blood picture. (5) The diagnostic value of the leucocyte picture was particularly great during the first 10 days, while its prognostic value was especially marked in the last 10 or 15 days of the disease. (6) Repeated combined total and differential counts must be made throughout the course of typhoid or paratyphoid fevers. The cytology of these affections could be appreciated in no other way. (7) The immunity with leucopenia of the typhoid-paratyphoid group and the immunity with active leucopoiesis of the colon wing of this family were evidently the two extreme phases of one fundamental process. (8) The above blood charts and reasoning by analogy showed that the conception of the typhoid blood picture as a group phenomenon within the typhoid-colon family was correct. (9) Each member of the typhoid-colon bacillus group was able to produce either a toxic gastroenteritis or a true typhoid affection. (10) The close, or fundamental, kinship between the numerous members of the typhoid colon group of bacilli was proven, first, clinically by the time-honored name of typhoid fevers; secondly, pathologically by their common faculty of producing ulcers in the gastrointestinal tract; thirdly, cytologically by their blood picture; fourthly, serologically by the coagglutination of Pfaundler; fifthly, epidemiologically by Hazen's theorem of the Mills-Reinke phenomenon of typhoid and general mortality. (11) The law of periodicity of inorganic chemical elements as announced by D. I. Mendeléeff in 1869 was, in his opinion, applicable to the district group arrangement of organic living micro-organisms.

SECTION ON DISEASES OF CHILDREN.

Tuesday, June 27—First Day.

Dr. S. M. Hamill of Philadelphia in the Chair.

The Opportunities of the Pediatrists in the Prevention of Death and Disease in Early Life.—Dr. S. M. Hamill of Philadelphia went thoroughly into the question of public health in the large cities and the congested districts. Compliment was paid to the work being done to remedy the existing conditions and suggestions were made for the co-operation of pediatrists with those now actively engaged in this work. As customary with the chairman's address, there was no discussion.

A Study of Children in Reference to Enteroptosis.—Dr. Richard R. Smith of Grand Rapids read this paper, which was profusely and effectively illustrated with lantern slides and *x*-ray pictures. He called particular attention to trunk development and the fact that the prolapse of organs was seldom (if ever) found until after the tenth year. In a series of 50 children examined, prolapsed kidney was not found, showing that this was not a congenial condition. Examination of a number of infants showed a condition of prolapsed kidney which afterward disappeared. He called attention to the fact that an elongated stomach was not necessarily a pathological condition, and that it would take care of food. He said that the "ideal stomach" was found only in the vigorous adult, but it was common in children. Healthy infants had the "cow horn" stomach well up under the diaphragm and even very fragile children usually had a normal stomach. In conclusion he said that every pathological tendency of adult life was found in the delicate child, although actual prolapse was rarely found. Prolapse of the stomach, kidneys, colon, etc., not commonly present in children, was compared with the frequency with which it occurred in adult life.

Dr. Butler of Chicago said that the acquired type of enteroptosis was never seen in children, but the congenial type was so common as to raise the question as to its being an abnormality. He thought that what would be termed an enteroptosis was a regular occurrence in infants, and that the body forms of children began to show in what was called the "second stretching period." He emphasized the lack of atonic conditions, and organic displacements, however, except in unusual circumstances, before the twelfth year. In his examinations he had not found a stomach below the umbilicus (under gas distension) before the twelfth year. He expressed the belief that the ill-health of many women had its origin in this enteroptotic habit of childhood. He said that organic displacement might be carried for years without symptoms, but that many symptoms showed a severity entirely out of proportion to the displacement to be found. He suggested as the best preventive measures that these patients, especially the neurotic, should be kept in as high a state of nutrition as possible.

Dr. I. A. Abt of Chicago said that he had had a case, that of an infant, with marked floating kidney descending away down into the pelvis; that he had from time to time examined this patient and that now, in her twentieth year, he could not feel the kidney at all, showing that it might be possible for these cases to recover spontaneously. He also called attention to the possibility of falling into error

in estimating the size of the child's stomach, feeling that one had symptoms of pyloric stenosis when it was only a normal stomach.

The Institutional Care of Young Infants.—Dr. Thomas S. Southworth of New York showed that institutions for this purpose had not the advantage of the asepsis expected, as shown by years of trial. He said that the factors contributing to the large mortality were delay in transmission to institution, disturbance of vital functions and digestion, questionable initial care in institutions, too few wet nurses for premature and delicate children, and routine feeding rather than adapting each child's food to its needs. He said that the large wards were greatly responsible for the spread of infectious diseases and that the necessity for large air space was not appreciated. He said that the lowest mortality obtained where mother's milk was used and individual care was given. He said that one must not condemn the institution until these remedies had been applied to the routine now being used. He showed that exposure, fatigue, and the probable disturbance of digestion acquired before the infant came to the institution, prevented good results. He presented complete details for the fitting up of receiving stations, and the construction of apparatus for maintaining body heat, and described the treatment to be given the infant as soon as it was received. He also explained how wet nurses might be obtained, and the necessity for a good milk laboratory for the preparation of proper milk for each individual child. He said that common illness looked upon lightly in the home became a serious affair in a crowded ward where the air was overheated and not fresh. Instruction should be given nurses as to the possibility of infection, through the agency of their hands and clothes, of bronchial troubles in winter and digestive disorders in summer, both of which groups of diseases were not commonly supposed to be infectious. In conclusion he said that when institutions accepted the best of both institution and boarding-out methods, the best results would be obtained.

Dr. G. Eliot of Connecticut said that the best results were obtained where institutions were located in the country, where the buildings could be of one story, cheaply constructed and torn down every three to five years and replaced. When they were located in the country the milk could be fed to the infants direct from the cows instead of being 24 or 36 hours old or older.

Dr. James W. Cokenower of Iowa said that in his work in the Iowa Children's Home during the past fifteen years he had handled about 7,000 babies. He said that the first great difficulty arose from the incomplete history when admitted; and the second, from infection brought in with the newcomers. He said that it was rare to have a disease break out in institutions after children had been under its management. He called attention to the necessity of looking after excretions and secretions. He said that their institution owned its own cows and regulated each infant's food most carefully to suit its needs. He said that frequently children were brought to them with the stomach muscles so relaxed that they could feed neither by mouth nor enema. In these cases quinine and olive oil inunctions were used when the surface would permit of them. If not, a flannel cloth was saturated with the strength which would be tolerated, and after this had been used the child was completely wrapped in cotton and silk and thus given the complete rest which the stomach needed, and to this method he attributed the recovery of many children.

Dr. Langley Porter of California thought that in twenty years no one would be found advocating the retention of an institution. He said that the San Francisco Children's Home and Aid Society had done away with it entirely. He said that the real problem lay in educating the public. He thought that the economic side deserved consideration; that where money was not tied up in equipment and outfitting it could be used for the procuring of a better class of nurses for children.

Dr. I. A. Abt of Illinois took issue with Dr. Porter on the question of the abolishment of institutions. He thought that while institutions were not all that they might be, the ill results could be lessened and there were many good features. He said that an infant asylum or hospital depended for its results upon the energy, soul, and brains put into it; that if technique, asepsis, and good food were insisted upon and good nurses secured results were bound to be in proportion. He said that from experience with both he had come to the conclusion that the hospital was a necessity, but he said that one might as well try to run a hospital without an operating room as an institution without wet nurses. He said that both physicians and nurses were entirely too careless about communicating disease, and made a strong plea for individual utensils for each infant. He also stated that the matter of starvation had gone too far and that babies were often physicked to death. He said that after the intestines were thoroughly cleansed further cathartic brought about a pathological condition of the mucous cells.

Dr. W. W. Butterworth of New Orleans said that in the South institutions would never be abolished because the only possibility of boarding out was in the homes of the colored. He said that while the mortality rate was so high there was something radically wrong and he laid it partially to the fact that the institutions were usually sectarian. He said that each institution should be under the supervision of a board of medical men. He said that a practical solution of the question of isolation of infectious diseases lay in the glass partitions now used in Paris, which could be put up at will and adjusted to the various needs.

Dr. McCleve of Berkeley, Cal., said that in the San Francisco Hospital, under the boarding-out system the mortality was lowered from 40 to 20 per cent; after the supplying of certified milk it dropped to 2 per cent, where it now stood.

Dr. W. V. C. Francis of California said that one of the difficulties in institutions in the Southwest was keeping out ants and flies. In their institution they had established the routine habit of giving one dose of castor oil to each child and nothing more unless definitely ordered by the physician.

Dr. Thomas S. Southworth, in closing, said that in the East he did not think it would ever be possible or practical to abolish institutions, but he said that any institution was successful in just so far as the nurses could be depended upon; that suitable milk must be insisted upon and infection eliminated by a quarantine of two weeks and that visitors to the child should be cautioned.

The Baby Tents.—Dr. Frank W. Allin of Chicago, Ill., read this paper by invitation. He called attention to the inadequacy of all methods in use in Chicago to lower mortality; that in one year there were 6,888 deaths among children under one year. One of the great difficulties lay in the fact that congested districts where need of fresh air was so great were removed from the sanatoria on the lake shore. He called attention to the fact that organized effort to save the babies was a recent measure. Statistics showed that the percentage of deaths was far greater in crowded districts, so that fresh air was just as much a consideration as good milk. To meet this the baby tents were instituted seven years ago. They were placed on roofs or in vacant spaces, fitted with a hospital tent, receiving tent, and milk tent where milk in any modification was supplied to mothers at cost. Eight iron beds were placed in the tent, also electric lights, two electric fans, and a telephone. The tents were opened July 10 and remained open until September 15. They were kept open nights and on Sundays only during excessive heat or in emergency. Trained

nurses and interns were in attendance and visiting nurses were employed in the neighborhood. Doctors (chiefly from the Pediatric Society), were assigned for two days each week and assumed control of all the cases of that day, prescribing for others only in emergency. No patients of more than two years of age were admitted. When the patients failed to return, the visiting nurse was sent to investigate. He said that all mothers could not be induced to leave their babies in tents, but much good was done by close association of mother and doctor, and that when the baby did not do well the mother could be induced to leave it. The first year sixty were cared for, and last year with eleven tents in operation 1,750 were given close personal attention. The mortality last year (and all cases which died at home within three days after being in tents were included), was 1.75 per cent. The most successful tent received 363 patients; these were seen on an average of four times each; the number in a tent daily was 12; the deaths were 2. The total death rate for the season was .55 per cent. Many large cities have adopted the tent plan. Organizations were largely financing the undertaking, but the cost last year was $5,000.

Dr. J. P. Sedgwick of Minneapolis said that in their tents they had a perforated iron pipe connected with the city water supply along the ridge of the tent pole. In the case of excessive heat the water was turned on and allowed to saturate the canvas, and by evaporation it greatly lowered the temperature. He said that since the establishment of the tents the death rate as compared to the hospital records of the same period five years before was exactly cut in two.

Dr. May Michael of Illinois said that a valuable addition to one Chicago institution was a wet nurse.

Dr. F. Allin in closing said that in Chicago during extreme heat they had frequently placed a large block of ice in a tub before the electric fans, which lowered the temperature.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Tuesday, June 27—First Day.

Dr. H. G. Wetherill of Denver in the Chair.

Carcinoma of the Clitoris and Report of Case.—Dr. Charles D. Lockwood of Pasadena, Cal., read this paper, in which he commented upon the comparative infrequency of tumors of the clitoris, and particularly of malignant tumors. He reported a case in which intense pain on urination was the most prominent symptom. Examination showed a characteristic, granular ulceration in the region of the clitoris. He completely excised the mass, which proved to be an epithelioma. It recurred in the inguinal glands after eight months, those of the right side being more prominently involved. Death occurred two years after the first operation. Irritation by means of discharges, syphilis, psoriasis, or chronic eczema seemed to be the prominent etiological factor in these cases. The glands were involved late. Recurrence was very frequent. The author had found reported 157 cases of tumor of the clitoris, of which 70 were epitheliomata.

Torsion of a Subserous Pedunculated Fibroid Complicating Pregnancy at Four and a Half Months: Operation, Recovery, with Delivery at Term.—Dr. E. M. Lazard of Los Angeles presented this paper, in which he said that while it was formerly believed that fibroids complicating pregnancy were a rare condition, a study of the literature showed a large number of reported cases, very few of which required operative interference. The condition was of interest on account of the accidents of pregnancy and association with malpositions, placenta previa, and retained placenta. Many cases went unrecognized. Gangrene of the tumor generally attracted attention to the condition, being caused by direct pressure or torsion of the pedicle. There were three cases of pedunculated fibroid reported in the literature. The author reported a case of a primipara who at four and a half months had a sudden sharp pain in the right side, followed by a fainting spell. A mass was discovered on the right side, which on operation proved to be a pedunculated fibroid with a gangrenous pedicle. The mass was ligated and removed, the patient's recovery being uneventful, and delivery being effected at full term by forceps. The puerperal period was uneventful, excepting for a high pulse due to hyperthyroidism.

Dr. J. S. Baer of Camden, N. J., said that he had never observed a case of this kind. He remembered five fibroids of the uterus complicating pregnancy at term, requiring forceps delivery or cesarean section. These cases bled more after delivery than a normal case.

Adiposity of the Mammary Glands.—Dr. J. R. Guthrie of Dubuque, Iowa, and Dr. Henry Albert of Iowa City presented this paper. They said that cases of a true adiposity of the mammary gland were comparatively rare, most of the cases of macromastia being a simple hypertrophy of connective tissue or glandular elements. In 69 reported cases, three had excess of fatty elements. In his case excessive adiposity was increased during pregnancy. Enlargement was associated with pain and tenderness. Toxemia required an abortion at seven months. Total amputation of both breasts was performed on account of the size and persistent tenderness, recovery being uncomplicated except for mild infection of the right wound. Microscopically the glands were found to be composed almost exclusively of adipose tissue.

The Exciting Causes, Means of Prevention and Early Treatment of Cancer of the Uterus.—Dr. A. E. Benjamin of Minneapolis read this paper. He commented on the lack of co-operation between the public and the physicians in the treatment of cancer. The death rate from cancer was rapidly rising, more women now dying from cancer than from tuberculosis. The exciting cause was usually local trauma associated with poor hygienic conditions. Every case was said to be founded on a chronic cervicitis. Every laceration of the perineum or cervix should be repaired at once. The necessity of bringing before the public the cause, and the importance of leucorrhea metrorrhagia, and menorrhagia, and the fact that 80 per cent of cancers were preventable and curable, was impressed upon the minds of those present. He urged complete hysterectomy in early cases, and cautioned against the radical operation in late cases on account of the unfavorable influence it might have upon the laity. He urged the necessity of exciting interest in the subject and of careful observance and recording of symptoms.

Dr. J. S. Baer of Camden, N. J., agreed with everything that Dr. Benjamin said. He had always urged the necessity of investigating any discharge at the menopause and advised examination of a section of the cervix in suspicious cases.

Dr. A. E. Hertzler of Kansas City said that nearly all of the cases sent to the surgeon had been bleeding for months or years, and were not operable. When the cases were easily diagnosed clinically they were not curable.

Dr. J. O. Polak of Brooklyn, N. Y., said that the New York Gynecological Society had recently gotten up a leaflet headed "What every woman should know in order to prevent death from cancer of the womb." Acetone was of value, but operation even in the presence of incurable cases prevented loss of blood and reduced toxemia.

Dr. Laura H. Branson of Iowa City, Iowa, said this subject was of great interest to her, particularly the subject of the prevention of cancer. She believed in the immediate repair of the cervix.

Dr. C. D. Lockwood of Pasadena did not believe that it was good policy to advise immediate repair of the cervix

except under the most favorable conditions, on account of the danger of sepsis and the possibility of leaving a large amount of scar tissue in the cervix.

Dr. T. Mitchell Burns of Denver did not believe in immediate repair except in certain operative cases. He believed that from six weeks to two months after delivery was the proper time to do the repair.

Dr. J. T. Reddick of Paducah, Ky., said that on account of edema of the cervix he believed it advisable to wait some time before repairing the cervix.

Dr. Baer of Camden, N. J., said that he did the immediate repair only when surrounded by the most favorable conditions.

Dr. Titan J. Coffee of Los Angeles examined his cases eight or nine days after delivery and did the repair if necessary. He used a 10 per cent. solution of cocaine as the anesthetic.

Dr. H. P. Newman of San Diego urged the necessity of early operation in all of these suspected carcinomata.

Dr. Burke of Redlands said that he believed Dr. Coffee's suggestion was a good one. He believed the physician was at fault who did not recognize operable cases of cancer.

Dr. W. B. Dorsett of St. Louis never repaired the cervix except for hemorrhage. His cancer cases had nearly all lived in a swampy district. He emphasized the importance of curettage and the actual cautery for inoperable cases.

Dr. Benjamin closed by stating that he believed in immediate repair under right conditions, and was much gratified by the discussion of the paper.

Relation of Exophthalmic Goiter to Pelvic Disease.—Dr. Arthur E. Hertzler of Kansas City, Mo., reported a series of cases in which there was in each case pelvic disease which antedated the exophthalmic goiter. In his first group, correction of pelvic trouble by operation cured four of five cases and improved the fifth. In the second group there was pelvic disease, but operation was not performed. In many cases the pelvic conditions were found only on examination, no history being given. Concluding, he said that perhaps one was not so sure of the pathogenesis of goiter as one was prone to believe. The relation of the thyroid to the pelvic organs was well marked.

Dr. Lazard of Los Angeles said that in his case of pedunculated fibroid there was no history of previous pelvic disease, and after operation and delivery the symptoms of hyperthyroidism persisted.

SECTION ON SURGERY.

Tuesday, June 27—First Day.

Dr. George W. Crile of Cleveland, Ohio, in the Chair.

To fill the vacancy in the Executive Committee caused by the death of Dr. J. C. Munro of Boston, the Chairman appointed Dr. Charles H. Frazier of Philadelphia.

Newer Methods for Further Increasing the Safety of Surgical Operations.—Dr. G. W. Crile of Cleveland divided operations into two classes: (1) Those on patients in fair health, such as operations on the uterus and ovaries, simple gall-bladder and hernia operations, operations for cancer of the breast, simple goiter, etc.: and (2) those on patients whose vitality had been lowered by accident, infection, or prolonged illness, such as severe crushes, peritonitis, starvation from pyloric obstruction, etc. Of 10,723 personal operations 4,127 were in the first group, with a mortality of 1 in 325 cases. All cases had temporary nervous impairment, such impairment varying with the individual, working women as a rule having less than women living in luxury. For this nervous impairment there was a physical basis. The central nervous system was damaged; brains after fatigue, injury, drugs, shock, etc., having been examined and anatomical changes having been observed. Severe infections, shock, and emotions even were the cause of surgical deaths and showed changes in the central nervous system. Three factors increased the damage to the central nervous system: (1) fear, (2) trauma to tissues, and (3) anesthesia. Fear was stronger than the will and required drugs for control. Morphine and scopolamine allayed fear and gave a neutral state. Owing to the abolition of the association fibers one should prevent the effects of trauma to the tissues by using a local anesthetic to block all impulses from the site of operation to the brain. Under the use of nitrous oxide anesthesia the effect of trauma on the brain was only one-fourth as much as when ether was used. Crile had had personal experience with 2400 operations under nitrous oxide and Dr. Teter had given it 17,762 times without a fatality. After the nerve cells of the brain had been damaged and vitality had been lost restoration could be brought about by direct transfusion of human lood. In industrial accidents and grave diseases where vitality was low, the remaining vitality should be conserved by the use of nitrous oxide as a general anesthetic and cocaine as a local anesthetic, to prevent impulses reaching the brain, and also the restoration of the exhausted nerve cells by direct transfusion. In 2410 cases so operated on there was a mortality of less than two per cent. Slides were shown illustrating the appearance of brain cells in the normal condition, in toxemia, in fatigue, in fright, etc.

Brachial Palsy.—Dr. Charles H. Frazier of Philadelphia read a paper on supraclavicular, subcutaneous injuries to the brachial plexus without skeletal injury. From 1873 to the present time there were 21 cases on record. The case reported was that of a physician who was struck on the shoulder by a man who fell four stories. Examination showed a lesion of the 6th, 7th, and 8th cervical nerves. On account of severe pain it was proposed to cut the posterior roots of the 5th, 6th, 7th, and 8th cervical, and the first dorsal nerves. Laminectomy was done; the 6th, 7th and 8th roots were found already divided. In diagnosis hysteria and hematomyelia must be considered. An operation in continuity might appear complete, yet with loss of function owing to division of the axis cylinder processes. The prognosis without operation was bad and with operation was not very good, but improvement might take place. One should not postpone operation. There were four classes of cases: (1) loss of function without rupture: (2) rupture in an accessible place; in these cases ends should be freshened and sutured; (3) rupture in an inaccessible place; and (4) neuralgia. In the last two cases the posterior nerve roots should be resected. Another observer had had six cases in the past two years without a fatality.

Dr. W. W. Grant of Denver spoke of the importance of preventing the formation of excessive scar tissue at the site of suture of a nerve. Personally he used cargile membrane.

Advantages of the So-Called Decortication of the Lung for Old Empyemata.—Dr. Fred B. Lund of Boston read a paper stating that in old empyemata there was a cavity with rigid walls and either the chest wall must be collapsed or the lung made to expand. The first method was a very severe operation and very deforming, especially in growing children causing lateral curvature. In 1893 Delorme, in France, and Fowler, in America, practised removing the plastic exudate from the lung, allowing it to expand. This was safer and less deforming than resection of ribs. Lund had seven cases. He made his incision upward and forward from the original incision, opened the pleural cavity and dissected the thickened pleura from the lung. The air cells of the lung were but rarely injured, as evidenced by the escape of air. The

expansion of the lung was immediate and recovery was prompt.

A Plea for More Direct Methods in Dealing with Gastric Ulcers.—Dr. Robert C. Coffey of Portland, Oregon, stated that gastric ulcer was not always cured by gastroenterostomy and advocated excision of the ulcer. He had a death from hemorrhage due to injury to an artery by the clamp. Therefore he perfected a technique of excision without the use of the clamp. The clamp served three purposes: (1) to hold the viscus, (2) to prevent extravasation of gastric contents, and (3) to prevent hemorrhage. He accomplished the same purpose by traction sutures to steady the viscus and by the traction elevated the walls of the stomach so that air entered the elevation. The incision was then made and the gastric contents were removed with a ladle and sponges and the entire mucosa was inspected. If the ulcer involved the posterior wall the lesser peritoneal cavity was packed with gauze, the ulcer was excised and the wound sutured. Hemorrhage was prevented by making an incision parallel to the blood-vessels. Thus all the advantages of the clamp were obtained without danger of injury by that instrument.

Dr. J. W. Draper Maury of Rochester, Minnesota, described a method of excision of a portion of the stomach by means of a pentagonal stitch of twine which cut its way out and did not necessitate opening the stomach.

Dr. Skinner of Geneva, N. Y., mentioned a paper he had read three years ago in Atlantic City describing an operation on the posterior wall of the stomach through an incision in the anterior wall. He stated he did not use clamps in stomach operations, but washed the stomach out by a nasal tube and allowed the tube to remain *in situ* during the operation.

Dr. Andrews of Chicago stated that the pendulum was swinging from the indirect method of treating gastric ulcers back to the direct method. The direct methods had disadvantages.

Dr. C. H. Mayo of Rochester, Minn., stated that he used clamps and had no ill effects from them, but had bad hemorrhages from the ulcer and also from the suture line. He stated that one-half of the cases of gastric carcinoma had been preceded by a history of ulcer, therefore a callous gastric ulcer were better excised. Ulcers of the duodenum were not prone to carcinoma.

Dr. A. J. O'Connor of Chicago stated that he had no fear of hemorrhage from the use of the clamps. The pentagonal stitch might be of service if the ulcer were small, but in those cases it was not necessary. On the other hand it caused too much puckering if the ulcer were large. One should approach the posterior wall of the stomach through the transverse mesocolon.

ELECTION OF OFFICERS.

The following officers were elected by the House of Delegates of the American Medical Association:

President.—Abraham Jacobi, M. D., New York.

First Vice-President.—W. Jarvis Barlow, M.D., California.

Second Vice-President.—Floyd W. McRea, M.D., Georgia.

Third Vice-President.—William R. Tipton, M.D., New Mexico.

Fourth Vice-President.—William T. Wright, M.D., Iowa.

Secretary.—Alexander R. Craig, M.D., Pennsylvania.

Treasurer.—Wm. Allen Pusey, M.D., Illinois.

Trustees.—Philip Marvel, M.D., New Jersey.
Philip Mills Jones, M.D., California.
Frank W. Searles, M.D., Illinois.

Next annual meeting at Atlantic City, N. J.

AMERICAN ASSOCIATION OF MEDICAL EXAMINERS.

Eleventh Annual Meeting Held at Los Angeles, Cal., June 26 and 27, 1911.

(Special Report by Telegraph to the Medical Record.)

Monday, June 26—First Day.

The President, Dr. Liston H. Montgomery, of Chicago, in the Chair.

Address of Welcome.—Dr. Wesley Wilbur Beckett of Los Angeles, Medical Director of the Pacific Mutual Life Insurance Company, delivered this address.

Life Insurance Companies as a Factor in the Progress and Problems of a Great Nation.—Dr. Liston Homer Montgomery of Chicago said that the greatest accumulation of private funds and the greatest aggregation of money were those in certain life insurance companies. The funds paid into life insurance companies should not be owned by these companies. In the handling of money there should be a maximum of safety with a minimum of cost. He considered the question of industrial insurance. He advocated the formation of a national department of health, and law or laws should be enacted to obtain such a department. Every individual was a producer and the country should protect the life and the welfare of its people. That was patriotism. A patriot resulted from the love of an individual for his country and the government should love such a man. Public sentiment endorsed the formation of a national department of health. There should be a separate bureau for this department of health. Dr. Montgomery was very enthusiastic in this matter. It was a matter of regret that to-day not more time was allowed members of the medical profession to enter the field of politics. He proposed that they should have appointed five members to consider the advisability of formulating some plan to further this idea and to make suggestions toward the accomplishment of the formation of a national department of health, and to report back to the meeting the results of their deliberations before adjournment. Life insurance companies should be conducted as beneficent institutions and not as commercial money-making affairs for the accumulations of millions of dollars with their perversion of sacred trust funds. In closing, Dr. Montgomery said that the medical examiner should be cloaked with good horse sense and diplomacy. If a man was examined and said that his appendix was in a glass bottle, he was a safer risk than the man who had his appendix in his abdomen. Life insurance premiums were too high. A national department of health and the bureau of life insurance should be merged.

The Medical Examiner.—Dr. Allison Maxwell of Indianapolis, Ind., said that the life insurance companies depended upon their medical examiners to keep down their mortality rate and this was a very strong argument for the selection of examiners of integrity and ability. The qualifications required of a medical examiner were many; to be successful he should have tact, and the moral courage to protect the company even though in doing so it drove away patients and possibly friends. The medical examiner should be continuously on his guard to discover whether or not the risk was a good one. There was the moral hazard encountered: often the medical examiner saw in a man something which was difficult to estimate, but the medical examiner could write many things to the home office which would be of value, such as the fact that the applicant was leading a very immoral life, etc. Dr. Maxwell believed that the medical examiners for life insurance companies were, as a rule, honorable and the best educated men in the community. Of course, they did make mistakes at times.

Dr. L. L. Stevens of Seattle, Wash., thought that each of those present had been in the position of a medical examiner looking upon the applicant from the physician's standpoint. There were many perplexing questions that frequently arose; many had patients whom they had treated for years, who appeared before them for examination for life insurance. Many times examinations were made and, for instance, a mere trace of sugar found; if this was reported to the company the applicant no doubt would have been rejected, and after that rejection this individual would never be able to secure life insurance. They sometimes felt that occasionally they might be wrong. Therefore as physician and as a friend of the applicant the case was not reported and the report was postponed. This was looking at the matter from the standpoint of physician and friend of the applicant. One of the requirements for a good medical examiner was loyalty to the company. They knew that some cases of diabetes mellitus during the incipient period would recover; but such patients did not make good risks. Dr. Stevens thought that medical directors would bear him out in the statement that it was better to report cases as they found them. Let the medical director decide whether the applicant should be completely rejected, or should be allowed to take out some other form of policy. Another point which might at first appear to be a trivial one was the necessity for clearness in writing and correct spelling; this might save the home office many hours of work.

Dr. Allison Maxwell said that the medical directors should impress upon the medical examiners the desire of the former that the examiners be sincere always; the directors would try to treat the examiners in the same way.

Why Physicians Who Are Good Business Men Are in Demand by Insurance Companies as Examiners.—Dr. Charles Cutting of Seattle, Wash., presented this paper, which was read by Dr. L. L. Stevens. He stated that now as never before the members of the medical profession realized that to be successful the practice of medicine must rest upon business principles. A man could not give proper thought and study to his work if he was harassed by business difficulties. Of the thousand lines of work the doctors probably suffered more from financial embarrassment. Was it true to-day that medicine was in a chaotic state? It was true; medicine to-day was in a chaotic condition, because they as physicians had been blind to the business side of the work. They had neglected to study the patients; they could not get the patients' attention, and so these had left and gone over to the quack, the Christian Scientist, the mental healer, etc., from whom they got both mental and the physical assistance. There were too many *isms* and fads to-day. The physicians must have the sera, drugs, and surgery, but above all they should have common sense. They could not afford to be ignorant of human nature. The man that had a good business training made the most useful and successful physician. Many physicians made good claim adjusters. The art of making a good physical examination rested largely upon the sense of observation. The following were some of the reasons why the position of medical examiner was attractive: (1) The demand for accident, health, and liability insurance was steadily on the increase. Accident and health contracts were for short terms only, not exceeding one year. Every man the world over desired protection against loss of time from disability caused by either accident or sickness. This applied to men and women, employer and employees. (2) The short time required to make accident and liability examinations appealed to the busy practitioner and he could, in the majority of the cases, arrange the time and place to suit his convenience. Thus it was possible to make a number of such examinations in the time usually required to examine one life applicant. (3) The fees ranged all the way from $2 up to $10, and where the cases went to court the examiner was asked to report again upon the condition of the plaintiff before trial and to testify during the trial, for which fees were paid in accordance with the custom of the locality where the examiner lived, from $25 to $100 a day. (4) The insurance agent was a good fellow, but alas, many times a thorn in the flesh of the life insurance examiner. Not so, however, in the accident, health, and liability field. The agent was in no way connected with the doctor and was unable, therefore, to harass him. (5) The successful examiner must be a good diagnostician. Never in the history of medicine had correct diagnosis been so essential as it was to-day. He was also called upon to make a prognosis, the accuracy of which depended largely upon his experience in this line of work. Such training was invaluable. (6) If the examiner proved satisfactory to his accident or liability company, if his diagnosis and prognosis showed that he was a man of ability, it was not long before he was likely to find himself serving as an adjuster for the company. That the skilled examiner made the best adjuster was gradually being conceded by the up-to-date and progressive insurance companies. The physician proving his ability in this line assured himself of a permanent position and made himself indispensable to the company, and this in turn meant a good sized income and 100 per cent. of collections. (7) The high class accident and health policies were sold to selected business and professional men, whose acquaintance was worth cultivating, and many an examiner had become the family physician of the assured and had more than doubled the size of his practice in a very few years. On the other hand, the industrial accident policies were sold to the working people and the examiner soon found his practice increasing in this direction also. (8) To cultivate the power of observation was the aim of every progressive physician. To be able to prove that his diagnosis had been correct was particularly gratifying. Most disability policies had a clause whereby the company had a right to perform an autopsy in case of death and the examiner who had demonstrated his value to the company was likely to be called at any time to do a post-mortem which not only called for a good fee, but was the best possible kind of training for a physician or surgeon. (9) Physicians averaged to collect about 75 per cent. per annum from their practice. Examiners were paid regularly at the expiration of 30 to 90 days, and their collections were always 100 per cent. (10) Accident companies were requiring more examinations in cases of claims than ever before. The demand for a higher grade of work would continue to increase year by year. The examiner would gradually take the place of the attorney and claim agent in the adjustment of a large percentage of claims. The following were a few of the necessary qualifications for success: (1) A thorough technical training. (2) The examiner must have a good address and appearance, be well groomed and tactful at all times. (3) Every examiner must develop the power of observation. (4) Many companies required the examiner to give his idea as to prognosis and the probable period of total or partial disability. (5) He should be able to tell approximately the length of time the insured was likely to be disabled. (6) He should be able to state whether or not the insured was disabled by accident or illness. This played a very important part in the adjustment of claims. There should be a close study of the relation between injuries and illness. (7) He should be a good listener; he should let the insured do the talking, and the examination should be made in the shortest time possible. (8) In making a prognosis the examiner should take into consideration all the facts. (9) Having made the examination and having used every available means to ascertain all the facts, the examiner then must accurately present his report on paper and in a manner which would be understood by the home office.

Dr. G. Strohbach of Cincinnati said that the subject under discussion interested him very much, because his hobby was economics. He wished to encourage sane methods in conducting the practice of medicine. Medical economics should be taught in medical colleges. In the State of Kentucky the board of examiners, after a brief period, would refuse to examine a physician who had not had and passed a course in economics. He said that to-day almost everything that pertained to medicine was in a chaotic state. They were changing from the old to the new order of things. The American Medical Association had been captured by the extremists, who were attempting to overturn the old order of things by revolution rather than by evolution. Who were those qualified to practise medicine: the medical scientists or the medical practitioners? While they needed the medical scientists it was necessary that they had the medical practitioner as well. In England they defined who should practice medicine. There it was stated that a man having definite qualifications was entitled to practice, and many of these men were eligible to appointment in various governmental works and public health work. The insurance companies there only recognized such men. With regard to fees Dr. Strohbach said he had been in correspondence with the Economic League of Leipsic, Germany. He learned that in that city there were used various forms or blanks for the examination work. A given amount of money was paid, the amount depending upon the number of questions to be answered, the amount of work required in the way of laboratory work, etc. There were, he believed, five varieties of fees. The idea of making a medical examiner an adjuster was new, but it appealed to him. But the medical examiner must be fair to both his acquaintance and to the company in whose employ he was. He of course represented the company. How the plan suggested would work out he said he would like to know.

Some Considerations of the Risk in Life Insurance Examinations, with Special Reference to Tuberculosis.—Dr. Clarence L. Wheaton of Chicago read this paper and gave a résumé of some of the principles of the subject with special reference to tuberculosis.

Election of Officers.—*President*, Dr. W. E. Grant, Louisville, Ky.; *First Vice-President*, Dr. Charles T. Cutting, Seattle, Washington; *Second Vice-President*, Dr. Frank W. Foxworthy, Indianapolis, Ind.; *Third Vice-President*, Dr. Paul Fitzgerald, Newark, N. J.; *Fourth Vice-President*, Dr. Wesley Wilbur Beckett, Los Angeles, California; *Secretary*, Dr. G. Strohbach, Cincinnati, Ohio; *Treasurer*, Dr. Liston Homer Montgomery, Chicago; *Executive Committee*, the Ex-Presidents.

CONNECTICUT STATE MEDICAL SOCIETY.

One Hundred and Nineteenth Annual Meeting, Held in Hartford, May 24 and 25, 1911.

Dr. Frank K. Hallock of Cromwell, President, in the Chair.

A Farm Colony for Alcoholics in Connecticut.—Dr. Frank H. Barnes of Stamford said that the problem of how to care for inebriates was one of the greatest of the present time. The laity, with a few members of the medical profession, had been struggling with this question for many years, and very little had been accomplished, inebriety having been on the increase at an alarming rate. He thought, therefore, that something should be done to stop its ravages. In order to get some statistics on the subject to present to the society, he had sent some letters asking for information to the judges of the courts of the leading cities of the State. The answers to these had led him to believe that the best solution of the problem lay in the establishment of a farm for inebriates. He suggested that power be given the president of the State Medical Society to appoint a committee to present this matter to the State Legislature and ask for the appointment of a commission to investigate the subject.

Dr. Henry S. Noble of Middletown believed that a certain percentage of the younger class of inebriates could be cured, if taken in hand with right methods before self-respect was lost. He considered the cure of inebriety to be a sort of moral reformation, enabling a man to withstand the temptation to drink. The punitive methods hitherto adopted had been entirely unsuccessful; because an individual suffering from the acute effects of alcohol, if confined, was almost certain to repeat his offense on regaining his liberty. While the speaker had not unbounded faith in the success of a farm for inebriates, he thought it the best scheme that had yet been devised.

Dr. Thomas D. Crothers of Hartford referred to the curious fact that this was the third time that this question had come up before the State Medical Society. He hoped that this time the work done on the two former occasions would be continued with better success, as the need of it was growing greater. He considered this question to be really one of preventive medicine, and offered a resolution that a committee be appointed to bring the matter before the State Legislature.

Dr. Frederick B. Downs of Bridgeport thought that one reason why a bill to establish a farm for inebriates had not already passed the State Legislature was that many of its members felt that the State Reformatory should take this class of cases, as it had been established to take care of all reformable cases, whether due to alcohol or not. He himself, however, believed that it would be better to have a farm for drunkards, where the men could be put to work.

Dr. Barnes thought that it would be dangerous to mix up alcoholics and criminals, and said that this was also the general opinion of men of experience.

The resolution of Dr. Crothers was passed by the Society, and a committee was appointed.

The Serum Reaction in the Diagnosis of Syphilis.—Dr. Jessie W. Fisher of Middletown detailed the advantages of the Noguchi modification over the original Wassermann reaction and stated the value of the positive reactions, especially in neurology. She then considered the disappearance of the reaction following the use of 606, and made a plea for the early diagnosis and thorough treatment of syphilis. She suggested that the test for syphilis might be made by the Board of Health laboratories. She summed up the value of the serum diagnosis of syphilis as follows: "It makes possible the early diagnosis and treatment of syphilis. It is corroborative of the clinical symptoms. It is invaluable in the differential diagnosis of obscure disease. It is an index to the progress of recovery, and a guide to marriage. It gives an assurance of cure. It is extremely important in the retrospective diagnosis of syphilis and in the prognosis of latent syphilis. Combined with the cytoanalysis of the cerebrospinal fluid, it is diagnostic of dementia paralytica. It is probably destined to become one of the most valuable tests of the future, exceeding in importance the Widal reaction."

Dr. Charles J. Bartlett of New Haven thought that no one had a right to take up this work unless he could give to it at least one day a week, and unless he had great patience and technical skill. In the case of a properly carried out positive test in this country, he considered a physician justified in pronouncing the case syphilis. If the reaction was positive in any great percentage of cases of malaria, he thought it important for the medical profession to know it. In the case of a negative reaction one could not state that the patient had not the disease, it being absent in only 80 or 90 per cent. of the cases that gave a negative reaction. Occasionally a negative reaction had

been found in the active secondary or tertiary stage of syphilis. One should, therefore, be guarded in considering a negative reaction as an indication of cure; although a gradual decrease in the degree of a positive reaction was valuable as an indication of improvement. It was necessary to wait months, and perhaps years, before being sure that 606 had cured the disease.

Dr. FISHER said that Noguchi had stated that if positive reactions were found in nonspecific disease, he would consider the technique faulty; although he admitted that such reactions were occasionally found in malaria. With the Noguchi modifications Dr. Fisher had obtained a lower percentage of positive results than she had obtained with the original Wassermann reaction. She thought that mercury affected the reaction more than 606, and believed that physicians should wait before giving up mercury and potassium iodide.

Ringed Eruptions in Skin Diseases and Their Differential Diagnosis.—Dr. JAMES D. GOLD of Bridgeport stated that ringworm was the disease *par excellence* for ring formations. He considered two forms: ringworm of the general surface, or tinea circinata; and eczema marginatum, or tinea circinata cruris. Both of these were due to a vegetable parasite, tinea trichophytina. Psoriasis and pityriasis rosea were often confused with ringworm; but the large scales of the one and the wrinkled, yellow center of the other marked the difference. He said that the circinate syphilide must also be considered in making the diagnosis of ringworm. The tubercular syphiloderm was confused with psoriasis and lupus vulgaris but the more general eruption and silvery scales of psoriasis, and the chronicity of true lupus, would generally make the diagnosis clear. Lichen planus and impetigo contagiosa were not infrequently found in rings; yet, even then, their individual characteristics were so marked that no trouble would usually be experienced in making the diagnosis. Erythema multiforme was a more acute and inflammatory disease, and was usually readily recognized. One should study the individual lesion, and compare it with other lesions of the body, to make the diagnosis sure, and, having established that, the treatment could be conducted along the right lines, with comfort for the patient and success for the physician.

Dr. MARK S. BRADLEY of Hartford referred to another skin disease prone to occur in ring-like configuration besides those given by Dr. Gold. This was dermatitis herpetiformis, which, in the erythematous type, closely resembled a generalized erythema multiforme. The most striking case of ringed eruption that he had ever seen was in a man with a well-marked case of psoriasis of long standing. The eruption was typical enough, except on the abdomen. The umbilicus was surrounded with a circle, about four inches in diameter, which was solid with the eruption. Around this circle was a ring of healthy skin, about an inch and a half broad; and just external to that was a ring of the eruption, about two inches broad. The abdomen looked like a target in a shooting gallery. The speaker also called attention to the fact that syphilis is the greatest of imitators.

Dr. RALPH A. MCDONNELL of New Haven expressed surprise at the general attitude of the profession toward skin diseases and said that the physician who would utilize the latest diagnostic aids to clear up the etiology of such an uninteresting complaint as chronic headache would dismiss with a glance and a prescription for a stock ointment almost any skin case. He stated that pathological processes of the most varied character might be seen in the human skin.

The Feeding of Sick Infants.—Dr. CHARLES A. GOODRICH of Hartford stated that the object of this paper was to emphasize certain clinical observations concerning the feeding of sick infants, rather than to dwell upon the science of their nutritional needs. Various substitutes for milk feeding in illness were mentioned, such as cereal decoctions, albumin water, a sugar solution and whey; and the low food value of these, as ordinarily prescribed, was pointed out. The special classes of cases in which they were most useful were discussed, together with certain contraindications for their use. Intolerance of milk was then considered, that occurring in disease, and also that due to some inherent peculiarity present in the infant. A brief mention was made of some of the symptoms occurring in this condition, and the feeding of these cases was outlined. Cereal gruels, either plain or dextrinized, were recommended in such cases. Lastly, the increasing importance of the subject of feeding in surgical cases was alluded to.

Dr. H. MERRIMAN STEELL of New Haven said that he had frequently fed babies with summer diarrhea on well-cooked cereals, nearly as thick as the ordinary breakfast foods, and, he believed, with much better results than those obtained by using the weak cereal waters. In cases in which it was necessary to starve the patient for twenty-four or forty-eight hours, he considered water alone the best thing to give, attention being paid to the salts. He agreed with Dr. Goodrich in his recommendation of milk sugar as a proper food for tiding over acute cases, and thought that for rectal feeding dextrin in solution probably furnished more absorbable material than any other food at one's command. He referred to the fact that in adding milk sugar to whey the limit of tolerance for sugar might easily be overstepped; because whey itself contained over 4.7 per cent. of their ingredient. He thought that undue stress was often laid upon the character of the stools in convalescent cases of summer diarrhea. This he considered absolutely no contraindication to beginning milk feeding. A trial of buttermilk was suggested for cases of intolerance for milk in both sick and healthy infants.

Dr. WALTER G. MURPHY of East Hartford said that it had been found that children after the age of three or four months often did better on a mixture of milk and barley-water than on one of milk and water or any other diluent. Its food-value, however, was so little that, if long continued, the patient might suffer from a lack of nourishment. In acute irritative diarrhea the indications were to get rid of all irritating substances in the intestinal tract, and to withhold all food until the vomiting had ceased. In cases in which the babies had some infection and were overfed plenty of water and rest were indicated; and if these children were not too much depressed, they were better without food. In acute fermentative diarrhea, if the child's condition would warrant it, the speaker approved of the withholding of all food until the intestinal tract had been cleared of fermenting substances. In babies whose general condition had not been good, whose powers of resistance were below normal, and who were subject to frequent attacks of diarhea and vomiting the withdrawal of all food was frequently disastrous. If the stools were offensive, cereal foods, either plain or dextrinized, given to the extent of the digestive capacity, were necessary.

Dr. GOODRICH said that a good many children that were ill with acute maladies other than digestive disorders would be able to digest food at a much earlier period than it was usually given to them, provided that the doctor knew what kind of food to use. While he agreed in the main that the children that were exhausted were the ones that especially needed these food values, he felt a little more inclined to the early feeding of the acutely ill.

The Relation of the Medical Profession to Opticians.—Dr. HENRY W. RING of New Haven stated that in the passage of so-called optometry laws throughout the United States the help of the medical profession had been so-

licited with no small degree of success. This aid had been obtained through misrepresenting the possible and actual evils to which the public might be subjected. Many physicians would send their patients to opticians for examination and treatment of the eyes, forgetful that opticians bore the same relation to the ophthalmologist that druggists bore to the general practitioner. A large number of cases of serious disease of the eyes had been treated by opticians with glasses, the real trouble not being suspected. The eye being not only subject to diseases peculiar to itself, but also participating in and giving evidence of affections of the other parts of the body, anyone unacquainted with this relationship was bound to make mistakes. The measurement of errors of refraction and anomalies of accommodation and of ocular motility, with or without the aid of drugs, was not, the author said, a simple mechanical procedure, but represented one of the most important therapeutic measures in the practice of medicine. The oculists had shown more activity than the general practitioners had in opposing the extension of the optometry legislation, because unfortunate results were so frequently met with in their work; but this opposition should not be confined to them. The situation should be appreciated by the profession in general.

Dr. E. Terry Smith of Hartford remarked that if the general practitioners saw, as the men practising opthalmology did every day, the results of the advice of incompetent opticians, they would realize the danger to the community. Until these men were more careful in appreciating their limitations the State should withhold its support of their work.

Dr. Henry S. Miles of Bridgeport said that the opticians had been deceived by a few leaders into believing that they could properly examine and treat eyes without any medical training. They, in turn, had deceived the public and, he regretted to say, some doctors. He did not consider it beneath the dignity of physicians to protect the public against themselves, or to prevent this evil, as well as all other evils. That the opticians had been permitted to continue their peculiar methods so long was equally the fault of laymen and physicians.

Dr. William H. Carmalt of New Haven said that he could not forget the amount of mischief he had seen done in previous years by these men in attempting just what they wanted to get the Legislature to legalize. Not only were they ignorant of the subject of disease of the eyes, but they also did not even know how to fit glasses ordinarily. If the opticians gave their examinations free, they must sell glasses, in order to pay for the loss of their time, whether these were needed by the patients or not.

Dr. Everett J. M'Knight of Hartford thought that the two defeats that the optometrists had had in Connecticut would deter them from trying it again, and believed that this agitation would gradually die out. He doubted whether they could get such laws passed in any more States. Both the Senate and the House Optometry Bill had been rejected without any opposition. It was only by combined effort, he said, that the medical profession of the State could have accomplished what they had during the last year. He remarked that it had been difficult to get the ophthalmologists to appear before the Legislative Committee. He considered this their duty, however, and thanked Dr. Ring for having done his duty in this respect.

Dr. Ring said that he had felt the same reluctance that the other ophthalmologists had in coming before the committee to oppose the opticians, because it would be natural for the unthinking public to say that the oculists were looking out for their own interests. He doubted, however, that the income of the average oculist would have been affected by the passage of these bills.

(To be continued.)

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks ended June 10 and 17, 1911:

	June 10		June 17	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	406	149	475	176
Diphtheria	281	24	311	23
Measles	1037	33	910	19
Scarlet Fever	353	27	305	14
Smallpox	..	..	..	..
Varicella	167	..	151	..
Typhoid Fever	28	5	69	10
Whooping Cough	66	3	64	6
Cerebrospinal Meningitis	5	5	11	7
Malarial Fever	..	..	....	....
Totals	2,343	246	2,296	255

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended June 24, 1911.

CHOLERA.

Places.	Date.	Cases.	Deaths.
India: Bassein	Apr. 23-May 6	8	6
Calcutta	Apr. 23-29	..	66
Moulmine	Apr. 23-May 6	8	7
Indo-China: Saigon	Apr. 17-May 7	60	41
Italy: Naples	June 17-18	7	3
Palermo	June 17	..	Present
Pianura	June 18	2	*1
Java: Surabaya	Apr. 8-9	2	†
Surakarta	Apr. 1-15	..	‡a100
Tanjong-Priok	Apr. 24	..	Present
Moluccas: Amboyna	Feb. 17-Mar. 2	12	**
Sumatra	Mar. 1-7	30	††21
Bandong	Mar. 1-7	..	‡‡
Turkey: Constantinople	May 29-June 4	3	..
Turkey in Asia: Samsun	May 27-June 2	77	46
Smyrna	May 7-13	..	3

*a*From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, May 31, 1911.
*Four miles from Naples.
†Europeans.
‡Estimated.
**Including 2 Europeans.
††On the western coast.
‡‡Present in vicinity.

YELLOW FEVER.

Brazil: Ceara	Apr. 1-30	1	1
Manaos	May 14-June 3	..	10
Para	June 4-10	1	*
Ecuador: Guayaquil	May 1-15	19	11
Milagro	May 1-15	1	..
Naranjito	May 1-15	2	..

*June 21, 2 cases.

PLAGUE

Arabia: Maskat	May 7-20	5	5
China: Pakhoi	Apr. 1-20	..	*a*20
Ecuador: Guayaquil	Apr. 1-15	5	2
Egypt: Alexandria	Apr. 29-May 30	4	2
Provinces—Assiout	May 5-31	37	22
Benisouef	Feb. 12-May 22	1	..
Dakahlieh	May 20-28	5	2
Galioubeeh	Apr. 11-May 31	1	1
Garbieh	May 15-31	3	..
Girgeh	Apr. 16-May 18	1	1
Fayoum	Mar. 19-May 28	38	23
Kena	May 5-31	51	49
Menouf	May 5-29	4	5
Minieh	May 5-31	23	4
India: Bahrein Island	May 2-14	..	*b*205
Bombay	May 14-20	198	163
Calcutta	Apr. 23-29	..	113
Kurrachee	May 14-20	196	189
Indo-China: Saigon	Apr. 17-May 7	56	17
Japan: Formosa	Apr. 23-May 6	74	61
Persia: Buchir	Apr. 22-May 7	6	†6
Venezuela: Caracas	May 6-19	3	1

*a*From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, May 31, 1911.
*b*Bulletin Quarantenaire d'Egypte, May 25, 1911.
*In Persian Gulf.
†Total to May 13: Cases 24, deaths 18.

SMALLPOX.

Austria-Hungary: Galicia	May 14-27	13	..
Canada: Dawson	June 8	4	..
Ottawa	May 29-June 10	31	1
China: Shanghai	May 1-21	..	6
Egypt: Cairo	May 14-20	..	1
Port Said	May 14-20	2	..
Germany		..	*..
Bremen	May 21-27	3	..
France: Havre	May 21-27	1	..
Paris	May 14-27	8	..
India: Bombay	May 14-20	31	21
Calcutta	Apr. 23-29	..	4
Madras	May 7-13	18	12

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Original Articles.

DECAPSULATION OF THE KIDNEY IN THE TREATMENT OF CHRONIC BRIGHT'S DISEASE.*

By JAMES TYSON, M.D.
PHILADELPHIA, PA.

TWELVE years have elapsed since George M. Edebohls published his first paper on the treatment of Bright's disease by decapsulation of the kidney, in the *Medical News* of April 22, 1899. The paper was entitled "Chronic Nephritis Affecting a Movable Kidney as an Indication for Nephropexy." The operation was suggested by the favorable results following in four of six cases in which he had performed nephropexy for the purpose of anchoring a movable kidney in the presence of well-marked chronic Bright's disease. In five of these six cases nephropexy was done without any idea of influencing favorably the chronic nephritis known to exist; the indication for operation being solely the presence in an aggravated degree of the usual symptoms due to mobility of one or both kidneys. The effect of the operation upon the coexisting Bright's disease was simply hazarded in view of the necessity of relieving the patient of these intolerable symptoms. The first case was operated upon on November 29, 1892, the fifth on April 1, 1897.

The complete and permanent disappearance of albuminuria and casts from the urine and the restoration of enduring and perfect health of three of the five patients led him to advise bilateral nephropexy in his sixth patient, a sufferer from chronic Bright's disease complicated with movable kidney. He operated on this patient mainly with the object of influencing the chronic nephritis. The operation was performed January 10, 1898, and "consisted in extensive decapsulation followed by fixation of both kidneys." As a result, the patient, a girl, aged twenty years, was radically cured of her chronic Bright's disease and remained so to June 3, 1904. She has since married, and on July 6, 1903, gave birth to two fine boys. "At the time," Edebohls says, "the idea that the cure of chronic Bright's disease in these cases was mainly, if not altogether, due to correction of the position of the kidney dominated my mind. Further experience, however, and observation made on the occasion of second operations gradually evolved the conviction that the decapsulation was mainly responsible for the good results obtained." Up to the end of 1902 he had operated on 51 cases of chronic Bright's disease, all of which but 3 he had the rare good fortune to follow up to the date of his paper in the MEDICAL RECORD, March 28, 1903. Edebohls continued his operation, publishing results from time to time, culminating in his book on the "Surgical Treatment of Bright's Disease," published before his death in 1904.

Three years prior to the publication of Edebohls' first paper, that is January 4, 1896, Reginald Harrison published in the *Lancet* a paper entitled "A Contribution to the Study of Some Forms of Albuminuria with Kidney Tension and Their Treatment." In this paper Harrison reported 3 cases of operation with resulting cure. In the first he cut down upon the kidney of a youth, aged eighteen years, who had had scarlatinal nephritis, expecting to find a suppurating kidney. Instead, he found a kidney distended by inflammatory products, and he closed the wound under the impression that he had made a mistake in diagnosis. There was a free discharge of blood and urine for several days. The wound was lightly plugged with lint, and in the course of ten days had completely healed. After the incision was made the excretion of urine became far more abundant and the albumin gradually and completely disappeared.

In 1887 he operated on a man, aged fifty years, under the impression that he had a stone in his right kidney. There were colicky pains, hematuria, and later constant albuminuria. He cut down upon the kidney, made an incision through the cortex, and explored the pelvis with his finger, without finding a stone. There was a discharge of blood and urine which continued a long time, but on the withdrawal of the drainage tube the wound healed and the urine became quite normal.

In 1893 he operated upon a woman, aged forty-four years, who had had slight hematuria at times for a year, and occasional albuminuria. Shortly after he saw her she had an attack of influenza, followed by an aggravation of her renal symptoms, including pain on pressure, with increased and constant albuminuria. As she believed that she had passed a calculus some months earlier, Harrison thought he was justified in exploring. He found the left kidney swollen and very tense. There was a free drain of urine with some blood, which continued for a fortnight, when the wound healed. At the date of the report the urine was normal and the patient quite well.

Reviewing these cases, Harrison concluded that the first case was one of scarlatinal nephritis, the second of nephritis from exposure to cold, and the last of subacute nephritis following influenza. *In all*, he said, *the cure was effected by relieving the tension*. He concludes with a few words as to the nature of the operation which might be appropriate in cases of suspected kidney tension and as to the time and occasion of its application. The operation advised was that usually adopted for exploration of the kidney by the finger through a small transverse lumbar incision. It should "be reserved," he says, "for cases where there is evidence that the recuperative power of the kidney suffering from nephritis

*Read before the Association of American Physicians, May 9, 1911.

is overweighted. Where, after an attack of this kind, the albumin is not disappearing from the urine, and there is a prospect, unless some relief is found, of permanently damaged kidney resulting, then a trial of this expedient may be undertaken without adding to the gravity of the circumstances." It will be noted that the operation thus recommended is not decapsulation, but simply section of the capsule of the kidney, the object being to relieve the tension of the organ within the capsule.

The following cases under my own observation illustrate the application of the treatment:

Case I.*—Fannie W., aged nine years, born in Philadelphia, was admitted to the Hospital of the University of Pennsylvania, November 11, 1902. She had scarlet fever when four years of age (five years before admission). During and immediately after the fever she had no dropsy. One year after, however (four years before admission), she presented symptoms of acute nephritis, including albuminuria and general anasarca, which responded promptly to treatment at a hospital in New York City. Subsequently to this she had five relapses, for which she was treated at different hospitals in Philadelphia, with more or less complete recovery, each attack requiring more time to overcome it. The last relapse set in about two weeks before she consulted me, when she had general anasarca with ascites, albuminuria, and casts. The edema was extreme. The face was so swollen that the eyes were almost closed, and the abdomen was enormously distended with fluid. She was sent to the University Hospital, where the examination was completed. Her temperature was 99° F., the pulse 126, the breathing rate 28. There did not appear to be much fluid in the pleural cavities, and the lungs were normal. The cardiac action was feeble; there were no murmurs, but the second aortic sound was accentuated. The liver outline was difficult to obtain because of the ascites, but seemed normal. The urine on admission was acid in reaction, specific gravity 1016, and contained one-half its volume of albumin; there was no sugar. The microscope found pale granular, medium granular, and dark granular casts; also free fatty renal cells. The quantity secreted during the first twenty-four hours was twenty ounces. The blood examination found 45 per cent. of hemoglobin, with 6,320,000 red corpuscles—probably an erroneous estimation.

The patient was immediately put to bed on a milk diet, and ordered cardiac tonics, with eliminative treatment by saline cathartics and hot packs. The remedies acted as they were expected to, and some relief to symptoms followed, but it was incomplete. On November 18, paracentesis abdominis was done, but on account of a defective instrument only six ounces of a clear fluid were withdrawn.

Under treatment the urine secreted was increased at one time to thirty ounces, and there was some diminution in the anasarca, but it was only temporary. Paracentesis abdominis was done repeatedly, with the removal of a clear spring-water liquid, and so persistently did the ascites return that some concurrent cirrhosis of the liver was suspected. She became very much reduced in strength, and after all medical treatment had been unavailing and it seemed she must die unless something else was done, she was transferred to the wards of Dr. Frazier, January 11, 1903, for operation, which was done on January 13, a large accumulation of abdominal fluid being first removed. She was so weak that it was thought unwise to operate on both kidneys at once, and accordingly at the first operation the right only was decapsulated.

The immediate effect of the operation was truly astonishing. In the first twenty-four hours after it was done the quantity of urine secreted was only 21½ ounces, but in the second twenty-four hours it reached 42½, in the third 72½, in the fourth 102, in the fifth 63 ounces, and in the sixth 60 ounces. In ten days after the operation ascites and anasarca had entirely disappeared and continued absent up to the present time. Before the operation the volume of albumin was one-half; but by the middle of February it had fallen to one-tenth of the volume of urine tested. For three weeks prior to the second operation the patient was allowed to be up and about, after which the albumin largely increased, becoming almost as large as when she came under observation. The casts did not disappear, but continued quite numerous up to the date of the second operation.

On March 14, 1903, just two months after the first operation, the left kidney was decapsulated by Dr. Frazier. Surgically the case progressed rapidly to healing of the wound.

After the second operation, the urine, of course, did not increase as it did after the first, as there was no edema to drain off, but ranged from 30 to 60 ounces in the twenty-four hours. Four days after the operation the albumin measured one-sixth volume, with hyaline and pale granular casts. About April 2 the patient was allowed to get up, but almost immediately the albumin increased to one-half volume, and she was promptly returned to bed (April 6). Since that time there has not been any marked reduction in the quantity of albumin; in fact, it has remained about the same. The urine has, however, been secreted freely, and the casts have been mainly hyaline and slightly granular. The patient has again been allowed to get up, and has remained free from dropsy and was, in fact, the picture of health. It cannot be said that there has been a cure, and it is impossible to say that there will be. On the other hand, there can be no doubt the patient's life has been saved, and apart from the urinary evidences she is seemingly well.

She was last seen September 23, 1903, when there remained one-third volume of albumin and a few hyaline casts in the urine, but she was the picture of health. She continued in apparent good health for more than a year, when, having returned to school during a very severe winter, she relapsed after exposure and died. She did not come under our care again.

The original report of my case to this association, at its meeting in May, 1903, elicited reports of four cases, all of which were greatly benefited by the operation, although one, after decided improvement, died in the third month after operation. One was reported by Dr. McPhaedran of Toronto, and three by Dr. Cutler of Boston.

Case II. I first saw Wm. M. in consultation with Dr. Wm. Hammond, at Glenolden, near Philadelphia, May 8, 1910. I found a boy, aged fifteen years, who, although swollen and distorted in appearance by an omnipresent general anasarca, was not confined to bed. His eyes were almost shut by the swelling, the scrotum and penis were invaded, and there was effusion into the abdominal cavity and pleural sacs. I have rarely seen a patient in a worse plight. There were, however, no retinal

*This case has already been reported to the Association at its meeting in May, 1903.

or uremic symptoms, no hypertrophy of the left ventricle. There was slight accentuation of the aortic second sound.

The urine had not been measured, but was evidently reduced in quantity, was loaded with albumin, becoming almost solid on boiling. There were numerous casts, granular and hyaline. There had been some dull pain in the lumbar region. His appetite was good, bowels regular. His discomfort was surprisingly small. He had the waxy pallor of a case of chronic Bright's disease. He was born in Canada, but has been living near Philadelphia for the last seven years, and attended school until three months ago. He had measles when a young child and scarlet fever three years ago, a light attack. Apart from these ills he has been strong and well.

His present illness began apparently suddenly February 13, 1910, the first symptom noted being swelling of the face, extending in a few days to the feet and legs. The edema spread rapidly, but the boy was not put to bed until the first of May; then it was difficult to keep him there. When I saw him the edema was so great that I advised multiple incisions for immediate relief and urged him to enter the University Hospital, which he did on May 31, in much the condition above described. The pulse and breathing were slightly accelerated and the temperature a little elevated for several days, due probably to cellulitis in his legs. His tongue was coated and breath foul. There were no cardiac symptoms except slight accentuation of the aortic second sound. There were a few fine crepitant râles at the base of the lungs anteriorly and posteriorly. Below each scapula there was impaired resonance with feeble breathing sounds and diminished tactile fremitus and vocal resonance, indicating some fluid in the thoracic cavities. The dome of the abdomen was tympanitic to percussion, but there was dulness in each flank, indicating some ascites. The edema was, if possible, worse than when I first saw him. The scrotum was excoriated from friction against the thighs. The legs bore the marks of incisions which I had advised to relieve the tense swelling of the extremities. The superficial veins were distended. The walls of the thorax and abdomen were also infiltrated with serum. The liver and splenic dullness was normal.

Uranalysis. The urine was scanty—6 to 16 ounces, acid in reaction, turbid, straw-colored, and with specific gravity 1016; highly albuminous, containing 8 grams per 1,000 by Esbach's method, and free from sugar. It contained many hyaline and granular casts, a few leukocytes and casts, and numerous cylindroids.

Blood. There were 2,690,000 red cells, 31,000 white cells, and the hemoglobin measured 55.5. On June 3 the albumin was four-fifths by volume and 12 grams per 1,000 by Esbach. On the 4th the blood pressure was systolic, 115 mm.; diastolic, 50. The right leg was so distended that a number of punctures were made with instant relief. These symptoms continued with unimportant modifications from day to day. Between June 12 and July 1 several deep-seated abscesses developed in the thighs and legs and were opened. They were treated in the usual way and rapidly healed, notwithstanding the terrible condition of his limbs. The urine continued highly albuminous, and in addition to granular and hyaline casts were waxy casts and fatty granular renal cells. There appeared also on the legs and thighs, in addition to the edema, an interesting distention of what seemed lymphatic vessels, and there continued more or less fluid in the pleural sacs and abdomen.

The usual measures of treatment were adopted, including salt-free diet, without any permanent effect on the dropsy and secretion of urine, which continued scanty. Having exhausted all of our resources without effect, he was transferred, on August 7, to the surgical wards, and on the 8th both kidneys were decapsulated at one sitting by Dr. A. C. Wood. At the time of transfer the blood contained 3,180,000 red blood cells, 12,000 leucocytes, and 55 per cent. hemoglobin. The capsule was incised and slipped back by the fingers, but not cut away.

The case did well after operation, most striking being, as usual, increased diuresis and correspondingly rapid disappearance of the edema. He was returned to the medical wards on September 16, when the urine was reported having a specific gravity of 1007, precipitating a dense cloud of albumin by heating and acidifying, and measuring by Esbach's albuminometer 1 gram in 1,000. There were hyaline, granular, and oil casts, with granular fatty renal cells and leucocytes; no blood cells. The other organs appeared normal, the heart as to size and position, and without murmurs, although the resident physician's notes mention marked accentuation of pulmonic second sound—probably an error. On the 22d he was up and about the ward, anemic, as attested by the blood examination, which revealed red cells, 3,200,000; white cells, 171,000; hemoglobin, 55 per cent.; but free from dropsy and feeling well. By the 26th he was out upon the lawn with a blood pressure of 100 mm. systolic, and 72 diastolic, and on October 22 he was discharged. October 2, 1910, free from dropsy or other external signs of disease. His urine, with specific gravity of 1013, still contained a considerable amount of albumin, though greatly less, with hyaline and granular casts, granular fatty cells, and leucocytes.

The patient was last seen April 8, 1911, apprenticed to a carpenter and working every day.

Case III. Mary K., aged seventeen years, born in Russia, was admitted to the University Hospital December 28, 1903. Her mother died at thirty-two of heart disease; her father, living at thirty-eight, has pulmonary consumption. She has two sisters and a brother living, the latter possibly phthisical. Mary was eleven years old when she came to America, and went to school until she was fourteen, since which she has been employed in a shirt factory, working hard but trying to live a regular life.

A year before this admission, November, 1902, she was in the University Hospital in my own service for three weeks with tonsillitis and pharyngitis with enlargement of external cervical glands. Her urine then contained one-eighth volume albumin, but no record of a microscopic examination seems to have been made. More recently she was in the Pennsylvania Hospital with tonsillitis and penumonia, and after her discharge she continued ill at home some time longer. Her present illness may have dated from her first admission to the University Hospital, when she had a little albuminuria, but she has been more positively ailing since she had pneumonia. Since then only did her face and feet become swollen, and she was further disabled because of weakness and frequent headaches. Since then, too, she has had more or less cough with mucopurulent expectoration. She has been more ill in the last two weeks, and for a week has been in bed because of great weakness, abdominal pain

and vomiting. The bowels have been regular, but of late the urine has been at times scanty, with occasional frequent micturition. Menstruation, established at fifteen, has been regular and painless until three months ago, when it ceased to appear.

On admission her temperature was 100°, pulse 108, breathing 18. She appeared a fairly well-developed girl of seventeen with moderate edema of the face and slight pretibial edema. Her chief complaints were weakness, headache, cough and some abdominal pain, frequent urination, and scanty urine. These symptoms had been present for about two weeks.

The urine at this time was scanty, with specific gravity 1030, and albuminous to the amount of two-thirds its volume. There were hyaline, pale granular, dark granular, and oil casts, and free fatty renal cells; also globular and squamous epithelium.

Physical Examination. Lungs: There were some moist râles with bronchovesicular breathing, slightly increased vocal resonance, and impairment of percussion resonance in the right infraclavicular region, which proved temporary. The heart appeared normal in size and function, perhaps slightly accentuated as to its aortic second. The pulse was slightly accelerated, of somewhat higher tension than normal. The liver was enlarged and tender, strikingly so; the spleen was normal. The region of the right kidney was tender and apparently the seat also of some active pain. There were no retinal symptoms.

It will be noted that the edema in this case was not great, but in other respects she had the typical symptoms of a chronic parenchymatous nephritis, and she was so regarded.

The usual treatment failed to produce much if any effect on the symptoms. It included the saline diuretics, such as citrate of potassium; also digitalis and digitalin, theocin, caffeine, iodide of potassium, and phenacetin for the headache. The treatment was continued over two and one-half months without making any impression. The largest quantity of urine secreted in any one twenty-four-hour period was 43 ounces; the smallest, 18 ounces.

Satisfied that we had done all possible by medical treatment, she was transferred to the surgical wards on March 11, 1904. On March 12 Dr. Charles H. Frazier decapsulated both kidneys at one sitting. The blood pressure during the operation ranged from 105 to 130 mm. For some days succeeding the operation there was fever with abdominal distention, for which repeated search, including laying open the wound, failed to find a cause except necrotic tissue in the edges of the wound. Ultimately these symptoms disappeared and she was discharged April 16, 1904, with the following note:

General condition good, wounds in fair condition; sinuses small and shallow; urine practically unchanged at discharge as compared with its state on admission.

Over seven years have elapsed since this operation was done and we have kept more or less in touch with the patient ever since. She was said to have been in the Pennsylvania Hospital for a short time in 1904, but a careful search fails to find the history of such admission. On December 19, 1905, she was working in a store at Nineteenth and South Streets, and feeling entirely well without recurrence of her previous symptoms.

On November 12, 1908, Mary was admitted to the Pennsylvania Hospital in my service. She reported that for the last six weeks she had been fairly well and working. She had a little edema of the face, but more of the feet and legs, and a trace of albumin in her urine with a few hyaline casts, but her appearance was not that of an ill woman. She had from time to time complained of a good deal of pain in the left side, but nothing to explain it was found except at this examination a little enlargement of the spleen. In a day or two the edema had disappeared and she was discharged. Occasion was taken to examine her eyegrounds at this admission, and they were found normal. Blood pressure systolic was 120; diastolic, 70.

On June 29, 1909, she reported that she was moderately well and able to work a part of the time. Occasional edema of face and feet; sometimes short of breath. She is neurotic and disposed to answer all questions affirmatively. Since then she has been in the University Hospital a couple of times and in the Pennsylvania a couple of times, to rest up, as it were, always with benefit. She has also reported to me personally from time to time.

On July 13, 1909, she called, complaining of weakness. There was then a good deal of albumin and there were numerous moderately granular and hyaline casts and leucocytes. Two months later she again reported, complaining of headache; the urine continued about the same. She reported November 27, 1909; February 3, 1910, and July 13, 1910.

On January 14, 1911, she called, looking remarkably well. There was no edema and had been none for four weeks. On February 23, seven years after the operation, she reported that she had been remarkably free from swelling most of the winter, but at the date of her visit she thought there was a tendency to return when on her feet, but at the time of her visit she was totally free from it. Yet the urine contained much albumin and a few hyaline casts. She had not menstruated for four months, and had had a good deal of backache.

This case of Mary K. requires some comment. It will be remembered that, while she presented distinctive symptoms of chronic parenchymatous nephritis which did not respond to treatment, she did not have any of the alarming symptoms which endanger life and sometimes demand prompt interference. The case was, therefore, somewhat different from Cases I and II, and also in that the operation was not needed to save life, but was done simply because of the intractibility of the case by any other treatment. Nor can it be said that any astounding change followed the operation. It is true the patient improved and resumed her occupation, and now, more than seven years afterward, continues to work, although somewhat irregularly. She is, however, far from cured, and some may question whether the improvement which took place would not have occurred without the operation. I am inclined to think, however, that had she been left alone, or rather to medical treatment, she would have retrograded. I do not desire to claim for the operation more than is due it, but I should be inclined to repeat it in a similar case.

The following case, sent to me by Dr. J. Langton of Shenandoah, Pa., was, I think, operated on too late:

Case IV. Frank C., aged thirty-two years, a practising lawyer, came of a typically robust family, and was never sick except slightly with rheumatism until present illness appeared. The rheumatism referred to was a mild attack of short duration in June, 1909. He consulted me May 28, 1910.

In November, 1909, he assisted at a fire, became thoroughly wet, changed his clothes in a cold room,

and felt chilly after it. A couple of days later he had a slight headache, which soon passed off, but returned again some time afterward with great severity. These attacks continued increasing in frequency and severity until he consulted me May 28, 1910. They occurred more frequently in the morning, sometimes passing off when he went into the open air. At any rate, their tendency was to abate as the day advanced. Vomiting sometimes occurred with them, but often he had headache without vomiting. If he vomited he ejected whatever was in his stomach; after a meal whatever he may have eaten. The attacks of headache were much more frequent than those of the vomiting. On cross-examination, I found he had morning sickness some months prior to exposure to the fire, so that probably the beginning of his illness antedated the fire.

He tires easily of mental and physical work, and has grown weaker. He is inclined to feel cool, although perspires all the time; realizes a sense of pulsation through the body at times, more particularly after excitement. There is no edema anywhere, in the hands, feet, or face, but he is pale and anemic. He is always thirsty, and his urine is increased in quantity. His blood pressure was 250 by Potain's sphygmomanometer.

Physical Examination.—His heart was enlarged, beating powerfully at the normal site of the so-called apex beat, but also very strong in the nipple line. There was sharp accentuation of the aortic second, but no murmur. The lungs were normal. The urine amounted to five pints in twenty-four hours and had specific gravity of 1008 to 1012, acid reaction, and contained one-third its volume of albumin; no sugar. I suspected sugar because of his thirst. There were numerous hyaline pale granular and dark granular casts.

He grew steadily worse, and on July 12 he came to Philadelphia to be under my care. He was in a desperate condition, suffering with intense headache, nausea, and vomiting. The urine gradually diminished until it had almost ceased to be secreted. For fifteen days, with the assistance of Dr. Holmes Walker, I did all I could to relieve these exhausting symptoms. Purgation, sweating, enteroclysis, hypodermoclysis, salines, digitalis, theobromine derivatives were all tried faithfully without effect. At a consultation, at midnight of the 27th, with A. C. Wood and Dr. Walker it was decided to decapsulate the kidneys. The operation was done at 2 P. M. the next day, bilateral decapsulation being done. The operation was apparently well borne and his condition seemed good when I left him at 3 P. M., but he died at 8:30 P. M., apparently of asthenia. He apparently lost a great deal of blood at the operation. The kidneys as seen after decapsulation were typically granular organs.

It is plain from a study of the above cases that in no one instance was a complete cure effected, for in none did the albumin completely disappear from the urine, notwithstanding the hale and hearty appearance of the patients at certain stages after the operation. These results are not as favorable as those of Edebohls. Of 72 cases on which he operated up to the end of 1903, 43 survived. In these the interval between the date of the operation and the last observation ranged between seven months and eleven and one-half years. Of these cases, 14 are reported by Edebohls as "ideal cures," with the urine normal and patient in excellent health. In three others "practical cure" or "probable cure" is reported and the urine is described "practically normal."

I will not pretend to explain these differences, but, notwithstanding the fact that I can report no cures, I claim that the operation is so serviceable in certain instances that it ought to be done more frequently. The conditions which demand it are not far to seek or difficult of recognition. They are simply these: Stubborn persistence of symptoms causing great inconvenience or danger to life; such are permanently obstinate dropsy, which refuses to yield to the ordinary treatment thoroughly carried out; uremia manifested by convulsions or other unmistakable signs, such as intense headache; anuria and large albuminuria, resulting in anemia and loss of function and strength. I repeat that operation should not be considered until medical treatment has proved unavailing. There are other conditions also in which the operation is indicated, and in the presence of which life has been saved by it. Such are obstinate hematuria, perinephritis with miliary abscesses, hydronephrosis, and pyonephrosis.

In none of these have I had the operation done. There is, however, another condition in which I think it is indicated and serviceable, as attested by my personal experience. It is perinephritis, a condition in which the true capsule, that remaining after stripping off the pericapsular fat, is the seat of depressions and cicatricial markings, and is attached with more than the usual firmness to the substance of the kidney. This condition, at times at least, produces the same symptoms as a stone in the kidney, and has been found at operation done for supposed stone. The presence of this condition may be reasonably inferred when the *x*-ray has proved negative and the symptoms of stone persist. I have had decapsulation done for this condition more than once with satisfactory results.

On the other hand, there are conditions which are said to contraindicate the operation. Age is one of these. An age of fifty years or over would appear to be unfavorable or be attended at most with partial relief, and that for a short time only. Valvular disease of the heart associated with irregularity of action is regarded as contraindicating the operation because of danger from the anesthetic. On the other hand, the hypertrophy of the left ventricle, which is so invariably a complication of chronic nephritis, is said to be benefited and the heart to return to its normal size. Extensive cardiovascular changes militate against the operation. Once established, they constitute a cause of danger which is irremediable, and a study of Edebohls' cases goes to show that those least benefited include cases of this kind. Retinitis albuminuria is also considered a contraindication, because the presence of this condition means that a patient thus affected is almost sure to die in a year after its recognition. It is most important that the intractibility of the case must be established by sufficiently close study. I have myself disadvised operations in cases where inexperienced surgeons desired to operate.

As to the rationale of the cure, the first explanation to suggest itself is the effect of the operation in relieving tension or pressure on the affected kidney. Reginald Harrison, in his original paper, says that in all those of his cases reported "the cure was effected by relieving the tension." It will be remembered that his operation was not decapsulation, but simply section of the capsule of the kidney, which would reasonably be expected to produce the same result.

Edebohls claimed that by removal of the impervious capsule proper an opportunity is created for

the formation of new vascular connections between the blood vessels supplying the secreting structure of the kidney, on the one hand, and the blood vessels of the tissues surrounding the kidney on the other. He even suggests the possibility of the regeneration of secreting structure after its destruction by inflammation. He regards the possibility of such regeneration as established by the experimental studies of Charles Thorel.

To such vascular formation Edebohls ascribes the later or more permanent beneficial effects, claiming, too, that its possibility has been experimentally proved. He ascribes the immediate benefit to such manipulation of the kidney as is necessary in conducting the operation, amounting, he says, to a *massage* of the kidney. He does not accept Harrison's explanation that the immediate good effects of decapsulation are due to a relief of renal tension, because he has never in any of his operations seen such abnormal tension. He considers that the "immediate stimulation of the existing blood supply of the kidney thus effected (by manipulation), supplemented by the relief to congestion afforded by the direct abstraction of more or less blood from the organ during operation, suffices for the immediate wants of the kidney, and carries it along until the supplementary new circulation becomes established." I can conceive the relief to the congestion to be of some value; in fact, I can see no difference between congestion and tension, and what is a relief to one is relief to the other. I deem it hardly profitable to prolong this discussion of the rationale, but those who desire to do so can find more about it in Edebohls' book on the "Surgical Treatment of Bright's Disease."

A few words in conclusion as to the new capsule which invariably forms sooner or later in from ten to twenty days after decapsulation. This is admitted by everyone who has studied the subject experimentally on animals, and confirmed in the few instances in which a second operation has been done on the same patient. The point of difference is as to the presence of vascular communication between the capsule and the surrounding tissues, the presence of which would explain the permanent improvement. From such an examination as I have been able to make of drawings made to illustrate experimental papers I would decide in favor of the probability of such vascularization.

The question has been raised, and it appears to me with reason, whether there is any advantage in decapsulating both kidneys. It will be remembered that in my first case one kidney was decapsulated some time before its companion, and that little additional effect followed the second operation. Finally, the operation should be a skilful and rapid one. The conditions of the operation are such as to make it prolonged under any circumstances, and it should not be further prolonged by the slowness of the operator. On this account, too, it is most important to determine whether the decapsulation of one kidney does not answer the purpose as well as the bilateral operation, thus cutting down the time one-half.

In my experience, not very large, the cases most favorable for operation have been those of chronic parenchymatous nephritis, and those in which the most brilliant results appeared have been those associated with stubborn anasarca. On the other hand, Edebohls says the most satisfactory cases for operation are cases of chronic interstitial nephritis, while Ramon Guiteras disadvises operation in cases which suffer from anasarca.

There has been a good deal of theoretical objection to this operation because of the tendency of the capsule to be restored and the absence of evidence of a new blood supply thus furnished, although certain experimenters do claim such a supply does succeed the operation, and furnish drawings from actual specimens to show that this is actually the case (Ferrarini, quoted by Edebohls in "Surgical Treatment of Bright's Disease," p. 113). But "the proof of the pudding is in the eating," and if improvement, attested by a number of clinicians and surgeons, takes place after operation, it does not very much matter whether it comports with the anatomy and physiology of the kidney as at present understood or not. It is unfortunate but true that many well-determined results succeed therapeutic measures which are not explainable.

A comment likely to be made by those who are familiar with the facts is that this operation has not made much impression on other surgeons than Edebohls, and that it has fallen into disuse rather than become more general. In the first place, this may be only partially true, and the operation may have been done more frequently than would appear on the surface, since, succeeding the report of my first case at the meeting of this association in 1903 four cases were verbally reported—one by McPhedran of Toronto, and three by Cutler of Boston—all of which were greatly benefited by the operation. Another reason for infrequency of operation may be the fact that most of these cases originate in the practice of physicians as contrasted with surgeons, and as the former are usually more timid as to operations they are less likely to have recourse to the surgeon for help. This circumstance, too, makes the surgeon less familiar with the operation and its good results. Thus, in the case of one of my most satisfactory cases it was with some difficulty I could get the surgeon interested in the operation, but after he operated and saw the brilliant result he was astonished, and since then has looked altogether differently on it and is ready to perform it whenever I want it.

1506 Spruce Street.

THE PROPER ATTITUDE OF A CORPORATION TO ITS INJURED EMPLOYEES.

By JOHN F. CULP, M.D.,

HARRISBURG, PA.

In these modern days of social and industrial unrest, when one hears so much about the war between capital and labor, it is rather refreshing to read how these often opposing forces may be brought to work together to the mutual advantage of both. An article by W. H. Allport, M.D., in *The Journal of the American Medical Association*, November 12, 1910, tells how one Illinois corporation has dealt with the question of industrial accidents from the standpoint of compensation furnished to the injured employees.

The writer of this article, who has been for the past twenty-two years surgeon to one of the largest Pennsylvania corporations, would like to refer briefly to the policy pursued by this company and its method of management of accident cases. This corporation is not a coal mining company; many of its nine thousand employees, especially in more recent years, have been foreign-born, but the general average of intelligence is quite up to the standard usually found among the employees of similar concerns.

Almost from its beginning this corporation has

adopted a policy of dealing directly with its injured employees or their families, without the intervention of attorneys or other third parties. In this policy we have been singularly fortunate. The money paid out has almost invariably gone directly to those who need it most, namely, the injured and their dependents.

In order to bring about such a desirable result the injured person must be first convinced that his employer is his best friend, who stands ready and willing to do what is right and just without being forced to such attitude by the intervention of a lawyer or the threat of litigation. It is impracticable and perhaps impossible within the scope of an article such as this to tell the various details which are necessary to carry out such a policy.

In a general way, however, when a man is injured we look after him until he is well, and in case he cannot be made well provide for his future and that of his family if he has one. Should he be killed outright or die as the result of his wounds we provide for those who are dependent on him for support.

The question of our legal responsibility is rarely referred to, because that is subordinated to the needs of the individual. All expenses incident to the surgical care of the injured one are paid by the company and the patients provided with the best care, either in a hospital or in his own home, if suitable, and no matter what his financial condition may be the injured pays nothing for medical or surgical services. He is given to understand that the company wants him to get well and assumes the moral responsibility for his care and attention.

The legal phase as to whose fault the accident was due is seldom discussed, except in special cases, nor referred to by the representative of the company in the first instance, although, of course, we know our legal status, whether it be that of non-liability, uncertain liability, or clear liability. We assume that there are certain dangers incident to such employment, and while we endeavor to safeguard such work, accidents are bound to happen. To expect the injured one to shift for himself, to be a burden either on his relatives or the community, is neither just nor right in principle, and is bad as a matter of policy.

When a man is injured, as soon as practicable after the injury his financial condition is inquired into, and it is learned who, if any, are dependent on him for support. In many cases he is given a sum of money weekly during his incapacity equivalent to half his earnings; in other cases, when the family is large and the wages small, he is given full pay or a greater proportion than one-half pay. In many cases of single men sent to the hospitals and who have no dependents the money allowance does not begin until they leave the institution, and then a sum of money sufficient to pay their expenses while they are convalescent is given them. Just as soon as they are able suitable work is found for them. Often one who has been hurt in one department will be given work in another, because no suitable work can be found for him in the department where he was injured.

It frequently happens that the usual wage of the employment to which he is assigned is not as large as that of his former position, and in such case the wages are often increased. Several factors here enter into the adjustment of the wages. The first consideration is his needs, the second his fidelity and time in service, and the third whether he himself was to blame for the accident.

There are many jobs about the works that can be acceptably filled by men who are either temporarily or permanently disabled. While in most instances the new position does not pay so well as the one held before the injury, yet it often happens that an accident gets a man better wages than he was getting before. Frequently men of foreign birth, unable to speak a word of English at the time of being injured, have acquired a fair knowledge of our language during the many long weeks and months spent in the hospital. Such men are often given better work than they could have ever hoped to have gotten had they not been hurt.

After an injured man returns to work we seldom if ever require that he sign a release before he is re-employed. Occasionally a man who has been injured and has been given money leaves our employ. If then he returns to work he is required to sign a release if he has not done so before.

In case of a fatal accident, if there be a widow and children a pension is provided. Here, too, there is no fixed sum for every case. The amount is regulated by the individual needs. This pension, which is paid monthly, varies in amount from one-fourth to two-thirds of the regular average pay of the husband and father for the previous two years.

The length of time this pension is continued varies. In some instances the time of the continuance of the pension is fixed in advance; in other cases the life of the pension is determined by the needs of the pensioners. If the children are sixteen years of age or over and healthy it is assumed that they can take care of themselves. For boys of this age positions are found in the works. Should the children be under sixteen years of age the mother is given a certain fixed sum monthly for each child until it reaches the age of sixteen years, and after this time it is expected that the child will be able to care for itself.

It frequently happens that the mother prefers to have one or more children placed in some industrial school or college, so that they may obtain a better education and training than she could give them. In this case the company makes all necessary arrangements for their admission. Should the widow remarry, her pension ceases. This pension is conditioned on her good moral behavior and the proper care of her children. Should a son who has been wholly or partly supporting his parents be killed we endeavor to find the extent of this support and to provide for its continuance for a reasonable length of time. Such pensions or reimbursements are often difficult to arrange satisfactorily. Under the Pennsylvania law parents are entitled to compensation for loss of support in such an amount as the child was contributing at the time of the death or injury and would have been likely to continue to contribute. In case of a minor they are entitled only to such compensation as they might have received from him during his minority. Should the son be over age the parents must prove not only that they had a right to expect support from the son, but that the family relation still existed, that it was likely to continue to exist and that they actually did receive assistance and the amount thereof. In the interest of harmony and to promote and maintain good feeling among our employees the company interprets such claims liberally, and in a few cases they have knowingly allowed themselves to be imposed upon rather than work a seeming hardship or be involved in litigation.

While pecuniary assistance is necessary to the injured and their dependents, there are many other

ways in which real aid can be extended. Humane and kindly interest and sympathy combined with practical helpfulness are essential not only in serving the injured and the afflicted family, but as a part of efficient service to the corporation. It helps the dependents forget that corporations have no souls if they find that the representatives' hearts are filled with sympathy. Such attitude is always appreciated. It is here that the surgeon has a great opportunity to be a real help not only to the injured and his dependents, but also to the corporation that employs him. It is he that first comes in contact with the injured, and if he be kindly and considerate, a man of broad humane sympathies and of good judgment, he can be of the greatest service to all concerned.

While he is healing the stricken he may also comfort the distressed, and if he possesses that rare tact born of genuine humane impulses he can pave the way to more kindly feeling on the part of his patient and his family to the corporation. Just as every man is born with certain inalienable rights, so does practically every man who is injured think his hurt is caused by the carelessness of some one else, and frequently it is wise by quiet acquiescence to permit him to think so for a time. Later, when his mind is clearer and his wounds less acute, he can generally be brought around to the proper point of view. If the surgeon gives the injured man or his distressed family then to understand that the employer does not intend to limit the treatment of such employee or his family to its legal liability, but will do what right and justice dictate should be done, the problem is nearly solved.

The results of this policy which I have outlined are as follows: During the twenty-two years that the writer has been the surgeon of this corporation there have been twenty thousand recorded cases of accidents. When we consider the hazardous nature of the work and the large number of workmen, this number of accidents, many of which were trivial, is rather under than over the average. From these twenty thousand accidents only eight suits for damages against the company have resulted, six for personal injuries and two brought by widows on account of the death of their husbands. These cases resulted, not because the company stood on its legal rights, but because the dependents had visions of large damages to be recovered, and in some instances could not be persuaded to compromise even by their counsel. That this company permits itself to be sued only where all other efforts fail is shown by the results of the cases. Of these eight cases, five were tried in the county courts, and in each case a non-suit was given the company. One of the cases was settled out of court, one withdrawn, and one, brought by a foolish, irresponsible boy, is still pending. This is a record probably unequaled by another large corporation in this country, and shows what can be accomplished by a policy of fair treatment such as has already been outlined. These results have been achieved without the aid of either a claim agent or a legal department, and while the surgeon is always at liberty to consult a legal adviser, such a recourse has been comparatively seldom necessary. While definite figures are not available, it is safe to say that not more than five thousand dollars have been spent for legal services in connection with these twenty thousand accidents that have occurred during the past twenty-two years. The money went where it did the most good; that is, to the injured and their families.

Absence of litigation, however desirable, is not the only good to be derived from the carrying out of such a policy. The employer says in effect to the employee: "I recognize the fact that you are helping me to create wealth, and if adversity comes to you in the shape of an accident it is only fair that some of this wealth that your hands helped me to create should be yours. I will care for you and yours." The law may not compel this, but whether it does or not it is right and just. Such a spirit of fair and generous dealing cannot but have a far-reaching and lasting effect on the employee. It makes him a better and more loyal workman and is conducive to pleasanter and more harmonious relations between him and his employer. The value of such harmonious relations between master and servant is difficult to estimate in dollars and cents, and in these days of industrial unrest, when capital is preparing to capitulate to labor on the best terms obtainable, the corporation that can stand forth with such a record over a long period of years must perforce have a great advantage.

The criticisms and strictures by Dr. Allport on the treatment of injured and disabled workmen by Pennsylvania corporations, I fear, have been largely too true in the past. It is such treatment that has been wholly responsible for the employers' liability law of 1907, one of the most drastic liability laws of any State in these United States. This law has been in operation in Pennsylvania for the past four years.

While this policy of treatment to the injured workmen and their dependents, as above outlined, is more nearly ideal than any other method, yet it is not without its shortcomings. Its advantages are: That it deals with each case individually, and, while there are certain fundamental principles observed, each case is decided on its merits. It makes the individual needs paramount, loyalty and length of service, while considered, being secondary. It makes the attending surgeon, who comes at once into intimate personal relations with the injured, the general agent of the corporation. It eliminates the claim agent and the paid attorney, or, rather, it makes of the attending physician all these and a family counselor as well.

The disadvantages are: Loyalty and long service cannot amount to so much in time of accident as the industrial necessities. The man who has been frugal and saving gets less in proportion than the man who has been improvident and careless in his living. The needs of the latter are greater because he has saved little or nothing, and it would seem, therefore, that the saving, frugal man was in a measure taxed to help out his unfortunate but less deserving brother. The second disadvantage of this policy consists in making the surgeon not only the healer of the wounds, physical and mental, but also the claim agent and legal counsel as well. It makes so much depend on the tact and temperament of the surgeon. Medical schools can and do teach medicine and surgery, but rare tact born of humane feelings can only be gotten in the great school of life, and if the physician does not have the proper temperament to begin with it can never be acquired.

Now that the writer has given up this work for other not more congenial but less exacting, it is pleasant to review the past just a little, and while sadness and some sorrow have been inevitably linked with most of his work, yet many of the clouds have at times shown a silver lining.

One of the five cases above referred to that were

tried in the courts was that of a middle-aged German, who brought suit for loss of an eye. He was employed to chip castings, and one day a chip from a fellow workman's chisel flew off and struck him in the eye, so that the eye had to be removed. Unfortunately, the poor fellow was almost entirely blind in the other eye, the result of an injury in childhood. He had a wife, who was an epileptic, and one child. The company gave him a pension equivalent to eighty per cent. of his wages, which were small, and coal and wood in addition. This pension was given voluntarily, was unlimited as to time, and as he had a nice little house worth twelve hundred dollars, paid for out of his savings, it seemed to us that he could live comfortably.

Some months after a labor agitation lawyer from the western part of the State persuaded the man he was being badly treated, and advised him to bring suit on the ground that the employer should have provided him with a wire cage in which to work so that flying particles could not reach him. The action was brought during my absence in Europe, and the trial was brief. The poor fellow lost his case and the sheriff sold his house, and between the cost of living and the lawyer he was left penniless. His wife died from grief, and some friends, of whom the writer was one, took up a collection and sent him and his son to the Fatherland. Six months later the priest in the town where he lived received a letter from a German priest asking if the man had a legal right to marry, saying that a buxom widow with fifty thousand dollars wanted to marry him. So they were married, and, as the story book says, it is presumed they lived happily ever after.

Many similar cases, with their touch of humor as well as pathos, could be told, but they are not strictly to be included within the confines of an article such as this.

In conclusion, the writer not only hopes but predicts that the principles of humanity and justice which have been applied in the treatment accorded to its employees by this one Pennsylvania corporation will be incorporated into a law which will do much to lighten the burden of the industrial workers in time of accidents.

211 Locust Street.

THE DRINK HABIT, WITH SPECIAL REFERENCE TO OFFICE TREATMENT.

By CHARLES A. ROSENWASSER, M.D.,

NEW YORK.

From time immemorial the doctrine has been preached that the victim of the drink habit cannot be successfully treated for his affliction unless he be restrained in a properly equipped sanatorium. Through the promulgation of this false idea thousands have gone on to insanity or ruin, and an uncountable amount of suffering has been inflicted upon innocent women and children. That the doctrine is false is my conviction based upon the experience gained through several years' trial of treatment of the drink habit by office visits.

The sanatorium idea is founded upon three accepted facts. First, that the essential factor of treatment of the drink habit is to keep alcohol from entering the patient's system; second, that owing to impaired will power the inebriate is unable to resist the temptation to take the drink which he so strongly craves; and, third, that this craving must be subdued in order that the weakened will can assert itself and cure occur.

Though correct in theory, it fails in practical application, and in my opinion such treatment will eventually be supplanted by the more rational and more easily applicable plan of treatment by office visits. The results obtained by such a plan of treatment show conclusively that the drink habit can be cured in as large a percentage of selected cases by office treatment without restraint, or with but a few days' restraint (during the acute stage), as by any other plan, provided the treatment is begun in time and is properly conducted.

Undoubtedly the sanatorium is an absolute necessity in dealing with some types of inebriates, such as those individuals, usually periodical dipsomaniacs, who during the acute attacks are practically temporarily insane, and in dealing with those advanced cases or alcoholic mental defectives who must be placed under restraint for their own protection and for the protection of others. In practice we find that before an individual will consent to place himself under restraint in an institution, or before his family can be brought to see the necessity of removing him from his home, or before a court or jury will commit him to an institution, conditions are usually so bad that the likelihood of cure, under any plan of treatment, is extremely remote.

Exponents of the sanatorium speak enthusiastically of the importance of isolation from alcohol, and the great value of systematic outdoor and indoor work, bathing, regular living, etc. That all these measures possess decided therapeutic value cannot be denied, but can they be applied in dealing with private patients. It is seldom possible to keep alcohol away from the individual who wants it, provided that he is able and willing to pay for it. Hence the vital principle of the restraint idea rests upon sandy soil. As a class, private patients requiring sanatorium treatment for the drink habit are not amenable to rule or reason. Inebriates possessed of sufficient insight to realize the importance of leaving no stone unturned to overcome their affliction and who are therefore amenable to reason and willing to obey instructions can be presumed to be willing to be cured, and can be cured by office visits, without detention, if at all.

Some inebriates develop in time a sanatorium habit and wander from one institution to another. They are a class of people for whose existence there seems to be no excuse. Of no use to themselves and a menace to their families, they are veritable social parasites, and sanatoria seem to be their natural habitat. They either cannot or will not obey rules and regulations. If they could or would they would probably not be incurable inebriates.

In dealing with public patients, such as is contemplated in the proposed Board of Inebriety for New York City, conditions are somewhat different. Patients legally committed to an institution such as an industrial colony can be subjected to more or less discipline, and, though such labor is a decidedly uncertain quantity, a competent director could probably show some of these blind-seeing people "light through work." Under the comprehensive plan of treatment outlined by those experts in social welfare who were instrumental in having the law passed the outlook is much brighter than heretofore for this class of individuals.

Were private sanatorium treatments all that could be wished for they would still fall far short of the mark, in that they are available only to those possessed of worldly goods. They are expensive, and, as earnings cease, as a rule, during the period of

treatment, the treatment becomes doubly expensive. The sanatorium idea has therefore been a great obstacle to the progress of the rational treatment of the inebriate, and has been responsible for the foisting upon the public of so-called "cures" and wonder workers. Such cures have only sprung up owing to the slowness of the medical profession to recognize the fact that there is a great need and popular demand for a plan of treatment for the drink habit which can be carried out without placing the patient under restraint, or removing him from his home and business, and subjecting him to the expense of institutional treatment, and the environment of an inebriate asylum.

Office treatment meets these requirements. Its most potent factor lies in enabling us to get the cases early, before the nerves and organs have suffered irreparable injury and while the home is still intact and the patient is employed, these social factors being of vital importance in establishing a cure.

The worker in the field of inebriety sees various types of cases, and, while, of course, individual cases present individual features, there is a certain similarity which permits of their classification into groups. For practical purposes we can arrange five such groups. They will be briefly considered.

Group 1. This includes the large number of persons who, while attending to their usual vocations, are daily consuming a small amount of alcohol in some form, and who have the drink habit without knowing it. They do not get drunk in the ordinary sense of the word, they do not stagger or lose control of themselves perceptibly, but they are more or less braced up by alcohol much of the time. They are usually considered to be moderate drinkers, and almost never apply for treatment for the habit. They are of interest, however, as representing the army from which the true inebriates are recruited.

Group 2. This group comprises persons who have gradually developed from what are commonly called moderate drinkers to more or less constant heavy drinkers. The individual may or may not get perceptibly drunk at times, but it is plain that he is drinking too much. He begins to grow neglectful of himself and his affairs, does not keep his business appointments, and is prone to forget his obligations to his family and to society in general. It is for the members of this group that office treatment holds out the greatest hope.

Group 3. This group is composed of those inebriates who are subject to periodical sprees, and who between the attacks are usually sober citizens, total abstainers, in fact. During the spree it is usually necessary to overlook their wishes and deal with them as we would with any patient bereft of his senses. Restraint is often necessary. This can sometimes be accomplished by keeping the patient under the care of an intelligent nurse for a few days, or placing him in a hospital. When the attack is over most of these patients are as well as they ever will be, irrespective of the treatment applied, for periodical dipsomania is usually a manifestation of epilepsy or manic-depressive insanity, and complete recovery is decidedly rare. For many of these patients office treatment is of value, however, for they can in some instances be taught to live so that the attacks will be less numerous and less severe, and also how to foretell the onset of the attack and to return at once for treatment on the first indication that an attack is imminent. This class of patients will tax one's patience to the extreme, but the condition is by no means hopeless. If we but get the patient to return to us in the hour of trouble and lessen the attacks and shorten their duration we will have accomplished something worth working for.

Group 4. This group is composed of inebriates who have become unable to manage themselves or their affairs. More or less drunk most of the time, they are a menace to themselves and to society. They are the individuals we see drunk upon the streets or in our police courts and jails, if they are poor, or leading wild and riotious lives and spending days and weeks in drunken revelry if they are rich. These are the patients demanding custodial care, for whose families sanatoria are a blessing. For some of the members of this group detention over a period of years under legal commitment on a compulsory labor farm holds out a faint hope.

Group 5. This group consists of inebriates who fail to provide for their families, beat their wives, and otherwise misconduct themselves. They are, of course, subjects for the police, but ought in every instance be put through a thorough mental examination, for many of them are utterly irresponsible and ought to be placed in insane asylums. Prolonged detention, under legal commitment, on a compulsory labor farm holds out practically the only hope for some of these individuals.

In every case our first duty is to study the patient and try to discover the underlying cause for the condition. This having been ascertained, common sense dictates that we aim our treatment at correcting the fault. Some of the most common causes of the drink habit are: Neurasthenia, diabetes, faulty heart action, intestinal parasites, gastric and intestinal catarrh, wasting diseases (especially tuberculosis), mental disease, excessive smoking, improperly prepared or insufficient food, worry, poverty, and prosperity. How many of these causes are removable?

Be the underlying cause what it may, the individual comes to us, complaining of a vague, indefinite thing, a more or less powerful physical and mental demand—a craving—for a stimulant. Not infrequently he says, "Relieve me of this intense craving for the stimulant and I will leave it alone." Can we promise him the relief he begs for? We certainly can in a most encouraging number of instances.

In practice we find that in the vast majority of cases we are unable to locate any definite cause for the craving for alcohol, and we cover our ignorance, and in a measure placate ourselves and our patients by saying that the patient is a neurasthenic or a psychasthenic, or both, and we are compelled to treat him along broad general lines. This, in fact, is what we should do, for from a practical standpoint the treatment of the drink habit in most cases resolves itself into nothing more nor less than the treatment of a severe case of neurasthenia.

In the treatment of this condition the following plan (published in the *Journal of the Medical Society of the State of New Jersey*, February, 1909) has given me most encouraging results:

I urge the patient to stop drinking at once, assuring him that under the treatment the craving for alcohol will soon become less severe and in a day or so will disappear, and that "tapering off" only prolongs the agony and is indeed like cutting off a dog's tail by inches. At the outset free purgation is secured by compound cathartic pills, fortified with podophylin, and the bowels are kept loose for a few days. I give atropine, grain 1-100, and push it to the point of toleration and maintain it there about four days, then give a small dose twice daily for the

remainder of the week; extract of digitalis, one-half grain, three or four times daily for two or three days, then diminishing the dose gradually and discontinuing at the end of the week, unless indicated; arsenious acid, grain 1-20, three times daily for a few days, then twice daily for the balance of the week; ergotin, four grains, three times daily for two or three days, then two grains twice daily for the balance of the week; and, occasionally, in the presence of severe prostration, one-half to one dram of the fluid extract of coca-erythroxylon, repeated as indicated. Other drugs used as indicated during the first week are bromides, chloral, sulphonal, trional, veronal, paraldehyde, apomorphine, calomel, quassia, and milk of magnesia.

During the second and third weeks the patient receives fifteen grains of the red extract of cinchona suspended in glycerine and water night and morning. Beginning with the fourth week and continuing for several months, he receives a tonic pill containing phosphorus, strychnine, iron, arsenic, quinine, and cascara.

Systematic treatment being a prime essential for success, I have my patients report to me three times daily for the first two or three days, then twice a day for the balance of the first week; during the next two weeks they report once daily and during the fourth week every other day. They then call once a week for a month, then once in two weeks, then once a month for as long a time as they will come. Of course the above number of visits will in some instances have to be less and occasionally more, but in the main the general plan is adhered to. Sometimes the patients are treated at their homes, and occasionally one will spend a few days with me. I never tell my patients what drugs they are receiving, and as far as possible give them every dose myself in order to be sure that instructions are being followed and to prevent self-drugging. Naturally we must avail ourselves of every possible aid to secure the desired result. Advising as to the general health and welfare, proper diet, church attendance, sometimes change of occupation (as from a tanner to a floorwalker), etc.

If you find the foregoing plan too irksome, if it would weary you to see your patients so often, or if your time does not permit of such close attention to these cases, and you yield to the temptation to write a prescription for the above or any other drugs and tell your alcoholic patients to take so much so often and see you again in a week or so, you will in all probability not obtain the desired result, for you will fail to secure the psychic touch which is so essential to establish a cure.

In the Medical Record, May 28, 1910, I reported a few cases illustrating the possibilities of office treatment. I am pleased to be able to add at this time that every patient then reported cured has remained well. A few additional illustrations may not be amiss. All the following cases were treated by office visits, without detention.

Case I. T. D. B. Aged 38 years. Married. Editor. Has been a hard, steady drinker for twenty years and would go on sprees. Ordinarily would take fifteen drinks of whisky a day, but when on a spree would take as many as forty. Has had great difficulty in retaining employment during the last year or so, and has just been discharged for drunkenness. Has had several attacks of delirium tremens. Came under treatment February 13, 1905, at the close of a prolonged spree. He promptly responded to treatment, stopped drinking at once, regained his position, and has remained totally abstinent.

Case II. G. M. H. Aged 29 years. Single. Electrical engineer. Referred by Dr. H. V. S. Stout, East Orange, N. J. A mild, constant drinker, with severe periodical sprees, during which he would drink all he could get. Craving was so intense that he carried a flask of whiskey with him. Came under treatment March 10, 1905, having been on a spree for about four months, during which time he has done practically no work. As an evidence of good faith, on beginning treatment he deposited a pint flask of whiskey upon my desk. The result of treatment left nothing to be desired. He is to-day a prosperous man, a good father and husband, and a total abstainer.

Case III. J. S. Aged 51 years. Widower. Painter. Has been a hard, steady drinker since early youth, drinking at first beer to excess, then taking up whiskey and other strong alcohols. The quantity consumed daily was only measured by his ability to get it. Has not done a day's work in months. This case looked hopeless on being brought to me by Rev. Father Polycarp, March 15, 1905, but, as the unexpected sometimes happens, he made a splendid recovery, stopping completely inside of twenty-four hours, and has remained totally abstinent in spite of the fact that he not long ago painted inside of a brewery.

Case IV. F. W. G. Aged 40 years. Butcher. Referred by Dr. W. S. Baker, Newark, N. J. A constant drinker, being more or less braced up most of the time. Easily affected by small quantities. Lays his excessive drinking to worry over domestic troubles. Has a good business and has never stopped work, but has to keep on drinking to get through the day. Is so nervous that he can scarcely talk, and it is very hard for him to use tools. Began treatment May 2, 1906, stopped drinking at once, and when last I heard of him a few months ago he was totally abstinent.

Case V. M. B. Aged 34 years. Married. Salesman. Has been a hard, steady drinker since early youth, taking all forms, but during the past few years mainly whiskey. Has spent some weeks in a sanatorium under treatment for the habit. Dr. A. V. Wendel of Newark, who was familiar with the young man's history, said to me, "That boy cannot pass a beer sign." He began treatment April 13, 1905, stopped at once and remained abstinent for about four months. Having an attack of diarrhea he asked a druggist for something to relieve him. This "something" aroused his craving and he drank slightly for a few days, when he returned for further treatment. He did well for three months and again relapsed, returning for treatment November 18, 1905. Following this course of treatment he remained well for fourteen months. January 18, 1907, he informed me that he had a few drinks the night before. Another course of treatment was begun, and with the happy result that he has remained well.

Case VI. F. M. B. Aged 46. Single. Bookkeeper by occupation, but owing to drink has not been able to do any task requiring mental effort in a long time. Is at present doing odd jobs in a stable and has only earned about thirty dollars in the past six months. Is a hard, constant drinker, drinking as much of any alcoholic beverage as he can get. Has been in the City Hospital several times for alcoholism and has had delirium tremens. On presenting himself July 24, 1905, his condition was such that the most enthusiastic worker would make a

gloomy prognosis. He responded, however, and remained abstinent for about a month, when he relapsed into his former condition and passed out of my sight. Meeting him on the street March 21, 1906, in a deplorable condition, I prevailed upon him to try again. He did so, and the result of treatment was most satisfactory. He to-day occupies a position of trust, has money in the bank, and has remained abstinent over five years.

Case VII. F. G. Aged 30 years. Draughtsman. Married. Brought to me by Rev. Mr. Stewart of Newark. Since four years has been subject to periodical sprees. Would have three or four attacks each year, and they would last about two weeks, during which time he wandered about drinking and neglecting himself and his affairs. Says he has at times a severe fight with himself to keep from drinking in the intervals between attacks. On being brought to me February 12, 1907, he was just over a spree. He has been entirely well since.

Case VIII. H. C. Aged 42 years. Married. Telegraph operator. Brought to me by Rev. Mr. Morgan of Montclair. For the past ten years has been subject to periodical sprees, and they have been growing more frequent, more severe, and of longer duration. When not drinking there is a struggle to keep away from alcohol. On coming under observation September 14, 1909, he was just over a spree and, while not having had a drink in twenty-four hours, had a strong desire and feared his ability to let drink alone without help. Under treatment the craving disappeared and he has remained well.

Case IX. A. F. Aged 42 years. Married. Salesman. In the midst of a spree and practically destitute he applied to a merchant for help. This gentleman, impressed by his manner, sent him to me for treatment at his expense. I learned that for about six years the patient had been addicted to drink, his excess being in his opinion due to domestic trouble. He had lost everything. Began treatment November 27, 1909; responded promptly. The merchant gave him employment and he is doing well.

Case X. E. B. K. Aged 38 years. Married. Clerk. This patient was for some years subject to periodical sprees, but being an exceptionally clever man he managed to retain his position with a leading broker until the sprees came so often and lasted so long that he was unfit for business and lost his position. He then became a fairly heavy, constant drinker, with sprees every month or so. He applied for treatment April 28, 1907. Stopped drinking at once and has remained absolutely well. He to-day occupies a most important position.

Case XI. G. A. J. Aged 33 years. Married. Machinist. This man was a moderate drinker of all forms of alcoholic beverages for about ten years, but for the past year, owing to some unexplainable cause, has been getting drunk several times a week, though he drinks comparatively little whiskey and beer. Craving is not very strong, but he is very nervous. He came under observation July 14, 1909, stopped abruptly, and has remained well.

Case XII. F. B. T. Aged 39 years. Single. Lawyer. Took his first drink of whiskey at the age of sixteen. At twenty-five was a very heavy drinker, getting drunk at times. About two years before coming under observation he spent several weeks under treatment at a sanatorium, following which he abstained over a year, though at times he had a hard time to keep away from drink. About a year later he took Hostetter's Bitters, not knowing it was alcoholic. This awakened the craving and he soon took whiskey, drinking hard, taking about one quart daily. He began treatment April 5, 1906, and has remained totally abstinent since, though there have been times of stress when he had a struggle to keep away from drink, and would I think have relapsed long since were it not that he always returns for a few days' treatment at such times.

Case XIII. E. C. Aged 48 years. Married. Coachman. Referred by Dr. J. C. Mabey, Montclair, N. J. For the past two years has been drinking too much and gets drunk at times. Though he has managed to retain his position, he has several times been on the verge of dismissal owing to neglect of his duties and the fear of accident while driving. Has been told by his employer that he must stop drinking or leave and has made a hard fight to get along without drink, but finds that he is unable to do so without help. Began treatment August 13, 1909; stopped at once, and when last I saw him, a few months ago, he was entirely well.

Case XIV. H. M. D. Aged 24 years. Single. Salesman. Referred by Dr. Morris Manges of New York. He began the use of alcohol socially at the age of eighteen years and, though extremely moderate for several years, gradually increased the quantity taken. For two years has been drinking to excess, getting drunk once every week or oftener and drinking constantly every day. During the six months prior to the date when I first saw him he was drunk more days than he was sober. He says he drinks because he feels the need of a "bracer." Has not attended to business for some time. Under treatment by Dr. Manges he stopped drinking for about four weeks and then resumed, not knowing why. The history of this case, the life of idleness which the young man adopted, the impossibility to get him to interest himself in some definite enterprise, the fact that he had recently inherited some money and was bent upon enjoying life in his own way rendered the outlook in this case extremely unfavorable, but the recovery was prompt, and from the day I first saw him, February 2, 1910, to date he has remained totally abstinent.

Unfortunately, the condition is one which, owing to a number of causes, is prone to relapse regardless of what is done in the way of treatment. In most instances relapse is due to over-confidence on the part of the patient. He feels certain that having remained abstinent for some time he is able to drink in moderation, and he takes a drink of some alcoholic beverage. This soon leads to another and another, and shortly he is again an addict. If he has previously spent weeks or months in a sanatorium miles away the likelihood of going to the trouble and expense incurred in a return to the institution is small, for he is by nature a procrastinator and keeps putting the matter off, and consequently steadily grows worse. On the other hand, had he been treated by a physician nearby who had won his confidence and persistently and diligently impressed upon him the vital importance of returning at once for advice and treatment in the event of things going wrong, the chances are far greater in favor of his return to his physician, thus shortening his days of inebriety and forestalling calamity.

Granted then that nothing can keep alcohol away from the man who wants it and is able and willing to pay for it, and that therefore the aim of the sanatorium in this direction is futile, and granted further that the craving for alcohol can be subdued by office treatment in those patients who are really desirous of overcoming their affliction and will co-

operate with the doctor, and that office treatment is within the reach of practically every person, is it not time for the medical profession to pay thoughtful attention to this phase of a vital subject?

With reference to the value of treatment of the drink habit, without detention, Norman Kerr ("Inebriety," 3d edition, p. 385) expressed himself as follows: "If the inebriate and his friends realized at an early stage of the disease his diseased state it may be laid down as a general rule that the treatment of inebriety would be best conducted with the patient pursuing his usual avocation. To have the mind engaged in the performance of regular duties, to be so busy at one's daily work as to leave no time for thoughts of indulgence, is no mean aid to the therapeutic cure of this disease. The more leisure the inebriate has the longer the time at his disposal to dwell upon his miserable slavery, the greater the danger of frequent repetition of the inebriate act. Mental occupation and bodily exercise are alike invaluable."

In recapitulation and conclusion, I would say that over six years of constant and almost exclusive study of the diseases of inebriety has convinced me that those individuals who are sincere in their desire to be cured of the drink habit can in the vast majority of cases be cured or vastly improved by office treatment without detention, or with but a few days' detention during the acute stage, and that those who enjoy their inebriety and do not wish to be cured cannot be cured or much improved by any plan of treatment. In the minds or brains of this latter class of persons there is either something present which does not belong there and which we are unable to remove, or something lacking, which we are unable to give.

510 West End Avenue.

CLINICAL OBSERVATIONS IN SOME CASES OF PROSTATIC OBSTRUCTION.*

By JAMES PEDERSEN, M.D.,

NEW YORK.

Under the assumption that all clinical experiences are interesting, especially such as present variations, I beg to submit six cases, somewhat atypical in character, in the hope that they will contribute to the discussion that is to follow. The first two two cases will illustrate some of the phases of malignant growth of the prostate and bladder—important phases because unrecognized (if not, indeed, unrecognizable without cystoscopy) until the malignancy has gone beyond the possibility of radical removal.

Case I.—In the first of these, an extensively infiltrating carcinoma, primary in the bladder wall, had given neither pain nor other recorded pathognomonic symptom until a few weeks before death.

The patient, sixty-four years old, in bad general condition, was referred by his physician, July 9, 1910, with the following four-year history: frequency of urination and dysuria, gradually increasing; marked hesitancy finally; occasional attacks of cystitis characterized by cloudy and malodorous urine; blood clots at times, apparently due to catheterism; no actual hematuria. At the time these usual symptoms began to develop, a "very large" prostate was diagnosticated; thus explained, they became the basis for the subsequent treatment. In due time catheter life became necessary. Two years later a sound was passed daily for one year. As may be sometimes observed, urotropin, whenever administered, served only to increase the frequency of urination.

The general symptoms were: an increasing tendency to headache, palpitation, and edema of the feet and scrotum; numbness and tingling of the feet; sudden temporary deafness. Previous personal history, including syphilis, negative. Family history negative as to malignancy and tuberculosis.

No pain had developed until recently. This recent pain was referred to the bladder neck and arose with every urinary desire. Both had been increasing rather rapidly. By the time he came under our observation the pain had become demoralizing and the urinary desire incessant. Hourly catheterism was imperative; it gave him some slight respite in the intervals.

The whole clinical picture spoke for malignancy. Rectal touch confirmed the diagnosis without defining the lesion. The indwelling catheter was not tolerated. Cystoscopy was impossible. The one specimen of urine submitted for examination was "yellow, slightly turbid, alkaline, 1008 and contained some red blood cells, many leucocytes and a trace of albumin, but neither casts nor sugar."

As soon as permissible, after nursing and stimulation for forty-eight hours, suprapubic drainage was established as the only way of relieving the sufferer. The peritoneum over the bladder was found permanently thick and adherent, and the subjacent bladder wall was dense and rigid as far as palpable through the wound. After some dissection, the prevesical space was cleared until a sound in the bladder could be recognized and cut down upon. To our surprise, the prostate had the feel of benign enlargement; it had escaped the extensive infiltration of characteristic feel that involved almost the rest of the bladder. The patient died of exhaustion two days later.

The pathologist described the growth as an epithelioma of the major portion of the bladder wall, beyond which it had extended, almost filling the pelvis and involving the rectum and retroperitoneal lymphatics.

The value of early cystoscopy in every case of disturbed bladder function is supported by such histories as the one just cited. It may well be considered a desirable routine procedure when no contraindication exists, as the likelihood of exciting a traumatic prostatitis is negligible if the cystoscope be introduced properly. Though the earlier recognition of the lesion might not have implied a radical cure necessarily, it would have postponed the fatal termination and spared the patient some suffering meanwhile.

Case II.—The second case, having points of similarity, is suited for comparison with the foregoing. It is remarkable in that the carcinomatous process, though it involved the whole prostate, did not give symptoms, *according to the patient's history*, until three months before so much difficulty in introducing the catheter was experienced, as to portend impossibility of introduction at an early date. It was this approaching calamity that led the patient's physician to advise prostatectomy. Possibly the freedom from striking symptoms is explicable by the fact that the malignant degeneration was of the scirrhous type.

The patient, an intelligent man fifty-six years old, gave a negative previous personal and family history. His first urinary symptom was sudden reten-

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tion three months before the consultation on June 15, 1910. Though this retention had been relieved by careful catheterization, infection of the bladder occurred. Subsequently, however, by the skill of his physician, this infection had been gradually cleared up, though catheterism had become necessary at shorter and shorter intervals to meet the increasing inability of the bladder to even partially relieve itself, in spite of the fact that the compensatory hypertrophy of its muscle fibers had not yet become exhausted. Catheterization was necessary from every one to three hours during the day and from three to four times at night. Futile urinary desire with pain and tenesmus set in as soon as maximum distension was reached. Resistance and rigidity of the vesical neck were now so considerable that a metal catheter was being used. Aside from a little blood after this instrumentation, occasionally, no blood was noted.

On examining the patient it was noticed that he looked older than his age, and that he was correspondingly atheromatous. That a soft rubber catheter of any caliber could not be made to enter beyond the membranous portion was quickly demonstrated. A 20 F. natural curve web catheter finally overcame both the spasm of the external sphincter and the binding rigidity encountered throughout the deep urethra.

The history of rapidly increasing narrowness of the deep urethra without tortuous deviation of the canal; the excess of subjective over objective local symptomatology (cystitis being no longer present) and the man's general appearance, though it could have been ascribed to his broken rest for three months past, all excited the suspicion of scirrhous malignancy. This the rectal examination did much to confirm. The rather small, firm, fibrous prostate was felt pushing its apex forward, as it were, along the membranous urethra, thus compressing it.

Two days later, suprapubic prostatectomy was undertaken with the understanding that, if the evidently fibrous gland were found malignant and could not be successfully removed, permanent suprapubic drainage should be established. The intravesical portion of the prostate was found funnel-like, with the large end directed forward, and hard as stone. The strain and pinching pressure upon the enucleating finger were very great. The line of cleavage was readily found, however. With the help of my assistants the truly difficult enucleation was accomplished and a satisfactorily clean cavity was left, as determined by bimanual palpation. The pathologist's report confirmed the diagnosis.

At the end of the first week a blunt sound (23 F.) entered the bladder without being obstructed or deviated in the least. Equally so 25 F. a week thereafter.

He now urinated at will in a good stream. The patient made a perfectly smooth, non-febrile convalescence, and took the train for his home on the fifteenth day after the operation.

Eight days later he wrote that his physician was dressing what remained of the suprapubic wound, and that the only urine it emitted was a few drops during micturition. A month after this he wrote that he now had a good appetite, was gaining strength and had no pain whatever. His letter of January 9, 1911, however, tells plainly of an abdominal metastasis causing gastrointestinal symptoms and symptoms described as "rheumatic." He was obliged to stop work about the middle of December, after almost six months of comfort and fair health. Apparently no bladder recurrence has developed thus far.

What can be done to guard against such masked cases of malignancy? Evidently the case cited was one of insidious obstruction leading to synchronous bladder hypertrophy ending in atony, accompanied by symptoms so slight as to be regarded by the patient as negligible. Only by a system of inspection can such cases be discovered before some ominous symptom compels attention.

Case III.—The third case is that of an active but feeble man of seventy years, who had had prostatic symptoms for between six and seven years. With the usual frequency and hesitancy of urination, this period of his history included an attack of bright hematuria with clots, a year and a half ago. This lasted three days. There was no recurrence until four days before he came under observation. Complete retention having occurred after some sexual excess, he had been catheterized, and again twelve hours later. Thereupon slight hematuria accompanied by frequency and urgency, with pain during and after urination, developed.

A 16 soft rubber catheter entered the bladder; readily though encountering a sense of constriction in the elongated deep urethra. The residual amounted to only ℥iii. Aside from the large amount of blood, with moderately abundant mucus and pus and a correspondingly high percentage of albumin, the urine was negative.

Per rectum, the prostate was felt low down in the pelvis; it was small, soft, and tender. The intravesical enlargement could be palpated vaguely through the relaxed abdominal wall. A tentative diagnosis of malignant growth of the prostate was made. On attempting to pass the cystoscope, the beak of the instrument encountered an obstacle, as though the enlargement bulged into the urethra laterally and from above, apparently at the internal meatus. A guiding finger in the rectum did not help. Eventually the long, slender Freudenburg cystoscope with short beak entered the bladder after some maneuvering. (No anesthesia.) Marked general enlargement was seen, but the distending medium became turbid so promptly that the details of the picture could not be studied. A tissue shred brought away by the cystoscope exhibited only dense connective tissue under the microscope.

Because the hematuria began to abate and all his local symptoms to improve under treatment, he persisted in deferring the operation. The hematuria ceased, but started up again within a month and he consented. Everything considered, the patient was not a good surgical risk. Therefore, forty-eight hours for preparatory nursing in the hospital were planned. But he played truant and entered the hospital a day late. Prostatectomy was performed June 23, 1910. The right lobe was firm and adherent; considerable force was required to enucleate it. It came away in two portions. The left lobe was delivered entire with great ease. A full size sound was passed to identify the membranous urethra and by palpating through the bladder we proved that neither constriction nor obstruction remained. The hemorrhage was so sharp as to make packing of the prostatic cavity desirable. For about three hours he suffered moderate shock. His poor recuperative powers and his obstinate refusal to take sufficient nourishment prolonged his convalescence. In the middle of his second week, during a period of torrid weather, he nearly died of heat prostration. His appetite

failed utterly. His restlessness made impossible anything like satisfactory attention to his dressings. Instead of the usual primary union in the sutured portion of the wound, the wound broke down. His homesickness next became a factor. Only the fear of fatal cardiac overstrain prevented me from yielding to his nagging request to be allowed to go at this time. His fourth week in the hospital, however, was signalized by such positive general improvement that he was permitted to leave, though his suprapubic sinus was still leaking considerably. He began to gain in flesh and strength at once. The sinus did progressively well and was firmly healed within two weeks.

The subsequent course of this case has tended to confirm the tentative diagnosis of malignancy. While progressively improving, both locally and generally, and noticeably gaining in weight and color, he suddenly began to lose weight, ten weeks after the operation. Soon thereafter the hematuria started up again. It has persisted ever since, more or less constantly. Cystoscopy has again presented the same difficulties at the outset, though a soft rubber catheter and a sound enter the bladder without appreciable impediment, and though he empties his bladder to within two drams. The patient has declined a second operation.

It seems to me that this case calls attention in the first place to the necessity for preparatory treatment before the operation. The amount of this preparatory treatment, expressed in number of days the patient should spend in the hospital, depends upon the individual case and is a matter of judgment. Unquestionably this patient had an excessive hemorrhage because his circulation had not been quieted by rest in bed before the operation. Could what was obviously indicated in his case have been carried out as planned, he would have been spared not only the hemorrhage but the shock, which was certainly augmented by the hemorrhage.

Case IV.—The fourth case may be properly entitled one of "irritable prostate." The patient, seventy-five years old, of large physique and fairly good appearance, but with a positively senile mentality, was referred for treatment in March, 1910. A year before he had begun to complain of feeble urinary stream and nocturnal frequency. Soon thereafter he had his initial retention. His symptoms gradually increased, and about a year later, when his second retention occurred, his physician put him on catheter life. This was about two months before he came under my care. A third attack of retention (relieved by his physician) had occurred very recently. He now complained bitterly of an incessant burning at the neck of the bladder, changing to pain whenever the catheter was passed, and of frequent, fitful attacks of vesical tenesmus in the intervals. To get a little relief, catheterization from seven to ten times in the twenty-four hours was obligatory. There was no history of hematuria.

The man's general condition and mentality were at variance, as described. Arteriosclerosis was decided. At 8½ inches a soft rubber catheter found a small quantity of residual urine, thick with pus. It appeared that he had almost stopped drinking water and had greatly reduced his intake of other fluids, hoping to avoid catheterism. His avoidance of fluids and the fact that a little urine was squeezed out during some of his tenesmic seizures, combined to account for the trifling amount of residual urine at that time. A few days later, after the tenesmus had been considerably checked and the patient had been put on the requisite quantity of water, the residual rose to an average of about 5 ounces. The prostate, per rectum, was large, prominent and boggy.

For obvious reasons it was determined to avoid any operation on this patient, if possible. His devoted wife willingly took up the burdensome treatment. Appropriate local measures, aided by small doses of codeine at the outset, soon reduced the catheterism to four times in twenty-four hours and practically put an end to the tenesmus. The incessant, tormenting "burning" at the bladder neck persisted unbated, however, and was the unfailing cause for his peevish complainings. Cystoscopy was easily accomplished without even local anesthesia. Contrary to the expectation, no calculus was found. A satisfactory radiograph by Dr. Lewis G. Cole excluded renal and uretral calculi. Two or three otherwise inexplicable exacerbations of the burning, associated with an abrupt reappearance of an appreciable quantity of pus in the residual urine at the next catheterization, after which would come marked relief, supported the alternative diagnosis of recurrent small follicular abscesses of the prostate, each rupturing in turn. Solutions of silver nitrate, mild below the average, seemed to increase his discomfort without any subsequent beneficial reaction.

Suprapubic drainage was unavoidable. It was advised, with the expectation of a subsequent prostatectomy should the patient's vital condition improve sufficiently. This improvement was not realized, however, though the patient was relieved of most of the prostatic pain—what remained of it being apparently due to the occasional contact of the rubber drainage tube. The patient's mental condition grew steadily worse. A marked degree of general hyperesthesia set in. At night he had delusions, and off and on, both by day and night, exhibited irrational impulses and mild delirium. He died eighteen days later. The urine varied in specific gravity from 1008 to 1020, and showed a faint trace of albumin—not more than the pus could account for. Casts were never present. The excretion of urea (1 per cent.) was proportionate to his diet. There seems, therefore, less ground for attributing his death to nephritis than to the effect upon the economy of the progressive mental deterioration.

Case V.—The fifth case is that of a patient sixty-eight years old, of an unusually sensitive organization. About four years before coming under observation he had developed noticeable dysuria. Two years later his first attack of retention occurred. An evidence of his extreme sensibility is the fact that, though free of constitutional symptoms, he spent nine weeks in bed at this time so that the catheter could be used from two to three times in twenty-four hours, as indicated. At the end of the nine weeks the bladder seems to have regained considerable power and catheterism was no longer necessary. The past two years have been marked by more or less acute attacks of cystitis and urinary difficulty, for which he was given indifferent treatment spasmodically. His general health began to fail, and this fact, coupled with his lack of purpose, made of him a pronounced hypochondriac. In all other respects his history is negative.

At the time he came under observation he complained chiefly of the annoying frequency (every two hours, day and night); considerable burning sensation with every urination; an aching pain in the pros-

tate, and a sense of fullness in the rectum. Made doubly timid by some previous experience and his inherited hypersensitiveness, he dreaded catherization. Apparently it was wholly because of this dread that he had been neglected so long. The catheter did not disclose as much tenderness of the deep urethra as expected; it entered easily and withdrew nineteen ounces of residual urine, the last portion thick with pus and mucus. The history of previous catheterizations made it permissible, in our judgment, to draw off this large quantity at once, and to offset it by leaving in eight ounces of boric solution.

A day or two after entering the hospital he began to show symptoms of renal insufficiency. The practically total retention was met by catheterism so regulated as to avoid overdistention and consequent back pressure. Eventually the crisis was successfully passed, and the deferred cystoscopy was performed (as usual without anesthesia). The findings were: Marked trabeculation of the bladder,—so much so that the ureter mouths could not be recognized; in the upper right-hand segment of the bladder the entrance to a diverticulum; no calculus.

In consultation with his physician, it was decided that prostatectomy, except by the two-stage method, would not be a safe undertaking. The preliminary cystotomy was performed under gas anesthesia. The bladder was drained for three weeks. The drainage was continued for this unusually long period, partly because of the diverticulum and the extreme bladder-atony, but chiefly to allow the kidney function to improve as much as possible before proceeding with the prostatectomy. His recovery was uneventful and satisfactorily rapid. He now urinates at normal intervals without any difficulty or distress whatever, and empties his bladder to within two drams. Under the usual after-treatment, the cystitis is clearing up.

This case certainly affords a strong argument in favor of the two-stage operation in certain cases. It is not a necessary procedure in every case. The degree to which this man improved in all particulars during the three weeks of bladder drainage was very reassuring and made the prognosis good. Instead of an invalid he is now a normal man.

Case VI.—The sixth case was referred three years ago for the relief of an intermittent incontinence, chiefly nocturnal. His early previous history, though not wholly relevant here, has its bearing. It is at least interesting as enumerating several ills to which flesh is heir.

The patient, of temperate habits, energetic and "wiry," was sixty-nine years old. His only urethritis was contracted when twenty-two. During its course he transgressed every rule of general and sexual hygiene. He declared that, after the use of certain strong injections, "the whole urethral lining came out at one time." Be that as it may, the duration of his urethritis was one and a half years. It is perhaps remarkable that neither chordee nor positive symptoms of posterior urethritis can be recorded; the latter especially in view of the pathological condition soon to be described. Next came three attacks of renal colic. After the first (1870) he discharged a grape-seed calculus; the second, twenty years later, did not impress itself on his memory; the third, twelve years later, was made memorable by the discharge of a quantity of sand for a period of twenty-three days. Finally, four years before coming under observation, he developed urinary frequency, hesitancy, and feeble stream. For their relief a physician performed internal urethrotomy. The hemorrhage, described as from 25 to 30 drops, was suggestively slight. Nevertheless, six or seven months later upward curvature developed. During the healing of the urethrotomy wound he passed a sound and made pressure per rectum against it. A year after the unrethrotomy he noted loss of sexual desire. Ever since the operation he had had the symptoms which constituted his chief complaint, namely, irregularly intermittent incontinence, as noted above; a feeling of distention in the rectum, very variable frequency and urgency of urination (from four to twenty times in twenty-four hours), and a sense of discomfort during the urinary act.

After he had suffered thus for two years he sought advice. From his history at this point it is evident that chronic suppuration of the prostate and perhaps of the seminal vesicles was the diagnosis. He declined operation and was given palliative treatment.

Examination showed a small, soft, mobile prostate and two sharply-defined, cord-like, indurated seminal vesicles. Both lateral lobes yielded tangibly to the finger; moderate pressure was sufficient to cause a dram of pure pus to flow from the urethra. When the seminal vesicles were included, the otherwise pure pus was found charged with countless spermatozoa. The residual urine amounted to less than two drams.

Having recently seen a similar case cured of a suppurating focus, I agreed to carry on the treatment and to defer operative intervention. Though not as constant to the prescribed and proscribed lines as could have been wished, he was fairly faithful. To bridge over the necessarily longer or shorter absences from the city, he was taught to empty the pus sacs by means of the Swinburne prostatic massage instrument.

Omitting the vagaries and vicissitudes of his lengthy experience, and noting only the essentials, we have an increase in the residual urine, which now varied from 1½ to 6 ounces; two attacks of retention, only one of which required the catheter; no vesical calculus as proven by cystoscopy; several brief attacks marked by chilliness and fever and sometimes by sweating; and a mild attack of pneumonia. He was under the care of his family physician during these several illnesses. The net results of the local treatment were: No further incontinence except when overtired; a substantial reduction in the frequency and urgency of urination; less pus from the sacs, and a restored potency.

It having become evident that no further progress could be expected, operation was advised. He declined and did not report for eight months. In that time he had retrograded both locally and generally—the latter to an alarming degree. Operation was now accepted. After four days of necessary preparatory treatment, suprapubic prostatectomy was successfully performed, February 21, 1910. The largest pus sac was easily shelled out; the remaining portions were tenacious, owing to the chronic inflammatory changes. There occurred more laceration of the vesical outlet than usual.

Anticipating, therefore, the possibility of a malformation during the healing, the indwelling catheter and the blunt sound were used at proper intervals, beginning five days after the operation. In spite of this precaution, a fold of tissue must have formed, and when the after treatment was taken up at the office it was found that a soft rubber catheter would not enter the bladder unless

styletted and sharply curved, though a blunt sound entered without difficulty.

Fortunately this apparent obstacle did not prevent the patient from emptying his bladder to within five drams of the total. He was last seen on October 20, 1910, at which time the cystitis of many years standing had almost disappeared; the urinary function was normal; his day-intervals varied from two to four hours, depending upon the activity of the kidneys, and he could retain his urine seven hours at night.

THE TREATMENT OF NEURITIS WITH THE HOT-AIR DOUCHE.*

By LEOPOLD STIEGLITZ, M.D.,

NEW YORK.

In opening this communication it might be well to remark that neuritis is a comprehensive term, and that under its caption diseases of very different nature are included. I am speaking to-night of that form of neuritis which presents itself to us in the guise of the severer forms of sciatica or as an inflammation of one or more of the large nerve trunks of the arm, a condition characterized by very severe pains originating in the peripheral nerve, and by more or less disturbance of sensibility in the shape of paraesthesiae or hypaesthesia. This form of neuritis is common enough and presents no small difficulties in the way of successful treatment. These difficulties are due to two facts, which I should like to emphasize at once: (1) After the inflammation in a peripheral nerve trunk has reached the stage of actual organic changes in the nerve structure the disease shows little tendency toward spontaneous recovery; on the contrary, the tendency is all the other way, toward a state of chronic and more or less permanent inflammation. (2) When these organic changes have set in the *curative* value of drug treatment is almost nil.

The main principles of the actual cure of the disease can be summed up in two words: Rest and heat. In the severer cases little or no headway will be made until the patient is put to bed and kept there till he is well on the way toward recovery, and then the return to active life should be gradual and cautious; a premature use of the affected limb is punished almost invariably by a setback. The beneficial effect of rest is indirect, inasmuch as it protects the inflamed nerve trunk from the innumerable small traumatisms active use of the limb would entail, traumatisms which aggravate the condition as indicated by the pain they create. Although rest is a *sine qua non* in the severe cases, rest alone will not cure this form of neuritis, owing, as stated above, to the very slight tendency toward spontaneous recovery of an inflamed nerve trunk. This failure to heal of its own accord is accounted for by the poor blood supply provided for the nutrition of the peripheral nerve trunks, and in general it may be said that the more poorly tissues are fed the more slowly do they throw off inflammatory or other diseased conditions. This is the point at which the second curative factor mentioned, heat, comes into play. For many years I had heat applied in the shape of hot salt or sand bags placed along the course of the affected nerve, and the results obtained were not bad. Nowadays wherever we have the electric current at hand it is well to wrap electrically-heated pads (so called thermopads) about the affected arm or leg and to keep these pads in place for a good part of the twenty-four hours. Hot poultices and other hot applications can be used for the same purpose. Far more effective than any of these methods of applying heat is the use of superheated air. Under the influence of Dr. Willy Meyer's teachings of Bier's methods of treatment of inflammatory conditions, I began using superheated air in the treatment of neuritis two years ago, and the results obtained have been so satisfactory that I thought it worth while to call your attention to this most efficient method of treating this trying class of cases. In neuritis the superheated air is applied best as a hot-air douche along the course of the affected nerve trunk. This method gives decidedly better results than the use of the hot-air boxes, so useful in joint cases. The application is made two or three times a day, or even oftener, according to the severity of the case. Each application should last from half to three-quarters of an hour. Briefly, it may be said that the douche should be applied as hot as the patient can bear it, care being taken, of course, not to burn the skin. After a few treatments the tolerance increases greatly. The amount of heat can be controlled both by regulating the source of the heat and by holding the conducting tube more or less closely to, and moving it more or less rapidly or slowly, over the skin; the closer it is held and the longer the current of hot air strikes a given point of the skin the greater is the sensation of heat. At first I used an apparatus built along the lines of the one described in Dr. Meyer's "Bier's Hyperemic Treatment." The source of heat was either a special Bunsen burner for gas, or, where gas was not obtainable, a special alcohol lamp, both supplied by Kny Scherer. At present I use an electric hot-air douche, which is exceedingly handy and simple, and which at the same time gives off a much higher degree of heat than any other apparatus I have tried. The construction of this electric hot-air douche (made originally to dry hair quickly) is simplicity itself. It consists of a small electric motor, which drives a small fan; the latter forces a current of air over a coarse wire coil heated by the electric current. Within less than five minutes the air as it leaves the conducting tube shows a temperature of 200° F.; this is hotter than any patient will stand applied closely to the skin.

These hot-air applications accomplish two equally important objects: they alleviate the pains, which are the principal symptom of the disease, and at the same time they cure the disease itself. The cure is effected most likely by the production of an active hyperemia, not only in the skin to which the heat is applied, but also in the underlying tissues, including the affected nerve trunks. After an application the skin is very much reddened, and at the end of a week the area is browned as from sunburn.

I do not for a moment wish to claim any miraculous cures from this method of treatment (the process of repair is at best necessarily slow in a profoundly inflamed nerve trunk), but I do not hesitate to assert that this process of repair is stimulated and the course of the disease considerably shortened by the plan of treatment outlined. In the milder forms of the disease, which are fully as common as the severer forms, the hot-air treatment is as near an approach to a specific as I could wish for. Except in very inclement weather the patient need not be confined to his house. The application of the hot-air douche every morning and evening, the wearing

*Read before the Metropolitan Medical Society of New York.

of long flannel sleeves (or drawers) and a certain amount of care to avoid unnecessary use of the affected limb will cure most of these cases.

Before closing with the histories of two characteristic cases, I wish to state expressly that I do not taboo the use of drugs in the treatment of neuritis. The salicylic acid group, many of the coal tar preparations and codein contribute greatly to the *comfort* of the sufferers during their cure, but the latter is just as effective without their use, as I have seen in cases where the patients objected to medicines of any kind. The use of the stronger opiates, notably morphine, is in my opinion absolutely reprehensible.

Case 1: Mrs. B., aged 45. Seen for the first time December 26, 1908. Two weeks before had been taken with very severe pain in the right arm, which had grown steadily worse. She had been under the care of a leading neurologist, who had used electricity and ordered massage and aspirin. The massage had caused excruciating pain. On examination I found a rather frail woman, with a systolic murmur, a moderate degree of anemia (60 per cent. hemoglobin) and a trace of albumen with occasional casts. There was marked tenderness along the course of the musculospiral nerve and above the clavicle from pressure on the nerve trunks of the brachial plexus. Paraesthesiae and a sensation of numbness in the thumb and radial half of the dorsum of the hand and loss of sensibility to touch in the same area were present. The paroxysms of pain were almost unbearable, occurring at all times of the day and night. Use of the arm brought on a paroxysm without fail. The treatment instituted was absolute bed rest, warm electric pads wrapped about the affected arm, but separated from the arm itself by a wire arrangement, as the pressure from the pad was unbearable; hot-air douches of an hour's duration, given three times a day; phenacetin, aspirin and codein in moderate doses, and occasionally veronal. The first two weeks improvement was slow, then there was a gradual but constant and comparatively rapid further improvement, and by February 10th the patient was completely free from pain. Two weeks later, against my advice, she began playing bridge, with the result that a rather severe relapse set in, severe at least in pain. The immediate use of the hot-air douche gave relief within twenty-four hours, and by the 7th of March, within twelve days of the onset of the relapse, she was completely and permanently cured. When she went abroad the following May she insisted upon taking the rather cumbersome hot-air apparatus with her, for fear of a recurrence of the disease.

Case 2: C. L., aged 72, consulted me October 18, 1908, on account of pain in his right arm. He had been suffering from more or less pain for the two last weeks; the last two days the pain had been almost unbearable. Sensation of numbness and tingling in the fingers and hand had been present for some time. The examination showed tenderness along the brachial plexus above the clavicle, and very marked tenderness along the musculospiral nerve. Tactile sensibility on the dorsum of the thumb and index finger diminished. Treatment: Bed rest, the hot-air douche for thirty to forty minutes twice a day, electric pads about the arm. Patient refused all drugs. After five or six days gradual but steady improvement set in, after ten days the patient was up, in two weeks the worst part of the disease was over, and in six weeks from the day the hot-air treatment was begun the patient was well.

60 East Sixty-fifth Street.

REPORT OF A CASE OF OVULATION WITHOUT MENSTRUATION.

By M. J. SIEGELSTEIN, M.D.,
NEW YORK.

The relation between ovulation and menstruation has given rise to a great deal of controversy in the past, and it must be conceded that, although many theories have been advanced for the occurrence of ovulation without menstruation, the knowledge of this subject is far from being satisfactorily understood. It is very rare for young girls to conceive until after the appearance of their menses, and impregnation rarely occurs after the menopause. These facts rendered it natural for earlier observers to suppose that conception could not occur without menstruation. This view, however, was soon abandoned. The physiological interpretation of menstruation and ovulation is a subject not at all clear. It is probable that the rut in animals as well as the menstrual processes in the mucosa of the uterus have some connection and fill a certain purpose in conception or in the embedding of the impregnated ovum. What this purpose is is still vague and uncertain. Some believe that the premenstrual swelling of the mucous membrane is a preparation for the impregnated ovum, a sort of nest formation. According to this view, the occurrence of the menstrual flow would indicate that the nest has been destroyed and that the impregnation of the ovum, for which the nest had been prepared, had not taken place. As Simpson has expressed it, "menstruation is the abortion of an unimpregnated ovum." Contrary to this view, others have seen in this wound formation on the mucous membrane during menstruation a favorable condition for embedding of the ovum. Which of these theories is correct cannot at present be determined, since we do not know whether the impregnated ovum embeds itself in the uterine mucous membrane shortly before or after menstruation. We are better informed about the association of menstruation with ovulation so far as time and cause are concerned, as occasional autopsies performed on women who have died suddenly during menstruation and the examination of ovaries removed operatively show that menstruation usually coincides with the bursting of a ripe follicle. The activity of the follicles in the ovary must be looked upon as the driving force which brings about the menstrual phenomena in the uterus. Without functionating ovaries there cannot be menstruation. Women with congenital defects of the ovaries do not menstruate; those in whom the ovaries have been entirely destroyed by disease or operatively removed stop menstruating.

The manner in which the uterine function is regulated by the ovaries is still a debatable question. Pflüger believes that the nervous system causes it; that the constant growing of the Graafian follicle causes a continued mechanical irritation of the nerves which are found in the stroma of the ovary and which, as late investigation has shown, surround the follicle with a fine network of fibrillæ. These irritations are conducted to the spinal cord and there accumulate; when they have reached a certain strength a reflex act takes place, which manifests itself in a congestion of the genitals. This brings about a bloody extravasation in the uterine mucosa with the ripening and bursting of the largest follicle. Others believe in chemical irritation produced by internal secretions,

which bring about these changes. These internal secretions of the ovaries enter the blood and there excite the vasomotor centers or ovarian nerves directly. Born and Frankel believe that not the entire ovary or its follicle, but only the corpus luteum, represents the gland (something that secretes), which by its internal secretions produces this cyclic monthly hyperemia which leads to menstruation. Frankel, during operations, destroyed these yellow bodies (lutea) by means of the cautery, and the menses at once stopped.

In reviewing five hundred histories of cases admitted into the Sydenham Hospital during a period of three years, it is interesting to note that the case to be reported is the only one of its kind that has occurred in that time. Ahlfeld reports a case of a woman who gave birth to numerous children and did not menstruate until her thirty-second year. Leviot reports a case of a woman who did not menstruate for fourteen years, and yet during that time became pregnant no less than four times. Gubler cites cases in which ovulation proceded menstruation by several years. A few cases are on record in which pregnancies have so rapidly occurred that menstruation had not appeared for years. Hirst reports a case of a woman 22 years of age, who had never menstruated and gave birth to a child, and another case where a woman menstruated only once after marriage and in the following fifteen years bore ten children without menstruating. Three years after the birth of the last child, or eighteen years since its cessation, menstruation returned copiously and was repeated more frequently than normal for twelve years. The menopause began in the forty-eighth year. In 1894 Leopold and Miranoff made an extended study of the conditions of ovaries removed at operations on forty-two women, whose menstrual history had been carefully noted. In thirty-two cases they found that menstruation and ovulation were synchronous, in eleven menstruation occurred without any trace of ovulation, while in one ovulation occurred in the middle of the intermenstrual period. A number of observers have attempted to show that menstruation may occur independently of ovulation, basing their contention upon the occasional continuance of menstruation after removal of the ovaries, but Gordon, Meredith, and others have demonstrated that after they had removed the ovaries ovulation took place and was either due to the presence of an accessory ovary or that a small part of the ovary was left, which has been shown to be sufficient for its occurrence. Waldeyer in 1873 first directed attention to the presence of accessory ovaries, which are sometimes found on the broad ligament in the region of the main ovary, resulting from faulty development or inflammatory changes occurring during fetal life, as a consequence of which small parts of the ovary have been cut off from the body of the organ.

The results following various operations on the genital tract show that menstruation is dependent on the presence of ovaries, but that ovulation may take place without the presence of the uterus, as it is generally conceded that complete removal of both ovaries, which necessarily stops ovulation, is always associated with cessation of the menses. On the other hand, total removal of the uterus, while associated with abolition of menstrual flow, exerts no effect upon ovulation, as is manifested by the regular occurrence of menstrual molimena. Clinical experience has shown that ovulation and subsequent pregnancies might take place without menstruation, as was demonstrated by the instances of conception occurring before the first menstrual period, and after the menopause, as well as during lactation, when the menstrual flow is usually absent. It is, therefore, evident that menstruation and ovulation occur about the same time, but that one not infrequently antedates the other by a few days, while in exceptional cases they may occur quite independently, but in any event are absolutely dependent upon the presence of ovaries. A common occurrence of ovulation without menstruation is impregnation during lactation. Remfry has found by investigation among nine hundred nursing women that in 57 per cent. only did there occur an absolute amenorrhea; menstruation was regular in 20 per cent., and irregular in 43 per cent. It was also common for conception to occur during lactation, 60 per cent. of menstruating women conceiving. Among the non-menstruating women, only 6 per cent. conceived during lactation.

The case that I desire to report was admitted to the wards of the hospital on February 9, 1911. She was a Russian Pole, primigravida, a well developed and husky girl of the blonde type, 20 years of age, not anemic, but intelligent and understanding English perfectly. All her measurements were normal and she was delivered of a normal child the same day. She had only menstruated once at the age of 17, for about three days, not profusely, but with cramp-like pains in the abdomen and back. Since that time she has never menstruated nor has she had any molimina during the expected period and she did not realize that she was pregnant even after the fourth month, when her abdomen was already slowly enlarging, for she came to the dispensary to inquire as to the cause of her condition. At the end of the tenth day she was discharged with instructions to report at frequent intervals for future observations.

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220 East Twelfth Street.

The Hemolytic Streptococcus in Puerperal Infection.—M. Metzger states that we have not as yet found a diagnostic method to distinguish between virulent and non-virulent streptococci in the vaginal secretions and blood. Hemolysis was a short time ago considered an exact differential test, but since then it has been shown that non-hemolytic streptococci are found in severe cases, and also hemolytic streptococci in harmless discharges. It has been shown by some authors that the property of hemolysis was but temporary and due to virulence of the germs, and that the hemolytic can be transformed into non-hemolytic bacilli by passage through mice and other animals. The same results are obtained with the secretions of the vagina, uterus, and blood. The presence of streptococci in the blood is a bad prognostic factor. Hemolysis indicates that the blood is a good culture medium for the germs, and rather shows the resistance of the organism than the virulence of the microbe. Culture on blood-agar is a simple prognostic method, basing one's conclusions on the rapidity of hemolysis and the number of colonies found. Normal puerperal women may be carriers of streptococci that become virulent.—*La Presse Médicale.*

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THE ASSOCIATION MEETING.

THE meeting of the American Medical Association, held the last week in June at Los Angeles, was one that will take its place among the memorable sessions of this body. The attendance was comparatively small, the registration numbering only about 2,200, but it was large considering the distance from the populous centers of the country, and the representation from the Eastern States was greater than had been anticipated. What the meeting lacked in numbers, however, it made up in enthusiasm. In spite of the powerful attractions of Los Angeles and its surroundings and the many temptations to neglect the scientific work, the attendance at the section meetings was remarkably good, and, as our special telegraphic reports last week and this bear evidence, a number of most interesting papers were presented and discussed. The welcome extended by the physicians of Los Angeles was extremely cordial. The entertainments provided for the visiting members were numerous and unique in character, and the work done by the Committee of Arrangements in providing convenient plans for registration and section meetings was most satisfactory.

A commendable feature was a series of health talks to lay audiences given in connection with the meeting by a number of prominent sanitarians and hygienists. The House of Delegates endorsed the Owen bill creating a Department of Public Health, at least, according to the wording of the resolution, it endorsed the "principle" of the bill. By this we understand that it favored the creation of such a department, without putting its stamp of approval upon all the details of the present bill. We cannot believe that the Association will meekly submit to the humiliation of seeing the Department of Public Health made inferior to all the other departments of the national government, with a layman at its head who is denied a seat in the President's Cabinet.

For the first time in many years a change has been made in the offices of the secretary and treasurer, Dr. Craig having been elected to the former position and Dr. Pusey to the latter. The unanimous election of Dr. Abraham Jacobi to the presidency of the Association will meet with the hearty approval of every physician of the country, whether a member of the Association or not, for, as we said a few weeks ago when the MEDICAL RECORD suggested his nomination, no one can be more deserving of this distinction. The American Medical Association has done honor to itself in thus honoring one of its oldest and most renowned members.

LIGHTS AND SHADOWS OF ENGLAND'S INSURANCE SCHEME.

FOLLOWING the enthusiasm with which the English public received the first announcement of the government's imposing scheme of national health insurance, there is a growing tendency, particularly in British medical circles, to look upon this measure not entirely as an unmixed blessing, and to advocate the exercise of extreme caution before it is enacted into law by the House of Commons. The fears that have been entertained by practically the entire British profession, that the contemplated law would not only fail to mitigate the evils of contract practice, but would magnify and extend these evils by giving national scope and governmental compulsion to a practice that is now purely local and voluntary, have apparently been justified by official statements as to the terms with which the government proposes to compensate physicians for their services under the new scheme. The hard-worked "lodge doctor" of American cities may feel exceptionally contented with his own lot when told that, according to the calculations of the Chancellor of the Exchequer, the proposed law would permit the average payment per annum of a capitation fee estimated at one dollar and a half for each person insured. This sum would include payment not only for medical attendance, but *also for the drugs, dressings, and appliances used in domiciliary treatment.* It is quite natural that the British profession would unite in emphatic protest against the consummation of a deal in which the practitioner will be, as he has been in the past, the inevitable loser. This protest has assumed the form of a memorial drawn up by the British Medical Association and addressed to the government and to members of Parliament. The chief demands are better payment for the practitioner attending beneficiaries under the proposed law; the restriction of medical benefits to those only whose income does not exceed $10 per week; the provision that the beneficiaries shall have free choice of doctor from among those practising in the district who are willing to enter into arrangements under the bill; and that the administration of the medical and other benefits shall be in the hands of local health committees and not of the friendly societies.

Although there are certain features of the new scheme that will appeal to both the public and the profession, these advantages will not close the eyes of the profession to many of the drawbacks associated with the nationalization of contract practice. For certain practitioners who have not been able to make both ends meet enlistment in the service of the government will guarantee a definite income, but if only the least fit in the profession are attracted by the prospect of increasing their earnings, the public will not receive the best form of medical attendance. Those who are enjoying the fruits of a remunerative private practice will hardly care to exchange these for the drudgery of public service. A third class of prac-

titioners will be compelled to accept this kind of work. They are the large body of earnest and hard-working men whose practice has been built up among people of moderate incomes. The proposed law would bring all of the latter within its scope, with the result that their former medical attendant would have nothing to do unless he enlisted in the service of the government. The result of the latter alternative would be that in order to maintain his former income the practitioner would be compelled to work all the harder, in view of the larger number of patients that he must necessarily attend. The hardships would be keenest in the case of the older physicians and those practising in rural communities.

As against these glaring disadvantages that will undoubtedly affect a large number of British practitioners, it may be noted that the abuse of hospitals and dispensaries will be greatly diminished by the fact that those who in the past have sought gratuitous medical service will in the future contribute to the fund that will compensate the practitioner for services that he has supinely granted for naught but the satisfaction of helping his fellow man. But this satisfaction did not help to fill the mouths of the hungry, nor did it enable the physician to set aside a competence for his old age, and for his family when he died. No one has ever been able to gauge the vast monetary value of the services which the medical profession has gratuitously donated to the State. The injustice of this has been emphasized time and again.

It is gratifying to note that the example of American life insurance companies in the inauguration of welfare work—by the dissemination of literature upon personal hygiene, by furnishing medical advice to their policyholders, by supplying district nurses, and finally by establishing sanatoria for the benefit of those of their policyholders who may contract tuberculosis—that this example has been followed in the English scheme of national insurance, with its princely appropriations for the construction of sanatoria and for their maintenance. The most extravagant dreams of the socialist could not conjure up a more fatherly attitude of the State toward its numerous offspring. But this attitude is not one of purely disinterested altruism. The Englishman by tradition is a shrewd economist. Does he not perceive with a vision that is not restricted to the present generation, but gazes far into the future, that whatever governmental outlay will aid in alleviating the burdens of the population will tend to produce a healthier and more sturdy race and will eventually diminish the nation's expenditures for the care of the sick, the insane, the paupers, and the criminals? The enlightened statesman of to-day recognizes the fact that health is one of the national assets, and must be safeguarded with greater zeal than other resources.

The experience of Germany has demonstrated that national health insurance is not a visionary scheme concocted in the brain of parlor statesmen. But legislation designed to improve the public health need not be enacted at the price of injustice to the medical profession.

THE BEGINNINGS OF MIND IN THE NEWBORN.

Notwithstanding the interest in this subject from the standpoint of neurology and pure psychology, comparatively few collected observations based on a large series of cases have been published. The first scientific observations in this field seem to have been made late in the eighteenth century by Tiedemann, and since his time a great number of excellent biographical studies of single infants have been recorded. Up to the time of the publication of Sigismund's interesting work, entitled "Kind und Welt" (1856), there was much confusion and misinformation in regard to the order of the appearance of the various senses in newborn children. The first collective investigation into the mental life of newborn children in a maternity hospital was made by Kussmaul in 1859, and subsequently these studies were repeated under similar auspices by Genzmer in 1873, and by Kroner in 1882. None of these observations was carried out, however, on a series of more than fifty children. A more recent and much more extensive investigation has recently been carried out by Frederick Peterson on a series of 1060 individual babies in the wards of the New York Lying-In Hospital. The interesting results of this investigation are reported in the *Bulletin of the Lying-In Hospital*, Vol. 7, No. 3. A series of tests were devised to determine the first appearance of the various senses and sensations and the material observed was carefully classified as regards the age and maturity of the infants and according to certain extraneous circumstances. The conclusions arrived at by Peterson are rather interesting although they are presented as being incomplete and subject to further elaboration.

Sensibility to light seems to be present in most infants at birth, and this is the case even in those prematurely born. The optic nerve is even prepared to receive impressions some time before birth at full term. Sensibility to sound was found to be quite as apparent as sensibility to light at birth, for 276 normal white children reacted to sound on the first day of life, and 146 reacted to light. A similar condition existed among the premature infants, many reacting to sound on the first day as well as to light. The auditory nerve is, therefore, likewise prepared to receive impressions of sound before the period of normal birth. This seems wholly contrary to the opinion of other authorities. The gustatory nerve was found to react differently to salt, sweet, bitter and sour substances at birth, and the same mimetic reactions were also observed in premature infants. The olfactory nerve was observed to receive impressions in newborn children at term, and likewise in premature infants. Reactions to touch, temperature, or other painful stimuli were present in normal as well as premature infants, but Peterson believes that sensitiveness to painful stimuli although present is more vague and uncertain than in later life, which leads many to assume that the sense of pain is dulled in the newborn. An interesting fact was also observed as regards the sensations of thirst and hunger, which were frequently noted on the first day

although the actual need of food was sometimes apparent only after the first or second day. Discomfort seemed to be clearly marked when nourishment was not forthcoming even in some of the premature infants.

There seems to be good ground for believing that the newborn child comes into the world with a small store of experiences and associated feelings and shadowy consciousness. The fact that even in premature infants the senses are found to be prepared for the reception of impressions is believed by Peterson to constitute evidence that such impressions have been already received and stored in the dim storehouse of a memory already begun. He even goes so far as to say that possibly some sort of vague light impressions have been received, on the supposition that in the interior of the body alternations of day and night may in a mild degree be manifested. He bases this supposition on the transillumination of the hands by a candle and of the frontal sinuses and antrum by the electric light, claiming that sunlight will attain an even greater penetration than any artificial light. He believes that there is even a greater possibility in the stimulation of the auditory sense by sounds produced within the body of the mother, possibly through the medium of bone conduction. The stimulation of the gustatory nerve is thought to occur through the frequent swallowing of amniotic fluid by the fetus. To show that infants start out in life on a common plane, a comparison was made in the reactions of colored and white children, and no perceptible differences were obtained.

By way of comment on these interesting observations, it might be stated that their publication will do much to overcome the feeling rather too prevalent among the laity as well as physicians, that the newborn are not sufficiently endowed with the various sensations to appreciate the ordinary stimuli, whether these are painful or pleasant. Although observations of the kind referred to are necessarily both difficult and uncertain, yet when systematically carried out on such a large number of infants the possibility of error is eliminated to a large degree. It is to be hoped that further research along these lines will be developed.

ANNUITY INSURANCE FOR PHYSICIANS.

The importance of physicians making some provision for a definite and certain income in their old age is discussed in an able editorial article in the *Old Dominion Journal of Medicine and Surgery*, May, 1911. It is not uncommon to behold physicians, particularly in the rural districts, who, with advancing years, cannot compete with their younger colleagues, and who find their former lucrative practice and comfortable income gradually slipping away. This is all the more distressing in view of the fact that the practitioner in his days of prosperity was compelled, both for social and business reasons, to live up to his income. The vanishing practice, whether the result of the keen competition of the younger men or the unfortunate outcome of the infirmities that come with advancing years, can no longer maintain the high standard of living to which the practitioner has been accustomed. He has been able to save little or nothing, and in many instances he is compelled even to allow his life insurance policy to lapse.

Is this plight of the older men in the ranks the result of improvidence in their days of plenty? To a certain extent it is, for no physician dependent upon his brains and physical well-being for a livelihood can afford to ignore the necessity of insuring at any rate a part of his income. College professors, officers in the army and navy, and even members of various labor organizations may look forward to an annuity during their years of retirement, but the doctor who has not inherited or wedded a fortune, or who has not acquired wealth as the result of extraordinary ability in the practice of his calling, or of happy speculation, in most cases can not look forward to a certain income in the unproductive years of his life.

A plea is made that the physicians of this country, through their influential organizations, should establish a system of voluntary annuity insurance, with benefits accruing at a certain age limit, as sixty years. The beneficiaries, having contributed the regular annual premiums, would at that age begin to receive the annuity. It is suggested that a physicians' annuity company, run with a minimum office expenditure, could carry on this work to better advantage than the regular insurance companies. Without attempting to admit the validity of this belief, there can be no doubt that the members of the profession, either on their own initiative, utilizing their own organizations, or availing themselves of the forms of annuity insurance obtainable through the ordinary channels, should seriously consider the necessity of insuring their own earning capacity, for annuity insurance is equivalent to this.

The Peristaltic Hormone.

The so-called hormone which has given the greatest promise as a therapeutic agent is that which preexists in the gastric mucosa (the gastrin of Edkins), the spleen, and elsewhere. The fact that it occurs in abundance in the spleen, unassociated with such pathogenic spores as might possibly find themselves in the stomach, led Zuelzer to obtain the body from that gland; for the hormone can be used only by intravenous injection, and cannot be sterilized by heat sufficient to destroy spores without affecting its integrity. At the recent meeting of the German Surgical Society Henle reported on the use of the peristaltic hormone in postoperative intestinal paresis (*Deutsche medizinische Wochenschrift*, May 18). In five severe cases the remedial action was thoroughly in evidence. All synergistic remedies and procedures should be combined with the injections, and the latter may be repeated if necessary, although a well-marked febrile reaction sometimes follows the use of the remedy. The peristalsis obtained is not so striking in the clinic as in animal experiment. Dencks has used the hormone freely both experimentally and in the clinic. The remedy he finds deposited in the spleen, its original source. Peristalsis develops in from ten to fifteen minutes. The action may be permanent, persisting for months. If the subject is greatly

constipated no immediate effects may be noted, and peristalsis may set in only after several days' interval. Results in intestinal paresis are inconclusive. The speaker observed a rise of temperature, but no other collateral phenomena. Borchardt recommends the hormone in the intestinal inactivity of spinal disease. In postoperative paresis he has seen both brilliant results and failures. Zuelzer, the discoverer of the splenic hormone, now uses it to differentiate between chronic constipation and ileus. In 25 cases of postoperative paresis Goldmann saw 10 prompt results and 5 total failures.

Blood Culture in Infectious Diseases.

Any one who has had much experience in bacteriological work has often obtained sterile blood cultures from patients obviously suffering with some form of bacteriemia. N. Klodnitzky (*Centralblatt für Bakterienkunde, etc.*, Vol. 58 No. 4) thinks that this is due not only to the bactericidal activity of the serum and the phagocytic powers of the white cells, but also to the red cells, which carry an easily available store of oxygen. In order to avoid these effects, various investigators have employed several methods, such as the marked dilution of the blood, an immobilization of it in agar, or the use of some medium containing a hemolytic agent. The author considers the bile salts the best of the hemolytic agents when attempting to isolate the typhoid bacillus, but they hinder the growth of many other organisms. His method is to obtain 0.5 to 1.0 c.c. of blood, with a syringe, from a superficial vein of the arm and to mix this with 4 or 5 c.c. of sterile distilled water. This procedure causes hemolysis of the red cells and destroys or dilutes the protective agents. The solution can then be used for the preparation of smear or hanging-drop, and from it cultures may be made on any media desired. He condemns the puncture of organs such as the liver or spleen. He considers the post-mortem blood culture of great value. The protective substances usually disappear shortly before death and it is said that the blood in the median basilic vein remains uncontaminated for a long time thereafter. For these reasons a blood culture taken at autopsy will frequently give bacteriological information unobtainable during life.

Phosphorus and Lecithin in the Treatment of Migraine.

The introduction of lecithin into therapy appears to have given a certain impetus to a revived exhibition of phosphorus as a so-called tissue remedy. At a recent meeting of the Gesellschaft für Natur und Heilkunde zu Dresden (*Münchener medizinische Wochenschrift*, May 23), Schottin expressed the belief, founded on ten years' study, that migraine is due to poverty of the cortical centers in phosphorus. The supervention of attacks while the mind is active, the disappearance of attacks during sleep, the stimulation with consecutive paresis of the optic and acoustic nerves (this constituting an aura), with similar involvement of the arm center, all point to a cortical location. The headache is attributed by Schottin to increased sensitiveness of the cortical sensory centers, which is propagated from the cortex to the vomiting center. The author treats migraine, *i. e.* the tendency to the paroxysms, with a nontoxic combination of phosphorus and lecithin in oil. The favorable results claimed seem to be the principal reason for the belief in the phosphorus-starvation theory of the origin of this neurosis. The author expresses a belief that spasmophilia in children has an analogous origin and upon similar grounds, viz., improvement under the use of phosphorus.

Has the Spirochete a Resistant Stage?

A very interesting observation has been made by Andrew Balfour (*Journal of Tropical Medicine and Hygiene*, Vol. XIV, No. 8) in his study of the spirochetosis of Sudanese fowls. He gave a chick, infected with this disease, a large dose of salvarsan and shortly afterward punctured the liver. Examination of this pulp with the dark-ground illumination revealed swarms of spirochetes, some of which could be seen to discharge highly refracting spherical granules and soon afterward die. This same process may also take place in the circulating blood. These granules enter the red cells and, according to Balfour, are identical with the granules of Leishmann, and possibly with the so-called "coccoid bodies" seen in the blood in human relapsing fever. He has found them to be resistant forms and thinks their presence may be sufficient to explain the difficulty of curing completely chronic spirochetal infections as syphilis and yaws.

News of the Week.

American Medical Editors' Associaton.—The forty-second annual meeting of this association was held at the Hotel Alexandria, Los Angeles, on June 26 and 27, under the presidency of Dr. Joseph MacDonald, Jr. Papers were read as follows: "Physical Therapeutics in the Medical Press," by Dr. Arnold Snow; "What Shall We Publish?" by Dr. J. R. Phelan; "The Extension of Advertising in Medical Journals," by Mr. S. DeWitt Clough (by invitation); "The Influence of Medical Journalism for Medical Progress," by Dr. W. Benham Snow; "The Literary Side of Medical Journalism," by Dr. T. D. Crothers; "A Plea for Scientific Classification of Disease," by Dr. Winslow Anderson; "The Future of American Medical Journalism, Once More an Optimistic Outlook," by Dr William J. Robinson. A number of papers were read by title, the authors not being present. The following officers were elected: *President*, Dr. Walter Wyman, Surgeon-General U. S. Public Health and Marine-Hospital Service; *First Vice-president*, Dr. Thomas L. Stedman, New York; *Second Vice-president*, Dr. Walter Lindley, Los Angeles; *Secretary and Treasurer*, Dr. Joseph MacDonald, Jr., New York; *Executive Committee*, Drs. W. C. Abbott, Chicago; C. L. Stevens, Athens, Pa.; G. H. Kreidler, Cincinnati. The annual banquet was held on the evening of June 26 in the Hotel Alexandria. The members and guests, the latter including many ladies, numbered eighty-five. Dr. MacDonald, the president of the association, was toastmaster. The following were the speakers: Dr. Wm. H. Welsh, president of the American Medical Association; Col. Wm. C. Gorgas, Dr. Walter Lindley of Los Angeles, Hon. James Slauson, President of the Los Angeles Chamber of Commerce; Rev. F. W. Clampitt of San Francisco, Dr. Winslow Anderson of San Francisco, and Dr. Wallace C. Abbott, of Chicago.

The Association of American Teachers of Children's Diseases met in the Barlow Medical Library, Los Angeles, on June 26, under the presidency of

Dr. W. C. Hollopeter of Philadelphia. An address on "The Baby Tent" was delivered by Dr. F. W. Allin of Chicago, and a paper on "The Aims and Purposes of Our Association" was read by Dr. A. C. Cotton of Chicago. Dr. W. C. Hollopeter of Philadelphia, president of the association, delivered a brief address in which he spoke of the work of the organization since its inception five years ago. The following officers were reelected: *President*, Dr. William C. Hollopeter of Philadelphia; *Vice-president*, Dr. John Zahorsky of St. Louis; *Secretary*, Dr. J. Ross Snyder of Birmingham, Ala.; *Treasurer*, Dr. George H. Cattermole of Boulder, Col.

Prizes of the American Medical Association.—The following awards were made by the committee in the scientific exhibit of the American Medical Association at the Los Angeles meeting:

(A) For the best research exhibit: (1) Gold medal awarded to the exhibit of the United States Public Health and Marine-Hospital Service for its exhibit of preparations and material concerned with research in plague and leprosy. (2) Certificate of Honor for research exhibit on investigation of pernicious malarial infection with reference to malarial hemolysins, awarded to Dr. Walter V. Brem, Colon Hospital, Cristobal, Canal Zone. (3) Certificate of Honor for research exhibit on nephritis, awarded to Drs. William Ophuls and Ernest C. Dickson, Cooper Medical College, Leland Stanford University. (4) Certificate of Honor for research exhibit on classification and identification of the parasites of the order of Trematoda, awarded to Drs. Henry B. Ward and E. F. Hirsch, Zoological Department, University of Illinois.

(B) For the best general exhibit: (1) Gold medal awarded to Pathological Exhibit of Hendryx Laboratory of the Los Angeles Medical Department, University of California. (2) Certificate of Honor awarded to Cooper Medical College, Leland Stanford University.

Civil Service Examination.—The New York State Civil Service Commission announces an examination to be held on August 5 for the purpose of filling vacancies in the position of prison physician at a salary of $2,000 a year. Full particulars can be obtained from the State Civil Service Commission, Albany, N. Y.

Civil Service in Illinois under the recently enacted law, has been extended so as to embrace the State Board of Health, the officers and employees of which are given fixed tenures of office regardless of change of politics. All persons who held offices or places on July 1st became members of the classified service without examination. This made Dr. James A. Egan the permanent Secretary.

Infant Mortality.—Commissioner Lederle announces that during the week ending June 24 there were 61 deaths from diarrheal diseases among children under five years of age in New York, a striking decrease as compared with the figures for the corresponding week of 1910 when there were 136 deaths from the same cause.

Federal Aid Asked.—The Harvard University Research Laboratories at Shanghai, China, having received a joint appropriation from the Legislatures of the Pacific Coast States and Hawaii for the study of Oriental diseases, have asked that Dr. George W. McCoy of the Public Health and Marine-Hospital Service be sent to Shanghai to cooperate with the laboratories in endeavoring to prevent the spread of these diseases to the United States.

Quarantine on Dogs.—The State Board of Health of Kansas has ordered a State-wide quarantine on dogs for ninety days, because of the prevalence of rabies.

In New Rochelle, N. Y., the quarantine against dogs which had been in force for eight months was removed on June 30 by order of the State Commissioner of Agriculture.

Railroad Hospital Department.—The employees and officers of the Illinois Central Railroad recently voted to establish a hospital department to be maintained by a contribution of 50 cents a month from all employees. In return for this the men will receive in times of sickness hospital treatment at designated hospitals, or treatment at home or at the offices of the department surgeons, medicines, and surgical dressings, artificial limbs and eyes, surgical appliances, and spectacles required as the result of an injury. In the case of the death of a contributor an allowance for burial will be made.

The Institutional Census.—One of the details of the recent census was the enumeration of persons in institutions of various sorts. The preliminary report which has just been made shows a striking increase in the number of insane in institutions. In 1904 there were 150,151 such persons, while in 1910 they had increased to 184,123, or 22.6 per cent. During the year 1904 the number of commitments to insane asylums was 49,622, and during 1910, 59,628, an increase of 20.2 per cent. In 1904 the feeble-minded in institutions numbered 14,347 and in 1910, 20,199.

Rockefeller Institute.—The Board of Scientific Directors of the Rockefeller Institute for Medical Research announce the following appointments to the staff of the institute: Alfred E. Cohn, M.D., Associate in Medicine; Arthur W. M. Ellis, M.D., and Alphonse R. Dochez, M.D., Assistant Resident Physicians; Frank W. Bancroft, Ph.D., Associate in Experimental Biology; Reinhard H. Beutner, Ing.D., Assistant in Experimental Biology; James B. Murphy, M.D., Assistant in Pathology; J. J. Bronfenbrenner, Fellow in Pathology; Frederick B. LaForge, Ph.D., and Angelia M. Courtney, Assistants in Chemistry; Henry K. Marks, M.D., Assistant in Pathology, and Helen L. Fales, Research Scholar in Chemistry.

Honorary Degrees.—Dr. William Bradley Coley of New York, professor of clinical surgery in the Cornell University Medical College and director of the Huntington Fund for Cancer Research, received the honorary degree of Master of Arts at the commencement exercises on June 28.

Surgeon-General Walter Wyman of the United States Public Health and Marine Hospital Service received the honorary degree of Doctor of Laws from Amherst College on June 28. In bestowing the degree President Harris of the college said: "He renders a service to humanity than which none could be greater."

Dr. G. G. Davis, professor of orthopedic surgery in the Medical Department of the University of Pennsylvania, Philadelphia, has received the honorary degree of Doctor of Laws from Lafayette University.

The University of Michigan, in recognition of the advance of preventive medicine, recently created the honorary degree of Doctor of Public Health, and at the commencement exercises on June 29 this was bestowed on Dr. William A. Evans, professor of hygiene and sanitary science in the Northwestern

University Medical School, and for many years connected with the Department of Health of Chicago, and on Dr. Guy L. Kiefer of the Department of Public Health of Detroit.

New Immigrant Hospital.—The new hospital at Ellis Island, New York, for the treatment of contagious diseases among the immigrants, was opened on June 22, 1911. The new structure provides for the complete isolation and treatment of measles, scarlet fever, diphtheria, and any other contagious disease which the Health Officer of the Port will allow past the State Quarantine. The wards intended for patients with measles contain 480 beds and cribs. The six detached wards have a capacity of twelve patients each. The opening of the hospital will abolish a long-standing inconvenience. Heretofore cases of contagious disease occurring among the immigrant children have been taken care of under contract with the Government in institutions in New York or New Jersey, or else it has been necessary to return the patients to the State quarantine hospitals on Hoffman and Swinburne Islands.

Obituary Notes.—Dr. Julian William Baird of Boston, Mass., a graduate of the University of Michigan in 1882, and of the Harvard University Medical School in 1890, professor of analytical and organic chemistry in the Massachusetts College of Pharmacy, Boston, since 1886, and Dean of the College since 1897, and a member of many chemical societies, died at his home on June 26, aged 52 years.

Dr. John Franklin Whitmyer of New York, a graduate of the College of Physicians and Surgeons, New York, in 1890, a member of the New York State and County Medical Societies, and chief medical inspector in the Department of Health of New York, with which he had been connected for over twenty years, died suddenly of heart disease at his home on June 23, aged 47 years.

Dr. Daniel F. Summey of Leicester, N. C., a graduate of the Medical Department of New York University in 1860, died at his home on June 13, aged 80 years.

Dr. Charles Ott of Kansas City, Kan., a graduate of the Ensworth Hospital Medical College of St. Joseph, Mo., in 1895, a member of the Missouri State and Wyandotte County Medical Societies, professor of the practice of medicine in the Kansas City Hahnemann Medical College, and a member of the attending staff of the Kansas City General Hospital, died in Higginsville, Mo., on June 9, aged 60 years.

Dr. Charles H. Holmes of Millen, Ga., a graduate of the Medical Department of the University of Georgia in 1901, died at his home on June 12, after a short illness.

Dr. Irving W. Johnson of Peoria, Ill., a graduate of the Hahnemann Medical College of Philadelphia in 1856, died at his home on June 12, aged 79 years.

Dr. Harvey A. Warner of Topeka, Kan., a graduate of the Medical Department of the University of Wooster, Cleveland, Ohio, in 1873, a member of the American Medical Association, the Kansas State and Shawnee County Medical Societies, and the Topeka Academy of Medicine and Surgery, lecturer on life insurance in the Kansas Medical College, and well known in fraternal life insurance work, died at his home of apoplexy on June 9, aged 61 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

POLLING THE PROFESSION ON THE INSURANCE BILL —PLAGUE-INFECTED RATS IN EAST LONDON— HARVEIAN ORATION—ROTUNDA HOSPITAL REPORT —DR. NEVE'S EXPLORATION OF THE HIMALAYAS.

London, June 16, 1911.

Objections to various parts of the State Insurance scheme are growing apace. The Friendly Societies are expressing dissatisfaction with the assurances they have received and are much concerned about their reserve funds. Some Chambers of Commerce are formulating objections to the high wage limit and to compelling employers to pay for their workmen over the insurable age. Householders are saying they ought not to pay for domestic servants. Hospital managers are afraid of losing a great percentage of their subscriptions. The medical profession has made a demonstration which has surprised the Government as well as the Friendly Societies. Mr. Lloyd George has been to Birmingham and there made a speech which has not tended to give confidence to any of the objectors. He appeared to make some concessions, but when the phrases were analyzed they seemed quite capable of being repudiated, besides which he said he spoke on certain points for himself, but they must come before Parliament. Thus he may very well state his personal opinion and afterward can plead he is overruled by his colleagues or by the House. He proposed to favor the demand for the free choice of the doctor by each injured person, and even said that would rather prevent malingering which would cause unfair distribution in the list or panel of medical men. He promised adequate representation of the doctors on the Health Advisory and Insurance Committees, and admitted that there might be just claims for extra services. But he adhered to his wage limit, although that has been generally declared as unreasonable.

The British Medical Association has been taking a poll of the profession, and to-day it is stated at their office that 15,000 reply cards have arrived supporting the demand formulated at the mass meeting reported in my last. Of course, adhesion to the policy commits no one to more than an opinion. But the number ought to warn Mr. Lloyd George that all his plausibility cannot cajole a whole profession, which, if determined, can render his measure futile, so far as sick insurance is concerned.

The *Practitioner* announced that its conductors would go to the expense of a referendum of the profession, and one was ready for issue on somewhat broader lines than the poll of the association when the latter urged the importance of an absolutely united front being presented to the Government. The *Practitioner* has, therefore, postponed its referendum in order to show there is no division in the profession. It is an example to be commended in view of the fact that on most previous occasions divided forces have led to defeat of professional claims.

It is to be regretted that the association, with its usual trade instincts, is making its poll also a canvass in its own interests, urging every medical man to become a member and so subscribe to its journal.

Some plague-infected rats have been found on a riverside wharf in East London. The owner in-

formed the medical health officer that six dead ones had been found and three of them were immediately sent to the Government Board bacteriologist. Two were found to have died from pneumonic plague. Six others were found on Tuesday and three had died from pneumonic and one from bubonic plague. Every precaution is being taken to prevent the spread of the infection. The practitioners of the district are asked to report any suspicious case of pneumonia to the medical health officer. Notices have been posted in the wharves and other places pressing the work people not to handle any dead rats but to put them in water by tongs or other instrument. It is also urged that rats be not poisoned but trapped. The sanitary staff of the Borough Council is doing all it can to avert the danger, including house-to-house visitation. Whence the infected rats came has not been discovered. No ship from an infected area has arrived at the wharf where they were found for many months.

Dr. J. H. Sequeira, dermatologist to the London Hospital, gave the annual oration at the Harveian Society, devoting it to the progress in his specialty since Hunter's time. He selected several interesting observations of John Hunter referring to the skin. One of the first was as to humors afloat in the blood. "If I have a faint idea of the meaning of this expression," wrote Hunter, "it describes something extraneous or foreign, something that does not belong to the blood itself"—an idea, said the orator, identical with our notions of toxemia. Hunter remarked that it would be a good thing to ascertain what sores should be dressed and what should not, and added "all cutaneous sores do best without dressing; excoriations and pimples had best be left to themselves." Dr. Sequeira remarked on this that in those days there was trouble from overtreatment and cited the well-known case of spreading pimples on the leg and Hunter's conversation with the patient. To "what was to be done" he said "nothing." To "how so," he said, "can anything be easier." To "the stocking will then stick to it," he answered "let no stocking be worn, put the boy in trousers." The advice was followed and the leg healed rapidly. In Hunter's days large doses were the rule, as might be expected, for hard living, hard drinking, and hard swearing were characteristic of the era. It was interesting, now that tropical diseases occupy so much attention, to find that Hunter was familiar with a number of them. The orator then sketched briefly the development of our knowledge of skin diseases, speaking of three epochs: the first that of describing the objective phenomena, the second when the study of histology flourished, the third when it was proved that many diseases are caused by microparasites. Then followed observations on eczema, parasitic diseases, tuberculosis, leprosy, etc. But space is limited. I pass them by for the remarks on therapeutics, which our readers may be more interested in on account of Dr. Sequeira's long experience in the enormous field afforded by the London Hospital. Internal treatment, he said, naturally held sway when skin diseases were thought to be due to morbid humors circulating in the blood. Of late years there had been a reversion to that view, though on different lines. Toxins might be brought in from without or developed within the body. Recognizing they could come from outside led to the discovery of parasites and the local use of parasiticides. Impetigo, caused by coccal organisms, was rapidly cured by antiparasitic applications. Seborrhoides were influenced by sulphur, long known empirically, now established as a rational remedy. As to tuberculin, Wright had shown its effects could be graduated by observing the opsonic index and the risks run in earlier use could thus be avoided. Analogous to that was vaccine therapy. We had been provided by bacteriologists with numerous preparations. Our results had not been uniform. Occasionally in furunculosis rapid disappearance had followed a staphylococcal vaccine. In other cases, including staphylococcal acne, results had been disappointing. The inoculation treatment of acne vulgaris with vaccines from the acne bacillus had also failed, and it seemed likely that the cause of this common disease was yet to be discovered. Most striking was the use of physical agents in the last twelve years—heat, cold, electricity, ionization, *r*-rays, radium. Instruments of precision enabled us to fix dosage and thereby avoid the dangers at first met with. It was once common for a child to be treated for a year or two for ringworm. Nowadays it could be cured in a couple of months. Rodent ulcers were now cured in a way that was spoken of as "miraculous." (This adjective is too often used—would not marvelous, or wonderful, do as well?) Extreme cold was the last remedy considered, and the orator found it, for nevi of moderate size, patches of lupus erythematosus, and other cutaneous conditions, better than anything else.

The report of the Rotunda Hospital (1909-10) was read at the Dublin Academy by Dr. Hastings Tweedy. The president (Dr. H. Jellett) confessed that the results were surprisingly good, considering the conditions. A thousand more patients a year were being passed through the wards than they were built for. The teaching capacity, too, was thereby limited and to keep the morbidity at the lowest, examinations by students must be restricted. This might be bad for students after they became practitioners. Dr. Tweedy replied that when he took up the office of Master he felt the Rotunda would be doomed whenever architecture became the first consideration in maternity practice, for they could never compete in structure with some of the plans supported by Government money. But men were taught in the Rotunda what was needed for general practice, and the worst way would be to impress them with the importance of bricks and mortar. He thought examinations were made with the utmost safety, provided sterilized finger-stalls were always employed. Their nurses had too short training for private practice, as they left the Rotunda in six months; at the end of six years a large number of them were useless. To say that they should not decrease hospital morbidity at the expense of students' educational facilities was to argue against most, if not all, humanitarian procedure.

Dr. Arthur Neve gave an account on Monday at the Royal Geographical Society of some explorations in the Himalayas; he dealt with the effect on the mountains and valleys of aerial, aqueous, and glacial denudation, the exceptional force of earthquakes, landslides, glacial cataclysms and torrential rains. Lord Curzon, presiding, said Dr Neve was honored in Kashmir, for no Englishman had rendered such service to the people. He went out long ago as a medical missionary and so devoted himself to the welfare of the people that it had been a happy moment, one of his happiest

reminiscences, when Queen Victoria founded her new Order, and being asked to make eminations, he had selected Dr. Neve for one of the first recipients. It was in the intervals of his great work in Kashmir that Dr. Neve had explored the Himalayas. Sir W. Lawrence, Dr. Stein, Dr. Sven Hedin and Sir T. Holdich added their tribute to the great work done by Dr. Neve and other missionaries in exploring various countries.

OUR LETTER FROM PARIS.

(From Our Special Correspondent.)

THE REACTION OF WASSERMANN IN THE DIAGNOSIS OF LATENT SYPHILIS—TREATMENT OF OBESITY—TREPHINING AND DECOMPRESSION.

PARIS, May 15, 1911.

LETULLE has employed the reaction of Wassermann as a means of clinical diagnosis in a large number of patients. He has thus detected in a certain number of chronic maladies the presence of latent syphilis. In ninety chronic cases he got positive results in thirty-nine, a proportion of 43 per cent. Without the Wassermann reaction we should not be able to detect syphilis in a large number of hemiplegics, tabetics, and cancers. To sum up, the Wassermann reaction, when it is positive, has great value. Although, it is just to add, the serodiagnosis of syphilis aids us in discovering the disease when it is positive, it does not with certainty always enable us to discover it and to specify it surely. From the observations of Letulle we find that the spirochete is very frequent as the pathogenic agent of a crowd of infections of a chronic nature, more or less curable, and that the examinations made by the Wassermann reaction contribute to place syphilis in the front rank of social diseases, even before alcoholism or tuberculosis.

Maurice Fleury demonstrated the undesirability in the case of reducing flesh of allowing the denutrition to become too intense, for the result of such treatment may be to awaken a latent tuberculosis. We should not reduce the flesh of obese persons until we have made a serious inquiry into their past, and a careful and repeated auscultation. The reducing treatment should be watched over closely and carried out in a slowly progressive fashion. Two results are to be feared in reducing flesh: On one hand, the rapid return of the flesh, for many fleshy persons grow thin for but a few weeks, or the revelation of a latent tuberculosis. Rather than to simply reduce the obese, it is better to increase their nutrition permanently, and recreate their nervous energy, habitually asthenic. Injections of serum and the employment of extracts of the thyroid gland may be excellent adjuvants to the treatment. In the beginning, to free the organism from poisons, it is well to give a milk diet for three days and then begin the regular régime. The regulation of drinking is of great importance; pure water should be ingested in large amount, but only when the stomach is empty. By drinking abundantly at meals the gastric juice is diluted and its digestive value impaired. Foods which create adipose tissue should be cut off. At the same time the diet must be so varied that disgust does not result, and full enough that the patient may not be injured by the attempt. Lastly, it is necessary to advise muscular exercise; an hour and a half of walking daily in three instalments. This régime will be amply sufficient to sustain life; it is neither physically nor morally depressing, but favors muscular development.

Maurice Auvray has made an interesting study of decompressive trephining for brain tumors. It is generally admitted that decompressive craniectomy presents undoubted advantages in relieving patients suffering from cerebral tumors. This operation produces a reduction or even disappearance of the functional troubles which are caused by intracranial pressure. Decompressive trephining should be a part of the treatment of inoperable tumors of the brain just as gastrotomy is used in cancer of the esophagus. The good effects of cerebral decompression are not confined to cerebral tumor alone, but are of value in other cerebral conditions. Broca thinks that trephining is an excellent and often the only method to employ. It is often impossible to diagnosticate the nature of a cerebral tumor so that craniectomy may be the first and sometimes the only operation possible. Lucas-Championnière believes that decompressive trephining does not form a serious operation, but it is necessary to make very large openings, for economical operations often cause serious accidents. As to the technique of decompressive trephining, it is necessary and indispensable to open the dura mater; it is necessary even to open the meninges down to the cerebral surface. When the dura mater has been incised it is useless to suture it. Pierre Delbet thinks that decompressive trephining is an excellent method. Certainly this operation is only palliative and its effects do not last long, but it is nevertheless true that the advantage for the patient is very great. There are two reasons which recommend decompressive trephining; the possible retrocession of the optic neuritis, and the relief of the pains, which is immediate. These pains are atrocious and constitute a formidable punishment. Immediately after the operation the patient is transformed and expresses his satisfaction and thankfulness. If this does not prolong their existence it permits them to finish it under acceptable conditions, which is considerable. To sum up, we should not hesitate to do decompressive trephining. Segond thinks that a cerebral tumor should be extirpated only when its location is absolutely determined and its total removal is possible without excessive laceration. In all other cases of intracranial hyperdistention we should be content with palliative treatment; we should open the osseous cranium without incising the dura mater and by sacrificing the bone. Practised in this way decompressive trephining is surely a benign operation. Walter thinks that the diagnosis of the location of cerebral lesions is, in spite of everything, often impossible.

From the point of view of the technique of the operation, Walter uses only the gouge forceps and the ordinary trephine or rasp. He does the operation of removal of tumors in two sittings. Auvray summed up the discussion by showing the undeniable therapeutic value of decompressive trephining. Of course, we have to do with a simply palliative operation, whose benefit is felt for but a few months. But, after all, is not this the result of all palliative operations? We should not refuse to patients with cerebral tumors the benefit of an operation which permits them to finish their existence under acceptable conditions.

Influenzal Urethrocystitis.—Ghedini reports a case of this condition, and notes that Comby in 1894 made the first report of a similar condition. He has collected all the cases that have been reported in the French and Italian literature.—*Gazetta degli Ospedali.*

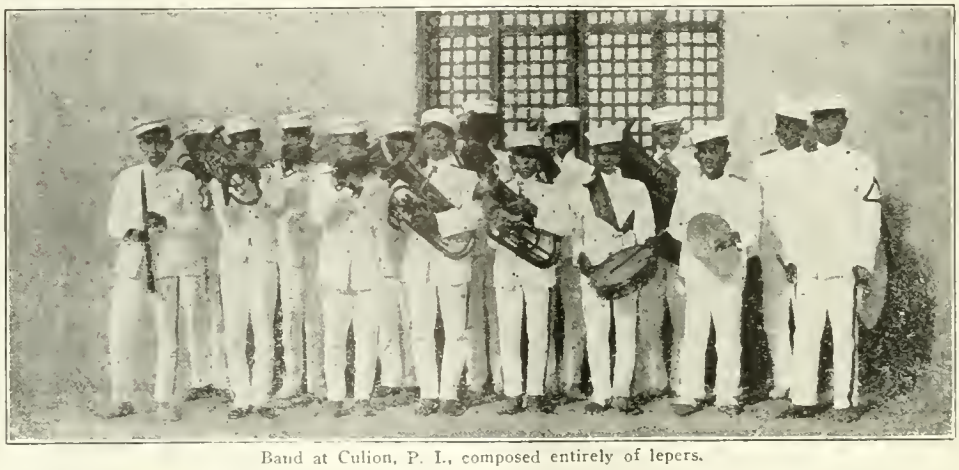
THE BAND AT THE CULION LEPER COLONY.

To the Editor of the Medical Record:

Sir:—I am forwarding herewith a photograph of an organization which is unique in musical and medical annals. It represents the band at the Culion Leper Colony, Culion, P. I. At the present time there are approximately 2,200 lepers segregated on the Island of Culion and a benevolent government has recognized the Filipinos' natural love of music by supplying instruments and uniforms for a band of fifteen men.

The six Sisters of Saint Paul de Chartres, who act as nurses at the leper hospitals, have always displayed a strong interest in the band and have advanced the training of its members to such a degree that the music is distinctly credible.

When a coastguard cutter arrives at Culion with a number of new patients the band blares forth a noisy welcome from the end of the big stone pier.



Band at Culion, P. I., composed entirely of lepers.

The leper is scarcely prepared for such an enthusiastic greeting and his face usually lights up with a broad smile, while he begins to feel that, after all, his seclusion may have its compensations.

It is not unusual to see a patient suffering from leprosy of the anesthetic type and minus several phalanges, pumping the keys of a wind instrument with the ends of his metacarpal bones. The deficiency does not seem to interfere with the volume or quality of the sound that may be elicited from this class of instruments.

A scrutiny of the photograph discloses evidences of the disease which has caused the segregation of the members of the band. It will be noted that a number of the performers, including the patients playing the cymbals, bass drum, snare drum, cornet, and tuba, are suffering from tubercular leprosy. The tuba player, near the center of the front rank, is afflicted with anesthetic leprosy.

The photograph was taken in front of one of the new, reinforced concrete tenement houses and illustrates the type of construction which is favored by the Bureau of Health for the housing of the Filipinos who are isolated at Culion.

Robert Olesen, M.D.
Assistant Surgeon, Public Health and Marine Hospital Service.
Manila, P. I.

Spirillar Dysentery.—Rispal reports a case of dysentery in which the usual pathogenic agents were absent from the stools which contained large numbers of spirilla.—*Province Médicale.*

Progress of Medical Science.

Boston Medical and Surgical Journal.

June 22, 1911.

The Results of the Treatment of Two Thousand Cases of Miscarriage as the Boston City Hospital. E. B. Young and J. T. Williams.
Further Experience with the Benzidin Test for Occult Blood in Diseases of the Digestive Organs. F. W. White.
On the Relation Between Laboratory Work and Clinical Work. R. C. Cabot.
Short Résumé of the History of Cesarean Section. E. T. Gray.
Indications for Cesarean Section. M. F. Hobart.
Technique of the Operation. M. A. Smith.
The Immediate Results of Cesarean Section. J. T. Williams.
The End Results of Cesarean Section. N. R. Mason.

Treatment of Miscarriage.—E. B. Young and J. T. Williams review the results of the treatment of two thousand cases of miscarriage at the Boston City Hospital. They conclude that spontaneous emptying of the uterus takes place in but about 13.2 per cent. of all miscarriages. The likelihood of a miscarriage to complete itself increases with the duration of pregnancy. When it becomes necessary to use artificial means to complete the miscarriage, the finger followed by the curette in later miscarriages and the curette alone in the earlier months of pregnancy have given uniformly satisfactory results. Experience has shown that where the cervix is extremely rigid it is better to introduce the curette and break up the fetus and placenta and remove them piecemeal than to attempt to dilate the cervix sufficiently to introduce the finger. Packing the vagina and lower segment of the uterus is an unsatisfactory and often unsuccessful method of emptying the uterus. No success whatever was obtained in treating incomplete miscarriages in this way. Packing is, however, of great value in two classes of cases: first, in exsanguinated patients, to stop the hemorrhage and give the woman a chance to recover somewhat from the loss of blood before emptying the uterus; and, second, when the cervix is very rigid, a tight cervical pack for twenty-four hours will soften it so that dilatation may be attempted with safety The results of artificial methods are as good as, but not better than, where nature has succeeded in emptying the uterus. Artificial methods are necessary in a majority of cases, however, simply because nature has failed. In infected cases the essential thing is to get rid of the infectious material by emptying the uterus: the particular method employed making little difference. The later in pregnancy miscarriage occurs the smaller the liability to become infected, but the greater the likelihood of developing grave septic complications if infection does take place. The mortality is practically the same at all periods of pregnancy. Induced abortions have a greater mortality than accidental. The mortality of patients admitted to the hospital after criminal abortions was 10 per cent.

Benzidin Test in Gastoenteric Diseases.—F. W. White believes that of all the blood tests the Schlesinger

and Holtz benzidin test is the best one to use, on account of its simplicity, clearness, and degree of delicacy.

Laboratory Work and Clinical Work.—R. C. Cabot states that the essential difference between clinical work and laboratory work is not in the technical methods employed, nor in the degree of their accuracy, nor in the methods of reasoning used. The essential difference consists in the predominance of physical elements among the data used in the wards, and their elimination in the laboratory. The clinician cannot safely utilize at the bedside the results of laboratory tests which he knows only by reading. He should familiarize himself with these tests in the laboratory, in order to understand the sources of error and the limits of reliability. No laboratory worker should remain out of touch with the clinical aspects of the cases which furnish him his material. In the absence of any single dominating personality as an integrating factor in the hospital system, the best available substitute seems to be combined ward visits in which the pathologist, surgeon, physician, chemist, and physiologist work together for the increase of their practical and scientific fruitfulness. The evils of specialism may be thus in a measure neutralized and its benefits enjoyed.

History of Cesarean Section.—E. T. Gray notes the great antiquity of this operation. The success of the present-day cesarean section is due largely to the following factors: strict aseptic precautions, early resort to operation before the patient's strength has been exhausted by lengthy efforts to extract the child by the natural passages, the careful and complete closure of the uterine incision, and a perfected technique.

Indications for Cesarean Section.—M. F. Hobart discusses the absolute and relative indications of cesarean section.

Technique of Cesarean Section.—M. A. Smith states that the conservative Sänger operation has become the operation of choice with the large majority of surgeons. By it the maternal mortality has been reduced to two or three per cent., and practically all healthy children delivered at term should survive.

Immediate Results of Cesarean Section.—J. T. Williams states that primary cesarean section is a simple and safe operation with a low maternal mortality. The mortality from cesarean section increases in direct proportion to the duration of labor, being only 2.7 per cent. in the primary, 5.7 per cent. in the secondary, and 13.7 per cent. in the late operation. Maternal morbidity as well as mortality is increased in the secondary and late cesarean sections. While there is no fetal mortality as a result of the operation where the fetus has been previously subjected to the strain of a long and difficult labor, the operation is frequently unsuccessful in saving the life of the child. The maternal mortality of 13.7 per cent., and the percentage of 13.28 of unsuccessful results for the child make the late cesarean section an unjustifiable operation.

End Results of Cesarean Section.—N. B. Mason discusses the following possible evil results of cesarean section: hernia, uterine fistula, adhesions, and rupture of the uterus.

New York Medical Journal.

June 24, 1911.

Simple, Rapid, and Complete Reduction of Deformity in Fixed Lateral Curvature of the Spine. E. G. Abbott.
The Endobronchial Treatment of Asthma. W. Freudenthal.
An Operation for the Relief of Tuberculous Peritonitis. A. Judd.
The Injection of Magnesium Sulphate for Acute Articular Rheumatism. A. B. Jackson.
Diagnosis of Tuberculosis in Its Earlier and More Chronic Form. O. F. Kunkel.
The Contagiousness of Consumption of the Lungs. A. V. Meigs.
Guidance and Protection of Children by the State. J. Rosenberg.
In Memoriam Christian A. Herter. J. C. Hemmeter.

Lateral Curvature of the Spine.—E. G. Abbott states that lateral curvature of the spine is a deformity which yields to treatment as readily as clubfoot or bowlegs, and is curable even after it has become fixed in its distorted position through structural changes. One of the first principles in the correction of any deformity is not only to bring the distorted part back to its normal anatomical position, but to place it in an overcorrected position. Wolff, in his law of "functional adaptation," shows that, if any part of the anatomy is changed from the normal posture to the abnormal and habitually used, the structures involved undergo a change throughout their entire texture to adapt themselves to the new position. The converse is also true, *i.e.* if a deformity in which the parts involved have become changed in their shape is brought back to a corrected position and used, those parts again undergo a change and become normal in their contour.

Endobronchial Treatment of Asthma.—W. Freudenthal is convinced that there are asthmogenous points in the bronchi as well as in the upper respiratory tract. By attacking these points directly by topical endobronchial applications there has been laid the foundation for a new means of combating and conquering bronchial asthma. The author has treated in this manner fifty-three patients; of these twenty-one were cured by a single endobronchial application, and fourteen after repeated treatment. The other patients were more or less improved, while in seven there was no improvement. Among the drugs used, in addition to cocaine, were adrenalin and othoform emulsion.

Tuberculous Peritonitis.—A. Judd emphasizes the following points in his method of treatment of tuberculous peritonitis: 1. The use of hydrogen peroxide, fifty per cent., for diagnosis and to destroy the tubercles. 2. The thorough flushing of the abdominal cavity so that the peroxide may come in contact with all infected areas. 3. The necessity of primary union in which one is assisted by the peroxide. 4. The necessity of getting these patients out of bed at as early a date as possible. They do very badly if housed or kept on their backs. 5. The necessity of after-treatment in the form of hygiene, supernutrition, and appropriate drugs. The author states that the results of this method of treatment have been so spectacular as to seem almost miraculous.

Magnesium Sulphate in Rheumatism.—A. B. Jackson states that he has had excellent results in the treatment of five cases of acute articular rheumatism by means of intramuscular injections of magnesium sulphate. He injects one dram of a twenty-five per cent. sterilized solution of this drug, after other measures, such as the use of salicylates, have failed.

Tuberculosis.—O. F. Kunkel discusses the early diagnosis of this condition.

Contagiousness of Pulmonary Tuberculosis.—A. V. Meigs believes that the proof is still wanting that the tubercle bacillus is the one and only cause of pulmonary tuberculosis.

State Guidance of Children.—J. Rosenberg advocates the establishment of suburban colonies for the poorer classes, with close State supervision of the rearing of the young.

Christian A. Herter.—J. C. Hemmeter pays a tribute to the memory of the late Professor Herter.

Journal of the American Medical Association.

June 24, 1911.

The Meningeal Forms of Epidemic Polioencephalomyelitis. S. E. Jelliffe.
The Urine in a Case of Acromegaly. A. W. M. Ellis.
A Case of Primary Endothelioma of the Great Omentum. H. T. Karsner.
A New Air-Water Sphygmomanometer. A. J. Bendick.
The Combined Use of Tents and Intrauterine Medication. E. C. Dudley.
Trauma as a Cause of Amyotrophic Lateral Sclerosis. A. H. Woods.
Salvarsan. J. S. McLester.
The Production of Antibodies to Pneumococci in an Insusceptible Host. P. Kyes.
The Therapeutic Effect of High Nitrates in Drinking Water. C. C. Young.
The Diagnostic Significance of the Urinary Methylene Blue Reaction with Special Reference to Malignancy. Preliminary Report. J. Fuhs and W. Lintz.

A Case of Strangulated Hernia Presenting Unusual Symptoms. J. R. Judd.
Huge Hydronephrosis (Two Gallons' Capacity). H. J. Whitacre.

Meningitic Forms of Polioencephalomyelitis.—S. E. Jelliffe states that not enough emphasis has been laid on the meningitic forms of polioencephalomyelitis; the meningeal symptoms are more prominent than in the ordinary spinal type, in which, however, they almost invariably occur to some extent. Practically all patients show some signs of meningeal involvement in the early stages. Irritative phenomena of the spinal nerves with hyperesthesia, tenderness, irritability, etc., are the common signs of this spinal meningitis, whereas photophobia, hyperacusis, headache, and somnolence mark the implication of the cerebral membranes. The chief signs in the meningeal forms vary, in their initial stages, from those of the spinal type, only in the matter of greater severity. There are headache, nausea, and vomiting, slight photophobia with hyperacusis, pains in the neck and back, stiffness of the neck, rigidity of the muscles of the vertebral column, opisthotonos of mild or severe grade, Kernig's sign, tonic or clonic convulsive movements, somnolence, and even unconsciousness. The temperature runs a noncharacteristic course. While in the ordinary spinal type the disease develops in classical fashion, in the meningitic form it may recede rapidly, and beyond the possible occurrence of transitory or permanent eye palsies nothing remains. In some cases death ensues with the development of stormy symptoms.

Urine in a Case of Acromegaly.—A. W. M. Ellis notes the constant excretion of creatin in the urine of a female patient suffering from acromegaly. This case was interesting in view of the recent finding by Krause of a constant excretion of creatin in human diabetes mellitus and in phloridzin glycosuria in dogs. Krause is inclined to associate the excretion of creatin with the deprivation of carbohydrates in the food in these cases and Cushing has recently drawn attention to the close relation of the secretion of the posterior lobe of the pituitary gland to the storage of carbohydrates. The frequency of glycosuria in acromegaly, due probably to hyperactivity of this gland, has long been known. In the case reported, however, there was no deprivation or diminished tolerance of carbohydrates. Other conditions in which creatin has been discovered in the urine are starvation, cancer of the liver, progressive muscular dystrophy, and pregnancy.

Omental Endothelioma.—H. T. Karsner reports a case of primary endothelioma of the greater omentum and notes the extreme rarity of this condition.

Air-Water Sphygmomanometer.—A. J. Bendick describes an instrument in which he has utilized air compression as giving the simplest and most elastic compression. Its other advantages are sensitiveness and accuracy.

Tents in Intrauterine Medication.—E C. Dudley after noting the fact that dilatation by tents has gone into almost complete disuse, and mentioning the disadvantages of forced dilatation, its transient effect and its occasional inadequacy, describes a method of using tents in a relatively safe way in conjunction with thorough intrauterine medication. The device consists in the use of a tupelo sponge or sea tangle tent, over the distal end of which has been attached half of a gelatin capsule filled with whatever medicinal substance may be desired. Stress is laid on the necessity of thorough disinfection and asepsis of the tent at the time of use.

Trauma and Amyotrophic Sclerosis.—A. H. Woods reports personal observations of two patients in whom amyotrophic sclerosis developed after an injury to the hand in one case, and after a severe strain followed some months later by a fall, in the other.

Salvarsan.—J. S. McLester discusses the adjustment of the concentration of solutions of salvarsan to the osmotic tension of the body cells.

Antipneumococcus Serum.—P. Kyes concludes that it is possible to obtain from fowls after suitable inoculation a serum with specific antibodies to the pneumococcus.

Nitrates in Drinking Water.—C. C. Young reports the result of the examination of eight well-waters, which showed an excess of nitrate that would cause a person drinking a gallon of water a day to take in four diuretic doses. In every case a marked diuretic effect was produced in persons on first using the water, and in two of the eight cases the marked kidney irritation set up did not disappear in the customary use of the water. The symptoms reported were markedly noticeable and sometimes decidedly disagreeable, and chronic kidney trouble existed in some of the persons reported.

Methylene Blue Urinary Reaction in Malignant Disease.—J. Fuhs and W. Lintz give in a preliminary report their finding that methylene blue is decolorized by the urine of patients with malignant disease. The same is true sometimes in cases of rheumatism, nephritis, meningitis, etc., but generally to a minor and variable degree. In most instances these latter diseases can be easily differentiated and eliminated, so it seems that the test may have some value in the diagnosis of malignant disease. Thus far it has been positive in every well-established case of malignancy in which the test was performed.

Strangulated Hernia.—J. R. Judd reports a case of strangulated hernia that had lasted four days before being seen. The abdomen was greatly distended and tympanitic and there was considerable pain. Operation revealed a gangrenous intestine involved in the hernia, twelve centimeters of which were excised together with a wedge of mesentery, and an end-to-end anastomosis was made with sutures. There was gangrene of the right testicle, which was also removed. This was due to pressure from the sac and its contents. The author specially notices the absence of vomiting in this case after so long a duration of the strangulation, vomiting being given as almost an essential feature in the text-books.

Hydronephrosis.—H. J. Whitacre presents an account of a woman, aged 68, who showed an enlargement of the abdomen equal to a seven or eight months' pregnancy, the physical signs and her age all pointing to the existence of a large ovarian cyst, which diagnosis was made. Her trouble dated back for twenty years and the tumor for sixteen, and it was diagnosed at that time as gas accumulation and obstruction. Operation showed that the cyst was not attached to either ovary and was retroperitoneal. The peritoneum was divided over the cyst and two gallons of fluid were drawn off with a trocar.

The Lancet.

June 17, 1911.

Pyelography and the Early Diagnosis of Dilatation of the Kidney. J. W. Thompson Walker.
Vaccination in Regard to Life Assurance. W. H. Jalland.
On the Use of Salvarsan in the Treatment of Syphilis. A. Fleming and L. Colebrook.
On Postanasthetic Vomiting. J. D. Mortimer.
An Inquiry Into the Causation of Infective Endocarditis. J. A. Venning.
Sanatoria from Within. J. E. Esslemont.
Case of Recurrent Carcinoma of the Parotid Gland Treated With Coley's Fluid. E. R. Hunt.

Pyelography and Dilatation of the Kidney.—J. W. T. Walker states that it is not possible by symptoms alone to make a diagnosis of early dilatation of the kidney. Kelly's method of determining the capacity of the renal pelvis by means of injecting the latter with a warm and bland solution and noting when the patient first experiences pain is associated with certain difficulties and fallacies. Thus in a pronounced degree of hydronephrosis, when the kidney is distended the pain is slight. Some fluid may escape alongside the ureteral catheter. Moreover, with an abundant polyuria it is impossible to empty the renal pelvis completely. Radiography offers more definite information.

Pyelography, however, is the most accurate method. By means of a ureteral catheter a 10 per cent. solution of collargol is introduced into the renal pelvis and then a radiograph is taken. In some cases a severe attack of renal colic follows the examination.

Vaccination in Regard to Life Insurance.—W. H. Jalland states that whereas in 1903 out of 57 insurance companies 11 altogether declined unvaccinated lives, only 6 received them without either extra premium or restriction, 11 accepted them without extra premium but excluded death from smallpox, while 19 accepted them at an extra premium; in 1910 the number of such companies declining unvaccinated lives had fallen to 3 out of 68, while those accepting them without extra premium or restriction had risen to 24. The other two classes had risen only slightly —viz., to 13 and 28 respectively. A question that we might put to ourselves is: Has the risk from a medical point of view diminished to the extent indicated by the present practice of the majority of British insurance companies? A further question might also be considered arising from the fact that the English companies are now accepting business more or less all over the world. To what extent are European lives jeopardized by the risk of contact with natives among whom smallpox may be rife? There can be no doubt that very considerable good has been obtained through enforced vaccination, and when in addition it is remembered that the improvement in the sanitary laws, the isolation now compulsory and also the compulsory notification of infectious diseases have largely added to the present conditions of security, one need not, perhaps, have had such great doubts as to the lessened restrictions insurance companies have been taking with regard to vaccination if one were satisfied that there would be a continuance of the safeguards imposed by the legislature. Recent action, however, may give rise to a doubt on this point in consequence of the exemption that has been allowed on the ground of conscientious belief on the part of the child's parent or guardian that vaccination will be prejudicial to health. When that exemption was granted it was taken advantage of to a very considerable extent in England and Wales, and one finds that 203,413 exercised it in 1898. In subsequent years up to 1907 the numbers were much smaller, being reported in the last-named year as 57,675, but in 1908, when the regulations were still further modified with regard to the conscientious objector, exemption being granted on a statutory declaration before a justice of the peace or other authority without the ordeal of proving his case to the satisfaction of a magistrate in open court, one finds the number increased to 162,799, rising again the next year to 190,689, while for the first half of 1910 Mr. Burns in the House of Commons reported that 110,851 exemption certificates had been received as against 456,533 births registered in England. This means that today about one-fourth of the children in England and Wales are going out into the world unvaccinated, and one realizes that if this continues in the same proportion it will be found in the next generation that every fourth individual met on the streets is unprotected by vaccination. Will the undoubted benefits of the laws as to sanitation under such circumstances be sufficient of themselves to maintain the present good that has been secured against the ravages of smallpox? The author believes that this is greatly to be doubted and that one must sound a note of warning to the insurance companies, so that it may be clearly seen what the issue is that lies before them. If there is risk of the introduction of the disease from other lands, many of which are not nearly so careful in respect of preventing smallpox, either from the persons of those coming from those lands or through the introduction of such merchandise as rags, hair and the like, it seems incumbent on one to maintain all the means that have been raised as defenses against smallpox, and it is a consideration, therefore, whether with regard to business coming to be insured the company should not maintain the attitude of 20 years ago—viz., either to insist on vaccination or to put upon the policies certain emphatic restrictions regarding unvaccinated lives. Recent epidemics of smallpox have demonstrated the protective value of vaccination and particularly of revaccination. A table presented by the author demonstrates that a fall in smallpox mortality occurred exclusively in the young. Among adults there was a rise, increasing with the older ages, i. e., in proportion to the length of time that had elapsed since vaccination. Germany is an excellent example of what can be done by efficient vaccination. There vaccination within a year of birth and again during school life is compulsory by law. For 25 years Germany has had very little epidemic smallpox, although the disease has been frequently introduced into frontier towns and districts. It is mentioned that many insurance companies say that they have had few claims due to death from smallpox for many years. The author admits that this may be so, but, he asks, is not the future bristling with danger? Medical men ought to throw the weight of their opinion into the scale and urge upon the various companies that it is both dangerous and injudicious to ignore the protective influence of vaccination.

Salvarsan.—A. Fleming and L. Colebrook note the remarkable effect of this drug in causing the lesions of syphilis to disappear. They do not venture an opinion as to the possibility of its displacing mercury in the treatment of this disease.

Postanesthetic Vomiting.—J. D. Mortimer notes among the causes of this condition the following: (1) the habitual state of the patient, (2) the disorder which led to the performance of the operation, (3) the faulty preparation, (4) the anesthetic or the way in which it is given, (5) swallowing of mucus, blood, etc., (6) the operation or some complication following it, and (7) faulty after-treatment. The anesthetic and method must be carefully chosen with regard to all the circumstances, including possible after effects. The administrator should do everything possible to maintain a free air-way and subdue rigidity. Glucose is valuable both before and after operations, not only to prevent or combat acid-intoxication, but as a food which makes no call on digestion. A tablespoonful can be given with water and lemon juice three times or more in the 24 hours, or in special cases it may be given by the rectum or intravenously (2.45 per cent.) Raisin tea contains an appreciable amount.

Infective Endocarditis.—J. A. Venning emphasizes that he has not attempted to adduce evidence that all cases of infective endocarditis with a history of previous attacks of rheumatism are rheumatic in origin. In 7 cases out of 27 due to an obvious infective focus there was a rheumatic history, but no one would hold that these cases are due to and are part of a rheumatic process. There are also many cases in which there is no obvious cause found, but which have a rheumatic history, yet one cannot say that they are due to the rheumatic diplococcus. Undoubtedly the causation of these cases is very varied. But the evidence adduced, both from the bacteriological work of Poynton and Paine and from that obtained by the study of the author's series of cases, is in favor of the view held by Osler in 1885—namely, that infective endocarditis, supervening in the course of some particular disease as rheumatism or pneumonia, may be regarded as directly produced by the causes which have excited the original disease.

Sanatoria from Within.—J. E. Esslemont discusses the tuberculosis sanatorium not so much from the strictly scientfic point of view as from the more human and personal one of the sanatorium inmate.

Coley's Fluid in Parotid Carcinoma.—E. R. Hunt notes the complete relief of pressure symptoms and the

very marked relief of pain which he attributes to the action of Coley's fluid in causing the sloughing away of the greater part of a carcinoma of the parotid gland in a case that he reports.

British Medical Journal.

June 17, 1911.

Where Chemistry and Medicine Meet. A. E. Garrod.
The Association of Toxemia of Pregnancy with Haemorrhage. R. Davies-Colley.
The Preparation of Various Foodstuffs (Especially Wheat and Rice); Its Effect on Their Content of Organic Phosphorus Compounds and Its Relation to Disease. E. S. Edie and G. C. E. Simpson.
The Average Height and Weight of English School Children. A. W. Tuxford and R. A. Glegg.
The Diagnostic Value of Rachicentesis. J. Rae, M.A.
Note on the Blood in Sympathetic Ophthalmia. C. P. Jones and S. H. Browning.
Bonesetting and the Treatment of Painful Joints. F. Romer and L. E. Creasy.

Chemistry and Medicine.—A. E. Garrod discusses the thesis that chemistry is able to lend valuable aid in the solution of problems of clinical and practical importance to medical men and helps materially as a guide to treatment. On the other hand, one must not expect from chemical studies more than they can reasonably be expected to give. Unlike the bacteriologist who deals with the actual *causæ causantes* of many morbid states, the chemical pathologist can only study the response of the organism to morbific agencies. He can tell one much concerning the forms which disease takes and the origin of symptoms, but comparatively little as to the actual causation of maladies. The author mentions examples of phenomena which can be studied by ordinary chemical methods which are accessible to the test-tube and the balance, but the advance of bacteriology is revealing responses of the organism of much more subtle nature still and has familiarized one with substances known by such names as antitoxins, and agglutinins, precipitins, and the like. The phenomena of immunity have doubtless a chemical basis, although the substances concerned are known as yet only by single properties, just as, for a number of years, the planet Neptune was only known by its disturbing influence upon the orbit of its nearest celestial neighbor Uranus. Now, Neptune has been seen, weighed and measured, and has taken its place as a regular member of the solar system, and one may reasonably hope that in due time the substances mentioned above will in like manner be brought within the grip of the chemist and will rank as compounds of known constitution and molecular structure. Obviously the realization of this dream will result in an immense extension of the field in which chemistry and medicine meet.

Toxemia of Pregnancy and Hemorrhage.—R. Davies-Colley reports a series of cases of toxemia of pregnancy treated at Guy's Hospital during the last 11 years. Investigation of their records has shown that hemorrhage in one form or another is not a very infrequent symptom of the disease, and that in some cases it may be so great as to constitute its principal feature. The cases of hemorrhage fall into three groups: (1) hemorrhage from the kidneys, (2) hemorrhage from the uterus, and (3) purpura and hemorrhage from the mucous membranes.

Preparation of Wheat and Rice and Relation to Disease.—E. S. Edie and G. C. E. Simpson state that it has been conclusively demonstrated that the cause of experimental polyneuritis and of tropical and ship beriberi is connected with deficiency of organic compounds of phosphorus—though whether the deficiency is of nucleins, lecithins, phosphatids, phytins or other classes is as yet undetermined. The minimum phosphorus requirement of an adult man at work is about 2 grams, and it would seem that the higher animals have not been endowed by nature with the power of preparing their own organic compounds of phorphorus from inorganic phosphorus. These bodies are of far-reaching importance to the bioplasm, indeed, are indispensable, and their absence or deficiency in the food supply will lead to serious symptoms or even to death. Experimental polyneuritis in animals is produced on the one hand by diets of substances such as rice, barley and white wheat flour in which the outer layers of the grains have been removed by milling and in which the proportion of phosphorus is very low. On the other hand, it is originated by foodstuffs which have been heated for a time to a temperature of 120° C. (especially in the presence of alkali) by which the organic phosphorus compounds have been partially broken down and by substances from which the same compounds have been extracted by long exposure to solvent action. Adult pigeons, previously on ample mixed diet, were fed exclusively on good white wheat bread guaranteed from unbleached and unadulterated flour. They ate it readily and greedily, but loss of weight and diarrhea soon commenced; the other symptoms of polyneuritis followed, and the first bird died on the fifteenth day. The authors make a plea for the more general use of whole-wheat bread, particularly for children.

The Average Height and Weight of English School Children.—H. W. Tuxford and R. A. Glegg present tables compiled from the examination during 1909 and 1910 of 583,640 school children. The children were measured and weighed in ordinary indoor clothing and without boots. The figures were received from 17 country and 44 urban education areas scattered throughout England. Among the tables given the following represent the results for England as a whole, including both city and country:

Average Height and Weight of English School Children.

Age last Birthday.	Boys.			Girls.		
	No.	Height. Cm.	Weight. Kilos.	No.	Height. Cm.	Weight. Kilos.
3	9,388	92.4	14.86	8,478	91.6	14.44
4	24,047	98.2	16.29	21,362	98.1	15.82
5	65,438	103.0	17.54	63,825	102.6	17.07
6	20,554	108.0	19 33	21,238	107.6	18.58
7	37,515	114.7	21.20	36,477	113.9	20.50
8	9,684	119.3	22.86	12,014	117.6	22.19
9	7,873	124.7	25.12	8,138	123.7	24.75
10	21,579	129.4	27.42	21,017	129.8	26.71
11	5,084	134.2	29.93	5,129	133.5	29.59
12	37,230	139.8	33.05	36,577	138.7	33.51
13	52,232	142.5	35.15	50,717	144.5	36.31
14	4,342	147.7	38.15	3,702	149.0	39.81

Weight and height curves constructed from the tables show certain irregularities, the most marked one of which is the elevation at age 12 in the boys' height curve and in both the boys' and girls' weight curve; this is probably due to the fact that children leaving school are more likely to be inspected toward the end than the beginning of their twelfth year, and the averages for this year are probably greater than the true mean. The elevations in both height curves at age 7 and in the girls' height curve at age 10 are not accompanied by any corresponding deflection of the weight curves, and the authors are unable to account for them. They constructed curves for the subsidiary areas and found that, generally, those for the urban areas were the most regular, those for the county areas being least so. The height and weight of girls are a little less than those of boys until the eleventh and twelfth years, when the relative positions become reversed.

Diagnostic Value of Rachicentesis.—J. Rae discusses this subject and reports six cases.

Sympathetic Ophthalmia.—C. P. Jones and S. H. Browning note the increase in the relative percentage of the large uninuclear cells in this condition.

Bonesetting.—F. Romer and L. E. Creasy conclude their article on the manipulative treatment of painful joints.

Insurance Medicine.

The Proper Attitude of a Corporation to Its Injured Employees.—By JOHN F. CULP. (See page 62.)

Lights and Shadows of England's Insurance Scheme. (See page 76.)

Annuity Insurance for Physicians.—(See page 78.)

Vaccination in Regard to Life Insurance.—(See page 87.)

The Work of the Insurance Companies in the Prevention of Disease.—At the fourth annual meeting of the Association of Life Insurance Presidents, held in Chicago in December, 1910, Dr. Eugene H. Porter, Health Commissioned of the State of New York, delivered an address entitled "The Fight Against Preventable Diseases," in which he noted what had already been accomplished by the various agencies engaged in the work of sanitary betterment and pointed out what could be done to further this movement by the insurance companies. While much has been done in clearing away the mists surrounding the causes of disease—the first step toward prevention, the actual results in this direction have not been all that could be desired. In the preventive warfare against disease the skirmish lines of the opposing forces have come together, and the enemy have been discovered, strongly entrenched and protected by the troops of selfishness and ignorance. The fact must, however, be faced that the preventable diseases are not now prevented, and are not likely to be entirely prevented for many years to come, but we are in position to begin a campaign for their ultimate practical extinction. The one great weapon in this fight for prevention is education of the people, for without the cooperation of the public, based upon an intelligent comprehension of the value of the work of the sanitarian, the enforcement of health laws is impossible. Sanitarians may know how to prevent disease, but what they will be actually able to do will be little until at least some of the knowledge they possess is disseminated among the people.

The grand army of health is made up of many divisions. "It embraces those bureaus at Washington where health work is of national significance; it numbers all the state health departments; it enlists all the municipal and local boards of health in every state and territory; it counts all the great hosts of organizations that labor for the betterment of human conditions; it involves those that fight for better tenements, for pure air, for pure foods, for pure water, for more playgrounds, for shorter hours of labor, for prevention against avoidable accidents, for better protection of working women, for proper care of children, for the checking of tuberculosis, for civic improvement, and for municipal reform." But there is still a legion, already well equipped for the war, which should enlist in this campaign against preventable disease—the legion of the insurance companies. The reasons why the companies should enlist for this war are: (1) There is nothing to prevent; no law could be invoked against a well-considered effort on their part to prolong life and to increase their income and strengthen their position as trustees of the funds of the people. (2) They already possess an efficient and highly trained body of workers in the 80,000 medical examiners and 20,000 agents in the field, in close relationship with 20,000,000 policyholders, a great army of potential instructors whose sanitary counsels would be attentively received and seriously weighed. Indeed, the speaker said, he knew of no one single agency in all the wide field of sanitary effort so potentially powerful for public health. The thing of importance is the fact of systematic organization followed by immediate and persistent work along the lines indicated.

In conclusion Dr. Porter offered the following outline of a possible plan of work for the insurance companies: (*A*) The immediate establishment in each insurance company of a department of health; (*B*) a cautious and judicious selection of the lines of activity to be followed; (*C*) an immediate moving along those lines. As to what these lines of activity should be the following were suggested: (1) The instruction of medical examiners and life insurance agents in sanitation and preventive disease work; (2) the issuance of a carefully arranged series of letters or circulars on health topics to policyholders. (3 The establishment of a health magazine or health bulletin. (4) The arranging for a series of public health lectures in various cities and towns, with or without the cooperation of State or local health authorities. (5) The systematic use of the tremendous educational power of the press. (6) Conjoint work with State and city health departments. (7) Conjoint work with all organizations interested in public health work. (8) The securing of more uniform and better health laws, and (9) of the establishment of a National department of health. (10) Aiding in securing adequate appropriations for health work. (11) The free reexamination of all policyholders. (12) A special investigation of the causes of pneumonia, Bright's disease, diabetes, apoplexy, and cancer. (13) Making available, as Dr. Dwight has suggested, that great abundance of experience now in possession of the insurance companies—a gigantic collection of facts that should be of incalculable value. (14) Education, and again, education.—*Proceedings of the Fourth Annual Meeting of the Association of Life Insurance Presidents, December 9 and 10, 1910.*

Height and Weight in Relation to Life Insurance.—In a paper read before the Royal Arcanum Medical Examiners' Association of Greater New York and vicinity, George F. Little states that height and weight in relation to each other are of great importance in estimating the value of an insurance risk. Age is now also recognized as playing an important part, for there is a tendency to a gain of weight with increasing years. The present table of the Royal Arcanum figures at the height of 5 feet 10 inches a standard weight of 154 pounds, at the age of 21 to 25; but at the age of 51 to 55, 172 pounds is allowed, a difference of 18 pounds. The ideal insurance risk, as regards height, is said to range from 5 feet 7 inches to 5 feet 9 inches. The greater the variation from these figures the greater is the risk. Longevity is not as great in tall men as in short men. Men who are both tall and stout are poorer risks than men who are stout and of medium or short stature. The former do not bear accidents or acute illness as well. Individuals of excessive weight are especially liable to diabetes, heart affections, apoplexy, gout, diseases of the kidney, and arteriosclerosis; excessive eating and abuse of alcohol are common among this class. Gossage's analysis of 5,375 claims shows that of 285 overweights 19, or 6.6 per cent, died of diabetes as compared with 65 or 1.28 per cent. of the 5,090 who were not overweight. Stout men under 40 are worse risks than those over 40 and under 60, and men who were unduly fat before puberty are poor risks, especially if the tendency is hereditary (Keating). Stout men are, however, better average risks than their very thin brothers, who are liable to tuberculosis and nervous disorders. The underweight bears acute illness better than the overweight and the majority of long-lived people are of light build. The necessity of the examiner possessing an office scale is seen in the fact that many men either do not know their own weight or else try to deceive the examiner. The Royal Arcanum allows 25 per cent. above and 20 per cent. below the standard weight. Of great importance is the tendency to steady gain or loss in weight. In the latter, if not due to laborious work, grief, indoor confinement, or change of occupation, tuberculosis or other organic disease may be suspected. If there is continued loss from any cause, the risk is not acceptable for the time being. In steady gain, unless in recovery from acute illness or beneficial change in occupation, the risk is undesirable at the moment. It is important to ask the applicant before weighing him the questions: "What is your usual weight? What was your last weight? What did

you weigh a year ago?" In all cases unduly stout or thin the family weights and measurements, as far as possible, should be noted as showing possible heredity, which is of value if longevity is also shown. In underweights it is important to note whether the chest is flattened or narrow, whether the supraclavicular spaces are retracted or the expansion lessened. Is the muscular development fair? Does the man stand erect or stoop and hollow his chest? Is he large or small of bone? Is his face of good color and soft in lines or does it evidence wasting? Greene states: "If an underweight has a well developed and free expanding chest, if his health record is good, his family long lived and free from tuberculosis, and particularly if the light weight is a family trait, he may be accepted at ordinary rates, even if 20 per cent. below tabular weight. If on the other hand these favorable features be lacking he cannot be given so much latitude." In considering overweight the following points are of value: The measurement of the abdomen should not exceed that of the chest, for this indicates a heavy deposit of fat. A sedentary occupation detracts from the value of the life. A pulse persistently rapid evidences lack of cardiac strength. In the very stout subject the heart is best listened to with a phonendoscope. Note whether there are signs of the overweight being due to alcohol, dilated facial capillaries for example, skin affections being excluded. Abundant muscular tissue over the chest and arms is a matter to be noted in the applicant's favor.—*American Medicine*, May, 1911.

Height and Weight of English School Children.—(See page 88.)

Longevity, Race, or Environment.—H. Josse Johnson says that each and every characteristic of race has been simply and solely due to difference of environment in the past. Statistics as to the exact value of life among the different races are meager, and available only for a small proportion of the peoples of the world, and we are therefore obliged to feel our way and gain our experience of the value of life among the rest as best we may. The effect on longevity of cleanliness, that is frequent bathing, is slight. The factors that tend to longevity are (1) heredity; (2) the climate of the country; (3) other surroundings, occupation, education, etc.; (4) the average height and weight; (5) chest development and capacity; (6) proportion, *i.e.* distribution of weight. Heredity is probably the most potent factor. Climate is also an important factor. The hotter the climate the more quickly does the vital elasticity get used up. In Europe the increase of mortality is greater as the heat increases. Spain is almost the only exception to this rule, but the high average mortality in Spain may be almost wholly attributed to the tremendous infant mortality. Environment tells somewhat against the Anglo-Saxon race and the nations of northern Europe, in that they live for the most part in densely populated districts and lead a strenuous life. On the other hand these factors are greatly counterbalanced by the advantages of education, the spread of sanitary science and of preventive medicine. The recognition of the germ theory of disease is the origin of the improvement in health of the industrial nations, and the basis upon which the whole of preventive medicine rests. If it were not for the alcohol habit the nations of the Teutonic race and of the more temperate climates would compare still more favorably with their relatively lethargic brethren of the hotter zones. The average height of the adult males of the white race differs so slightly as to be an almost negligible quantity and the average height of all races with which insurance physicians have to deal comes well within the limits which experience has taught are not abnormal. The extremes, above 75 and under 60 inches, have proved a very short-lived class. As to average weight in white races, this does not vary much more than the average height. Overweights of any race do not offer the same resistance to disease as men of the average standard. It is generally accepted that a well-built man has a thoracic circumference which measures at least half the height. In those countries which have compulsory military service the average chest measurement is greater than in those countries which have not. However, Johnson considers it doubtful whether the military chest is an advantage from the insurance standpoint. The chief points of build are the size of the abdomen in comparison with that of the chest and of the latter to the height. No man under 40 years of age should have an abdominal measure in excess of the chest. Elaborate comparative statistics are given of the vitality of the different European races and the conclusion is reached that the Scandinavian race stands so easily first that to it must be conceded some superior innate vitality, while the Jews living under varied circumstances and surroundings are proverbially long lived.

The final conclusions of the author are that environment is the immediate factor, and makes itself felt and evident at once. It also acts more remotely in that it weeds out the unfit and weakly, and so improves the stock of any race. Race is the remote and determining factor which can and does predominate over any environment. This is true of the Jews who are characterized by their greater longevity, and of the negroes who are characterized by their lesser longevity, when compared with the mass of the population under the same environment.—*Transactions of the Life Assurance Medical Officers' Association*, London, 1910.

Census Data and Their Interest for Medicine.—Krevet has analyzed a few census returns for the town of Mühlhausen, with the population of over 35,000; 950 inhabitants had reached the age of 70 or over, and of these 554 were women. Five persons over 90 years of age were all of the female sex. These data answer the general belief of the exceptional longevity among women. As a rule these aged persons belonged to the middle class of society. Many of the women had borne many children. They were mostly of medium stature, not obese, and gave a history of sound digestion through life. None ever took any gymnastic exercise, or massage; none were teetotallers or vegetarians; none spent their holidays at the seashore or in the south none frequented sanitaria or mountain resorts. Most of them slept in ill-ventilated quarters. The great majority had labored all their lives. One woman of 94 years had been a cripple—a hunchback—since 30 years of age, yet she bore 15 children. At 80 she broke her femur, and had been an invalid since. Krevet thinks that a study of statistics and observation of aged people may throw light upon the question of longevity.—*Blätter für Vertrauensärzte der Lebensversicherung*, March and April, 1911.

State Insurance in Italy.—A bill is before the Italian Parliament, with, it is said, every prospect of becoming a law, designed to make of life insurance a State monopoly. The bill provides that in future all insurance companies, Italian and foreign, shall cease to get new business in that country, but may continue their work for the present policyholders only. There will be no compensation for contracts made in Italy or abroad after the proposed bill becomes a law. Such contracts will be null and void and policyholders who violate this provision are to be subject to a fine of from 5 to 20 per cent. of the amount insured and imprisonment for a term of from one to six months. The foreign companies are protesting against the proposed lines of the bill, alleging violation of acquired rights. The capital of these foreign companies in Italy reaches a total of $186,000,000. Of this $28,000,000 belongs to American companies.

The Typhoid Death Rate.—From 1901 to 1905 the annual death rate from typhoid fever for the countries named was as follows: Scotland, 6.2; Germany, 7.6; Austria, 19.9; Hungary, 28.3; Italy, 35.25, and for the United States, 46. These figures, according to Dr. Huber, mean that in a single year we Americans have averaged 400,000 cases and 35,000 deaths from this one preventable disease.

Book Reviews.

Diseases of the Stomach and Upper Alimentary Tract. By Anthony Bassler, M.D., Visiting Gastroenterologist to the People's Hospital and Visiting Physician to the St. Marks Hospital Clinic; Member of the American Gastroenterological and American Medical Associations; Fellow of the New York Academy of Medicine, etc. Copiously illustrated with numerous half-tone and line text engravings and 56 full-page half-tone plates (with nearly 100 figures), plain and in colors, from original photographs and drawings. Philadelphia: F. A. Davis Company, 1910.

From the standpoint of size, this book, of over 800 pages, must rank as one of the larger works on diseases of the stomach. The first three chapters deal with the anatomy, physiology, and chemistry of the parts concerned. Then follow chapters on anamnesis and on the examination of patients, of gastric contents, and of feces; and these are among the most satisfactory portions of the book. Various methods of treatment are then considered, also the indications for surgical intervention. The latter half of the volume treats of the various gastric diseases in detail. The book has several good features. It represents much original work on the part of the author; it is not so narrow in scope or teaching as works on this subject are apt to be; the illustrations are unusually good, and the volume is exceedingly well printed; some of the chapters (so far as their contents are concerned) leave very little to be desired. But, on the other hand, the author's style is often turgid and involved, and it is sometimes very difficult to find out what he really wishes to say; the prescriptions are a curious blend of English, Latin, and some nondescript dialect which is probably meant for Latin. There is quite a little very elementary matter which readers of a volume of this size and caliber might safely be presumed to know. Omitting numerous misprints, the author makes use of such expressions as "chronic gastrides," "the feces collects," "the feces is," "good results is due," "bona fidely so," "bona fidely due," "hypermotility nervosa," etc. As a sample of his style we quote (from page 399): "On the other hand, because of the high rates of mortality in surgical procedures of the gastro-enteron, the desirability of practical knowledge of what is wisest to do to obviate or remove the error when the abdomen is opened and the condition is observed, a skilled hand in the way of the various operative procedures pertaining to the surgery of the digestive tract, and the importance of perfect work quickly done, necessitating as it does a good understanding of the anatomy and physiology of the parts, the time has arrived for the existence of special surgeons who have aptitude for this class of work, and whose skill, born of ample experience, is beyond that of the more general surgeon." As an illustration of the lingua franca of prescription writing we append (from page 319):

℞. Sodæ bromidum.
Fldext. cascara sagrada, āā 10.0.
Liq. ferri albuminatum, 100.0.
Fiat et Sig: etc.

And on the following page: "Fiat capsulæ or soft pills no. xxx."

In another edition this should be translated into either Latin or English.

An Introduction to Surgery. By Rutherford Morison, M.A., M.B., F.R.C.S. (Edin. and Eng.), Professor of Surgery, University of Durham, College of Medicine, Newcastle-upon-Tyne, Senior Surgeon to the Royal Victoria Infirmary. With 146 illustrations in the text and 5 colored plates. Price, $2.50 net. New York: William Wood & Company, 1911.

Within the limits of this volume of 167 pages the author has succeeded in presenting the fundamental principles of modern surgical science. The book is not designed to take the place of the larger textbooks, but is offered as a supplement or as an introduction to these. The real need of a book like this is manifest when one considers the facts that the principles of surgery are relatively few; that it is important that the student should have a clear conception of these principles in order that he may intelligently interpret the multitude of surgical conditions that affect the different parts of the body. The present volume is an abstract of the author's lectures which have been framed wth the idea of emphasizing the main principles of diagnosis and treatment that are based on a sound knowledge of pathology. As an illustration of the method by means of which the author strikes at the fundamental principles of surgery, may be cited the chapter on syphilis, tubercle, and malignant disease. These are first considered together; their numerous points of resemblance and difference are tersely described, as regards the primary lesion or focus, the glandular enlargement, and the mode of dissemination. This takes in the diagnosis of the three diseases, which are treated at some length. The relation of fibrosis to the three conditions, the manner in which the bones are involved, the influence of septic infection on the primary disease, and the characteristics of combinations of syphilis, tuberculosis, and malignant disease are all presented in a manner which is unique in surgical textbooks. The three conditions are then separately discussed in detail. Another illustration of the application of broad general principles to special conditions is splendidly furnished by the section dealing with inversions and torsions of the hollow viscera. It is noted that "whatever organ the twist involves, and whether viewed in reference to etiology, pathology, symptoms, diagnosis, prognosis, or treatment, all cases have many points in common." These points are dwelt upon. Several pages are devoted to the subject of certain protective functions of the omentum, with numerous illustrations showing its relation to hernial sacs, to damaged loops of intestine, to the locking up of pus from an appendix abscess, to perforated hollow viscera, and to the isolation of pelvic tumors. Its extraordinary capacity for the formation of new blood-vessels is pointed out. In addition to the general principles the text contains many suggestions of practical value in the surgical treatment of special cases. Thus the discomforts and dangers of plugging of the posterior nares are pointed out, while it is stated that by careful plugging through the anterior nares it is possible to arrest any ordinary hemorrhage from the nose. The treatment of tuberculous abscesses by means of a small incision and the use of Klapp's suction ball shows that the author is alive to modern advances in surgical treatment. While this book has been written primarily for the student, there can be little doubt that the general practitioner will greatly profit by a perusal of its pages. The text is concise, without being schematic and unintelligible, and the style shows the natural elegance and precision of the mature scholar. The numerous illustrations and colored plates are of a particularly fine order, and together with the excellent paper and typography contribute to make this book an ideal one in its particular sphere.

Gynecological Therapeutics. By S. Jervois Aarons, M.D. (Edin.), M.R.C.P. (Lond.); Gynecologist to St. Anthony's Hospital; Fellow of the Royal Society of Medicine; Member of Obstetric and Gynecological Sections; formerly Registrar and Pathologist to the Hospital for Women, Soho Square; Gynecological Tutor, Extramural School of Medicine, Edinburgh; House-Surgeon, Gynecological Ward, Royal Infirmary, Edinburgh. With Foreword by Sir Halliday Croom, M. D., F.R.C.P., F.R.C.S.; Professor of Midwifery in the University of Edinburgh. $2.00. New York: William Wood & Co., 1910.

In this small volume of 175 pages the symptomatology, diagnosis and operative treatment have been entirely omitted, and the book devoted exclusively to medical gynecology. Except for some of the prescriptions given, and the mention of the use of the *x*-ray and radium, the author recommends no treatment which he himself has not carried out. In general, the therapeutic measures mentioned by Dr. Aarons are in line with what, in this country, is considered good gynecological practice. However, we do not agree with him in his management of ectopic gestation, when there are signs of internal hemorrhage and the practitioner has to wait for the arrival of a surgeon before an operation can be done. Quoting from the book, "The patient should be kept flat upon the bed, the foot of which should be raised about eighteen inches. A normal saline infusion may be given, to which a little adrenalin has been added." Again, "A hypodermic injection into the gluteal region of pituitary extract (1 cc.) will help to allay the shock." We do not consider this good advice, as the saline infusion and the pituitary extract, by raising the blood pressure, will tend to increase the hemorrhage from the ruptured blood vessels, and therefore ultimately increase the shock. The time for the use of these measures is when the blood vessels have been ligated, during or after the operation. If any medication is needed while waiting for the operation hypodermic injections of morphine should be given, as morphine allays the restlessness which follows the loss of large quantities of blood, and thus favors the clotting of the blood in the ruptured vessels. The book is one that cannot fail to be of great service to the general practitioner, and it would have been even better had the author gone a little more in detail into the methods of treatment which he describes.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Sixty-Second Annual Meeting, Held at Los Angeles, Cal., June 26, 27, 29, and 30, 1911.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 52.*)

HOUSE OF DELEGATES.

Thursday, June 29—Fourth Day.

THE PRESIDENT, DR. JOHN B. MURPHY OF CHICAGO IN THE CHAIR.

Election of Officers.—The following officers were elected for the ensuing year: *President*, Dr. Abraham Jacobi of New York City; *First Vice-President*, Dr. W. Jarvis Barlow of Los Angeles, Cal.; *Second Vice-President*, Dr. Floyd W. McRae of Atlanta, Ga.; *Third Vice-President*, Dr. William R. Tipton of Las Vegas, N. M.; *Fourth Vice-President*, Dr. A. L. Wright of Des Moines, Ia.; *Secretary*, Dr. Alexander R. Craig of Philadelphia, Pa.; *Treasurer*, Dr. W. A. Pusey of Chicago, Ill. Three *Trustees* elected to serve until 1914 were: Dr. Philip Marvel of Atlantic City, N. J., to succeed Dr. Wisner R. Townsend of New York City; Dr. Philip Mills Jones of San Francisco, Cal.; and Dr. W. T. Sarles of Sparta, Wis., to succeed himself; *Chairman* of Committee on Transportation and Place of Session to serve for three years, Dr. J. R. Pennington of Chicago, Ill.; *Member of Council on Health and Public Instruction*, Dr. H. B. Favill of Chicago; *Member of Council on Medical Education*, Dr. J. A. Witherspoon of Nashville, Tenn.

Election of Honorary Members.—Mr. Howard Stiles of Edinburgh, Scotland, was unanimously elected an Honorary Member of the America Medical Association.

Supplementary Reports from Reference Committees.—Dr. G. W. Guthrie made the following recommendations in behalf of the Committee on President's Address: That a committee of five be appointed by the President to arrange a series of lectures and exercises for those attending the next annual meeting of the Association. That the President appoint a committee of five to arrange for clinical meetings on the day before and the day after the next meeting of the Association. That the President appoint a committee of five to investigate and report on the advisability of publishing a small medical journal for distribution among the laiety. That a committee of five be appointed to represent the American Medical Association at the Association of American Educators which would meet in San Francisco in July.

The President was authorized by the House to appoint these committees.

The Committee on Sections and Section Work presented resolutions requesting the House of Delegates to support their efforts to raise the standard for practitioners of ophthalmology so that every ophthalmologist should be a graduate in medicine and have one year of clinical work before entering upon the practice of ophthalmology.

The House adopted these resolutions.

New Section on Hospitals and Hospital Work.—The House of Delegates adopted resolutions forming this new section and the President appointed Dr. Witten Booth Russ of San Antonio, Tex., president, and Dr. A. L. Brittin of Athens, Ill., secretary.

The Committee on Hygiene and Public Health, in behalf of the Section on Preventive Medicine, presented resolutions providing that a committee be appointed to investigate in regard to the prevalence of syphilis and gonorrhea in this country and to report at the next meeting; also that a committee be appointed to confer with a committee from the Association on Sex Hygiene as to the best methods to pursue in the investigation of these questions and the best means of lessening or suppressing these diseases. They also recommend that this committee consider the advisability of reporting these diseases and that the subject be brought before the House at the next meeting.

The Judicial Council.—In compliance with resolutions adopted by the House creating a Judicial Council and providing that the President appoint five members to serve, Dr. Murphy appointed the following to serve from one to five years in the order named: Dr. Hubert Work of Pueblo, Col.; Dr. James E. Moore, Minneapolis, Minn.; Dr. Alexander Lambert of New York City; Dr. A. B. Cooke of Nashville, Tenn., and Dr. Frank Billings of Chicago.

On the Admission of the Medical Society of Porto Rico.—In regard to the resolution providing for the admission of the Medical Society of Porto Rico the reference committee decided that the constitution of the Medical Society of Porto Rico was such at present that the society could not be admitted as a constituent of the American Medical Association, and it was therefore voted to defer such admission until the constitution of that society should have been amended to conform with the constitution and by-laws of the American Medical Association.

Resolutions of Thanks.—Resolutions were adopted expressing gratification and appreciation on the part of the members of the association to the various organizations and individuals who had contributed to the success and enjoyment of this meeting.

Place of Next Meeting.—Atlantic City was chosen as the place of the next meeting.

SECTION ON MEDICINE.

Wednesday, June 28—Second Day.

DR. WILLIAM A. JONES OF BUFFALO, CHAIRMAN.

Effects on Secondary Anemia by Hypodermic Injections.—Drs. WILLIAM JARVIS BARLOW and ROBERT L. CUNNINGHAM of Los Angeles, Cal., presented this communication, reporting upon three preparations used, iron cacodylate, sodium cacodylate, and arsacetin. Iron cacodylate was said to be iron in combination with cacodylic acid and therefore an organic form of iron and arsenic; sodium cacodylate contained sodium in combination with cacodylic acid; and arsacetin was an acetyl derivative of atoxyl said to be much less toxic and much more stable than that more familiar drug. Of each drug a single dose was contained in an ampoule and the preparation was sterile and ready for use. The injections had been made most commonly in the deltoid muscle. The injections had been employed on twenty-eight patients from which they concluded as follows: 1. When the hemoglobin content of the blood was relatively low, *i. e.* when the color index was very low, below 0.8, the dose of 0.03 grams might be given twice or three times a week, changing the site of injection each time. There was apparently more direct stimulating effect derived from the iron solution than from the others. 2. When the patient was not neurotic and would not object to the pain accompanying the administration of the solution, sodium cacodylate was to be preferred when there was any suspicion of syphilis and here they used one c.c. of the thirteen per cent. solution three times a week or at least twice a week; when a painless solution was particularly desired they used one cc. of the five per cent. solution twice a week as being safer than the stronger solution, when there was some degree of secondary anemia, but with a color index fairly high, as above 0.8. Arsacetin was to be preferred when it was to be combined with tuberculin treatment and when sodium

cacodylate was not well tolerated. In all cases they used 2 cc. of a ten per cent. solution and gave that amount two or three times a week, or even daily if it seemed desirable. Although they had seen no harmful effects from these drugs they had avoided their use during hemorrhage from the lungs, waiting at least one week after the sputum had cleared before resuming injections; during the so-called asthmatic attacks of the cases with a great deal of chronic bronchitis and emphysema, fearing to irritate the mucous membranes during such seizures; in all cases with marked albuminuria and cylinduria; and where there had been marked intereference with the circulation.

Reserve Renal Capacity in Chronic Interstitial Nephritis.—Dr. Edward F. Wells of Chicago said that in the midcourse of chronic interstitial nephritis with the secreting structures of the kidneys greatly reduced by degenerative and atrophic processes more or less marked renal insufficiency was the rule. Notwithstanding the difficulties and inaccuracies attending the estimation of the amount of urea, chlorides, phosphates and sulphates contained in the daily urine it was the opinion of the author that they were of sufficient diagnostic and prognostic importance to warrant their employment in routine practice. In many instances this insufficiency was very great, but in some instances material and even great reserve capacity might be discovered. In studing these cases attempts should be made to discover and measure the reserve, in addition to the ordinary functional capacity of the kidneys, for the purpose of strengthening the foundations of rational prognosis and treatment. In his own practice the writer advised such active and passive muscular exercises as might be taken without evidences of urea retention. The amount of proteid ingestion always small or moderate was gauged in like manner. These were points of great practical importance. Along similar lines estimations might be made of the capacity of the kidneys to eliminate urinary water and also chlorides. The latter taken in connection with observations upon the weight of the patient and of the extravascular tension, blood pressure, and cardiac hypertrophy was of prime importance and should be made with regularity. The main object of the paper was to stimulate further and more accurate investigation.

Pathological Findings in Hypertension.—Dr. Roger I. Lee of Boston read this paper in which he made a comparison of blood pressure determinations taken shortly before death and the pathological lesions found at autopsy. The material reported consisted of the pathological findings in every case showing a systolic blood pressure of over 160 in life which had come to autopsy from the medical wards of the Massachusetts General Hospital from January 1, 1907 to April, 1911. The pathological findings showed some kidney lesion in 71 per cent. of the cases; arteriosclerosis in 69 per cent., there being only one case of hypertension with arteriosclerosis in which there was no kidney lesion; cerebral lesions in 15 per cent. of the cases; cardiac lesions in over 24 per cent., these lesions being in addition to simple hypertrophy and dilatation; in 28 per cent. no kidney lesions were found. The following conclusions seemed justified: Hypertension occurred most commonly in association with some lesion of the kidney. The most common lesion was an atrophic kidney with increase of connective tissue and disappearance of glomeruli. Hypertesion occurred also in association with acute, subacute and chronic glomerulonephritis. Hypertension occurred not infrequently in association with cerebral lesions. A moderate degree of hypertension might occur in cardiac lesions. In valvular cardiac lesions the aortic valve was apparently always involved. Hypertension might occur apparently rarely in cases of general arteriosclerosis without other lesions. With a continued systolic blood pressure of over 200 some form of nephritis was found. Hypertension usually indicated well marked cardiac hypertrophy. The hypertrophy might be moderate in connection with a well marked hypertension over a considerable period.

New Clinical Values in the Treatment of the Gastric Neuroses.—Dr. Chas. Lyman Greene of St. Paul, Minn., said that the nervous dyspeptic had ever been a joy to the quack, the *bête noir* of the honest surgeon and internist, and a mystery to all three. He summarized as follows: (1) The gastric neurosis whether motor or secretory depended almost wholly upon an underlying asthenia. (2) This asthenia might be acquired, temporary and due to self starvation or other debilitating causes, but almost always presented a chronic congenital insufficiency of body structure and function, producing a peculiar nutritional instability. (3) That so-called passive neurasthenia or psychasthenia was most frequently seen in individuals of the asthenic habitus and was but a part of the clinical picture though a genuine and troublesome complication. (4) That gastroptosis produced symptoms only in the presence of atony of marked secretory changes and did not justify primary operative procedure. The same statement as to the unwisdom of operative interference applied to other displacements such as movable kidney and certain uterine malpositions. (5) That certain cases occurred in which no structural abnormality existed. That of these some were due to self starvation, others occurred in the robust individual who represented the "*malade imaginaire.*" (6) That under proper conditions the gastric neuroses of the common type justified hopeful prognosis. (7) That pain manifestations were so variable as to site, severity, character, and persistence as to lead frequently to erroneous diagnosis and futile operative interference, but that rational nonsurgical treatment afforded relief in the greater number of the cases. (8) That cases of the chronic congenital type bore surgery badly and usually obtained from it either definite harm or but slight and transient improvement. (9) That simple procedures might give great relief to mild cases and to those patients whose means would not permit the institution of the proper treatment, but that under the latter conditions failures were frequent. (10) That all severe or persistent cases demanded isolation, rest, and hypernutrition, combined with helpful suggestion and the minimal use of drugs. (11) That in their modern treatment of the dominant asthenic type of gastric neurosis they were successfully attacking that most common cause of chronic invalidism.

The Blood Pressure in Pneumonia.—Dr. Alexander Lambert of New York read this paper in which he gave the results of his observations on the blood pressure in 48 cases of pneumonia in adults, eight of these being broncho- and 40 lobar pneumonia. The ages had ranged from 13 to 78 years and were such cases as were found in general hospital service. Of 11 fatal cases in the series 10 were those who had used alcohol. In the mild case in which there did not seem to be much toxemia the disease did not seem to change the blood pressure in young adults from the average normal, i. e., 120 to 130; it remained normal throughout their attack. In some young adults whose pulse remained below 120 and the blood pressure above 105, while there was no change at the time of the crisis, it fell below 100 after convalescence had set in. In other patients of this class as soon as the crisis occurred and convalescence set in the pressure quickly and steadily rose to 120 or 130 mm. In no case did they see a sudden fall of pressure at the crisis. In some of the severe cases the blood pressure had been low, the pulse, temperature and respiration very high and this ratio had remained persistently throughout the disease. Dr. G. A. Gibson of Edinburgh had summed up his experience on this subject as follows: "When the arterial pressure expressed in millimeters of mercury does not fall below the pulse rate expressed in beats per minute, the fact may be taken as of excellent augury, while the

converse is equally true. That is, when the pulse rate per minute is higher than the pressure of the millimeters of mercury, the equilibrium of the circulation is seriously disturbed." The class of patients last referred to were those in which Gibson's rule was most noticeable. In the patients who recovered the pulse usually diminished in frequency before the blood pressure. In some few instances the reverse occurred. In other patients the temperature and pulse did not run very high and the blood pressure was very low; in these the ratio of Gibson's rule did not point to a bad prognosis. In some patients suffering from chronic nephritis the blood pressure remained above 150 mm, but was distinctly lowered by the pneumonia. Some of these patients recovered and some died. In those who recovered the blood pressure rose after the crisis; in others with nephritis the blood pressure had remained high, 180 to 200, and yet the patients died. The readings of the blood pressure gave no hint of the cardiac failure. It was interecting to note that 20 of the 48 cases showed Gibson's rule and of these six died. Of the 28 that did not show Gibson's rule five died. It was also interesting to note that among those who showed Gibson's rule not quite half were alcoholics, and among those who did not show it not quite three-fourths were addicted to alcohol. Patients who had arteriosclerosis and chronic nephritis were not apt to show Gibson's rule, but the danger of cardiac failure was none the less very great. The measurement of blood pressure would often decide the question whether they should look to the heart or the blood vessels to reestablish the equilibrium of the circulation. Unless they knew whether they were dealing with a vasomotor paralysis with a low tension pulse or a cardiac failure with a high tension pulse they could not use adrenalin intelligently; it was unquestionably poor judgment to use it on a patient whose blood pressure was already high and whose heart was struggling without sufficient reserve force against too great a strain. It was a grave question whether alcohol was advisable in pneumonia unless they knew whether the blood pressure was high or low. A knowledge of blood pressure in pneumonia would often be of assistance in judging of prognosis and treatment.

The Importance of the Quantitative Regulation of the Diet.—Drs. H. D. Arnold and R. C. Larrabee of Boston presented this paper. The regulation of the diet had hitherto been empirical and unscientific; it had been qualitative, not quantitative. Modern infant feeding had been attended by marked success because it had regulated quantitatively the three food stuffs, protein, fats and carbohydrates. The problem of the quatitative regulation of the complex diet of adults had been regarded as too difficult for general application in practice. However, sufficiently simple methods had been devised to make such regulation practicable.. It was important in diabetes, nephritis, gout, tuberculosis, obesity, malnutrition, all diseases of metabolism, and in many other conditions. They had used the diet chart prepared by Dr. Arnold for several years and had found that it simplified the problem a great deal, and made it feasible to do this work in private practice satisfactorily, when once the physician was conversant with the method of its use.

Dr. Wilder Tileston of New Haven, Conn., said that the quantitative regulation of the diet was of extreme importance in the treatment of all conditions of undernutrition. It was not difficult to regulate the diet if one would take the trouble to study certain tables which gave the nutritive value of foods. Tables could be obtained from the United States Department of Agriculture, Bulletin No. 28, for ten cents.

The Incidence of Serofibrinous Pleurisy and Empyema as Complications and Sequalæ of Pneumonia, with Remarks on the Medical Treatment of the Conditions.—Drs. James M. Anders and Arthur C. Morgan of Philadelphia presented this paper. In general, it might be authoritatively stated that serofibrinous pleurisy was of more frequent occurrence than empyema in lobar pneumonia, a dictum strongly supported by statistical inquiries. The statistical observations which formed the basis of their paper, embraced an examination of 68,982 clinical and post mortem records, from which they culled 2512 cases of pneumonia, and found that of these 1335 presented complications. In the 2512 cases of pneumonia, serofibrinous pleurisy occurred in 198 and empyema in 68.

Laboratory Diagnosis of Syphilis.—Dr. L. S. Schmitt of San Francisco, Cal., read this paper and offered the following conclusions: (1) Examination by the dark field condensor was the surest and most rapid method of determining the presence or absence of the treponema pallida. (2) The success with fresh specimens and smears depended largely on the care and manner used in making the preparations to be examined. (3) The early diagnosis of syphilis became more important on account of the advantage obtained in shortening the disease in many instances by the use of salvarsan. (4) Serum diagnosis of syphilis was of great value throughout the course of the disease after the infection became systemic. (5) The complement fixation reaction was of value in determining a syphilitic etiology and the effect of treatment. (6) In cases under treatment a negative complement fixation reaction was not of the same value as a positive one in determining the presence or absence of the disease. (7) In certain forms of parasyphilis a negative reaction did not entirely exclude the presence of syphilis. (8) In syphilis of the central nervous system the complement fixation reaction should be done with the cerebrospinal fluid as well as with the blood-serum. (9) Great care should be taken in selecting and making antigens used in the complement fixation reactions. The reaction was a quantitative one and the accuracy of results was dependent entirely upon the quantitative relation between the various reagents. (10) With properly selected antigens the Wassermann and Noguchi methods were equally reliable.

Visceral Syphilis.—Dr. Frank Billings of Chicago read this paper in which he considered tertiary syphilis of the liver, lungs, great blood vessels, heart and kidneys. Gumma of the liver and hepatitis syphilitica were of frequent occurrence in city patients. Intermittent fever with chills, enlarged, palpable, and tender liver, occasional jaundice, leucocytosis and moderate secondary anemia were usual symptoms. Rest would often bring about a symptomless, latent state. Recurrences might occur over many years. Gumma of the lung might be mistaken for tuberculosis. Syphilitic aortitis and arteritis of various types resulted in aneurysm, myocarditis, etc. Syphilitic nephritis was recognizable. The fact that salvarsan aggravated the morbid condition of a heart, blood vessel, or kidney disease prohibited its use in these conditions; however, this remedy was undoubtedly of great value in early syphilis and in syphilis with gummatous infiltration and ulceration. A maximum dose of salvarsan followed by mercury was of undoubted value. Dr. Billings doubted very much if salvarsan would give better results than the rational use of mercury and the iodides. Exceptions might occur in which salvarsan might prove a better remedy.

Observations on the Value of the Wassermann Reaction.—Dr. Albert Keidel of Baltimore read this paper which was based on 378 cases examined by the Wassermann test. There were 50 cases definitely nonspecific that gave 100 per cent. negative reactions. Of 71 cases with lesions of a doubtful nature and a negative history for syphilis, 24 per cent. were positive and 5 per cent. doubtful. Of cases with lesions of a doubful nature and an indefinite history of syphilis there were 61, 37.7 per cent. of which gave positive reactions and two doubful. Of cases with a

definite history of syphilis but no lesions there were 83, 25 per cent. of which were positive and 5 per cent. doubtful. Of cases with suspicious or manifest lesions and a definite history of syphilis there were 113, of which 82.3 per cent. were positive and 6 doubtful. A positive Wassermann reaction was for practical purposes conclusive evidence of syphilis. The test might be positive in certain nonsyphilitic conditions and the difficulty lay in the correct interpretation of the negative results, and might be met by careful attention to the technique, by using only the highest powdered preparations, skillfully made and accurately titrated. When the result was in doubt they need not hesitate to make repeated tests. By taking these precautions a negative Wassermann reaction while not of equal value with the positive result was almost as reliable.

Observations on the Value of Salvarsan.—Drs. JOHN T. GERAGHTY and ALBERT KEIDEL of Baltimore presented a report which was based upon a series of 70 cases. From their experience with this drug they were convinced that it was an important addition to the therapeutics of syphilis. In almost every case where visible lesions were present complete disappearance followed the injection, and marked improvement in the general condition of the patient was a constant feature. In all cases refractory to mercury the response to salvarsan had been prompt and striking. The drug was indispensable in the treatment of patients who did not tolerate mercury. They wanted particularly to emphasize the fact that the use of salvarsan had now passed beyond the experimental stage. The superior ability of salvarsan over mercury to rapidly kill the *Spirochæta pallida* in the tissues had been demonstrated beyond question, and salvarsan was therefore indicated in every case of syphilis when not specially contraindicated, even where it seemed advisable to supplement it with the subsequent use of mercury. From their experience they strongly advocated a vigorous course of mercury following the injection of salvarsan, continued for about six months and possibly then followed by another dose of salvarsan.

The Disadvantages Incident to the Administration of Salvarsan.—Dr. DOUGLAS W. MONTGOMERY of San Francisco, Cal., said that the necessity in the present state of our knowledge of not relying entirely upon salvarsan, but of also prescribing the other great specifics, mercury and iodide of potassium, was evident. As salvarsan must be introduced directly into the juices of the body either intramuscularly, subcutaneously or intravenously, its administration required skill and the greatest care, and even then, from the nature of the drug, its introduction might be followed by most disagreeable results. The occurrence of severe pain, of necrosis, of non-absorption and of sepsis when the drug was given intramuscularly or subcutaneously, and when necrosis occurred, the long endurance of the subsequent ulcer had also to be taken into account. The disadvantages incident to salvarsan when too slowly absorbed or not absorbed at all were evident. The care, time and expense associated with giving the drug intravenously were disadvantages. Disagreeable temperature reaction occurred occasionally in certain cases. There were dangers associated with the specific reaction caused by salvarsan when the lesion treated was situated in an organ of great dignity. It was necessary to have the patient under trained supervision during the first few hours after the injection.

The Adequate Treatment of Syphilis.—Dr. W. T. WOOTTON of Hot Springs, Ark., said that the inferior results from the treatment of syphilis in the past was due to improper and insufficient treatment and physicians were in a great measure responsible for this condition. To cure syphilis each and every spirochæta must be found and put to death. Metallic mercury was the safest and only agent that could do this alone when given to saturation. The inunction method was the only one by which saturation could be obtained. The number of spirochætæ killed was in direct and exact proportion to the completeness of the saturation. The iodides, per se, were not curative, but acted as overseer, keeping the mercury at work and giving it access to enclosed lesions. Salvarsan, as a *therapia sterilisans magna* was a failure; as an aid in the temporary eradication of active lesions it was a boon. The closest they could come to a *therapia sterilisans magna*, an ideal course, was through metallic mercury to complete saturation, and salvarsan in full doses intravenously at the height of saturation. Negative serum tests could not be depended upon; therefore the course should be repeated after a sufficient time had elapsed to ensure elimination of the previous course and for the system to have returned to the normal; otherwise there was danger of arteriosclerosis from the mercury. The treatment could be carried out anywhere, but probably to much greater advantage at a resort where the entire time could be given over to the treatment, *sans* business, friends, etc., plus elimination before, during and after. In spite of abuse and misuse metallic mercury stood today without a peer as a specific for the cure of syphilis.

Salvarsan.—Dr. E. G. BALLENGER of Atlanta, Ga., said he was convinced from his experience with "606" that it was a most valuable adjunct in the treatment of syphilis, and he believed that if properly administered and repeated at suitable times better cures of syphilis might be effected than heretofore. The micropathology clearly showed that not infrequently second and third injections became necessary in order to dissolve the wall nature had thrown up in her effort to limit the invasion. After this nidus of infection had been exposed to the circulating blood subsequent treatment might kill the remaining organisms. Dr. Ballenger greatly favored the intravenous method of injection and suggested a new method of inserting the needle into the vein. The plan advised was to pass a small trocar through the skin over the vein and then to introduce the needle into the vein through the canula. The number of patients requiring an incision would be lessened considerably by the adoption of this procedure. The apparatus also had a dilatation in the connecting glass tubes near the stop-cock. These bulbous portions acted as air traps and thus prevented the injection of air which by chance might have been left in the rubber tubes. The gravity apparatus was connected to a three way stop-cock so that a test could be made first with physiological salt solution, after which the "606" was allowed to enter. Two hundred and thirty injections had been administered without a mishap worse than pain at the site of the injection which occasionally occurred before the technique was perfected.

Dr. D. W. MONTGOMERY of San Francisco said that mercury was the drug in the treatment of syphilis, an agent that had been used for 400 years; it was the best means they had in the treatment of this disease. Salvarsan might have its place, but mercury still held its own. The iodides were not in any sense specifics. One could get a specific action upon the lesions, however, without the giving of mercury at all. That mercury was a poison was in his mind as clear as anything in therapeutics; it had been known to be a poison for centuries. The laudation of mercury as the great specific in syphilis still continued and he thought held good.

Dr. HOWARD FOX of New York called attention to the work done with salvarsan at the New York Skin and Cancer Hospital during the past eight months. Following the injection of this agent they had one case of herpes zoster. In 128 injections they had found no serious effects. In two cases a general toxic erythema which was followed by a high temperature lasting three days resulted. In five cases there occurred a local necrosis from the subcutaneous and the intramuscular injections. He did not agree with the gentleman who said that the intravenous procedure was a

difficult one; anyone with any experience could introduce the needle into the vein without difficulty. Aseptic precautions should be observed before beginning the operation. The use of the salt solution was unnecessary; sterilized distilled water answered the purpose. The gravity apparatus was more convenient than the original Schreiber's method. Among 69 intravenous injections in eight they had had follow small nodules; in six of these the nodules disappeared shortly after the injection.

Dr. W. J. Butler of Chicago said that the term "cure" had been used so much that he really wondered whether they all had the same ideas on the syphilitic question. When was syphilis cured? He did not know. He did not think that anyone present could answer that question. He did not think that they could saturate their patients with mercury for two or three years and then satisfy themselves that these patients were cured for all time. Why? Because they knew they were not cured. The external manifestations of syphilis were the least important as compared with the visceral syphilis which occur in later years. When were these patients cured of their syphilis? When they were dead. The possibility of recurrences was always present. Should they disregard the recent advances made in syphilitic control and treatment? By no means. When syphilis was active the reactions could be obtained in 98 or even 99 per cent. of the cases. When one did not get this reaction it showed that the syphilis was inactive. The syphilitic patient should never be without the care of the physician, even though the reaction was negative after three or four years' treatment; they should occasionally receive treatment to protect against possible recurrences.

Dr. C. F. Hoover of Cleveland, Ohio, reported the case of a patient, a student in the University of Austria, who was sent to Switzerland because of hemoptysis; he did not improve there and returned home and died. The autopsy revealed a pulmonary syphilis. Dr. Hoover said he had been on a sharp lookout for cases of pulmonary syphilis, but he had come across but two cases in which he was absolutely sure of the diagnosis. The symptoms under antisyphilitic treatment entirely disappeared. So far as fever was concerned, he thought they could get any variety; he recalled one instance in which the elevation of the temperature was very sharp, from 97 to 106 within two hours and then dropping to normal within three hours. A suppurative phlebitis was the diagnosis. Under antisyphilic treatment the patient made a good recovery.

Dr. Harry Reeves Olliver of San Francisco, Cal., reported the case of a young man who had been treated for tuberculosis of the lungs for six years. He had hemorrhages, but no tubercle bacilli were found. He was asked if he had ever had syphilis. He smiled and the doctor had revealed to him Hutchinson's teeth. The Wassermann reaction was positive. The patient was placed on mercury, but improvement did not occur until he was given salvarsan. He gained eighteen pounds in weight within three weeks, and since had had no hemorrhages. Dr. Oliver reported four cases of nephritis in which there were a large percentage of albumin, granular and hyaline casts, general anasarca, ascites, etc. Under the administration of mercury and salvarsan the patients all recovered.

Dr. William Litterer of Nashville, Tenn., said he had seen salvarsan used in five cases of pellagra and in three marked reactions were obtained. In these cases the Wassermann reaction was negative, both before and after the injections. In three the reaction was quite severe, the temperature going to 104. He used salvarsan on two cases of sarcoma and got only a slight reaction. He tried it on two cases of psoriasis and got a reaction in one. Just what caused that reaction he did not know. It might have been due to some idiosyncrasy.

Dr. George H. Aiken of Fresno, Cal., said he had been treating syphilis for over thirty years and felt somewhat humiliated in being told that he had not cured a single case. He had treated a young man for two years; his patient then married a healthy young woman, and they had a family of four. The children grew up healthy; they never developed any local or constitutional symptoms of syphilis and he had had them under his personal observation for over twenty years. Was it possible that they were syphilitic? He could not believe it.

Dr. John H. Graves of San Francisco, Cal., said that many men presented themselves for treatment of a recent attack of syphilis; they were, as a rule, young, careless, and inexperienced and called upon the physician but a few times. They were terrified when they learned that they had this disease. As soon as they found that there were no terrible consequences they passed from observation. That was the last the doctor saw of them. If every recent case of syphilis could receive a full dose of salvarsan and then given as many inunctions of mercury as possible some of these individuals might be cured in a short time. Even if they were not cured this procedure might save some innocent person from being infected.

Dr. William W. Graves of St. Louis, Mo., believed that no case of syphilis was ever cured. This sounded like very strong language, but he believed that he had reason to believe in this opinion. He called attention to the inadequacy of the therapeutic measures employed in the treatment of syphilis.

Dr. B. H. Orndorrf of Chicago related his experience with nearly 100 cases of syphilis in which intravenous injections of salvarsan were given; in each case the Wassermann reaction was positive. Three cases of leucemia were also treated with "606." The first was one of myeloid leucemia, with 450,000 white cells; no beneficial or deleterious effects resulted from the injection until three months after, when trouble occurred in the auditory apparatus; one month later this patient died; at the time of his death he was totally deaf. The second case was one of lympatic leucemia, with 600,000 white cells of the uninuclear type. Three weeks after the injection this patient died with slight auditory disturbances. The third case was one of the chronic lymphatic leucemia; the white cells were less than 200,000. The injection produced neither advantageous nor deleterious effects.

Major Percy M. Ashbum, U. S. A., reported the case of a man, sixty-four years old, who was taken ill in the Philippine Islands and who was treated for malaria. He had an intermittent temperature running as high as 103 F. He coughed and expectorated. Tuberculosis was excluded. He was sent home with the diagnosis of pulmonary mycosis. Later he was treated for rheumatism. He then had hemorrhages from the stomach, and blood appeared in the stools, and he suffered from an acute anemia. With the development of a loud heart murmur a diagnosis of septic endocarditis was made. An analysis of the gastric contents showed the constant absence of hydrochloric acid, and the constant presence of blood, and the condition was then diagnosticated as one of cancer of the stomach. He gave a history of stomach disturbance which extended over a period of three years. This man was the soul of honor and denied ever having had syphilis. The Wassermann reaction was positive. He was placed on inunctions of mercury, which cured his pulmonary mycosis, his cardiac disease, his gastric cancer, etc., all very promptly. The speaker later learned that the patient's wife had suffered from severe headaches during the past thirty years; in her the Wassermann was positive. When the patient learned that a diagnosis of syphilis had been made he was very indignant and refused to take treatment. However, he was given a tonic which contained mercury, and he made a good recovery.

Thursday, June 29—Third Day.

Treatment of Diabetes Mellitus.—Dr. A. J. Hodgson of Waukesha, Wis., read this paper. He stated that a very small percentage of cases of diabetes mellitus were caused by some severe preëxisting pathological condition, but that approximately 90 per cent. of the cases applying for treatment were due to errors of metabolism. The majority of cases were due to long continued gross errors in eating; oft repeated emotional excitement, the excessive use of starches or of alcohol, the gouty diathesis and heredity, sometimes associated with exophthalmic goiter, all seemed to play a part in the etiology of this disease. The quantity of food as well as the quality and manner of eating should be considered. In a disease that had been years in developing it was hopeless to expect a cure in a short time, and this should be made very plain to the patient. Codein and arsenic might have their use in a limited number of cases, but as a rule they should be left severely alone. They were not only useless in most cases but lessened the patient's chances of recovery. The drinking of plenty of mildly alkaline water was desirable. Olive oil and castor oil should be given in all cases in which there was constipation. The diabetic should be kept mentally indolent and physically active, but he should not be fatigued. Many of the so-called gluten flours contained from 40 to 75 per cent. of carbohydrate and consequently were worthless to the diabetic. The author had advised a starch-poor bread made from a flour consisting of unground poppy seed, ground nuts, eggs, flour or dried spinach, salt, and milk. These biscuits contained only 5 per cent. of carbohydrate. Carbohydrate should be restricted in the beginning to the limit of safety and added gradually in but one form until the point of tolerance had been reached. Successful treatment depended wholly upon the degree of control that the physician was able to exercise over his patient.

Bubonic Plague (with Special Reference to That of Ground Squirrel Origin).—Dr. George W. McCoy, United States Public Health and Marine Hospital Service, dealt exclusively with plague in man that had been derived from infection among ground squirrels in California. Nine cases, all having occurred during the past three years, were considered. All originated in the rural districts in vicinities where plague was prevailing among ground squirrels. Four of the cases occurred in squirred hunters who had handled animals within a week prior to the onset of the symptoms. The cases might be classified as severe acute, mild acute, and subacute or pyæmic. The onset was often marked by a chill followed by fever and headache. Epistaxis was common. Glandular swelling occurred either coincidently with or following the systemic reaction. Fever and general symptoms continued for about a week. No case of primary pneumonic or primary septicæmic plague of ground squirrel origin had been observed. Bacteriological diagnosis was made in every case by isolation and identification of the pest bacillus. Treatment was with anti-pest serum when practicable. The disease among the ground squirrel covered ten counties. Healthy squirrels from plague zones were relatively immune to laboratory inoculation. The mode of conveyance of infection was not definitely know, but the probabilities appeared to favor flea transmission. The chief menace was the danger of infection of rats of cities leading to an epidemic.

The Treatment of Intestinal Amebiasis.—Dr. W. E. Musgrave of Manila, P. I., read this paper. He stated that there was not only a natural tendency to recovery from this disease, but that such recovery actually took place in a considerable percentage of patients and was so complete as to leave little or no permanent scarring of the intestinal walls. More recent studies had shown that the types of ulcers varied considerably and several decidedly different lesions had been described. The author was becoming continually more certain that there was a definite amebic pathology in which there was no break in the continuity of the mucus membrane of the bowel. In discussing the therapeutic value of ipecac, Dr. Musgrave said that possibly the variation in the efficiency of different preparations of this drug were responsible for the divergent results obtained from its administration in dysentery. The difference among medical men in regard to the definition of the word dysentery might also be responsible for the different results reported. He concluded, however, that ipecac was a valuable drug in clinical dysentery of whatever etiology. In a small percentage of cases it did no good whatever. The author cited cases to illustrate the curative effect of the acute disease upon the more chronic one of the amebic infection. That this occurred was also borne out by autopsy studies. A patient with clinical dysentery demanded during such periods absolute rest in bed, a very restricted milk free diet, and measures for the control of intestinal peristalsis and for the relief of pain. Cases of the chronic or intermittent variety might last for years unless properly handled. For these the writer recommended a liberal diet and some form of occupation requiring both physical and mental activity in a moderate degree. Such treatment being contraindicated only during acute outbreaks. Proper support of nutrition was considered the first requisite. Only such medication was indicated as tended to improve the patient's general condition, and to meet special conditions as excessive fermentation, hyperchlorhydria. Local treatment by bowel irrigation either alone or combined with some other form of medication gave most satisfactory results. The knee-chest position was undoubtedly the best one for any form of medicated enema. From two to four litres of fluid might be used. Thymol, quinine, and silver nitrate had proved to be of greatest value in local treatment. The effect of mercury salts in the treatment of amebiasis deserved further investigation. The writer had had most encouraging results from the use of protoiodide of mercury in old sluggish diarrheal types of the disease. The drug was administered just as it would have been in syphilis. Over-treatment was a very common error. With proper care the prognosis of this disease was good.

Experimental Intestinal Obstruction—Report of Further Physiological, Cytological, and Chemical Studies.—Dr. J. W. Draper Maury of Rochester, Minn., read this paper. Two small series of fifteen dogs each had been prepared as follows: Under profound anesthesia in each case the duodenum had been sectioned and infolded just aboral to the major pancreatic duct. All animals were treated exactly alike as regards dressings, postoperative care, and free access to water. In one series each dog was given by mouth four times daily about 30 cc. of a watery suspension of mucous membrane scraped from the jejunum and ileum of healthy dogs. Approximately 400 cc. of water were added to the entire scrapings, and it was found that this suspension would keep on ice about five days. No effort at standardization was made, but it was early observed that immediate treatment seemed more important than the size of the dose or later treatment. One was tempted to speculate on the fate of the numerous colon bacilli thus transplanted to unusual regions from the terminal ileum. Dr. Maury drew the following conclusions: (1) Epithelial cells of the jejunum and ileum given by mouth to duodenally obstructed dogs prolonged life in a series of fifteen animals by about thirty-six hours over a similar series to which the mucosa was not given. (2) The average pulse rate of the treated dogs was thirty-three beats lower than that of the untreated. (3) The belief that they were dealing with a cytological product was strengthened by the trend of the charts. These showed that beneficial action occurred early, just as in the case of any successful treatment by anti-bodies. (4) The chemical determinations in one animal showed a normal nitrogen

metabolism after duodenal obstruction and suggested a decreased functional power of the liver in terms of glycuronic-camphor.

Some Obscure Conditions of the Digestive Tract as Studied by the Roentgen Ray.—Dr. G. R. SATTERLEE of New York City presented this communication. The observations were made in the Dispensary of the University and Bellevue Hospital Medical College, in the Edward N. Gibbs *x*-Ray Laboratory. After considering the anatomy of the gastrointestinal tract in normal cases the motility in normal and pathologic states and the size and position of the viscera in some abnormal conditions, the writer described the method that they had used in making these observations. For the average adult they administered 75 grams of bismuth subcarbonate, suspended in 500 cc. of fermented milk. This was swallowed on an empty stomach, without previous catharsis. The radiographs were made by exposures of from one-sixth of a second to one second. The first radiograph was taken in from ten to fifteen minutes after the ingestion of the bismuth; the second was taken one-half hour after the bismuth. Six or seven were taken successively at intervals of one, two, three, four, five, six, and sometimes seven or eight hours after the bismuth was taken. Other radiographs might be taken after twenty-four and thirty-one hours. In every case exposures were taken at twelve to twenty-four-hour intervals until the last trace of bismuth had left the intestinal tract. Dr. Satterlee's observations had been made on twenty-eight patients with several duplicates as controls and three hundred and eight plates had been studied. The following conclusions were drawn: (1) The length of time that the contents of the gastrointestinal tract first reached each division of the tract, and the time in which each division was completely emptied could be definitely determined in each individual by means of the bismuth Roentgen of ray test. (2) The normal activity of each part of the gastrointestinal track could be definitely established. (3) The food, immediately after ingestion, began to pass into the small intestines, and by the end of an hour at least one-quarter of the gastric contents was in the jejunum. (4) The stomach was emptied of 500 cc. of milk or soup in two and one-half to four hours. (5) The time to the cecum of this meal averaged two hours and varied from one to five hours; it was shorter in children. (6) The complete emptying of the colon consumed from twenty-four to forty-eight hours. (7) The complete emptying time of the small intestine after this meal was probably about six hours. (8) The bismuth Roentgen-ray test was harmless and practical. (9) The ordinary methods of medical treatment could be more intelligently applied with the improvement in diagnosis accomplished by this test. (10) The bismuth Roentgen-ray test should be employed before an operation for a chronic condition of the gastrointestinal tract was performed. Dr. Robert T. Morris agreed with the writer in this essential.

Infantilism in Pituitary Disease.—Dr. ALBION WALTER HEWLETT of Ann Arbor, Mich., said that it had been generally recognized that tumors in or near the pituitary gland might produce effects on the body growth and general metabolism which were quite distinct from those of acromegaly and gigantism. The symptoms presented might be divided into two classes: those due to the mechanical effects of the tumor, and those which seemed to be due to an altered internal secretion. To the former group belonged the headache, vomiting, and visual disturbances, the most characteristic of which, primary optic atrophy, and unilateral or bilateral temporal hemianopsia were due to direct pressure on the optic chiasm or nerves. To the latter group belonged the sexual disturbances (retarded sexual development, cessation of menses, etc.), the obesity, the stunted growth, and possibly the occasional diabetes insipidus. These were due, in part at least, to a diminished secretion of the anterior lobe of the gland. Dr. Hewlett reported in detail three cases. The first gave a history of brain tumor; the blindness was due to primary optic atrophy. There was retarded growth. There was also sexual infantilism and obesity, together with diabetes insipidus. The patient was a man twenty-seven years old. The second case reported was a man forty years old. Since the age of thirteen years he had had periodic attacks of headaches with vomiting. There was a mild sexual infantilism. He had an adolescent height and figure. There was a bitemporal hemianopsia with primary optic atrophy. There were bony changes in the region of the sella turcica. The third case was a man, fifty-two years old, who had a retarded sexual development. He had a small frame and a large sella turcica. Pictures of these patients were thrown upon the screen.

A Clinical Study of Mobility of the Heart.—Dr. DUDLEY FULTON of Los Angeles, Cal., gave the result of a study of 193 cases. Of this number 49 were apparently healthy; the remaining 144 were private patients or routine cases studied in his wards at the hospital. In studying the movability of the heart in different positions of the patient the absolute or superficial dullness was used and determined by feeble percussion. In determining the change of the apex beat in different postures the usual point of maximum intensity of the apex beat was ignored. The point of the heart coming in contact with the palpating finger farthest downward and to the left was considered as the true apex. The conclusions obtained were the result of a second examination, or were controlled by two examiners, so that a fair degree of accuracy might be assumed. One of the most striking facts observed was the discrepancy between the amount of displacement of the apex beat and that of the cardiac dullness in the change of the position of the patient. In the 193 cases there were nine in which there was a total displacement of the heart downward, the so-called cardioptosis of Rummo. In seven of these there were clinical signs of atheroma of the aorta. From this study the impression was that the determination of the movability of the heart was of considerable value in the differential diagnosis of cardiac dilatation, and that before assuming that the heart was dilated to the right or to the left the mobility of the heart should always be determined. Immobility or fixation of the heart should always arouse suspicion of adhesion of the pericardium to neighboring organs. There was probably no serious heart lesion diagnosticated less frequently clinically than pericarditis with adhesions.

Symposium on Poliomyelitis.

A joint meeting with the section on diseases of children was held.

Epidemiologic and Etiologic Studies of Acute Poliomyelitis in Pennsylvania.—Dr. SAMUEL G. DIXON, Commissioner of Health of Pennsylvania, presented this paper, which was read by Dr. Howard Karsner of Philadelphia. Pennsylvania's important research work in poliomyelitis and a detailed account of the department's epidemiological and clinical studies compiled from the records of many practising physicians throughout the commonwealth was the subject of this interesting paper. A graphic description of how the disease began in the Lehigh Valley and later in Lancaster County, and how it gradually spread throughout the entire Commonwealth until a total of 1067 cases were reported, illustrated by a map of the State and a diagram showing the ages of those afflicted, attracted a great deal of attention. A mortality of 240 cases for the year 1910 was very surprising to students of this disease who had been accustomed to a mortality nearer 10 per cent. than that found in Pennsylvania's serious epidemic. A full report of the department work in the field laboratories was given and a further report was made concerning the micro-

organism found in the blood of human cases of poliomyelitis, and experimental cases of this disease in monkeys. The only new feature regarding this research work was that recently the laboratory staff had demonstrated active motion of this microorganism and the further fact that it could be grown in blood bouillon, plain bouillon, and blood agar.

Recent History and Etiology of Infantile Paralysis—Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment of Infantile Paralysis—Infantile Paralysis as Observed in Massachusetts, 1907-1910.—Drs. R. W. Lovett and M. W. Richardson of Boston presented this communication. They stated that infantile paralysis in the United States had increased very rapidly of late years. In the five-year period ending in 1904 about 1000 cases were reported, and in the year 1910 8700 cases were reported in the United States. The disease was a reportable one in twenty-three states. It had been proved to be infectious, and was evidently transmissible from person to person and by means of a third person. In addition to personal transmission one must consider the possibility of contracting it from fruit, dust, insects, and the domestic animals. The very great increase in travel in the United States was probably a factor in the more rapid spread of the disease of late years. It could be caused experimentally in monkeys, and in rabbits paralysis could be caused by inoculation of the human disease, which after being transmitted through several generations could be again transmitted to monkeys. Immunity was conferred by one attack. The disease was less transmissible and less common than measles, scarlet fever, etc. The account of the symptoms was given, calling attention to the frequency of cerebral types and their association with spinal types. Prevention must proceed upon general principles as in other infectious diseases, and quarantine and disinfection of secretions and premises were essential. About 16½ per cent. of the cases recovered inside of three months, and about 27 per cent. inside of four years. Treatment in the acute stage should consist of rest and the prevention of deformity. Apparatus and operative treatment were considered in their relation to the chronic stage. Two thousand one hundred and thirty-eight cases occurring in Massachusetts were analyzed in regard to various aspects of the disease. Where a limited locality had been severely affected one year it was practically immune in the following year. The death rate in Massachusetts had been 8 per cent., and the disease was more frequent in the smaller cities and towns than in the larger ones. The studies of the State Board of Health for four years were analyzed and various conclusions from them presented.

Election of Officers.—*Chairman*, Dr. Wilder Tileston of New Haven, Conn.; *Vice-Chairman*, Dr. W. L. Berring of Des Moines, Iowa; *Secretary*, Dr. Roger S. Morris of Missouri; *Orator*, Dr. Chas. L. Greene of St. Paul, Minn.; *Delegate*, Dr. J. A. Capp of Chicago; *Alternate Delegate*, Dr. S. W. S. Toms of Nyack, N. Y.

SECTION ON SURGERY.

Wednesday, June 28—Second Day.

Dr. George W. Crile, of Cleveland, in the Chair.

Oration on Surgery: Some Observations on Ascending and Hematogenous Infections of the Kidney.—Dr. George E. Brewer of New York described in detail animal experimentation to determine the factors in ascending and in hematogenous infections of the kidney. He stated that bacteria placed in a healthy bladder did not infect the kidney for two reasons, first, because of the descending flow of urine and, second, because of the valve-like action of the opening of the ureter in the bladder. He found that retention of urine in the bladder did not open the orifices, but that retention plus muscular contractions caused a reflex opening of the ureteral orifices and could force bacteria and inert substances into the pelvis of the kidney. The clinical conditions necessary for an ascending infection are, therefore, incomplete retention such as is associated with enlarged prostate or tenesmus from an acute cystitis. In experimenting with hematogenous infections great difficulty was experienced in determining the proper dosage of bacteria. Given a proper dose there was no infection of a healthy kidney, but if the kidney were subjected to trauma or to circulatory disturbances infection in that kidney took place. He concluded that hematogenous infections usually affected one kidney at first and that a damaged kidney was an element of danger in any individual.

The End-Results of Gall-Bladder Surgery.—Dr. E. MacDowell Stanton of Schenectady, N. Y., drew conclusions from 350 cases of gall-bladder disease. In cases of gallstones a permanent cure was obtained almost always when all the stones were removed. Overlooked stones being the cause of uncured cases, cholecystotomy was the operation of choice even when the gall-bladder was apparently functionless, provided all obstructions were removed. In cases of cholecystitis without stones the operative results were not brilliant, only about 50 per cent. of the cases being cured. This class of cases was often better treated by medicinal means.

Factors Hostile to Success in Gall-Bladder Surgery.—Dr. B. B. Davis of Omaha stated that there was often more pain after an operation on the gall-bladder than before, owing to suspension of the gall-bladder to the abdominal wall. Such suspension was not necessary if the ligature about the drainage tube was slight. All raw surfaces should be covered to prevent later painful adhesions. A fibrous gall-bladder without muscular tissue should be removed to prevent future stagnation. In cholangitis the drainage must be prolonged until the bile was clear. Patients should not be discharged immediately after healing was complete, but should be treated medicinally.

Dr. Robert T. Morris of New York stated that he had caused the closure of a mucous fistula from the gall-bladder where there was still functionating mucous membrane by the injection of Beck's paste. He stated that gallstones did not usually reform after removal because stones were formed in a single toxic attack which might not occur. In cholecystitis with adhesions but without stones he had had brilliant results and preferred to make a diagnosis of simple cholecystitis, admitting that stones might or might not be present. Many of the cases of apparently unsuccessful gall-bladder surgery, he stated, were due to an interstitial pancreatitis which was comparatively common.

Dr. A. J. Ochsner of Chicago stated that in many cases of gall-bladder disease there was associated an intestinal intoxication due to stasis. He advised against operating in the acute attack. In cases of apparent pyloric obtruction associated with gall-bladder disease the stomach symptoms were due to obstruction in the duodenum at the ampulla and subsided after operation on the gall-bladder.

Dr. J. F. Percy of Galesburg, Ill., stated that pancreatic disease had still many points to be worked out in connection with these cases.

Dr. F. L. Hupp of Wheeling, W. Va., reported a case of transposition of the gall-bladder. An incision was made in the usual place, but no gall-bladder was found. The incision was then carried across the median line and the gall-bladder was found on the left side.

A New Technique for Rectopexy for Rectal Prolapse.—Dr. L. L. McArthur of Chicago described a new technique for cases in which the simpler methods were ineffectual. It consisted in an anastomosis between the anterior rectal wall and the fixed end of the sigmoid and colon. The rectum was suspended to the fixed colon.

Dr. Andrews of Chicago stated that the above operation was the one best suited to the condition because it fixed a movable organ, the rectum, to another movable organ, the sigmoid, instead of to the immovable abdominal wall, thereby obviating much pain from traction.

Lingual Thyroids.—Dr. C. H. Mayo of Rochester, Minn., spoke of the development of the thyroid and of thyroglossal cysts. Sublingual or lingual thyroids might be due to delayed descent of the thyroid gland. The aberrant thyroids might be due to traction by the thymus. The condition must be differentiated from simple lingual tumors, malignant tumors, thyroglossal cysts, and lingual tonsils. The diagnosis was usually made at operation. The technique of the operation consisted in firm traction on the tongue by suture. It might be necessary to do a laryngotomy. Hemorrhage was controlled by deep sutures. He reported 50 cases with no fatalities.

Megalocolon.—Dr. W. I. Terry of San Francisco stated that colopexy and coloplasty were of little use as a rule. Resection of the dilated colon was usually best. He reported two cases. Colostomy should be done first. Of 110 cases, 82 recovered and 28 died.

Mr. Howard Stiles of Edinburgh said that this condition was relatively common in children. There would be a history of partial obstruction for two or three weeks, then the discharges would be more copious, with colicky pains. He reported a case of a boy of 8 years in whom he did a permanent colostomy through the vermiform appendix with recovery.

Treatment of Tuberculosis of the Long Bones.—Mr. Howard Stiles of Edinburgh showed many *x*-ray plates of tuberculosis of the shaft of the long bones, both before and after treatment. He treated the cases by subperiostial resection before the periosteum became diseased. In all cases the bone was regenerated.

Gonorrheal Osteoperiostitis of the Diaphysis of the Femur.—Dr. S. H. Watts of Charlottesville, Va., reported a case with history of gonorrhea of several weeks' duration. The thigh was swollen. On operation the periosteum was found thickened and beneath it was a turbid fluid which contained gonococci. The medullary cavity was not opened. The *x*-ray showed the shaft thickened by newly formed periosteal bone. The condition was first reported by Fournier in 1869. Some observers claimed the inflammation was outside the periosteum, but the speaker's cases seemed to be instances of osteoperiostitis.

Tendon and Fascia Transplantation.—Dr. D. D. Lewis of Chicago stated that tendon and fascia could be interchanged because structurally the two tissues were not widely differentiated. Cases were cited in which tendons had been transplanted from one fowl to another and from dog to man. Personal experiments were made on dogs with perfect functional results. The transplants became larger than normal. The fascia lata had been used as a substitute for tendon. Pictures were shown illustrating a case of a boy in whom the tendon of the trapezius was transplanted to the deltoid with the interposition of a piece of fascia lata. The result showed abduction of the arm to about 70°. This abduction had since increased.

Dr. L. W. Ely of Denver cited an instance of transplanting the fascia lata to a defect in the dura mater.

Dr. McKenzie of Oregon asked for instances of fascia being used to fill the gaps in nerves with restoration of function.

Treatment of Joint Tuberculosis.—Dr. Leonard W. Ely of Denver stated that the great variety of methods of treatment of joint tuberculosis showed that the treatment of this disease was unsatisfactory. He formulated the following rules: (1) Treatment should be radical. A few milder synovial forms might recover by conservative treatment, but were likely to recur. As diagnosis was difficult such cases as recovered might have been mistaken diagnoses. Cases treated radically did not recur. (2) Operation should deprive the joint of function. Synovia and red marrow were most susceptible, therefore one should destroy the function since such procedure destroyed these tissues. (3) The operator should avoid secondary infection by removing the drains early. Rule No. 1 presumed that lymphoid cells were not phagocytic but were the most susceptible prey of the bacillus.

Dr. J. B. Murphy of Chicago complimented Mr. Stiles on his results, but his own experience was almost diametrically opposite, since it had been with adults, while Mr. Stiles's had been with children. In children the condition began in the diaphysis, whereas in adults it began in the epiphysis, and the joints were likely, therefore, to be involved. In operating it was not necessary to preserve periosteum, as Mr. Stiles advised. Ambulatory treatment of a diseased joint was a mistake; it should be immobilized.

Dr. S. F. Huntington was not satisfied with the treatmen of hip-joint disease now in vogue. One should tunnel through the subtrochanteric route up to the epiphysis and clean out thoroughly and let it heal, using Beck's paste if necessary. This was different from general surgical principles.

Mr. Stiles said one must remove disease in a synovial membrane. It began in the epiphysis in adults because the nutrient arteries were longer; this was not so in children. It was more common in the elbow in children for the same reason.

Dr. Ely said it was not necessary to remove the synovia because when the function of the joint was destroyed, the synovia disappeared. It was impossible to remove the synovia with the curet, as advised by Dr. Huntington. This method destroyed the nourishment of the cartilage and caused the disease to open into the joint.

Treatment of Localized Appendicular Abscess.—Dr. Van Buren Knott of Sioux City, Iowa, advocated always removing the appendix in localized abscess. He made his incision through the right rectus muscle, walled off the general cavity and separated all adhesions, thereby opening all pockets of pus and removing the appendix. He did not fear spreading the infection because a localized peritonitis could be so well controlled by the Fowler position.

Dr. Huntington of San Francisco did not agree with Dr. Knott. In certain cases he did not remove the appendix at the primary operation but merely drained.

Dr. A. J. Ochsner of Chicago said he removed the appendix in nearly all cases, but when in doubt as to the recovery of the patient he merely drained and left the wound entirely open. His patients were kept on liquids until the appendix was removed.

Dr. Knott, in closing, stated that by removing the appendix in every case the mortality was reduced from 8 per cent. to 1 per cent.

Thursday, June 29—Third Day.

Spinal Fractures.—Dr. A. F. Jonas of Omaha said that the osseous lesion was no index to the extent of cord destruction. Exploratory laminectomy should be done immediately, as near as possible to the seat of the fracture. All motion and jarring, as in transportation, should be avoided lest the injury be increased. Delays were dangerous, as degeneration might ensue. Dr. Jonas cited several cases illustrating these points.

Dr. H. W. Howard of Louisiana emphasized the importance of early operation. He stated that the best results followed cases of compression only, but that regeneration of the cord might occur. He advised exploratory operation with opening of the dura. He presented a pa-

tient with a history of fracture of the 5th and 6th cervical vertebrae, with fragments of broken bodies projecting into the cord. The accident occurred in 1904. Paralysis, bedsores and loss of control of the asphincters followed. Laminectomy was performed April 15, 1911. The dura was found adherent. The adhesions were broken up and projections of the bodies of the vertebrae chiseled off. The patient now had control of the sphincters, was able to sit up and move his arms and to some extent his legs.

Dr. STILLMAN of San Francisco stated that in his experience no improvement followed operation. Hope of regeneration of cord was practically nil. Operations had, however, done no harm and the patients recovered from operation.

Dr. THOMAS of Los Angeles stated that his results had been the same as those of Dr. Stillman. The cord never regenerated. Cases that were relieved, he believed, were due to hemorrhage. He continued to operate, but believed the outlook was hopeless.

Dr. STRONG of San Bernardino complimented Dr. Jonas on his results. He reported four cases, one of which recovered, the other three dying of septicemia. The successful case had a fracture of the lower dorsal vertebrae with complete division of the cord. The cord was united by sutures, care being taken to preserve the posterior root ganglia. Recovery took place to the extent that the patient could now use crutches.

Dr. HARVEY CUSHING of Baltimore advised a study of the case by a neurologist before operation, so that the lesion might be more accurately located. He divided such injuries into three groups: viz., (1) Hematomylia. These cases recovered without operation which might do harm. (2) Total transverse lesion of cord. (This and the above condition might be diagnosticated.) Operation should not be done, as it was hopeless. (3) Other cases in which exploratory operation was advisable and might do good. He stated that in these cases, suprapubic cystostomy and drainage should be done to avoid bladder and kidney infection and bed sores from dribbling of urine. He emphasized the delicacy of the operation of laminectomy. The dura should be opened without injuring the arachnoid. The periosteum should be preserved.

Dr. JONAS, in closing, stated that help of the neurologist is frequently unobtainable. The operation did no harm. All his patients with complete transverse lesions died. The cord was difficult to suture. His cases of hemorrhage into the cord itself died.

Several Unusual Joint Cases: Their Treatment and the Results.—Dr. GEO. W. GUTHRIE of Wilkes-Barre, Pa., reported cases as follows: (1) Opening of elbow joint with separation of olecranon; nailed; result perfect. (2) Compound supracondyloid fracture of the elbow. Parts put into opposition and arm flexed strongly and secured to side by adhesive plaster. Passive motion at end of fourth week. Complete functional and cosmetic result. (3) Injury to tibia in which three-quarters of an inch of the upper extremity were severed by a hatchet opening knee joint. Fragment nailed. Parts sutured with catgut and plaster cast applied. Nails cut at end of second week. Perfect functional result. (4) Ankylosis of both knees in semiflexed position. Arthrodesis performed. L. knee now fixed with 10° flexion and R. knee had 10° motion. Patient walked upright, but cosmetic result was bad. (5) Compound fracture and dislocation of wrist: apposition secured and maintained by nails and cast. The result was perfect.

Dr. SHERMAN of San Francisco referred to Mr. Stiles' paper of yesterday. Hip-joint tuberculosis originated in the epiphysis when bone was growing. In the hip and elbow it was intraarticular and in other joints extraarticular. This could be explained only by Dr. Ely's hypothesis. Hyperplastic periostitis was rare. There was a tendency to early invasion of joint, especially hip. Operation was becoming more popular. Entire recovery without operation was not likely to occur.

Dr. HUNKIN of San Francisco did not believe in the efficiency of destruction of function of the joint in the treatment of tuberculosis nor did he believe that tuberculosis was found only in red bone marrow and synovia, as Dr. Ely had suggested. He approved of Mr. Stiles' treatment.

Thirty Years' Experience with Fractures at Minnequa Hospital—Treatment and Results.—Dr. R. W. CORWIN of Pueblo, Colo., suggested plaster of Paris casts for fractures before arrival at hospital. The top might be cut off and be refastened into place by straps. Scalp wounds and contusions should be explored thoroughly. In cases of fractures of the spine one should immobilize at once. When in doubt he explored, but not if the cord was completely severed, as such cases were hopeless. Early operation was best. Careful after-treatment was necessary. More of his patients were living after non-operative treatment. One should avoid plating of bone when there was insufficient covering of soft parts. Early plating was best as not so likely to become loose. It was imperative to use non-irritative material for plates. The first dressing of a compound fracture was important. One should not close without drainage.

Pinning Fractures Through a Cannula with the Aid of the Fluoroscopic Screen.—Dr. ROBERT T. MORRIS of New York in this paper said the trocar and cannula should be carried to the site of the fracture and by the aid of the fluoroscope the tractor was thus withdrawn and followed by a drill, and the drill followed by a silver pin which was driven into place by a tamper. Splints were applied in addition. It might be necessary to use extension before trying this method. Delay was also of aid in inducing leucocytosis.

Clinical and Experimental Work to Determine the Value of Lane's Plates in Treatment of Fractures.—Drs. WILLIAM BARTLETT and W. R. HEWITT of St. Louis read this paper. Clean screws would always hold in bone at least 71 days. In experiments on dogs he found that an average pull of 95 pounds were required to dislodge a ½-inch screw from dog bone with two mm. cortex. If the screw was infected only 41 pounds were required. Absorption of bone cortex and thickening of periosteum occurred around infected screws. Clean screws showed no change even microscopically. Clean screws were harder to withdraw after 60 days than at first. Human bones were harder, with thicker cortex, and longer screws were used and more screws. Splints should also be applied in these cases. The authors cited cases of compound fractures in man in which plates were applied. The mortality was 3.84 per cent. He discussed the advisability of open or closed method. The open method was necessary if good apposition could not be obtained otherwise: if the patient was in good condition an operation was risky. X-ray pictures were not always reliable. He illustrated the paper with stereoscopic views, showing (1) a winch to make traction to secure apposition of ends; (2) embracers to line up the fragments before releasing the winch; (3) drill press and other instruments for applying plates; (4) screw threaded all the way to the head; (5) plates.

Open Treatment of Fractures.—Dr. EDWARD MARTIN of Philadelphia emphasized the importance of early operation. He exhibited apparatus for securing apposition of the ends of the bone. Plates should be stronger. He inserted the screws as far as the medulla and not nearer than ¼ inch of the fracture. External splints were necessary. The less foreign matter there was in the wound the better. He showed stereoscopic pictures on the screen illustrating cases and results.

Dr. BROWN of Santa Barbara exhibited a double flexible steel clamp fitting snugly to the bone for the treatment

of these cases. It was adjusted by screw adjuster and projected only 3-32 inch above the surface of the bone when applied.

Dr. Pearse of Kansas City advised early operation, as screws held better. He emphasized the value of cleanliness. Iodine did not give enough antisepsis. The usual plates were too weak. He recommended a double T-plate which was folded around the ends of the fragments and screwed with six screws. External splints were applied. He advised proving out Lane's technique before trying to improve it.

Dr. Lund of Boston commended Lane's plates and similar methods. It was necessary to study Lane's technique. He commended traction apparatus. A case was illustrated with the stereoscope.

Dr. Wills of Los Angeles recommended a double plate with through and through screws. He exhibited a case with perfect functional result.

Dr. Fuller of Chicago advised non-operative treatment if possible. He commended Drs. Bartlett and Martin, but thought traction apparatus could be dispensed with. It might have a place, however. He emphasized the danger of infection and therefore was afraid of instruments which had been exhibited because of trauma. After operation he placed the limb in splints and suspended it as high as possible.

Dr. Mitchell of Washington suggested local anesthesia if unnecessary to wound the medulla. Otherwise one should use nitrous oxide.

Dr. Rogers of New York advised a complete set of Lane's instruments so that the fringes might be kept out of the wound and infection avoided.

Dr. Warner of Ohio, after plating or wiring, treated just as the closed method to prevent traction of the muscles. Splints should be opened to expose the wound.

A Theory for the Pathological Physiology Involved in Diseases of the Thyroid Gland and Its Therapeutic Application.—Dr. John Rogers of New York said that thyroid functions were only to produce secretion. They had to do with oxidation, carbohydrate and nitrogen metabolism. The thyroid was normally like a sponge. In Graves' disease it was more solid and contained less iodine. The injection of nucleoproteid produced tachycardria, nervous tremor, sense of heat and unrest. It stimulated the sympathetic system. Globulin caused in normal man a feeling of well-being. It was a diaphoretic, diuretic, chalogogue, and a tonic. It was almost a specific for gout in its early forms. In Graves' disease resulting from fatigue the thyroid was enlarged to help out the organs in activating secretion. There was an excess of nucleoproteid and a deficiency of globulin in the fatigued gland. The normal human thyroid histologically contained comparatively a small amount of epithelium and a large amount of calloid; when pulpified and suspended in salt solution it yielded a small nucleoproteid precipitate and a large globulin precipitate. The thyroid of acute toxic Graves' disease showed the reverse of both conditions. The two substances could not be entirely separated but possessed distinct physiological properties. The clinical evidence was overwhelming that fatigue was the exciting cause of Graves' disease. The clinical evidence in untreated patients and the persistence of certain symptoms after thyroidectomy indicated participation of other organs than the thyroid in the original fatigue. The therapeutic problem did not involve rest alone. The treatment was rest and iodine feeding or rest supplemented by organotherapy, as indicated.

Factors Influencing the Safety of Surgical Treatment for Goiter.—Dr. Martin B. Tinker of Ithaca, N. Y., said that the surgical treatment had stood the test better than the medical. The importance of thorough physical examination was emphasized. The internist, surgeon, and laboratory man should compare findings in any given case. As regards anesthesia, various forms were used, but some cases required local anesthesia. If general anesthesia was employed the patient has to be only partly under its influence. Angulation and compression of the trachea might cause death. Rise in blood pressure caused profuse hemorrhage. The speaker preferred local anesthesia. Nitrous oxide was the safest general anesthetic, and was best used in conjunction with local anesthesia. The wound healing was important, as there was little resistance to infection. He did not use iodine, as too much was in circulation already. Harrington's solution was discarded. Skilled assistance was necessary. Team work was important in operating. The results of the speaker's work in this field were 167 operations without loss of life. The risks were slight and mostly accidental.

Dr. Ochsner of Chicago said that Dr. Rogers' work brought out the meaning of hyperthyroidism. Heretofore hygienic and dietetic measures and ligation were the main principles in the treatment. Later removal of part of the secreting gland was considered the proper procedure. Local anesthesia was advisable, since the patient was awake, and no traumatism was used. The speaker used morphine and atropine before operation.

Dr. Rogers emphasized the worthlessness of commercial thyroid. He did not use ether, but used nitrous oxide and local anesthesia.

Dr. Tinker said that local anesthesia in the hands of those with surgical experience should be tried and compared with general anesthesia.

Lymphangiomata of the Omentum and Omental Cysts.—Dr. Stanley Stillman of San Francisco said that cysts had their origin in the lymph vessels of the omentum. He reported cases. There were cyst cavities separated only by a thin wall from the blood vessels, which were dilated over them. The etiology showed these cysts were either lymph spaces dilated, or endotheliomata or congenital structures.

Tumors of the Mesentery.—Dr. H. A. Royster of Raleigh, N. C., said that these tumors were rare, but important. Text books gave an inadequate description of these structures. The difficulty in treatment was due to the fact that they were partly of embryological development. They were mesoblastic in type, and the cystic tumors were more common. As regards their etiology, many were congenital. Trauma also played a rôle. The speaker cited a case where trauma lighted up previously existing ones. He reported four personal cases: (1) A dermoid cyst of the mesocolon. The appendix was adherent to it. This was rare, and of congenital origin. (2) Sarcoma of sigmoid mesocolon. The patient died from cachexia, after the operation. (3) Sarcoma of the mesocolon. The diagnosis was impossible. Exploratory operation was necessary. Pain, constipation, nausea, and vomiting indicated intestinal occlusion. The tumor was characterized by free mobility, especially from side to side. It was separable from the solid viscera. There was resonance above and below, and colicky pain in the region of the umbilicus.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Wednesday, June 28—Second Day.

DR. H. G. WETHERILL OF DENVER IN THE CHAIR.

The Value of Pyelography.—Dr. W. F. Braasch of Rochester, Minn., read this paper, in which he discussed the limitations of cystoscopy and advocated the injection of an opaque solution into the ureters and pelvis of the kidney, with immediate radiography. The method was not dangerous and had great value in demonstrating the extent and character of renal and ureteral dilatations, calculi, deformities, and congenital anomalies. Most radiographs

required additional data to be of value, and these were obtained by pyelography. The paper was concluded with a demonstration of radiographs obtained by this method, showing cases of dilatation of the ureter and pelvis of the kidney, renal calculi, renal tuberculosis, and some congenital anomalies.

Dr. H. G. Wetherill of Denver suggested that an outline of technique would be of interest to the section.

Dr. Braasch used a freshly prepared 10 per cent. solution of collargol, usually 5 cubic centimeters being sufficient. Pain was usually due to overdistention of the ureter and pelvis of the kidney. A radiograph was taken immediately after injection, usually a 5 or 6 second exposure being made.

Dr. E. E. Montgomery of Philadelphia said that this opened up a new field in the diagnosis and treatment of diseases of the kidney and ureter and greatly reduced the liability of making mistakes in diagnosis and subsequent operation.

Dr. Wetherill also emphasized the importance of the paper and expressed great appreciation to Dr. Braasch for his contribution and demonstration of slides.

Postoperative Urinary Retention and Cystitis.—Drs. J. H. Jacobson and J. G. Keller of Toledo, Ohio, presented this paper, which was read by Dr. Jacobson. They said that postoperative cystitis was more common than would be supposed, often spoiling an otherwise good surgical result. The cystitis was not always due to the catheter, since it was often found in cases where no catheter had been used, but the catheter was nevertheless the most important single factor on account of the injuries inflicted by it on the mucosa. The most common predisposing causes were retention, trauma, and congestion. The most commonly found microorganism was the colon bacillus, which was found in the lower urethra after the recumbent position had been assumed for a few days. Good results had been obtained by using "Frank's bladder laxative," consisting of a 2 per cent. solution of boroglyceride, which irritated the bladder mucosa sufficiently to cause voluntary micturition. From ten to fifteen cubic centimeters of this solution were injected with the urethral syringe, since this instrument did not cause the trauma which a catheter would. Following the paper was a demonstration of slides made by Dr. Keller, showing the pathological appearance of the bladder after various operations.

Pericystitis.—Dr. M. L. Harris of Chicago read this paper, in which he stated that the causes of pericystitis were either direct injury or extension of inflammation from adjacent organs. He cited a case in which a pus-tube was found lying between the uterus and the bladder and draining into the latter. The pus then passed by an extraperitoneal tract down the thigh. These bladder lesions were mostly postoperative, usually from lack of care. The bladder was often involved in suturing other parts. The author cited a case in which part of the bladder was caught under the round ligament where it was shortened, and he urged greater care in pelvic work.

Dr. E. E. Montgomery of Philadelphia said that in the earlier work lack of care caused much suffering from cystitis. Pericystitis was frequent in plevic inflammations of various kinds, causing severe adhesions.

Dr. W. R. P. Clark of San Francisco found that he could avoid adhesions by allowing the patients to change their position in bed continually.

Dr. W. B. Dorsett used great care in hysterectomies to hold the stump in its normal position by the use of the broad and round ligaments so as not to distort the relations of the bladder to other pelvic viscera.

Dr. A. E. Benjamin of Minneapolis said that patients often complained that the resulting cystitis was worse than the original operation. Improper technique was often the cause. He cited cases in which the appendix was found adherent to the bladder, giving symptoms of cystitis rather than those of appendicitis. He had similarly found cystitis following adhesions of the tubes or sigmoid.

Dr. J. B. Frankenheimer of San Francisco said that the horizontal position in bed made it difficult for patients to urinate. He advocated training patients to use the bedpan before operations or deliveries.

Dr. Jacobson, in closing, urged the cystoscopic examinations as a control, so that the operator might estimate the trauma following the operation, even if there were no symptoms of cystitis.

Dr. Harris, in closing, urged great care, especially in round ligament work. It was easy to draw part of the bladder into the wound in which the operator anchored the broad ligament. He urged the making of incisions sufficiently large to avoid this complication.

Chairman's Address: Retrospection and Introspection; Our Opportunities and Obligations.—Dr. H. G. Wetherill of Denver began his address by reviewing the improvements in gynecology and obstetrics in the last decade. Puerperal sepsis had decreased with an increase in asepsis on the part of the general practitioner. He made a plea for conscientious surgical efforts; this necessitated better training and a higher standard of personal integrity in young surgeons. He spoke at length of the evils of the open hospital and suggested a board of physicians to control the privileges of the hospital, investigating the fitness of men who desired to do the major work. Hospitals, especially religious ones, should not allow professional abortionists to operate in them. Commercialism allowed hospitals to do these things, but we could do much by not tolerating these men in our societies or meeting them on the rostrum or in consultation. He suggested that the name of the section be changed to Obstetrics, Gynecology, and Abdominal Surgery. He argued that we could not always be sure of the diagnosis and therefore must be prepared in any laparotomy to do anything in the abdomen or pelvis.

A vote of thanks was tendered the retiring Chairman, Dr. Wetherill, by the Section. Dr. Wetherill moved that the question of change of name be referred to a committee, to report at a later time. The motion was seconded and carried.

Pathological Kinks and Adhesions in the Terminal Portions of the Ileum.—Dr. Franklin H. Martin of Chicago began by stating that the duodenum, appendix, sigmoid, and end of the ileum were most likely to be distorted. He said that Lane's kink accounted for many cases of uncured appendicitis and described the technique of operation. After operation the patient should be kept in bed, adjusted to a fifteen degree Trendelenburg position, while forced feeding should be practised. Gymnastic exercises were resorted to in order to strengthen the abdominal muscles. Belts were applied at once and were worn for some time. He finished his paper by showing slides illustrating his various methods of treatment.

Dr. W. B. Dorsett of St. Louis instructed his patients after laparotomies to move about freely to prevent the reunion of newly separated adhesions.

Dr. Arthur E. Hertzler of Kansas City, Mo., said that this condition was described fifty years ago under the name of sclerosis mesenterica. A fibrinous exudate formed between layers of the mesentery; when it became organized as fibrous tissue, it contracted and formed the shortened mesentery. He suggested that the operator caused this inflammation of the mesentery by trauma when he did an appendectomy, and so produced the resulting kink.

Dr. Hershey of Detroit did not believe in stitching the mesentery of the cecum to the parietal peritoneum. He simply shortened the mesentry by making a longitudinal incision and swing up transversely.

Dr. Chas. E. Barnett of Fort Wayne asked if the Tren-

delenburg position had interfered with the function of the kidneys. He did not believe that the introduction of oil into the peritoneal cavity prevented adhesions.

Dr. MARTIN, in closing, repeated the reasons why his method most closely imitated nature.

Personal Observations in the Treatment of 140 Consecutive Cases of Uterine Myoma.—Dr. WALTER B. DORSETT of St. Louis began this paper by giving the indications for the surgical treatment of myomata. He always urged operation on account of danger of malignant changes. Statistics founded on his cases showed a predominance of this condition between 40 and 50 years in nullipara. Hysterectomy was the operation of choice in these cases. He advocated ligation of large vessels as usual, with the addition of secondary stitches in adjacent tissues to prevent retraction and secondary hemorrhage. He demonstrated slides showing his technique.

Dr. GOLDSPOHN of Chicago spoke of the necessity of leaving at least part of one ovary to prevent premature menopause. He believed that the tubes should always be removed, as well as the cervix on account of danger of malignancy.

Dr. J. O. POLAK of Brooklyn reported a series of 132 cases. He believed that myomectomy tended to incite a recurrence of tumors. When he left the ovary he also left the tube in order to preserve the circulation. He urged firm fixation of the stump to prevent prolapse of the vagina. In high amputations he removed the mucosa of the cervix.

Dr. DORSETT, in closing, said that in operations for fibroids he always removed the ovaries in women at the menopause especially when they were diseased. He left the cervix unless there was a suspicion of malignancy.

Delayed Chloroform Toxemia.—Mr. HAROLD STILES of Edinburgh spoke of the pioneer work done by Leonard Guthrie of London, who wrote on this subject in the early 80's. He described many typical cases, concluding that the condition was more common in septic conditions, consequently many deaths attributed to septicemia were found to be due to chloroform narcosis. He believed that the brilliant results in septic appendicitis operations ten years ago in America were due to the use of ether, chloroform at that time being used in Great Britain with poor results. An extremely rapid fatty degeneration of the liver was followed by a degeneration of the mucosa of the stomach, bowels, kidneys, and meninges.

Dr. GRANT of Denver asked what evidence there was other than clinical to prove that chloroform had caused the reported deaths.

Mr. STILES cited the experiments on animals, and said that enough cases had come to autopsy to prove the point. He especially cautioned against the use of chloroform in children with acetonemia, in whom fatty changes already existed.

The Surgical Treatment of Ptosis of Abdominal Organs by the Hammock Operation.—Dr. R. C. COFFEY of Portland, Ore., read this paper. He discussed the anatomy and embryology of the intestinal tract. In Glenard's disease we had a change in connective tissue causing sagging of all the viscera with no kinks. In surgical ptosis we had a relaxation between definite fixed points in the gastrointestinal tract, forming kinks and causing stasis, with resulting symptoms. He said that we should not operate for anatomical displacement unless symptoms were present. Short-circuiting the bowel was often ineffectual, but the hammock operation had proven successful in all of his cases in which it was indicated. In extreme ptosis of the stomach and liver these organs must first be anchored, and then the shape of the abdomen must be changed by operation. The hammock operation consisted in suturing the gastrocolic ligament to the peritoneum of the anterior abdominal wall.

Dr. A. E. BENJAMIN of Minneapolis stated that he kept his patients in the Trendelenburg position for from four to six weeks before operation in order to accustom the abdomen to the higher position of the viscera. He used the x-ray to locate accurately the displaced organs.

Dr. GOLDSPOHN of Chicago emphasized the necessity of changing the shape of the abdominal walls, since he believed that their relaxation played a more important part in the support of visceral organs than did that of the mesentery itself.

Dr. COFFEE, in closing, said that his patients had been in bed from six months to two years before operation.

Thursday, June 29—Third Day.

Election of Officers.—The following officers were elected: *Chairman*, Dr. C. Jeff Miller of New Orleans; *Vice-Chairman*, Dr. B. Somers of San Francisco; *Secretary*, Dr. F. F. Simpson, Pittsburg, Penn.; *Executive Committee, Dr. H. G. Wetherill* of Denver, Col.

Uterovaginal Prolapse in Elderly Women.—Dr. GEORGE B. SOMERS of San Francisco commonly found this condition in elderly women who had borne many children. He discussed the relative value of total hysterectomy and the interposition of the uterus between the anterior vaginal wall and the bladder. He favored the latter operation, since it prevented the recurrence of cystocele better than any other method of which he knew. It was a comparatively easy and safe operation. He repaired the perineum before the patient left the table, since a good perineum was very essential in all these cases, which as a rule had been badly lacerated.

Dr. PHILANDER HARRIS of New Jersey opened the discussion by saying that he did not believe in the removal of the uterus for slight prolapse or cystocele, since in most cases a less radical measure sufficed. He said his own operation of fixing the uterus into the abdominal wall was not planned to cure cystocele.

Dr. S. M. D. CLARK of New Orleans had done the Watkins operation, but had a recurrence of the prolapse. He then brought the anterior vaginal wall up to the anterior abdominal wall and fastened it there, since which time there had been no recurrence of the trouble.

Dr. L. G. BOWERS of Dayton, Ohio, recommended shortening the anterior vaginal wall to give added strength to the fascia supporting the base of the bladder.

Dr. FRANK TOPPING of San Francisco said that, after all, time was the test of the reliability of an operation. To the clinics came many women who had been repeatedly operated upon, but with several recurrences. He found that the majority of plastic operations failed and relapses occurred.

Dr. SOMERS, in closing, said that he favored saving the uterus whenever possible, because it was a better support for the bladder than anything else so far tried. He did not believe in shortening the anterior vaginal wall, because it did not keep the cervix high enough, and might cause its presentation at the vaginal outlet.

Special Considerations in the Treatment of the Female Pelvic Organs.—Dr. HENRY PARKER NEUMAN of San Diego, in this paper, made a strong plea against the useless removal of the pelvic organs in women. He said the province of gynecological surgery was to preserve all possible structures, and the organs should never be removed en masse, except as a life-saving measure, as in cancer or hemorrhage. He favored shortening the round ligaments at the internal ring, since there were no adhesions at this point, and pulling on the ligaments caused very little or no trauma. He emphasized the fact that early, skilful plastic gynecological surgery was very essential, since it tended to prevent subsequent more serious conditions.

Dr. WHITE of Chicago said that pelvic prolapse was not a pelvic hernia, and should not be called that. He said the pain after herniotomy was due to the implication of

one of the two large nerves in that region, and could be avoided by first isolating these nerves, and so not including them in the sutures.

The Proper Operative Period and Methods of Drainage in Pelvic Infections.—Dr. L. G. Bowers of Dayton, Ohio, read a paper on this subject, illustrating his points with pictures. He believed that an early radical operation prevented much useless office treatment. In the case of a chronic pyosalpinx he drained through the cul-de-sac with a large gauze drain which was removed on the fifth day. In the gonorrheal infections he used palliative treatment during the acute stage, followed by a radical operation a little later.

The Employment in Abdominal Surgery of Two Rubber Drainage Tubes with a Single Stab Wound Exit, Instead of a Single Tube with Exit by Incision or Otherwise Wherever Drainage Is Desired.—Dr. Philander Harris of New Jersey said he used two sets of double rubber drainage tubes, with a wick of gauze, one set of which tubes he placed in the infrafascial, and the other in the suprafascial space, for the purpose of draining the blood and serum which collected in nearly all cases. In intra-abdominal drainage he also used double tubes which had their exit in a stab wound several inches from the incision. He showed pictures of the tubes in place, and also had tubes passed around among the audience.

Dr. Frank T. Andrews of Chicago did not believe in draining every abdominal incision. He said if we prevented mutilation of tissue infection would rarely occur. He used strands of silk-worm gut in draining the abdominal cavity.

Dr. Bowers, in closing, thought we needed no abdominal wall drainage if we were careful to obliterate all dead space and cause as little trauma as possible.

Dr. Harris, in closing, said that in a series of over 2600 cases less than 50 showed no oozing of serum or blood. Therefore intramural drainage was justifiable. He recommended a trial of his method of draining.

Postoperative Complications.—Dr. F. F. Simpson of Pittsburg said there were two things we could do; either prevent these complications or else recognize them early and give them intelligent treatment. He showed some of his charts in the postoperative cases. An exact hourly record was kept of temperature, pulse, respiration, urination, emesis and abdominal distention. Thus one could study each function separately and then study their relations one to the other. By so donig one could recognize complications very early and by the early treatment thus made possible lower the mortality.

Two Years' Experience with Vaccines in Obstetrical and Gynecological Infections.—Dr. John O. Polak of Brooklyn, New York, read this paper. He had used the vaccines in a large number of cases, particularly of postabortive and peurperal infection. Blood counts were taken before and after vaccination and blood cultures of the organisms were obtained whenever possible. Patients reacted to injections by a feeling of well-being even before the temperature and pulse showed any change. Small doses were given at first and were repeated as soon as blood examination showed an indication. His results were better with stock vaccines than with autogenous ones. He reported several series of cases according to groups of infections. The results were excellent, especially in thrombophlebitis, chronic mastitis, and pyelitis due to the colon bacillus.

Dr. Frank T. Andrews of Chicago believed that the vaccine treatment in the acute cases was a dangerous method and wished to know how much of a reaction there was in the local lesion.

Dr. Polak, in closing, said that the vaccines were good in the very early acute cases, but the late acute cases were not improved. In septic abortions the usual operative procedures were instituted and the patients were given a dose of mixed vaccine before they left the table. There was no local reaction at the site of the lesion after the use of vaccines.

Primary Carcinoma of the Fallopian Tube.—Dr. E. E. Montgomery of Philadelphia presented this communication. The cervix and ovaries were very liable to cancer on account of injury and constant physical changes, but it was rather rare to find a primary carcinoma of the tube. It was usually associated with an ovarian cyst. Carcinoma of the tube presented no characteristic symptoms. It was usually preceded by salpingitis, and even if removed by operation frequently did not look pathological, and its nature was diagnosed only by microscopic examination. His case was diagnosed as one of retroversion and prolapsed ovary. Operation showed a mass on the end of one tube, which was removed and shown to be a carcinoma. Subsequently a hysterectomy was performed, with recovery and no recurrence. The opposite tube was tuberculous and there was a myoma of the uterus.

Change of Name.—The recommendation made by the Chairman, Dr. H. G. Wetherill, in his annual address, that the name of the section be changed to "Section on Obstetrics, Gynecology and Abdominal Surgery," was approved and the section ordered it referred to the House of Delegates.

Prolapse of the Gravid Uterus.—Dr. Palmer Findlay of Omaha read this paper. He said that a number of cases had been reported of complete prolapse at full term, but few were other than elongation of the cervix. It was most rare in primiparæ. The uterus might be prolapsed before labor or there might be an acute prolapse in labor. Pregnancy was unlikely in an already prolapsed uterus. There might be spontaneous reposition, but abortion more likely and postabortive and puerperal infections were common. Labor was lengthened and rupture was likely unless the cervix was incised. His case was in a multipara at three months. The entire uterus could be delivered by traction. He emptied the uterus, did an amputation of the cervix and an anterior colporrhaphy and perineorrhaphy. Some uteri could be replaced in the knee-chest position and retained with pessaries. If the head was engaged at or near term there should be no attempt at replacement, but bilateral incisions and version or forceps were preferable. In several cases the organ had been replaced, the cervix amputated and the pelvic floor repaired without interrupting pregnancy. Abnormal presentations were frequent in these cases.

Dr. Arthur E. Hertzler of Kansas City reported a case in a primipara, in which the uterus was replaced and retained by posture in bed, carried to term, with normal delivery. Later the cervix was amputated and the perineum built up.

Dr. W. B. Dorsett of St. Louis related a similar case in which the woman, after being kept in bed for six months, aborted. She was subsequently operated upon, perieorrhaphy, anterior colporrhaphy and Gilliam operation being performed.

Dr. Frank T. Andrews of Chicago had done an extavaginal hysterectomy in a case which had formerly had a normal delivery after the uterus had been replaced and the patient was kept in bed.

Pernicious Vomiting of Pregnancy.—Dr. C. B. Ingraham of Denver presented this paper. He classified these cases as of reflex, neurotic and toxic types. In his case an abortion had previously been performed for pernicious vomiting. In her second pregnancy a dermoid cyst was removed, but the vomiting continued until lessened by suggestion, the neurotic element being marked. He believed that a prominent etiological factor in these cases was an autotoxemia, the cause of which might be one or more of such factors as toxin of placental origin, intestinal

putrefaction, and changes in the thyroid and parathyroid secretion. Starvation might have some influence in determining the nitrogen contest of the urine, but did not explain all of the symptoms. Increase in ammonia was a danger signal, but not in itself an indication to terminate pregnancy. The large amount of ammonia was due to decreased urea formation on the part of the liver, and evidence of impaired hepatic function could be noted in urinary findings after saccharine diet. He mentioned the liver findings after the use of chloroform, which made this drug contraindicated in toxemias.

Dr. JOHN O. POLAK of Brooklyn said that he did not believe there was ever a true neurotic type. Reflex conditions might have an influence. Care should be taken not to let these cases go too far before aborting them.

Dr. T. M. BURNS of Denver had seen these cases cured by suggestion.

Dr. C. JEFF MILLER of New Orleans believed that some of these cases were helped by gastric lavage.

Dr. FRANK T. ANDREWS of Chicago cautioned against the use of bromides on account of the danger of acne of the amnion and subsequent congenital deformities due to amiotic adhesions.

Dr. G. R. NEFF of Farmington, Iowa, suggested the use of salted almonds and peanuts in some cases, in which other food could not be retained.

Dr. CHAS. T. PALMER of Los Angeles had seen thinly sliced, well-browned bacon retained by patients in extremis.

Dr. INGRAHAM, in closing, emphasized the neurotic element as an important factor in some cases.

A Study of Cholecystitis and Cholelithiasis in Their Relation to Pregnancy.—Dr. LAURA H. BRANSON of Iowa City, Iowa, in her communication discussed the character of infections of the gall-bladder. Human bile was not sterile, though animal bile was usually so. Bacteria might exist for long periods in the gall-bladder, in dormant condition. Authorities differed greatly on the true function of the gall-bladder. With progress in the development of symptomatology we had reached a point where accurate diagnosis was usually possible. Ninety per cent. of patients having gallstones had borne children and 90 per cent. of these patients dated the beginning of gallstone disease to some particular pregnancy. Metabolism in pregnancy was greatly altered, in the latter months elimination being decreased. Bile remained sterile only when its flow was unimpeded and pressure on the liver by the gravid uterus impeded the flow sufficiently to account for infections and disease. Cardiovascular changes were common with cholelithiasis. It was possible to operate for the gallstones even in the presence of these changes. The author presented three typical histories and concluded that physiological pregnancy furnished sufficient etiological factor, and pathological pregnancy furnished the etiological agent direct.

Dr. PALMER FINDLAY of Omaha wished to have explained the attacks in early pregnancy, and not in later months.

Dr. BRANSON in closing said that in the later months of pregnancy there was a physiological adjustment which overcame the etiological factors mentioned.

Cesarean Section: Indications and Technique—Report of Eighteen Cases.—Dr. T. MITCHELL BURNS of Denver, in his paper advised section in eclampsia with rigid cervix, central placenta previa, certain cases of ablatio placentæ, persistent nonengagement of the head, and death of the mother. He said that infected cases did as well as after high forceps. He advised the Porro operation in cases complicated with carcinoma, sarcoma, and certain fibromata. The usual preparation was made for laparotomy, an 8-inch incision was made in the left rectus, one-third inch above the umbilicus; a 6-inch incision was made in the uterus, cutting through or displacing the placenta and delivering the child, followed by a small idoform gauze pack of the uterus, which was closed with interrupted sutures; this constituted his technique. The omentum was placed behind the uterus in order to wall off the peritoneal cavity. In clean cases the uterus was not removed from the abdomen. His cases had a very low mortality and little morbidity.

Dr. JOHN O. POLAK of Brooklyn said that the section was performed in the interests of the child, which he did not think were great in ablatic placentæ and eclampsia on account of the high fetal mortality. He did not eventrate the uterus and urged the use of light oxygen and other anesthesia to prevent fetal asphyxia.

Dr. BURNS, in closing, said that he performed the operation early in eclampsia when the fetal mortality was not high.

SECTION ON DISEASES OF CHILDREN.

Wednesday, June 28—Second Day.

The Influence of Summer Heat in the Production of Gastrointestinal Diseases of Infants.—Dr. I. A. ABT of Illinois in reading this paper covered carefully the literature of the subject and stated that bacteriological and dietetic causes could not wholly account for the disorder. He stated that in his experience there were fully seven times as many bottle-fed infants affected as breast-fed. In conclusion he expressed the conviction that temperature was the most important factor, that it should be lowered as much as possible by frequent bathing and light clothing, that home hygiene should be regulated, and the importance of keeping the child out of doors emphasized.

Dr. FOSS of Arizona said that in his State, where the summer weather was very warm and the wet bulb was never below 72 and frequently as high as 115, summer diseases in children were almsot unknown, so that he considered that the question of heat should be eliminated.

Dr. MAGEE of California stated that while in California the humidity was much greater than Arizona, yet in his practice he had practically no summer diarrhea. He said that he did sometimes have gastrointestinal diseases due to improper feeding, but not the summer diarrhea as seen in the East. He believed, therefore, that electrical conditions must enter into the problem.

Dr. WEEMS of Texas thought that the apparent discrepancy in these statements was to be accounted for by humidity, that where it was dry the moisture of the child's body lowered its temperature, while the humidity of the East prevented this natural protection against summer diseases.

Dr. GENGENBACH of Colorado agreed with Dr. Abt that heat did play an important role in these conditions. He said that although in Denver they did not have the excessive heat experienced in the East, still he could see a marked disturbance in the babies under his care during a hot spell. He thought that the question of food could not be entirely left out of consideration, for he had noticed that when he lessened the amount of cream fed to his patients during the disease he had had good results.

Dr. ALLEN of California stated that from her six years' work with the Chicago Children's Home and Aid Society she had observed marked difficulty in keeping the mortality rate low during the excessive heat.

Dr. BUTTERWORTH of Louisiana presented and explained a mortality chart made from statistics gathered in New Orleans and said that, from a study of this, he had come to the conclusion that we must not lay too much stress upon heat.

Dr. ROYSTER of Virginia had noted that in his section of the country where the weather was excessive for a week or two in May and was followed by a cool spell the

patients got better during the cool weather, then in June the highest mortality of the year was reached. He also had remarked that he had no consultations from country practitioners, showing that out-of-door conditions did have a beneficial effect in spite of the fact that the thermometer registered the same. Children practically prostrated in the morning, when taken to the seaside to spend the day come back markedly improved. In his experience the character of the discharges in these cases changed from year to year, watery one year, and bloody and mucous the next.

Dr. Abt in closing said that some very valuable statistical information might be gathered by the appointment of committees from different sections of the country to investigate the matter.

A Statistical Investigation Relative to the Influence of Various Methods of Infant Feeding on the Morbidity and Mortality of Infants.—Dr. W. W. Butterworth of New Orleans said that from August 1, 1909, to July 31, 1910, he had recorded the deaths of 1,314 infants and compiled data of more or less detail as to the feeding in 884 of the cases, the age, sex, color, legitimacy, nationality, and health of parents, the hygienic conditions of the homes, their education, etc. As complete data as possible of the water supply, table food, the ailments of early life, with especial reference to gastrointestinal disturbances and symptoms, and the general development of the child. From this investigation he concluded that the temperature of the summer is but one of many causative factors. Improvement of sanitation reduced the mortality 50 per cent. and he thought that with education regarding the necessity of breast feeding it would be still more lowered. He attributed part of the lowered mortality to the outdoor living and the use of condensed milk which was low in fats.

Recent Experiences in Artificial Feeding of One Hundred Infants During the First Three Months of Life.—Dr. F. C. Neff of Kansas City, Mo., concluded that the regain of birth-weight was no slower in bottle-fed than in breast-fed infants, that the normal rectal temperature was 98.6°, and that a higher temperature should be regarded as pathological. He does not consider peptonizing of milk particularly advantageous in young infants preferring buttermilk, skimmed milk, or malt soup.

Dr. Southworth of New York called particular attention to diagnosing signs of "no milk." He said that the necessity for physiological adjustment between mother and child must not be overlooked and that it would many times account for the child not getting the milk which was really there. He believed that too frequent application to the breast tended to decrease the quantity. He condemned the practice of attempting to fit a proprietary condensed milk to all children and said that he would expect to find rickets in all children so fed.

Dr. McLaren of California had noted that babies under six weeks old would gain in weight rapidly if temporarily fed on condensed milk and would afterward be put upon a modified formula of cows' milk.

Dr. Dranga of California believed that condensed milk had a very definite place in infant feeding because it was essentially clean, lower in fats, and easily adaptable to the needs of the child. He called attention to the lower mortality among poor children of London who were fed on condensed skimmed milk with the addition of cod liver oil to augment the fat. He thought that the common custom of placing children to the breast every two hours had something to do with the lowering of the quantity.

Dr. Sedgwick of Minnesota reported a lower death rate in Minneapolis than that given for New Orleans, but said that it was higher in the summer than during the rest of the year. He also had noted difference in the discharges from year to year, there being distinctly catarrhal one year and changed entirely the next. He considered casein milk of definite value in cases of summer diarrhea and in atrophy.

Dr. Tubbs of Iowa said that condensed milk had nothing to recommend it except its sterilization. He believed that food had as much to do with the etiology of summer diarrhea as anything else.

Dr. Tilton of Arizona said that he had not seen a case of scurvy in cases in which condensed milk was used.

Dr. De Buys of Louisiana reported a high mortality in his section, which he thought to be due to ignorance among the negroes, and to the fact that institutions were under religious supervision rather than medical.

Dr. Abt of Chicago advanced the theory that one was justified in resorting to any form of feeding found to be good in the locality, that the question of feeding was more or less in an empirical stage, an dthat only through careful study and unbiased experimentation could anything like a definite conclusion be arrived at.

Dr. Royster of Virginia said that he had never fed a baby on condensed milk, but that nine out of ten of the children coming to him in pitiable conditions of malnutrition were on condensed milk. He fed them on a solution of milk sugar until a formula of cows' milk could be tolerated.

Dr. Francis of Los Angeles said that he frequently recommended goat's milk when the necessity for weaning arose.

Dr. Magee of California also advocated goat's milk, expressing the belief that if people understood the value of the milk as a food, and the ease of keeping the animal where it could be milked at will, the milk then being fed immediately to the child, it would come more into use. He called attention to the fact that a goat was never tuberculous, that tuberculosis could not be produced by inoculation in a goat.

Dr. Butterworth, in closing, called attention to the fact that he was not advocating condensed milk, but had merely showed the figures. He said that probably if these very children had had a modified milk even a greater percentage of them would have lived. He said that the city having settled matters of sanitation would take up systematically the matter of feeding to conserve the life of its infant population. He contended that there was no greater fallacy than that condensed milk was a sterile preparation, that government reports showed it to be reeking with bacteria. He stated that goat's milk more nearly approached mother's milk than anything yet known.

Dr. Neff, closing the discussion of his paper, said that it was his principle not to boil milk when giving the malt extract, but he did not know whether it had any effect on scurvy or not.

Relation of Gastric to Pancreatic Fat Digestion in Infants.—Dr. J. P. Sedgwick and Dr. F. W. Schultz of Minneapolis presented this paper, which was read by Dr. Sedwick. It reviewed gastric lipase in adults and infants, pancreatic fat digestion, and the importance of lipase in the digestion of emulsified fat in milk. Fat-splitting elements were found in the stomach at least as early as the fourteenth day. He gave a résumé of their studies in lower animals and infants from which he concluded that the function of gastric lipase was not needed in the infant after the duodenum had been reached.

The Neurotic Basis of Juvenile Delinquency Based on Some Special Cases of the San Francisco Juvenile Court.—Dr. Philip King Brown of San Francisco stated that too frequently what was called and treated as crime in children was the natural outcome of environment and bad training. When these conditions were changed, he said, a long step in the right direction would have been taken. He affirmed that it would be a fallacy

to attempt to outline a definite treatment for these unfortunates, and in conclusion he asked that the Section take some action toward recommending that the delinquency of children be placed upon a different footing in the courts.

Dr. Colliver of California said that in an investigation of some 3,000 children it was found that environment played the most important part. Ninety-five per cent. of these 3,000 children, he stated, came from homes which for one reason and another were disrupted and the matter of discipline was neglected or totally lacking. He thought that many of these conditions had their beginning in physical conditions which, by slight operation, such as circumcision, tonsillectomy, or the removal of adenoids, were markedly benefited. He said that in sections of Los Angeles where playgrounds were established the number of appearances in court were lessened.

Dr. Royster of Virginia asserted that delinquency and dullness in school went hand in hand and as contributing factors to these conditions must be taken into account physical development, environment, and heredity. He said that the mentally deficient might be classed into three groups, viz., those which could be corrected, those that might be taught trades and become self-supporting citizens, and finally those of a third class for which nothing could be done. He said that Goddard in his work had examined some 2,000 cases, all of which were traced back four generations, and in not one single instance was there no trace of heredity in the condition shown. As a prevention of this lamentable condition Dr. Royster suggested care and education and the prevention of the unfit from reproduction.

Dr. Burnham of California urged need for attention to the normal boy, giving him a vent for his surplus vitality as the best measure.

Dr. Hanson of Ohio brought forcibly to the front the improvement in the public school systems, the prevailing method of medical inspection of school children, and stated that these measures would aid materially as the delinquent child was usually a pathological individual.

Dr. Chapin of Baltimore said that as a result of his experience with playground work and at the Johns Hopkins University, he had come to the belief that the establishment of playgrounds in all large cities would prove the salvation of the coming generation.

Dr. Philip King Brown, in closing, expressed his belief in the underlying goodness of most boys and agreed that the greatest requisite for their development was a safe channel for the outlet of high spirits which was being rapidly met by the playground.

A Consideration of Obstructions at the Pylorus Occurring in Infants.—Dr. Langley Porter of San Francisco considered the pathology of the condition and discussed the classical symptoms in general which would indicate the necessity for operation, and those occurring in cases which recovered spontaneously. He said that successful operation brought complete and almost immediate amelioration of symptoms and that the greatest number of recoveries were characterized by the regurgitant type of vomiting, but that at best little had been gained which would serve in the matter of treatment. The presence of lipase seemed to have some affect upon the spasm in these cases. External heat was sometimes of value, as was also condensed milk and other modified foods, especially when combined with milk laxatives. In conclusion, he said that, while his experience was too limited to admit of positive statements, still he believed that patients having regurgitant vomiting had a better show than those in whom it was cumulative. He urged the need of further study.

Dr. Butterworth of New Orleans lamented the puzzling nature of these cases as shown by the fact that patients upon whom operation was not permitted, although it was believed by the physician to be the only proper method, frequently recovered. He noted the frequency of this condition in boys and in the first born of families and frankly confessed his inability to draw a line when to operate and when not. He said that his best results had been obtained from frequent stomach washings with bicarbonate solution, antispasmotics, and belladonna.

Dr. Porter, in closing, said that he had used belladonna with some success. He said that he had found much to think about in the occurrence of five deaths in the fourteen cases, two under operation. He said that they used an anesthetic in attempting to find the tumor and had never seen ill results. With the development of gastritis he began stomach washings, and said that from that time on the child was able to digest fats.

The Relation of Meat Ingestion to Indicanuria in Childhood.—Dr. E. C. Fleischner of San Francisco presented this paper which was read by Dr. Porter. He stated that repeated tests showed no indicanuria in normal childhood. That a series of tests in an institution showed no indicanuria when children from three to twelve years of age were fed two meals of meat a day, but in children of three years and younger there was quite a marked percentage of indican present, from which he concluded that the diet of young children should be regulated in this respect.

Dr. Sedgwick of Colorado stated that such experiments were of more value in children than adults because of the tendency to indicanuria in adults.

Dr. Porter, closing the discussion, said that the work of Dr. Fleischner has a distinct value in pointing out that irritability in children was frequently due to indicaturia, and so universally was this case that he had been diagnosing heavy indican reaction in exceedingly irritable children.

Thursday, June 29.—Third Day.

Election of Officers.—The following officers were elected: *Chairman*, Dr. I. A. Abt, Chicago, Ill.; *Vice-Chairman*, Dr. L. T. Royster, Norfolk, Va.; *Secretary*, Dr. J. P. Sedgwick, Minneapolis, Minn.; *Delegate*, Dr. Wm. C. Hollopeter, Philadelphia, Pa.

Rachitis in Its Early Stages.—Dr. J. W. Cokenower of Des Moines, Iowa, called attention to the crying need for more specific attention to the etiology and early treatment of this condition, saying that it should be recognized as a constitutional disorder in which medicines were secondary to hygiene, proper feeding, and fresh air. He said that particular attention should be paid to the probably cause of the condition, its diagnosis, and therapy, and closed with a résumé of the brief literature recently published.

Dr. Follansbee of California also emphasized the need for early recognition and expressed the belief that adenoids played an important part in causation. She said that in her opinion adenoids were not infrequently congenital, that she had had them removed as early as the fourth day with beneficial results to the nutrition of the child.

Dr. Cokenower, in closing, said that although the condition was one to be met with frequently in any practice, it was rare to have it the subject for discussion at a medical meeting, or of a paper in the medical journals. He said that it not only resulted in contortion of bones, but produced muscle changes, causing difficulty in the normal functions of the organs, and that many of the deformities so trying in later life had their origin here.

Report on Brain Cases in Children.—Dr. William J. Butler of Chicago made a report of two cases under his care at Cook County Hospital in which he gave a complete analysis of the symptomatology, physical findings, diagnosis, pathology, and the result of spinal puncture, emphasizing its importance in the analysis of a cerebrospinal lesion.

Dr. C. C. Rogers of Chicago said that the symptoms of these conditions could not be mistaken for anything else.

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Original Articles.

MALIGNANT ENDOCARDITIS IN NEW YORK CITY; A CLINICAL STUDY.

BY THOMAS E. SATTERTHWAITE, M.D.,

NEW YORK.

MALIGNANT endocarditis is a very serious disease, often difficult of diagnosis, and usually fatal, even if all the resources of the physician have been called into play. Among pathologists it is believed to be a simple endocarditis which has become infected by poisonous germs. It then assumes so grave a type that the word malignant is an apt prefix. How long it has been known under this name is difficult to say; Bouillaud in 1835 found that it had been in use before his day. This great diagnostician described both a typhoid and a septic type, which latter he called gangrenous; he also recognized three varieties, the acute, subacute, and chronic. In 1889 the term malignant endocarditis appeared in Wilkes' and Moxon's Pathological Anatomy, apparently because in 1882 Goodhart of Guy's Hospital found a group of fatal cases associated with typhoid and scarlet fever.

Simple endocarditis, meaning the non-malignant variety, is not to be regarded as a fatal disease, except in so far as it produces death mechanically through embolism of some important organs, the brain or basal ganglia, for example. Even cerebral embolism may occur a number of times before there is a fatal issue, which only results after the embolism has cut off the blood current from important nerve centers.

Malignant endocarditis is so rare a disease that no one person can have had much personal experience with it. Nor can anyone discuss it intelligently without having studied a large number of cases at first hand. I have had the unusual opportunity of studying one hundred cases in the record books of some New York hospitals, and the chief object of this paper is to present a brief analysis of what my examination has yielded. In so doing I take this opportunity of thanking the officials of the several hospitals for the privileges they have accorded me and the facts they have put at my disposal. It is needless to say that I have endeavored to be accurate in the brief analysis I have made. There was no selection of cases; they were tabulated in the precise order in which they occurred in the several hospital books.

With regard to the infecting agent, only those of the streptococcus, staphylococcus, pneumococcus, and gonococcus groups were recorded, either as having been found in the living blood or in the body after death. This list is a limited one, if we consider that the meningococcus, the *Bacillus coli*, the *Bacillus typhosus*, the Klebs-Loeffler bacillus, the gas bacillus, and probably others have been charged with causing the infection. Apparently there are epidemics of the disease, as is implied by the fact that Billings in eleven out of fourteen cases found the pneumococcus as the infecting agent (78 per cent.) Among the associated systemic diseases I found rheumatism in more than one-third of the cases, and suppurating foci, pneumonia, pleurisy, phthisis, syphilis, gonorrhea, influenza, tonsillitis, chronic peritonitis, chronic appendicitis, colitis, and nephritis in varying proportions.

Unfortunately for scientific nomenclature, the affix ulcerative came to be used for this form of endocarditis, though ulceration merely represents one of the regular events in the simple form. In fact, it has been claimed that infection of valves may occur without ulceration of their surfaces, just as in diphtheria we occasionally see a diphtheritic patch on an unabraded surface. Less objection is to be charged up against the words infective and infectious, and yet we have not thus far been able invariably to find the pathogenic germs, so that these terms constitute a begging of the question. In fact, in my one hundred cases the germ was found in only 33 per cent. The same objection applies to the word mycotic, which is sometimes used. In speaking of the septic form, we of course allude to those assigned to the streptococcus, the staphylococcus, and other pus-producing germs.

In this connection I should state that the cases of which I present a brief analysis were sometimes examples of mixed infection. Thus, in my one hundred cases, of which thirty-three showed specific germs in the blood or elsewhere, streptococci were found alone in eighteen; staphylococci occurred jointly with them in one; staphylococci occurred alone in five; pneumococci were associated with them in two; pneumococci occurred alone in six; and the gonococcus in one. It is clear, therefore, that the predominating germs found were of the pus-producing varieties.

In malignant endocarditis there is a poisoning by implantation in the inflammatory deposit of the valves; in adults chiefly those of the left heart, and in infants of the right heart. The poisoned emboli, together with aggregations of bacteria, are carried forward by the blood current into the greater circulation, infecting the entire system.

As to the frequency of malignant endocarditis in this city, in the Babies' Hospital of this city, in a total of 8,775 admissions during the term 1900-1911, the records do not show a single instance of the disease. This institution presumably limits its admissions to those under three years of age. In the New York Hospital and St. Luke's, during a similar term, with admissions numbering 102,631, but one case had been recorded of a child under three years of age. So that under the age of three or four it must be extremely rare; in fact, it almost never occurs.

My statistics, based on 100 cases, are as follows: Under 14, 7 per cent.; between 20 and 30, 25 per cent.; between 30 and 40, 30 per cent.; between 40 and 50, 18 per cent.; between 50 and 60, 4 per cent; over 60, 1 per cent.; age unknown, 15 per cent.

We are led to believe, therefore, that this is largely a disease of early middle life, occurring with greatest frequency between the ages of thirty and forty, almost never under four, and seldom before fourteen or after sixty. Unfortunately, however, it is not possible to verify this statement by any official data obtained by governmental inquiry. For we are confronted by the fact that malignant endocarditis is not mentioned in the international list of the causes of death furnished by the Department of Commerce and Labor, nor does it appear in our National Census tables, or in the reports of our State Department of Health or our City Department of Health. The following abstract of a letter written me by Dr. William H. Guilfoy, Registrar of Statistics in our City Board of Health, under date of February 11, 1911, illustrates the prevailing method by which the returns are made by physicians in our city. He says: "I am unable to furnish you with definite figures in regard to the number of deaths from malignant endocarditis, either acute, subacute, or chronic; and, by the way, I do not remember ever having seen a death ascribed to chronic malignant endocarditis. My impression is that a majority of the deaths which are classified under acute endocarditis are deaths from acute or subacute malignant endocarditis, which have been reported as either acute endocarditis or septic endocarditis or ulcerative endocarditis."

In the Manhattan State Hospital for the Insane, with a total of 58,042 patients treated during the ten-year term ending September 3, 1910, not one case of malignant (infective or infectious) endocarditis was registered as such on the books. On the other hand, in Bellevue Hospital, where between 1902 and 1908 there were a total of 204,690 patients, 222 were registered as infective (malignant) endocarditis, including both the acute and chronic forms.

My statistics were taken from the records of three of the great semi-private general hospitals, where I was able to get from each the number of patients admitted during the last ten-year term available, together with the number of cases of malignant endocarditis registered during that period. The results were as follows: New York Hospital, 50 cases treated, admissions 88,365; St. Luke's, 45 cases treated, admissions 14,266; Presbyterian, 118 cases treated, admissions 33,592; total, 213 cases treated, admissions 136,223, or one in 639 patients.

In Bellevue Hospital the proportion was 1 out of 922, during a six-year term, with 204,690 admissions.

As a rule, with exceptions in very rare cases, malignant endocarditis is accompanied by fever. In one there was a temperature as low as 98° in a woman of 41, who died with symptoms of chronic peritonitis. She was not in the hospital more than one day, and was probably in a state of collapse when admitted. In the larger number of cases the temperature reached or exceeded 104° F., while in 73 per cent. it varied between 103° and 106°; in 14 per cent. it touched or passed 106°, while in 2 per cent. it exceeded 107°. High temperature, therefore, was the rule. In only 7 per cent. was there temperature under 102°. The pulse rate seemed to vary with the temperature

While in my cases germs were only found in 33 per cent. (in one of the hospitals they were found in 42 per cent.), but sometimes not until after death.

Cultures should be made in every case of the disease, and if the early ones are negative they should be repeated at short intervals, as the microorganisms may not be found until the examinations have been many times repeated.

Petechiæ were noted in 19 per cent. But they must be differentiated from the rose-colored spots of typhoid and from purpura hemorrhagica. In this connection it must be remembered that there is also a purpura rheumatica.

Hemorrhages were occasionally noted, but only in 5 per cent. Implication of the spleen was found in 8 per cent. Headache and diarrhea were frequent, as might be expected. The leucocyte count varied from 6,650 to 36,000; it exceeded 20,000 in only 5 instances. In 21 out of 33 examinations it did not exceed 15,000 (63 per cent.). The hemoglobin content was low, most often under 60. Rheumatism was a concomitant in 37 per cent. Pneumonia came next in frequency (6 per cent.). Tuberculosis existed in 5 per cent.; pleurisy and syphilis each in 3 per cent.; gonorrhea in 2 per cent.; acute and subacute nephritis in 2 per cent.; cerebrospinal meningitis in 1 per cent; mammary abscess, suppurative arthritis, colitis, chancre with suppurative buboes, chronic appendicitis, gangrene of foot, and miscarriage each in 1 per cent.; total, 66 per cent.

Sometimes the diagnosis presents great difficulties, and has to be made by exclusion, for often the symptoms are variable and indefinite and lead to the confounding of the disease with tuberculosis, purpura, typhoid or malarial fever. The subacute or chronic form will perhaps for a time be difficult to differentiate from typhoid. It is here, however, that blood culture comes to our aid, for by the discovery of the streptococcus or the staphylococcus, where the Widal, von Pirquet, and malarial tests are negative in the presence of an endocarditis, the diagnosis of the malignant form of the disease may be made with reasonable certainty.

But we cannot depend absolutely upon culture methods. They fail in a certain number of cases, and the germs may not be recovered during life. We must rely on a diminished leucocytosis and enlarged spleen, hemorrhages, a previous endocarditis, some displacement of the heart, precordial pain, headache, rapid pulse, a temperature that is continuously high, a tendency to septic symptoms, and often suppurating foci somewhere. And inasmuch as the pathological diagnosis may be inconclusive, we must learn not to wait for it, but make, if we can independently, a clinical diagnosis.

Basing our prognosis on the 100 hospital cases, we may conclude that in malignant endocarditis 85 per cent. of the patients die, 10 per cent. improve for a time—how long is uncertain—but that in 5 per cent. there is such a degree of improvement that it may be called recovery, so far as the malignant nature of the disease is concerned. While we cannot put it in the same class with pyemia, the disease is to be classed with the severest forms of constitutional infection.

The duration of the disease may be from a few days to several months. Billings has reported a

case in which the patient lived more than two years. In my one hundred cases the number of weeks spent by patients in the hospital before the fatal issue was from one to thirteen, but the majority succumbed before the end of the fifth week.

Antigonococcal serum was used in 1 case, other sera in 3 cases, and vaccines 5 times, of 100,000,000, 60,000,000, and 24,000,000 strengths. In no case was there recovery under these forms of treatment.

Case I was that of a young man 21 years of age, who entered the hospital with suppurating glands in both groins, due to a chancre. He also had rheumatism. His temperature varied from 97.8° to 99.8° F. He remained in the hospital 13 days, when he was discharged "improved." Apparently his treatment was symptomatic.

Case II was that of a girl of 7, in whom the diagnosis was made by exclusion. The von Pirquet, Widal, and malarial tests were negative. Her temperature rose to 104°, and her case was diagnosticated as one of malignant endocarditis. She improved so that when she was discharged after 13 days in the hospital she was nearly well. The diagnosis was clinical.

Case III was that of a man 30 years of age, who came into the hospital with influenza, rheumatism, and enlarged spleen. He had petechiæ, and a leucocyte count of 10,400. His temperature rose to 102°. Sputum negative. After 4 days he was discharged in good condition.

Case IV was that of a young woman 18 years of age, who entered the hospital with pleuritic effusion and rheumatism. The examination of blood was at first negative, but afterward streptococci and staphylococci were found. Her temperature rose to 105°, but after 96 days in the hospital she was discharged improved. She was ill in all 9 months. The treatment was symptomatic.

Case V was that of a man 25 years of age, whose leucocyte count varied from 32,000 to 18,300, while the Widal test was negative. The diagnosis was subacute rheumatism. His temperature rose to 103°, but under symptomatic treatment it gradually fell, and he was discharged improved. He was 28 days in the hospital. How far this improvement was maintained is a matter of interest to us, for of these cases I have no further information.

As treatment by sera or vaccines was employed in only 9 per cent., evidently the value of this form of treatment had not impressed itself very seriously on the minds of our hospital physicians. There is no doubt that success has followed the use of both sera and vaccines in a large number of cases, but it seems likely that we have heard more of the successes than of the failures. In a recent book on "Serums, Vaccines, and Toxines" (1910) it is suggested that in case of failure with one brand of serum another brand may be successful. It is evident that in streptococcus disease we should not use antistaphylococcal serum, yet apparently this has sometimes been done. Some temporary benefit has apparently followed the use of Hiss's serum. But in my nine hospital cases both sera and vaccines were used ineffectually as to ultimate result. Nor was unguentum Credé, used in one instance, successful.

In any event, the indications are for rest, good and abundant food, the liberation of pus when practicable, and the use of sulphate of quinine and perhaps iodine internally, and supporting treatment generally.

In the five cases I have reported as improved or cured it appears from the records that the success was due to the use of expectant treatment. In them no specific was given, but, so far as I was able to judge, each individual symptom was treated as it manifested itself. And yet, in spite of all I have said, and all that I found from the study of hospital cases, I have been impressed with the idea that Wright often gets remarkable results, and that bacterial therapy has probably come to stay. At the same time it remains for us to discover not only the precise cases in which it is applicable, but more particularly the character of the bacterins or sera to be used and the technique required to produce successful results. Meanwhile the study of my cases demonstrate that a cure is possible in 5 per cent. by the use of symptomatic measures.

Note.—Since writing the above, my attention has been called to an article on bacterial therapy (Synnott, Medical Record, June 3, 1911) which the author regards as contraindicated in malignant endocarditis and puerperal septicemia as soon as the invading bacteria have gained access to the blood stream, causing systemic infection. At best, it is thought to be of problematical value in these cases.

7 East Eightieth Street.

PASTEURIZATION OF MILK IN THE BOTTLE ON A COMMERCIAL SCALE.

By CHARLES E. NORTH, M.D.,

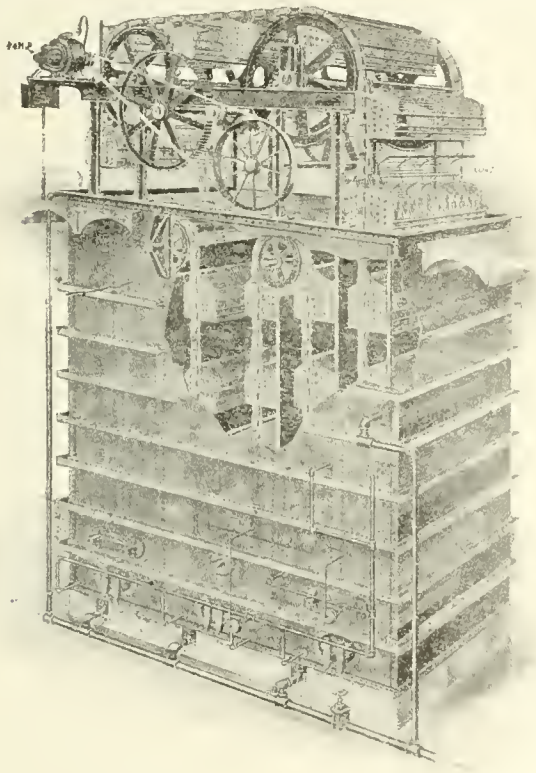
NEW YORK.

During the past three years there has been a large increase in the quantity of pasteurized milk consumed by large cities. The long distances from which milk must be drawn by rail to supply the growing demand of cities have lengthened the time between milk production and milk consumption. The multiplication of dairy farms, which are the sources of supply, has made efficient sanitary control almost impossible. As a consequence, large cities have been brought face to face with a situation which has threatened serious injury to an article of food which is at once the most valuable and the most perishable, and which has latterly proved to be a frequent means for the transmission of infectious diseases. In this emergency it has been proper that public health authorities as well as those interested in the industry should resort to a means for preserving the food value of milk and at the same time protecting the public health, and they have found this in the disinfection of milk by heat.

The application of heat to milk known as pasteurization has gained headway in spite of vigorous opposition from several classes of opponents. Among these, without doubt, the members of the medical profession have raised the most serious objections. On the one hand, there are alleged to be certain injuries to the chemical composition of the milk, and following these are alleged to be injuries to children consuming the milk. On the other hand, the process is said to be a substitute for sanitation and to put a premium on carelessness in milk handling. These objections are, however, not founded on sufficiently substantial ground to offset the important advantages which the process of pasteurization offers. An indication of this is seen in the change of opinion which is going on within the medical profession itself and which is steadily winning new advocates for pasteurized milk.

Perhaps the steadiest opponents of pasteurization are to be found among the physicians practising pediatrics. It was among these that certified milk had its origin, and it is these who chiefly compose the certified milk commissions. In actual practice, however, much of the certified milk which is prescribed is pasteurized in the infant feeding bottle. What has come to be called the "home pasteurization" of milk for infant feeding is widely advocated and practised among this branch of the medical profession. The analysis of their objection to pasteurization shows, therefore, that it is not to the process itself as such, but that it is really an objection to the party by whom the process is performed. In other words, there is a strong sentiment that pasteurization performed by the mother in the home is reliable, while pasteurization by the milk dealer at his milk station is unreliable.

The large milk dealer has given some cause for doubt as to his reliability in this matter. The adoption of pasteurization by the milk industry in the



Beer Pasteurizer: Continuous Submersion Type.

first instance had no other object than the destruction of bacteria-forming lactic acid, and thereby the prevention of loss of milk through souring, particularly during the hot weather. Quick heating by the so-called "flash pasteurization" acts as a preservative, but as commonly practised the process cannot be depended upon to destroy the bacteria causing infectious diseases. This "flash pasteurization" was first adopted secretly because there was no public demand for pasteurized milk, but as pasteurization gained recognition as a public health measure milk dealers gained courage and advertised this imperfect process, and thereby brought reproach upon the term "commercial pasteurization" from which it has not yet recovered.

"Commercial pasteurization," which means the pasteurization of milk by the milk dealer, has some advantages from a public health standpoint which the sanitarian cannot lightly dismiss. These advantages are not guaranteed, however, unless we have in our possession not only a process which is efficient for the pasteurization of milk on a large scale but also a system of supervision which will control the process so that it is always properly operated. It is almost unnecessary to point out that only a small fraction of the milk supply of a large city like New York can be produced under sanitary conditions sufficiently controlled to furnish an insurance against milk-borne infection, either from dairy cattle or from persons handling the milk. The greater part of milk supplied must for a long time to come be of such an uncertain character that the proper application of pasteurization is the only possible guarantee against milk-borne infections. To leave this process to the housewife means a delay of many hours during which there are not only opportunities for additional contaminations to the milk, but for a large multiplication of bacteria in the milk. When one contemplates the varied intelligence among housewives and the fact that in a population like New York City the heating of milk would be done in about 1,500,000 homes, one must admit that the results would vary greatly and in many instances would be ineffective. On the other hand, the large milk dealer has access to the milk from six to twelve hours before the milk consumer. He is also able to pasteurize at one operation many thousands of quarts, and if the operation is an efficient one all of these receive the same guarantee.

In a previous paper ("The Holding Method of Milk Pasteurization," *Engineering News*, May 12, 1910) I pointed out the great advantage which resulted from the adoption by the large milk dealer of the "holding tank," which is a storage tank for heated milk. I showed how by this means it was possible for the milk dealer to pasteurize large quantities of milk in bulk and to have absolute control over the length of time and of the temperature and at the same time make the process a continuous one. From among the numerous comparative tests made of the momentary or "flash process" and the "holding process" of pasteurization, I show below figures which typically illustrate this difference, which are taken from a test of two machines operating in the same plant.

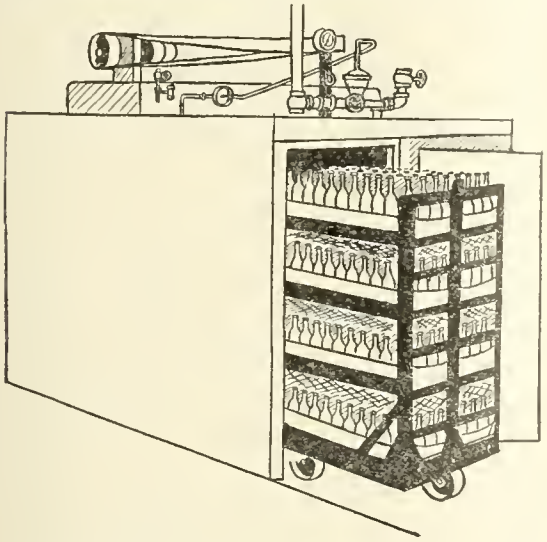
Raw Milk	Momentary Process.	Holding Process.
320,000	50,000	1,500
10,000,000	35,000	1,600
1,670,000	52,000	1,100
940,000	30,000	4,500
360,000	48,000	4,000
330,000	30,000	2,400
Ave.. 2,270,000	40,833	2,518

These figures have been confirmed by the tests which have been made in many of the large cities of this country where the holding process of milk pasteurization has been adopted. The retaining of heated milk in tanks for thirty minutes at a temperature of from 145° to 150° F. has entirely removed the objection raised against the pasteurization of milk by the large dealer on the ground that the milk was not heated for a sufficient length of time. One other great advantage of the use of these retaining tanks has been the fact that it permitted the use of lower temperatures so that while formerly the large dealer heated milk to from 158° to 170° F. momentarily, the temperature can now be reduced to below 150° F., thus avoiding so far as possible injuries to the milk. While this process has resulted in the reduction of bacteria to numbers much smaller than the older processes, yet this has not been the most important result. The time and temperature used have guaranteed the destruction of all of the bac-

teria of infectious diseases transmissible by milk, and this has been the achievement of value from a public health standpoint.

But the large milk dealer has not yet escaped criticism and will not do so until the processes of commercial pasteurization are still further perfected. Within recent years an outbreak of typhoid fever occurred in the upper part of New York City which included eighty-five cases. All of these were persons in households receiving milk from one large milk dealer. The interesting investigation which was carried out by the Board of Health revealed the fact that all of the milk delivered in this section came from one shipping station in New York State in which one of the men employed was a "typhoid carrier." This man's work consisted in putting caps on the glass milk bottles after they were filled with milk. Even if this milk could have been pasteurized by the holding method this outbreak would have occurred, for the reason that the process of bottling and capping takes place after the pasteurization has been done.

A visit to any of the large pasteurizing establishments will show that there are numerous opportunities for the reinfection of milk after pasteurization. When milk leaves the heater it has to pass over



Beer Pasteurizer: Intermittent Shower Bath Type.

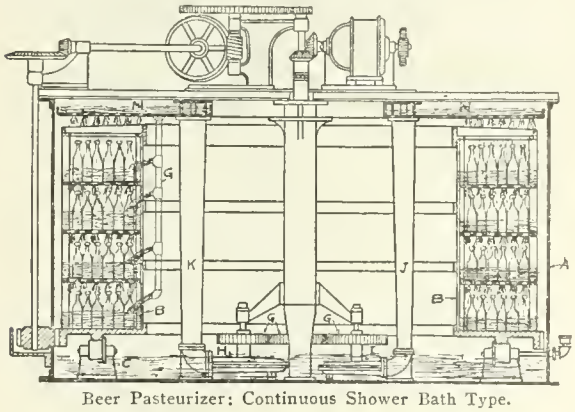
cooling apparatus and through pipes into tanks or bottle-filling machines. From these it runs into the glass bottles, which are then capped. It is exposed to the surfaces of the apparatus and pipes and to glass bottles and caps and to the air of the bottle-filling room and to the fingers of the employees. It may be contaminated by any accidental imperfection in the sanitary control of these sources of infection. In a recent paper published by Dr. Koehler, Assistant Commissioner of Health of Chicago ("The Control of Pasteurization," *Journal of the American Medical Association*, March 11, 1910), the author points out how common this recontamination of pasteurized milk is and gives figures from the large number of bacteriological examinations made under his direction of commercially pasteurized milk in the city of Chicago. A few of his figures illustrate this point. The average of all examinations for the month of January, 1910, at 41 plants, of milk taken directly from the machines was 40,700 bacteria per c.c. Milk from these same plants in bottles on the market gave an average of 277,800 bacteria per c.c. The average of all examinations from 74 pasteurizing plants during July, 1910, samples taken directly from the machines, gave 185,000 bacteria per c. c., while bottled milk on the market from these same plants gave an average of 3,600,000 bacteria per c.c. Dr. Koehler states "as a matter of fact it is impossible in the control of pasteurization on a large scale to eliminate entirely the element of recontamination. Particularly is this true when there are numerous small dealers to be covered who cannot afford the services of bacteriologists. Nevertheless it is obvious that this should be closely studied and an effort made to reduce the recontamination to a minimum. It is, of course, a bacteriological problem and should be handled by trained bacteriologists rather than by the ordinary milk inspector, who has had little or no laboratory experience. That there is much recontamination still going on in Chicago is to be expected considering the fact that the work of pasteurization is at present in a transitional stage."

The "bacteria count" as such is, of course, only an indicator of contamination or of bacterial growth. The real objection to recontamination after pasteurization is the possibility of the infection of milk with the bacteria of disease. If, therefore, the process can be improved to such a point that no reinfection can possibly occur, it is an object to be earnestly desired. This result has already been obtained in the pasteurization of beer. A study of the brewing industry reveals the fact that in the matter of handling perishable fluid on a large scale and distributing the same to the public this industry has gone through a process of development which has carried it many years in advance of the milk industry. Experiences which the milk industry is now passing through are past history in the brewing industry. Brewers have for many years found it necessary to destroy the yeast in beer by heat to prevent the fermentation from proceeding too far. They have also found that the shipping of beer to a distance made it necessary to preserve it from chemical change by the multiplication of organisms, and they applied heat for this purpose. The processes adopted by them in the first instance were very similar to those now practised in the milk industry. Beer was heated in tanks in bulk and was pasteurized before being placed in bottles, but the recontamination of beer through handling subsequent to pasteurization and from imperfectly cleaned bottles and caps gradually forced the brewing industry to adopt measures which would guard against such recontamination. This has resulted in the pasteurization of beer in the bottle. I believe I am safe in saying that all bottled beer on the market at the present time has been bottled first and pasteurized afterwards. A visit to the bottling department of any large brewery will show that the pasteurization of many thousands of bottles of beer in the course of a few hours is a commercial success.

The pasteurization of milk in the home is commonly done in a bottle. The pasteurization of milk in the infant milk depots, and particularly in those operated by Mr. Nathan Straus, is also done in the bottle. These processes are undoubtedly good because the pasteurization includes not only the milk, but also the bottle and the bottle cap, and no further manipulation of the milk is necessary with the exception of refrigeration until it is used by the consumer. But the methods of home and of the milk depots are entirely inadequate for commercial purposes, and for this reason the pasteurization of milk in the bottle has not been adopted by the large milk dealer.

Through the courtesy of some of the large brewers I have had access to their pasteurizing apparatus and have made tests of their process. The pasteurizing of beer is done by several different types of machinery, but in general these are of only two classes. In the first type the beer, after being bottled, is placed in baskets, which are swung from pivots and carried by an endless chain into tanks of water having different temperatures. In this way the bottles travel through water which is lukewarm and warmer until they reach the pasteurizing temperature, which for beer is 142° F. They remain at this temperature for about twenty minutes, after which they pass into the cooling tanks, from which the baskets emerge and the bottles are removed for shipment.

In the other type of machinery the beer bottles are placed on trays which are slid into a compartment of a large wheel revolving horizontally, where they receive a heavy shower bath of water. As the wheel revolves the trays pass into baths of gradually increasing temperatures until the hottest temperature is reached and maintained, after which the baths become cooler until the bottles reach the place of beginning, where the trays are removed. In both types of machine the process may be made a continuous one, and bottles be placed into and removed from the apparatus without interruption.



Beer Pasteurizer: Continuous Shower Bath Type.

It is important to note that the application of heat to beer is accomplished in all types of pasteurizers by means of water. The hot water is applied directly to the external surface of the bottles. The pasteurization of milk in bottles as performed in most of the milk depots is accomplished by the use of steam, and unless raised to a high temperature this does not insure an equal distribution. The pasteurization of milk at low temperatures, I believe, cannot be well performed by steam heating. On the other hand, the temperature of water is much easier to control, and for low temperature pasteurization water possesses advantages over steam, whether the bottles be entirely submerged or whether they be subjected to a powerful shower bath.

The use of water for pasteurization purposes, on the other hand, makes it positively necessary that glass bottles should possess a cap which is watertight. The caps used on milk bottles, while of many varieties, are not such as can withstand the application of hot water for pasteurization purposes without leakage. The brewers have met this situation by placing caps upon beer bottles of tin with a cork lining, which are crimped on to the rim of the glass bottle by machinery. These caps are so formed that they cannot be removed without a special instrument, and they are absolutely watertight.

During the past year the manufacturers of these caps have adapted them to milk bottles and it is now possible to secure these watertight caps in several sizes. The opportunity which the appearance of these watertight caps created for the milk industry was not at once apparent, but it is an event of the utmost importance and opens the way to the adoption of the methods which have proved so successful in the beer industry. In the tabulation below are the results of the pasteurization of milk placed in beer bottles and sealed with watertight caps in a pasteurizer of the submerging type in one of the large breweries in New York City. This machine was pasteurizing many thousands of bottles of beer at the same time at a temperature of 142° F. for twenty minutes in addition to the preliminary heating and final cooling.

	BACTERIA PER C. C.	
Sample.	Before Treatment.	After Pasteurizing.
1	400,000	23,000
2	300,000	9,000
3	57,000	4,500
4	40,000	3,000

From the above table it appears that the process is one which very considerably reduces the number of bacteria in milk. The temperatures used, however, are not as high as those generally used in the holding method of milk pasteurization and consequently the results do not give such low bacteria counts as are sometimes obtained. On another occasion bottles of milk were placed in a machine of the shower bath type in which beer was being pasteurized at the same time in a brewery in Brooklyn, N. Y. The temperature used was 140° F. for fifteen minutes in addition to the preliminary heating and final cooling. The results of this test are given in the table below.

Milk Before Heating.		Milk After Heating.	
127,000	140,000	18,000	20,000
136,000	176,000	23,000	40,000

While the bacteria were reduced, the counts were not as low as desirable, but it must be noted that the temperature and time were less than in the former test and considerably less than is commonly used by milk pasteurizers.

It has been stated by eminent authorities that a temperature of 140° F. for twenty minutes is sufficient to destroy all of the bacteria of infectious diseases commonly transmissible through milk. In practice such a temperature and time do not give satisfactory results in the pasteurization of milk on a large scale, for the reason that the numbers of bacteria are not reduced to a very low figure. Consequently the majority of large milk-pasteurizing machinery is operated at higher temperatures and the ones most commonly in use are from 145° to 150° F. for thirty minutes. As a means of comparison the results which may be achieved by pasteurizing milk in bulk in the ordinary type of machine and pasteurizing milk in the bottle submerged in water I give below the results of a test made for me by Mr. Bixby of Boston.

Bacteria in Raw Milk	Pasteurized in Machine.	Pasteurized in Bottle.
2,000,000	99,000	30,000
2,000,000	102,000	34,000
6,300,000	42,000	6,600
1,960,000	70,000	1,200
6,200,000	65,000	4,000
2,100,000	65,000	8,100

From the above table it is obvious that the submerging of the milk bottles in water gave much better results than the ordinary pasteurization of milk by the large machine even when the same temperatures and the same length of time were used upon the same milk.

It seemed most important to ascertain what would be the results of the pasteurization of milk in the bottle by the use of a beer pasteurizer when the time and temperature were made to correspond with those which are commonly used for milk in commercial practice. Consequently I arranged for such a test at one of the breweries in Brooklyn, N. Y. To reduce the chance of laboratory error to a minimum, forty-eight bottles were filled with milk and were capped with watertight caps. These were placed in the machine in the same position usually occupied by the beer bottles. The temperature of the water applied to these bottles at first was 100° F. This temperature gradually increased until at the end of fifteen minutes it reached 148° F. By means of a controller the temperature was held without variation at this point for thirty minutes, after which it was gradually reduced, so that the cooling process which took place occupied fifteen minutes, leaving the bottles at a temperature of 60° F. They were then removed from the apparatus and placed in ordinary shipping boxes and surrounded with cracked ice, after which they were transferred by wagon from the brewery to the laboratory where they were examined. Samples were taken of the raw milk placed in these bottles and each bottle was separately examined in the laboratory for the results of the pasteurization. One bottle was broken accidentally and two of the bottles were used for drinking to test the flavor of the milk, leaving forty-five of the forty-eight bottles for examination. The results of the test are given below:

Raw milk, bacteria per cubic centimeter in the several samples, 250,000; 450,000; 200,000; 900,000; 70,000.

Pasteurized top layer, bacteria per cubic centimeter, 500; 100; 300; 2,100; 500; 600; 100; 500; 200; 400; 200; 200.

Pasteurized second layer, bacteria per cubic centimeter, 1,000; 400; 200; 600; 1,000; 0; 100; 200; 100; 200; 0; 400.

Pasteurized third layer, bacteria per cubic centimeter, 800; 2,500; 400; 200; 300; 300; 600; 300; 500; 300.

Pasteurized fourth layer, bacteria per cubic centimeter, 600; 400; 600; 300; 1,800; 400; 300; 600; 400; 300; 100.

In making the above laboratory examinations dilutions of milk were used in the proportion of one part of milk and ninety-nine parts of water for the pasteurized milk and, of course, higher dilutions for the raw milk. Consequently, in giving the results of pasteurization, it was necessary to multiply the number of colonies found on the plates by 100 in each instance. A review of the results showed that each plate contained an exceedingly small number of bacteria and consequently from the knowledge which we have of the comparative accuracy of the dilutions it seems fair to assume that if lower dilutions of milk had been used the numbers of bacteria in the pasteurized milk would have been considerably smaller. In any event, the numbers which resulted from this test are very small and perhaps I may be pardoned for saying that among the rather numerous opportunities which have occurred in the past ten years for making examinations of pasteurized milk I have not before obtained from any pasteurizing apparatus of the commercial type results which nearly approached these in excellence.

In less than an hour after leaving the pasteurizer the milk in all of the bottles had developed a distinct cream-line, and the amount of cream appearing at the top of each bottle was sufficient to indicate that the rising of cream had not been in any way impaired. The milk was pleasant to the taste and possessed no odor or taste which would suggest that it had been heated. Of four persons who separately tasted this milk, three stated that the flavor was not altered in any way, while one thought that, although the flavor was pleasant, yet it was slightly different from raw milk.

The control of time and temperature is entirely automatic in a beer pasteurizer. Recording thermometers are used, which register both the time and the temperature and which travel continuously within the apparatus with the bottles while the process is in operation. The records on this chart show the remarkable uniformity and indicate that the process has been brought under almost perfect mechanical control.

It is not customary in the brewing industry to cool bottled beer to the same degree that milk is cooled; consequently pasteurizers of beer are not equipped for cooling to low temperatures. It is, however, only a matter of adjustment to make provision for such cooling as is required in the milk industry. The capacity of the large pasteurizers used for bottled beer is in every respect equal to the needs of the large milk dealer.

The pasteurization of milk in the bottle on a large scale is entirely possible and practicable. The placing of milk in a glass bottle with a watertight seal, followed by pasteurization of the entire package, guarantees against reinfection until the bottle is opened and will place the operation of pasteurization as such above criticism. The adoption of this method by the large milk dealer will, I am sure, be a great step in advance and not only give additional protection for the product, but will also give a guarantee to the milk consumer against milk-borne infections which has not existed up to this time.

30 Church Street.

REMARKS UPON HYPERCHLORHYDRIA AND CHRONIC DYSPEPSIA.*

By CHARLES SUMNER FISCHER, Ph.D., M.D.,
NEW YORK.

The frequency with which hyperchlorhydria and allied states are encountered among chronic dyspeptics would justify the assumption that they exist, or have existed at some period, in most cases of defective gastric digestion. Freud has given us a "Psychopathology of Everyday Life." Some one might give us a Chronic Dyspepsia of Everyday Life, and make the basis of such the hyperacid stomach. The statistics of any gastric clinic will reveal, either by analysis of the gastric contents or by inference from the histories of the cases, that the majority of chronic dyspeptics exhibit this condition, so that we can almost reasonably postulate its existence in an average case of average duration. The literature upon the subject is enormous and more or less confusing as to causes, frequency, variety, and consequences. Each enthusiast has encountered and described a type of his own, with the result that numerous supposititious clinical entities have been evolved ,to follow which would lead to obfuscation of the intellect. In this regard, undue ardor of specialization has effected

*Part of paper read before the Associated Physicians of Montclair, N. J., and Vicinity, December 19, 1910.

a loss of the proper sense of proportion as to the actual existing conditions. To counteract this laboratory enthusiasm and to steady our medical judgment, we may have recourse to the impressions produced by clinical observation of the general trend of these conditions over periods of years.

While such conditions as hyperchlorhydria and hypersecretion do exist apparently in different types, the impression we receive from the observation of large clinical material as to their nature, course, common etiology, and universal treatment would seem to indicate that we have to deal with one process in all, that differences in type are simply varying stages of the same condition, that the excessive secretion *per se*, is but an exaggerated physiological activity, brought into existence by conditions rather than defects. In this connection, it should be remembered that a hyperchlorhydric stomach is a good stomach in the sense that it can perform its enzymotic function properly. Whatever there may be pathological in the condition is due to excessive capability, for while the results may be abnormal, on account of local circumstances, the fundamental principle of the process is one of intense physiological activity for special purposes. Every normal stomach responds to irritation at first by hyperactivity, that is, it pours out sufficient normal secretion to counteract the insult. A stomach which does not do this is defective as to either its secreting structures or its constitutional inspiration, and it can be safely assumed that most cases of subacidity began as hyperacid conditions. The original insults to the mucous membrane produced isolated attacks of hyperacidity, which in the course of time changed to subacidity for local or general reasons. This natural tendency of the normal stomach to hypersecrete upon irritation is, in itself, sufficient reason for the frequency of these conditions. Its digestive functions can be regarded as protective agencies and hyperchlorhydria is an exaggerated digestive function called into existence as one of such. It is a local manifestation of the endeavor of the organism to protect itself through a scheme of general acidity.

The hydrochloric acid of the stomach is but a massive exposition of this plan of defense, for digestion implies self-preservation and self-preservation postulates protection. It is immaterial whether this is accomplished in the digestive tract or in other cellular structures. The antibodies formed for general organic protection are found in the globulin faction of the native proteins. These globulins are acid and give rise to the antitoxins, agglutinins, and precipitins. These latter are produced whether food or toxin be injected into the circulation. Native proteins injected into the blood stream often act as toxins. Certain foodstuffs when first introduced to civilization have acted as poisons. The food which nourishes our bodies gradually merges into the toxins which destroy them and Erlich classifies the toxins as spoiled foodstuffs. The side-chain theory fits the digestion of food as regards the distintegration and assimilation of the protein molecule. "Leistungskern," receptors, haptophores, all act in the process of digestion and assimilation of food as they would in the defense against toxins, so that in its struggle for existence the organism follows a certain general law, either nutritional, as in the process of digestion and assimilation, or antitoxic, as in the operation of immunization. Whether the reactions involved are purely chemical remains to be demonstrated. With the secretions of the pathogenic bacteria largely alkaline and the tendency of animal protection largely acid, it would seem that such were the case. Judged in the light of this knowledge, we must regard the hydrochloric acid of the gastric juice, formed from the common salt of the circulating medium and adapted quantitatively to progressive biological development, as a natural protective agent against bacterial invasion or as a means of self-preservation in the sense of digestion. These facts may appear to be irrelevant to a consideration of such a prosaic condition as chronic dyspepsia with hyperacidity, whereas, in truth, they have a distinct bearing upon the extreme frequency of hyperchlorhydria and the proneness to this state under nervous influences, and may throw some light upon the question of priority in advanced associated disturbances of the motor and secretory functions of the stomach.

If the normally constructed stomach must respond to insult by hypersecretion of acid as a result of progressive biological development, we can readily understand the effects of the tangible and practical influences affecting this organ in the course of daily life. In the hyperchlorhydric temoprary state we have the secret of many of the lesser evils of occasional defective digestion. In this category we may include most cases of common acute indigestion. The vulgar sour-stomach, the popular bilious attacks, and many of the so-called old-fashioned sick headaches. This is not surprising when we consider that the normal human stomach pours out hydrochloric acid in the course of twenty-four hours in sufficient amount, if taken internally in one dose, to produce symptoms of acute poisoning.

The operating causes of hyperchlorhydria or hypersecretion do not differ from those of other affections. They are either remote or immediate. It is only in the ease and rapidity with which the stomach responds physiologically to external influences that this organ differs from the others. The reasons for this have been stated. They are largely biological. These characteristics, however, give to the predisposing causes a certain importance which they otherwise would not possess. We are very apt to disregard hereditary influences in the production of these conditions because there is no evidence of direct transmission, when, in reality, such transmission indirectly through the nervous system is of far greater importance than habit or environment. There is an ancient proverb which says: "When the fathers have eaten sour grapes the children's teeth are set on edge." Outwardly, this is not demonstrable. The classic symptoms of hyperchlorhydria are either masked or unrecognized during the early years of life. That the condition does not exist at this time is not probable, for it occurs acutely at times during the first months of existence. The general lack of inhibitory control inherited by many children is more likely to exhibit itself during adolescent years in general motor disturbances. Vagaries of secretion are not so evident. In the case of the stomach secretions any irregularities may remain dormant until the latent defects of nervous

organization are exposed by the tremendous psychic readjustment occurring at puberty. As a result of the psychological development of this period, a latent hyperchlorhydria may reveal itself or the inborn tendency to the same receive the necessary stimulus for its development. This development will depend somewhat upon subsequent events. If the course of life is laid so smoothly that no great drain is placed upon the nervous system, there may be no symptomatic evidence of irregularity. If, however, as is usually the case, the daily struggle for existence is a strenuous one, any latent tendency will sooner or later reveal itself, habit and environment to the contrary notwithstanding.

With a certain propensity for hyperacidity present in the average normal stomach from birth, it can readily be understood that all indiscretions later will tend to foster this. The foundation for many of these cases is laid during childhood. In the uncontrolled dietetic habits of the average child we may find the primary inspiration. Whereas, in a certain small proportion of children these habits are carefully regulated, in the great majority there is a general lack of supervision, with the result that most children eat more or less continuously and irregularly. The constant presence of food calls for continuous secretory activity, which in the course of time may constitute a habit. This more or less habitual hypersecretion remains physiological just so long as conditions demand it and need give no disagreeable symptoms. There comes a time, however, when a regulation of the diet becomes desirable and a continuous gastric secretion undesirable. From this time on a primary physiological hypersecretion becomes a pathological one. If, at the same time, any latent defects of the nervous system are unfolded, we have the very best conditions for the initiation of the most common form of dyspepsia. Man occupies a position midway between the herbivorous and carnivorous animals. If his habits approximate those of the former, he will secrete gastric juice more or less continuously. If they resemble those of the latter, there will be intermittent secretion. In either case, there will result an adaptability and reciprocity of all the digestive secretions to the chosen scheme. He cannot, however, vary the procedure from day to day without inharmonious action of the whole and functional derangement in general. The symptoms of such derangement will fluctuate according to individual disposition.

It is useless to go into a consideration of the immediate or exciting causes of the ordinary dyspepsias. That they will be likely to cause hyperacid conditions we have seen. They are either physicochemical or psychoneurotic. They act either from within or without the organism. Contrary to popular belief, however, it may be said in a general way that the great majority of our ordinary stomach troubles are due to conditions of life rather than dietetic indiscretions. With the exception of a small proportion of fortunately placed individuals, the average chronic dyspeptic is underfed, not overfed. Under proper conditions the ordinary insults offered to the stomach would have very little effect, for the organ is a very tolerant one. It is insensitive to ordinary heat, cold, mechanical or chemical irritation, in which capacity it is living up to the functional requirements of its development. When it does react to insult it produces its physiological secretion in excess in a purely defensive attitude. Hence, the average chronic dyspeptic always starts with a hyperacid state unless there are very decided constitutional reasons to the contrary. In the course of time this may change to subacidity on account of the structural changes, functional fatigue, or general malnutrition, dependent upon the character of the producing causes. Hence, in a given case, of short duration, without hyperacidity, we are justified in suspecting structural changes in the stomach itself, provided there is no constitutional basis for subacidity.

The conditions hyperchlorhydria or hypersecretion as expressions of physiological hyperactivity may occur in every form of stomach disease irrespective of the original causes. Whether these causes in the beginning operated through the nervous system or through the habits of the individual is absolutely immaterial. A time will come when the two are merged. An original neurosis eventually results in local organic changes from hypo- or hyperactivity and a primary organic lesion will sooner or later involve the nervous system through nutritional and psychological disturbances. Hence, old cases exhibit defective digestion, defective innervation, and defective metabolism. They represent a great class of our chronic dyspeptics, and, as such, belong to the gastrologist, neurologist, and general practitioner. Neglect of any one of these phases or fanatical devotion to any one of them will result in failure to cure. Arrived at this stage they cease to be stomach disease in a strict sense, and treatment amounts to a careful regulation of an inharmonious whole. Often too great laboratory zeal or specialistic enthusiasm does more harm than good.

Much has been written concerning reflex influences upon the acid secretion of the stomach, and attempts have been made to establish a direct connection between such conditions as appendicitis and gallstones and certain abnormalities in the quantity of hydrochloric acid secreted. That excessive gastric acidity and these conditions should coexist many times is not surprising when we consider the frequency of hyperchlorhydria in the general run of gastric diseases. The *modus operandi* of these reflexes has never been satisfactorily explained, but it can be assumed with air safety that, whatever the stimulus may be, the average stomach will respond to it to the extent of its secreting capability, which in an organ of normal strucure means natural hyperacidity. In cases where such hyperactivity does not occur we hear nothing of reflex action. If, however, any causal relation exists between foreign conditions and the gastric-acid secretion, this latter should be affected in different ways and to different degrees. Very little is written about reflex unacidity in this connection. It is far more probable and may be regarded as a general law that under reflex influences a given stomach will secrete acid according to its capability and usual habit under direct irritation.

This same rule applies to gastric secretions in their relation to constitutional conditions. Except in cases of advanced cachexia or dyscrasias these secretions follow a more or less independent course. No relationship has been estab-

lished between gout, rheumatism, diabetes, tuberculosis, chlorosis, etc., and gastric acidity. In advanced stages of these conditions marked excess of acid may be exhibited in the gastric secretions, at times, so that no empirical conclusion can be drawn as to the condition of digestive function at any stage of these diseases. In those conditions, where, as a result of defective metabolism, a general acidity is supposed to result no influence whatever is exerted upon the acid secretion of the stomach. It may attain to any degree, plus or minus.

It is in the functional neuroses that the greatest degree of variability is exhibited in the gastric secretions. The reasons for this have never been determined. Why the emotional state should cause hyperacidity in one case, and hypoacidity in another, or the same variation at different times in the same individual, has never been solved. It is a problem so intimately connected with intracellular protoplasmic activity, that is, with life itself, that it has so far resisted all efforts at explanation, theory, or laboratory refinement. We know, however, that the tendency of the gastric secretions in these conditions is toward excess in the majority of cases. Fully seventy-five per cent. of so-called nervous dyspepsias are hyperacid conditions, and yet these occur in individuals a good percentage of whom comprise what the neurologists have called physiological inferiors. Why an organism which is physiologically inferior should be able to exhibit in such marked degree one of its most active defensive agents, either in the sense of digestion or in that of a purely chemical agent, is an enigma. Clinically, we may regard this tendency as another evidence of lack of inhibitory control, with which so many are born. Acquired neuroses seem to be losing ground. Heredity is the main feature in these conditions, so that, in this connection, excessive acid secretions may be allied with all the other uncontrollable muscular, sensory, and psychological phenomena associated with neurasthenia, psychasthenia, and hysteria. As these latter are aggravated by the lesser evils in life, by the daily small irritations, so is the tendency to hyperacidity increased by these same. Decided shocks cause cessation of secretion entirely. On the other hand, there seems to be no direct relation between depressed or irritated states of the nervous system and the gastric acidity. Intense nervous and mental depression causes no corresponding depression in the degree of acidity exhibited. On the contrary, the two states may show pronounced contrariety. The relation existing between the functional neuroses and gastric acidity displays the same independence which exists in purely reflex conditions and constitutional diseases.

In associated motor and secretory disturbances of gastric digestion the question of priority always arises. Which function is affected first? In a given case of hypersecretion, with food retention, which is the primary affection, hypersecretion or retention? It is not always possible to decide this question in an individual case, nor is it necessary to do so in advanced cases, for the conditions become retroactive in the course of time. Judging, however, from the natural tendency of the normal stomach to hypersecrete upon slight provocation, it is probable that in the majority of cases we have to deal with a primary excessive secretion and secondary retention. The tendency of every hyperacid stomach is to empty itself slowly for purely physiological reasons. The duration of pyloric contraction depends upon the neutralization period in the duodenum. If this is protracted by a high degree of acidity of the gastric contents, pyloric contraction will be prolonged. The resulting retention causes gastric irritation with increased secretion, and we have a vicious circle within the narrow limits of the stomach, pylorus, and duodenum. This explanation does not apply to all cases, but the principle of it is present in all cases. It is immaterial, in this connection, whether the primary exciting cause be remote or immediate—that is, physicochemical or psychoneurotic. Once the excess of acid is established the subsequent course of local development will be the same in most cases.

It has seemed advisable to review the general principles involved in hyperacid conditions of the stomach because the literature has become more or less confusing. The various descriptions of different types have served to obscure the underlying basis of biological facts which is present in all of them, and most variations are largely questions of degree. Chronic dyspepsia and hyperacidity are almost interchangeable terms, for excessive secretion is the feature of the great majority of our ordinary stomach troubles, whatever may be the operating causes.

144 East Thirty-eighth Street.

TOP-MILK AND WHEY FOR INFANT FEEDING (ONE QUART OF MILK DAILY UP TO THE END OF THE FIRST YEAR); WITH SOME OBSERVATIONS ON MILK PURITY AND PRESERVATION.*

By RANSFORD E. VAN GIESON, M.D.,

Brooklyn, N. Y.

At this season of the year, with midsummer heat rapidly approaching and with it the conditions most favorable for bacterial growth and possible infection of the food of bottle-fed infants, the question of the best methods of artificial feeding with clean milk properly modified becomes one of the most serious import. It needs no reference to statistics to prove that the annual increase of the death rate among children under three years of age is almost wholly due to three factors: Heat combined with humidity, unclean milk, and improper feeding, producing intestinal infection and diarrheal disease. The climatic conditions are beyond our control, but much may be done to control the remaining factors. Since the days of Dr. Rotton Percy, who successfully led the crusade of the medical profession against swill milk from stall-fed, diseased cows, we have gradually but surely, through the strong hand of legal enactment, erected year after year barriers against the entrance of impure milk. That more has not been done is more the fault of the consumer than the producer. Stronger than laws to restrain the entrance of unclean milk and unwholesome cold-storage food, greater than periodical inspection of herds, is the will of the consumer educated to realize the death-dealing possibilities of germ-laden milk and food decomposed from prolonged cold

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storage. If the consumer tenders his money and demands its equivalent in untainted food and clean milk he will eventually receive it. The purveyor has his ear to the ground and when the popular murmur, united and intense, reaches him, the law will be obeyed and not evaded. There is no power stronger than the concentrated force of enlightened public opinion. Our duty then as medical men in all this matter of foodstuffs is a ceaseless campaign of education. Artificial feeding is based upon the use of milk of the greatest obtainable purity—the discussion of this question would be but a fatuous fallacy, if such milk is not obtainable. The problem is difficult enough with the purest and best milk; but when this is contaminated the solution is an impossibility by any method whatever. The prevention of the entrance of the grosser impurities is not difficult. The entrance of disease germs under the strict enforcement of our present laws should be an impossibility, barring a single portentous fact which is certainly very difficult to control. Coincidently with the summer heat, and remaining with us with more or less fatal activity, appears that most pestiferous member of the suctorial insect family, the common house-fly, long simply regarded as only a nuisance, but now known to be a dangerous foe. We are not far from the true facts when we venture to state that as transmitters of disease germs they are the most potent and difficult to combat. Born and bred in disgusting, decomposing, excrementitious products, perching on the dying and the dead, rioting in filth and corruption, feeding on germ-bearing material—omnipresent, of astounding fecundity, their feet shod with death-dealing bacteria—these winged assassins are active agents in food contamination, and against them there is but one defence, namely, a relentless war of extermination, and the destruction or making unfit as breeding places of the stable refuse. We have conquered the mosquito, we can also conquer the fly.

What simple cleanliness and cold can do in furnishing pure milk is strikingly illustrated by the following facts: "At the Paris exposition of 1900 there was an exhibit of dairy products under the care of Major Alford of the U. S. department of agriculture, which consisted of *fresh* milk and cream shipped from Illinois, New Jersey, and New York in hot weather (July), coming some 3,000 to 4,000 miles. The cream and milk were perfectly sweet a fortnight after being bottled, while the only other competitor was the French with a local supply which did not keep a day after reaching the grounds. In the Chicago national dairy show a sample of cream shipped over 1,000 miles was still sweet at the end of seven weeks. Cleanliness and cold were the only methods used in so wonderfully preserving the milk."

From whatever standpoint we may study the principles upon which successful artificial feeding should be based we eventually arrive at the main fact involved, and that is the gradual adaptation of the infant's digestive organs to a number of foreign substances by nature fitted for the nurture and growth of a lower animal. One cardinal principle must stand prominently in the foreground when we are dealing with cow's milk as a substitute for that of the mother, and that is that the ingredients of the former are practically altogether different from those found in human milk. This applies to all the substances except the water and the salts. Also, the milk of *any* animal in its living gland differs in some degree from dead milk in the test tube of the laboratory. Mechanical processes separating it into its supposed component parts, reassembling them in any desired proportion does not produce, even when the original proportions are preserved, the *same milk*. Something has disappeared. That something, clinical experience has proven, is essential to complete the full nourishing quality of the milk. It eludes the most elaborate chemical research. We therefore must arrive at the conclusion that milk, that most perfect of emulsions, is a very complex fluid about which much remains to be learned. Nevertheless, clinical experience and laboratory research unite in proving the basic fact upon which all successful modification depends in order to adapt it to the limitations of the infant's digestive ability —and that is, that, although animal milk contains substances apparently similar to those found in human milk, they are not chemically or even physically identical. This applies especially to cow casein. It is so radically different from human casein that it must be considered practically as a foreign body capable of nourishing an infant only after it has been modified and adapted to a stomach of feeble power designed by nature for an easily digested food. Cow casein readily coagulates into large, tough masses, insoluble armor-clad clumps, against which the feeble attacks of the gastric juice are impotent. Rebellion is at once proclaimed. The foreign intruder may be ejected by vomiting, and hostilities for a time are suspended. If not, it storms the weak fortress of the pylorus, passes victorious into the lower intestine, to become a culture medium of germs, a breeder of toxins, colics, diarrhea, and all the long train of evils which arise from forcing an unprepared foreign body into a stomach unable to digest it. Human casein coagulates slowly in very fine, soft flocculi, almost semifluid, pultaceous masses, easily digested.

To overcome and render innocuous this foreign body and yet preserve its nutrient properties is the main problem of milk modification. The central idea is to prevent its formation in solid masses. Cow casein is comparatively harmless if we can keep its particles separated. Our best method of doing this is the very simple one of dilution whereby we expose in a finely divided form much smaller quantities than the average amount of casein in mother's milk, to the digestive action of the gastric juice, and feeble peristaltic movement of the stomach. This is the condensed teaching of nearly a century of clinical experience. It is wise and safe to accept it, all study, analysis, comparison of calories to the contrary notwithstanding. Laying aside all theory it is sufficient to say that the stomach of the infant and that of the young calf are adapted by nature to their respective normal foods, and as we cannot, in changing from the calf to the infant, alter the organs we must modify the food to the organ. Dr. Louis Starr's comment upon this phase of the question is concise and appropriate. "We certainly should not sacrifice everything to chemical accuracy." The modern tendency is decidedly towards somewhat weaker dilutions than were used by our fathers, reducing the casein proteid to one-half per cent. and reaching slowly 1 per cent. at the end of the first month. If we thus lay the foundation, the main difficulty in modification is overcome, and having thus made casein digestible, subsequent success is assured; the proportions will remain nearly the same, the amount and frequency of the feedings varying according to the average capacity of the stomach.

The second form of proteid in cow's milk is the soluble one of *lactalbumin*. This is important and deserves special consideration. It more nearly resembles that of human milk than any other ingredient. It requires no modification. It is the chief ingredient of whey to the extent of 1 per cent. and is the most valuable asset in the top milk and whey mixtures, mainly because it enables us to give the needed amount of soluble digestible proteid with a minimum of casein—an achievement that insures success. The presence of lactalbumin in whey makes the latter one of the best diluents for casein that we possess—holding it in finer suspension, and preventing clumping in hard masses—thus obviating the use of weak cereal solutions until the amylolytic function is sufficiently developed to convert starch into sugar. Schlossman estimates total proteids in human milk at 1.56 per cent., of which 63 per cent. is casein and 37 per cent. lactalbumin. He considers that this large proportion of soluble albumin is of great help to digestion, since the infant obtains a considerable part of the nitrogen it requires in a form in which it can be directly absorbed, whereas casein has to undergo complicated changes before it is ready for absorption. In my preparatory formula for the first month, I have endeavored to approximate these proportions. It is estimated to contain 0.66 per cent. casein and 0.40 per cent. lactalbumin in total proteids of 1.06 per cent. The large percentage of fat in the top milk used in the formulas differs materially from that of human milk but is less troublesome to modify than the casein; when properly diluted with whey containing 1 per cent. lactalbumin, giving 2 per cent. to 3 per cent. fat, it produces no noticeable digestive disturbances. It is usually given somewhat in excess of what is really needed. Fat-free milk long continued, though containing over 6 per cent. of sugar, is sooner or later followed by unmistakable evidences of malnutrition. Dilutions of milk make it necessary to add some form of sugar to bring the total amount in the mixture from 5 per cent. to 6½ per cent. Here, as in almost everything else connected with infant feeding, there has been considerable dispute. Personally I have always used pure granulated white cane sugar. I am not prepared as yet to believe that cow lactose and human lactose are identical in composition or effect. It is contended vaguely and without sufficient proof that cane sugar is more liable to set up fermentative changes. It is also frankly admitted that it is often better borne than cow lactose. After using it for many years I have found no reason to change my views as to its superiority over cow lactose.

The lime water used must be the liquor calcis of the United States Pharmacopoeia. In combination with the lactose of the whey and the added cane sugar to 6 per cent., it is an anticoagulant of casein of feeble power and antacid.

The top milk used in the formulas is ten, twelve, fourteen, and sixteen ounces. The remainders are used for making the whey.

The percentages are calculated from 4 per cent. market milk, bottled and usually delivered before 6 A. M. Lowest measure of cream line from top of bottle 3⅛ inches, highest 3⅞ inches. Lowest price 9 cents per quart, highest 10 cents. The fat is figured from Chapin's middle column for 4 per cent. milk. The proteids are made somewhat lower than the estimates generally given. The writer agreeing with Holt (Judson and Gittings, p. 131) that they are usually figured too high.

TOP MILK PERCENTAGE.

Ounces.	Fat.	Proteid.	Lactose.
10	10	3.30	4.50
12	9	3.50	4.50
14	7.50	3.70	4.50
16	7	4.00	4.50

The whey is made from the milk remaining after the top portion is removed.

I have found Hansen's junket tablets the most convenient and cheapest form of rennin for this purpose. According to the maker they consist solely of rennin and common salt. One of these coagulates a quart of unsterilized, unpasteurized milk at a temperature of 98° F. in some eight minutes. When the surface of the milk begins to appear glossy and glistening and the whole mass moves from the side of the vessel when the latter is slightly tipped over, it is firm; it is then broken up in fine pieces with a fork, stirred rapidly for some twenty minutes, then replaced over the gas or alcohol stove, brought carefully to 130° F., and immediately removed. The curd gathers in a tough mass. It is now strained through two thicknesses of clean bleached cheese cloth, the curd being gently pressed, and when cooled to the temperature of the room is bottled and placed by an equal supply of top milk for the day's feeding. Thirty-two ounces of milk thus treated will yield 28 ounces and 2 drams of whey and smaller quantities proportionately the same. The whey must not be made from top milk, as it will give too much fat, and moreover this very valuable portion is needed—from 10 to 16 ounces for the child, according to its age.

One of the objects of this paper is to demonstrate how a baby may be successfully reared up to the fourteenth month on one quart of good fresh, clean bottle market milk. As the necessary safeguarding of the milk by proper sanitary surroundings and precautions at its source, the country farm, will entail, for a time at least, increased expense of production and consequent rise in price, milk for babies will become a somewhat precious fluid, and economy will become a necessity for parents of limited means. In cheesemaking, the curd is cut with a sharp knife into small strips or cubes, and the temperature is not raised above 98°. The whey drains off slowly and the curd contracting gradually retains nearly all the fat, the whey is clear and limpid. It will contain 1 per cent. lactalbumin and a minimum of fat, about 0.30 per cent. It is the so-called gravity whey, not adapted to the present method as it is lacking in fat. Whey prepared by my method yields a chylous-looking fluid, opaque from the presence of fat. From the remainder left after ten ounces are removed, the whey thus prepared from it will give 1 per cent. fat. The remainder from 12 and 14 ounces about eight-tenths of 1 per cent. I have calculated my mixture at eight-tenths of 1 per cent. fat to avoid unnecessary figuring. It is essential, however, that the whey should be prepared as nearly as possible according to the directions given and be decidedly opaque. This method also gives a maximum of whey from a given quantity of bottom milk and we need all we can get, especially when we reach maximum feedings of nine or ten ounces of the mixture.

An important and necessary feature in this process is the *inhibition* of the enzyme in the whey which may curdle the mixture if kept too long before feeding. Now an enzyme cannot be neutralized or saturated like acids and bases; when we consider that two or three ounces of an ordinary solution of rennin will curd effectually 1,000 pounds of milk at 98° F., we see at once that we are dealing

with a ferment that acts by contact, and any chemical that destroys its action will also make the whey unfit for feeding of infants. There is then no harmless method of inhibiting the action of the ferment except that of heat, but in doing this it is essential that we should not also coagulate the lactalbumin; when this happens it is of no more food value than so much sugar water. The lactalbumin must remain in solution; as such it is a valuable proteid, coagulated in suspension; it is changed into something, we know not what, but we may infer that insoluble, it is about as indigestible as the casein proteid. Monti heats the whey to 155° F. to destroy the lab ferment, cools and strains through a silk cloth. It is then mixed with one or two parts of milk put in sterile bottles and pasteurized at 158° F., cooled to 50° F., and kept at this temperature until used. No doubt the enzyme is destroyed and unless great care is observed, to some extent also, the lactalbumin which should be kept in solution. A clear limpid gravity whey when heated grows opaque at 158° F., at 160° F. it coagulates.

Whey prepared by my method at 130° (135° maximum) *inhibits* the enzyme sufficiently for all feeding requirements. Its total destruction (at 145° F.) is not necessary, as the whey and top milk are not mixed until just before feeding. When a traveling supply is needed sufficient whey is prepared at 135° F.; the top milk, an equal quantity is heated to 140° F., placed in separate bottles, and used as required. On general principles, with any system of feeding, it is better to keep the ingredients separate until feeding. With this method it is *imperative*.

Addition of Starch.—This may be coarsely ground wheat, barley, oatmeal, or granum. I have usually used the latter. Its analysis (Leeds, quoted by Judson and Gittings) gives, in percentages: Water, 8.38; albuminoids, 13.13; fat, 1.40; starch, 76.11; soluble carbohydrates, 1.80; ash, 0.39.

It has the advantage of being easily prepared, requires no straining, and has about the same value as wheat. Modern authorities on infant feeding all agree that there is no rule more important than that which fixes the time and regulates the amount of starch to be given. Some prefer to wait until the amylolytic function is well developed, others begin when it is sufficiently developed to convert *small quantities* into sugar. The experiments of Korowin in 1873, confirmed by Shaw in 1904, prove that young infants can convert starch in ½ per cent. solutions. Rotch says that starch should not be given before the eleventh or twelfth month. Between these two extremes there is a safe period when it can be made available as a nutriment in small amounts, and that is, in the healthy infant, at about the sixth month. It must be given tentatively and increased very gradually in the same watchful manner that we accustom the child to live and thrive on cow casein.

The cereal solution is made by adding four rounded teaspoonfuls of granum to one pint of water in a quart agate-ware open boiler and boiling twenty to thirty minutes. An indicator is hung over the edge of the boiler showing the height of the water before boiling. After twenty minutes the water will be reduced nearly one-half. Water is now added to the pint mark, brought again to the boiling point, removed, and bottled when cool. This makes a 4 per cent. solution, a dram of which will contain about 2½ grains.

The formulas constructed upon the preceding principles are measured in drams. They are *initial, preparatory, intermediate,* and *permanent,* designed to feed a child all it may require to the end of the year or fourteenth month.

Initial Formula.—First to third day: Whey, 6; boiled water, 3; lime water, 1; total, 10 drams. Sugar, 20 grains = 1/3 teaspoonful. Contains: Fat, 0.48; lactalbumin, 0.60; sugar, 6 per cent.

Preparatory Formula.—Introducing casein from 10 ounces top milk; to end of fourth to fifth week proportions increased as may be needed: Top milk, 2; whey, 4; boiled water, 3; lime water, 1; total, 10 drams. Sugar, 1/3 teaspoonful, or 20 grains. Estimated to contain: Fat from top milk, 2; fat from whey, 0.32; total fat, 2.32 per cent. Proteid from top milk, 0.66; lactalbumin from top milk, 0.40; total protein, 1.06 per cent. Sugar (20 grains), 6 per cent. Total solids, excluding salts, 9.38 per cent.

Permanent Formula.—At the second month the child having been accustomed to the casein proteid, tempered and attenuated by the soluble lactalbumin, we begin with the basic formula consisting of equal parts (drams) of top milk, whey, and boiled water, to which is added lime water from 6 to 10 per cent. and sugar 6 per cent. The proportions will remain the same. The percentages will vary as we pass from ten ounces to twelve, fourteen, and sixteen of the top milk, the fats slightly decreasing, the proteids increasing. At the sixth to eighth month starch is added gradually to balance the decrease in fats. The lowest basic formula will be ten drams, the highest eighty drams, or ten ounces.

BASIC FORMULA (IN DRAMS).

Top milk	3		24
Whey	3		24
Boiled water	3	× 8 =	24
Lime water	1		8
Total	10		80

The lime water will vary when units are added to the equal parts. Multiplying *all* the parts will of course give 10 per cent. In order to prevent confusion I usually give the mothers feeding cards calculated for six to eight weeks from their last. The basic formula, total drams multiplied by 2, will give total grains of sugar to be added to bring the mixture to 6 per cent. total sugar. For domestic feeding we estimate an even teaspoonful dry granulated sugar at sixty grains or one dram. The results are sufficiently accurate. It is estimated to contain:

Ten Ounces Top Milk.—Fat from top milk, 3; fat from whey, 0.24; total, 3.24 per cent. Proteid from top milk, 0.99; lactalbumin from whey, 0.30; total, 1.29 per cent. Sugar (20 grains), 6 per cent. Total solids, excluding salts, 10.53 per cent.

At about the fifth month we will be feeding seven feedings of 9-9-9-3 or 12-12-12-4, or from four to five ounces, and ten ounces will not suffice, so we pass to twelve ounces, and after this time rarely give night feedings. The estimate of this formula shows it to be slightly decreased in fat and increased in proteins, or casein.

Twelve Ounces Top Milk (sixth to ninth month).—Fat from top milk, 2.70; fat from whey, 0.24; total, 2.94 per cent. Proteid from top milk, 1.05; lactalbumin, 0.30; total, 1.35 per cent. Sugar (20 grains), 6 per cent. Total solids, excluding salts, 10.29 per cent.

The feedings will be five to six ounces six times daily giving 12-12-12-4 = 40 drams, or 15-15-15-5 = 50 drams.

We can now introduce a fraction of 1 per cent. of the 4 per cent. granum solution by substituting one dram for one of the boiled water. Top milk, 15; whey, 15; boiled water (14 + Granum Sol. 1), 15; lime water, 5; total, 50 drams. Sugar, 1½ teaspoonfuls.

In six feedings the total granum is 2½ × 6 = 15 grains, or 1/12 of 1 per cent.

These additions of one to two drams are continued so long as no intolerance is noticeable, until all the boiled water is replaced by the granum solution, when the percentage will be 1.20, which is the limit of the basic formula. This happens normally at about the fourteenth month, when the feeding capacity and needs of the child will begin to exceed the quart allowance and it may be safely weaned. When two bottles of milk can be afforded there are two intermediate formulæ having well balanced proportions of fat and proteids that can be introduced after the preparatory formula, estimated from ten and twelve ounces of top milk. With one bottle we have to pass on to the fourteen and sixteen-ounce formula, adding more granum water in place of boiled water to balance fat decrease, say 0.80 per cent.

Basic Formula, 14 Ounces Top Milk.—Fat from top milk, 2.25; fat from whey, 0.24; total fat, 2.49 per cent. Proteid, 1.11; lactalbumin, 0.30; total, 1.41 per cent. Sugar, 6 per cent.; starch, 0.80 per cent.; total solids, excluding salts, 10.70 per cent.

Basic Formula, 16 Ounces Top Milk.—Fat from top milk, 2.10; fat from whey, 0.24; total, 2.34 per cent. Proteid, 1.20; lactalbumin, 0.30; total, 1.50 per cent. Sugar, 6; starch, 1.20 per cent. Total solids, excluding salts, 11.04 per cent.

In the sixteen-ounce formula *all* the boiled water has been replaced by the 4 per cent. granum solution giving the highest starch percentage and total solids percentage.

Intermediate Formula, 10 Ounces Top Milk.—Top milk, 3; whey, 4; boiled water, 2; lime water, 1; total, 10 drams. Sugar, 1½ teaspoonfuls.

Fat from top milk, 3; fat from whey, 0.32; total fat, 3.32 per cent. Proteid, 0.99; lactalbumin, 0.40; total proteid, 1.39 per cent. Sugar, 6 per cent. Total solids, excluding salts, 10.71 per cent.

Intermediate Formula, 12 Ounces Top Milk.—Same formula. Fat from top milk, 2.70; fat from whey, 0.32; total fat, 3.02 per cent. Proteid, 1.05; lactalbumin, 0.40; total proteid, 1.45 per cent. Sugar, 6 per cent. Total solids, excluding salts, 10.47 per cent.

Results.—Of some ten cases, all but one were typical examples of malnutrition. Three are weaned. One after having entirely recovered from all digestive disturbances contracted whooping cough and died of broncho-pneumonia at the end of the fifth month. Six are still under observation; from these I select two, one of medium severity and the other requiring very careful treatment.

Medium severity, simple malnutrition.—Mrs. B.'s adopted child. Taken from a home when four months old; had been fed on modified milk from birth, but did not grow well, suffered from colic and diarrhea and occasional vomiting. Mrs. B. gave it commercial artificial food without improvement and it seemed to grow weaker and worse. Colic and diarrhea remained about the same. The child was brought to me at five and one-half months. I prescribed the preparatory formula with excess of whey with top milk from eight ounces. In two weeks the basic formula. It is now sixteen months old, taking three nine-ounce feedings and two meals of bread-and-butter pap with equal parts of whey and twelve ounces top milk.

Mrs. S.'s eighth child.—Her first born is living, six intervening children have all died between the third and fourth month. All were born plump and well, averaging seven to eight pounds at birth; two took the breast for two months, four for five weeks, when milk dried up. All were given artificial commercial foods and modified milk, but all food disagreed; to use her own words, "they cried almost constantly and everything ran through them." This last child was not put to the breast and the best commercial artificial food was given with the same symptoms—colic, diarrhea, and emaciation. At the fifth week it was brought to me in a pitiable condition. It seemed to me that the only prescription fitted to such a case was human milk from a healthy wet nurse. I gave top milk, 2; whey, 4; boiled water, 2; lime water, 1, from six ounces top milk five drops cod liver oil between feedings and inunctions of the same twice daily. There was slight gain in a week. In a month there was a decided gain. I then gave basic formula from ten ounces top milk. At the present time (June, 1911), after six months, it is taking the basic formula from twelve ounces top milk. The cod liver oil inunctions are continued and if there is no tuberculous infection we may make a favorable prognosis. It is the only child of the seven that has lived beyond the fourth month.

The third case has been under my personal supervision since birth, April 6, 1910, face presentation and instrumental delivery followed by partial facial paralysis and rather feeble suction. Breast milk, none. Put immediately on initial formula third day, preparatory ten ounces top milk; starch at six months; is now taking top milk, 22; whey, 22; granum solution, 22; lime water, 7 drams (total, 9 ounces) × by five feedings = (forty-five ounces daily ration), with a nibble of stale bread between feedings. It has never had the slightest digestive disturbance. It measures thirty inches, weighs twenty-five pounds, and is well and happy.

To sum up: (1) The central idea of these formulæ is gradual adaptation of foreign substances to weak digestive powers; (2) the great value of lactalbumin solution as a diluent and nourishing soluble protein; (3) the necessity of preserving it *intact* by using *moderate temperatures* to *inhibit* the action of the enzyme; (4) to preserve as nearly as possible the proportions of one-third lactalbumin to two-thirds proteids.

Finally, to anticipate some objections: (1) That it is too complicated for domestic use. Answer: It is more complicated in theory than in practice: one lesson usually suffices. The mothers follow their cards and make few errors. (2) It is expensive and troublesome. Answer: No; the chief expense is clean pure milk. This is essential with any method employing milk. The expense is one dairy thermometer, 25 cents; a two-ounce graduate, 30 cents. The remaining implements are found in every household. No trouble is too great that may save an infant's life.

94 Kent Street.

Experimental Influenzal Endocarditis.—Porrini produced endocarditis in rabbits by means of injections into the veins of the ear of mixtures of influenza bacilli and toxins with an indifferent powder (Ribbert's method), or with adrenalin (de Vecchi's method).—*Gazzetta degli Ospedali.*

THE SIGNIFICANCE OF FEAR IN MENTAL DISEASES. REPORT OF A CASE WITH CLAUSTROPHOBIA.

By MAX A. BAHR, M.D.,

INDIANAPOLIS,

CENTRAL INDIANA HOSPITAL FOR THE INSANE.

The condition of fear has not until recent years been given serious consideration in psychiatric practice. It occurs either as an emotional state or as in the various phobias in the form of compulsory concepts or ideas. The fear of emotional origin may occur at times without any kind of accompanying physical perception, at times it is associated with the greatest multiplicity of sensations. The latter is generally more frequent. Very often it is joined with a painful feeling of oppression in the region of the heart which has been designated by Professor Ziehen of Berlin as *Præcordialangst* (præcordial fear). Many patients complain of constriction in the neck accompanying the fear, others of a feeling of uneasiness in the abdomen. Others complain only of a feeling of unrest which at times appears in the entire body, at times in the legs, and at times in the arms. According to the seat of perception they are designated as præcordial fears, thoracic fears, abdominal fears, etc. At times the localization of fear is also determined by accidental coexisting sensations or pains which have already existed long before the appearance of the fear. In those cases where accompanying perceptions are entirely wanting, the patients state either that the fear is "seated everywhere," or it is a "mental fear," or finally they also locate their fear in the head in spite of the absence of the accompanying perceptions. There has been much dispute regarding the relation of fear to the accompanying perceptions mentioned, and it has even been designated that these accompanying perceptions acted directly as the cause of every fear, and designated for example especially the præcordial fear directly as a vasomotor neurosis of the heart. This conclusion is erroneous from the fact that the accompanying perception can at times be entirely wanting in profound fear. Primarily fear, like all normal and pathological emotions, is much more frequently of cortical origin. It more frequently and more intensely than other emotions exerts an influence upon the striated and unstriated musculature of the body. This manifests itself in the so-called movements of fear, the apprehensive rubbing of the hands, and the to-and-fro movements of the limbs as is so characteristic in the melancholia of involution. The respiration is frequently altered during the fear of the patient as he breathes more rapidly, and thus arises the accompanying perception of "thoracic fear." Finally still more important is the influence of fear upon the circulation. The peripheral arteries undergo a stronger contraction, the heart action becomes accelerated, irregular and less forcible. Consequently here arises the "paroxysms of fear" and the "cardiac unrest," of which so many patients complain.

Fear can also induce a condition of motor inhibition resulting in a state of complete catatonic stupor. Why it produces in one case a motor inhibition and in another an agitation has not yet been fully explained. In not a few cases the influence of fear upon the individual varies at different times, inhibition and agitation alternating with each other. Fear also induces so-called secondary delusional concepts; the patients seek in a manner an explanation of the fear, and consequently the delusional ideas of having sinned, of impoverishment, of being incurably ill present themselves as welcome attempts at explanation. In rare cases there also occur secondary hallucinations with corresponding content. Such are the fears of emotional origin in counterdistinction to the various phobias which make their appearance in the form of compulsory ideas. These phobias are always characterized by the sudden appearance of pronounced anxiety in connection with the general idea of fear. When subjected to them, patients may suffer from palpitation of the heart, become pale, tremble, have cold sweats, nausea, faintness, polyuria, weakness in the legs, and finally may even lose control of themselves and collapse.

The conditions in connection with which such attacks of fear arise are varied, yet there are some forms which recur with notable regularity. Thus there is the fear of open or closed places, fear of high places, fear of men or women, fear of crowds and of solitudes, fear of animals, fear of insects, fear of darkness, fear of accidents, fear of fire, fear of travel, and in fact fear of anything. There is no end to the absurdity of acts which may be occasioned by these persistent ideas of fear. Those that possess the fear of riding on a train find no pleasure in traveling, those that have fear of closed places do not enjoy going to church, and generally always sit near the door ready to fly at the first sign of danger. Various fears may also develop in connection with the occupation of the patient; for instance, barbers sometimes suffer these attacks whenever they see a razor, or telegraphers when they catch sight of their instruments, which finally necessitates giving up the occupation. Among women, especially, there occurs the fear of dirt, contagion, or infection. The countless bacteria always present in the air are the chief source of annoyances. The patients are always complaining of bad air and are always throwing open the windows. Books are especially avoided as a possible source of contagion. In patients with fear of injury they will throw away all needles in the house, or they will no more wash windows for fear that the glass might break and cut them. The intellect in these cases is not only undisturbed, but may be unusually good. Patients exhibit throughout a pronounced feeling of mental illness and frequently a clear insight into the morbidity of the individual symptoms.

The more common of the various phobias as classified by Beard are as follows: Claustrophobia, fear of narrow or closed places; agoraphobia, fear of open places; astraphobia, fear of lightning; monophobia, fear of being alone; pathophobia, fear of disease; mysophobia, fear of contamination; siderodromophobia, fear of railroad travel; acrophobia, fear of being at a high height or looking over precipices; thanatophobia, fear of death.

It is to be emphasized that the phobias in question are not normal fears, based, as normal or natural fears are, on some reasonable justifying experience. A reasonable and justifiable normal fear of lightning might arise after the experience of having been at some time in a house struck by lightning. Other fears, such as the fear of riding in a buggy after having been in a runaway, or the fear of a voyage at sea or railway after a frightful shipwreck or railway accident, is a more or less

natural or reasonable fear, as the fear of hoodoos and ghosts are among the superstitious or those accustomed to ghost stories and tradition of goblin visitation, etc. These fears do not require a warped brain for their lodgment or entertainment, though the weakened brain may be more vividly impressed and markedly swayed by them. The morbid phobic symptoms to be of diagnostic value must be groundless in their inception or continuance so far as influences external to the brain are concerned. They must be of intercerebral and not of extraneous origin. They must proceed from a morbid state of the brain and not from properly exciting external causes. They must be fears peculiar to the individual under peculiar circumstances of cerebral disturbance and not fear common to others and due to causes that naturally cause alarm and frighten. The fear, for example, of microbic infection from distrust of perfect cleanliness in an establishment, in a barber, in a cook, etc., may be normally founded. There is a normal, natural, scientific and medically legitimate mysophobia which must be differentiated from the morbid fears of an abnormal brain.

These various phobias have so frequently been complicated with neurasthenia that all such cases have at times been regarded as such. This, however, is not the case, as not a few cases exist in which all neurasthenic symptoms are wanting. Such is the case to be described below. It is to be emphasized that these various phobias only represent a symptom and that they may be found in various psychoses, as in melancholia, in the beginning stage of dementia paralytica, at times in the course of paranoia, furthermore in hysteria, etc., and especially in neurasthenia. Hereditary taint is exceedingly frequent and occurs in about 80 per cent. of the cases. The outbreak occurs most frequently at the time of puberty. Occasionally the first phobias already present themselves at childhood. Now and then the beginning of the disease takes place at the climacterium. Very frequently it deals with individuals who at times already before the phobias, manifested an abnormal love of order, an extreme conscientiousness and indecision, and a peculiar deficiency of self-confidence. Masturbation, nicotine abuse, alcoholic excesses, intellectual overexertion, physical fatigue, anemia, accumulated emotional excitations frequently are superadded upon the hereditary endowment. Further satisfactory etiological research has still to be made in regard to this type of mental condition. The presence of these phobias generally signifies an unfavorable prognosis. Long intermission may occur, but relapses are most inevitable. Usefulness is seriously impaired, but patients may continue for many years to be self-supporting. Exclusive of the chances of suicide, the average duration of life is not specially shortened. Transition into secondary dementia also does not take place. Such a condition is at times simulated, in that the patients after many years finally become weary of the struggle and mechanically give way the whole day to their morbid fears. Because of this, other interests and other emotions in the patient are lost. It is sad to say that many of the patients become addicted secondarily to alcoholism and morphism after they have once learned the otherwise wholly transitory favorable action of the alcohol or the morphine upon these morbid fears. Apart from the hereditary susceptibiliy and instability of the cerebral centers, no definite pathology can be assigned. These various phobias, as already stated above, may occur in many forms of insanity, but they do not constitute the gravamen of the mental disease, as is the case of fears which originate in the form of compulsory concepts or ideas. The following is a case with pronounced and persistent symptoms of claustrophobia: A male, age 48 years, was admitted to the Central Hospital the following dates: June 7, 1895; June 7, 1910, and again on September 21, 1910. His family history was negative excepting that his brother died a rather mysterious death in which there was suspicion that he had committed suicide. There was nothing unusual in the early history of the patient. He was ill but very little as a child and was an average pupil at school. It was stated that as a young man he was somewhat more seclusive than his associates, that he cared very little for company, and that he would rather be alone. Married at the age of 23 and has three children living, all in good health. One child died at birth and the mother died at the same time. This has worried the patient a great deal, and as he states: "I have never had a cheerful day since." This was about seventeen years ago, or about one year previous to his first admission to this institution. No history of alcoholism, but he has used tobacco somewhat excessively. At each admission of the patient the entire psychical process has been dominated by the feeling of fear that he will be caught in a burning building or that he will be killed by the roof of a building falling on him. He has lived in this state of fear almost constantly since 1894. He has a complete insight into his condition. Says that he realizes the fallacy of his belief but cannot rid himself of this morbid fear. "At times this fear will leave me and I will feel better, but I know that I have not been entirely well since leaving the institution the first time." Question. Are you insane? "I am not insane, but I know that I act queer, but I can't help it." On several occasions the patient has had hallucinations during the course of the illness, but they have not materially influenced the disease. His emotional state has been chiefly one of depression and anxiety in consequence of these morbid ideas. "I would have to carry out my queer ideas or I would never have peace of mind." The patient was a farmer by occupation and frequently when these compulsory ideas of fear would come over him, that he would never be able to come out of a building alive, he would avoid entering the same and for weeks and months at a time he would sleep out in the open. He would also take his meals outdoors for the same reason. Later he also developed the idea that people were going to kill him and he secluded himself from everyone for weeks at a time. He had no systematized paranoid ideas of persecution nor was there any plot to kill him. "Just this feeling of being afraid and that someone might kill me." Also developed compulsory ideas that he must count the trees and their branches as he walked along the roadside. Frequently when these ideas came over him he fought against them, but he would never have peace of mind until he gave in to them. Question: Have you ever thought of suicide? "I have frequently thought of it, but I don't believe that I would ever attempt it." "Doctor, just send me away, a thousand miles away from all civilization and I will be all right." "Afterwards, when I feel better, I fully realize that these are only imaginations on my part." There is absolutely

no dementia present. Patient answers all questions correctly within his educational sphere, and is also well orientated as to time, place, and persons. The patient's abnormal action and conduct has always been in consequence of his morbid fears which would crowd themselves upon him and over which he had no volitional control. Physical examination was negative excepting that he was troubled considerably with insomnia. Examination of the urine at various times showed considerable indican to be present.

AUTOINOCULATION;

ITS PRACTICAL APPLICATION IN THE TREATMENT OF VARIOUS INFECTIONS AND AS A SUBSTITUTE FOR BACTERIAL VACCINES.

By MARTIN J. SYNNOTT, A.M., M.D.,

MONTCLAIR, N. J.

It has been demonstrated at various times by Sir Almroth E. Wright that in active immunization there are three great agencies by which immunizing responses may be evoked in the human organism: (1) The inoculation of bacterial vaccines; (2) artificially induced autoinoculation, and (3) spontaneous autoinoculation.

Autoinoculation means the escape of bacteria or their products from the focus of disease into the adjacent lymph or blood stream. The result of such an escape is usually to increase the opsonins and other bacteriotropic substances in the blood by stimulation of the machinery of immunization. In this way Nature endeavors to cure or relieve the infective process.

When a patient fails to recover from a bacterial infection this is due (1) to excessive autoinoculations, causing a profound or permanent "negative phase," with lowered resisting power in the blood, making possible the rapid extension of the disease processes; (2) to an inadequate or tardy immunizing response; or (3) to the fact that the infective bacteria occupy a nidus so sheltered from the by-circulating blood that the antibacterial agencies (opsonins) in the blood do not have free access to them, and thus phagocytosis is interfered with.

Immunizing responses may be evoked artificially by hypodermic inoculations of bacterial vaccines, which are either derived from (autogenous), or correspond to (exogenous), the infecting microorganisms. In strictly localized infections we have generally no autoinoculations, and consequently no natural immunizing responses. It follows, therefore, that all such infections are preeminently adapted to treatment by therapeutic immunization with appropriate bacterial vaccines.

In generalized infections, on the other hand, Nature is producing a succession of autoinoculations, because bacteria or their products are being set free in the organism from the infected area, and these in turn evoke immunizing responses in the organism, as a result of which the antibacterial elements (opsonins) are increased in the blood. In this type of infection vaccine inoculations may do harm, except in the hands of an expert immunizator.

Spontaneous and artificially induced autoinoculations are destined to prove important factors in the treatment of many diseased conditions, in which vaccine inoculations are refused or are contraindicated, and an interesting field for experimental therapy along these lines is thus opened to the intelligent and observant physician. Moreover, it is important in treating all infectious diseases to find out if possible, before resorting to bacterial inoculations to produce active immunity, what the body itself is doing and to what extent extraneous circumstances such as exercise, massage, motion, Bier's apparatus, etc., may influence these attempts on the part of the body.

In most active infectious disease processes, such as febrile phthisis pulmonalis, spontaneous autoinoculations are almost continually taking place, even though the patient may be at rest. Such patients are, according to Wright, living in a succession of negative and positive phases. The degree of autoinoculation is in proportion to the activity of the disease. There are other cases in which autoinoculations cease when the patient is at rest, but reappear after any movement sufficient to stir up the disease foci (such as exercise, coughing, talking), and to let loose into the general circulation either the products of the microbe or the microbe itself. This fact explains the high or variable opsonic index often found in acute phthisis, a phenomenon also observed in other diseases after local stimulation.

This variation in the opsonic index may be made use of for diagnosis and in skilled hands is a valuable sign. Thus in cancer of the tongue prolonged reading may influence the opsonic index curve to Doyen's *Micrococcus neoformans,* enabling us to differentiate between malignancy and syphilis. Again, as pointed out by Matthews, an obscure joint swelling may be so treated by massage or Bier's bandage as to cause an increase of the local circulation when, if tubercle bacilli are present, a variation in the tuberculoopsonic index will occur; or if the gonococcus is the cause a variation will occur in the opsonic index to the gonococcus. A variation distance at least equal to three-tenths of unity will be positive proof that tubercle is the cause of the swelling or at least is present as a secondary infection. Thus a variation from 0.8 to 1.10 would be considered diagnostic. In suspected tuberculous peritonitis deep kneading of the abdomen may be resorted to. In suspected phthisis active exercise for one-half hour may induce the required autoinoculation. An enlarged lymphatic gland may be carefully massaged or stirred up by hot fomentations, and the blood examined before and after.

In other words, when a focus of infection is stirred up by massage or passive motion or exercise or in any other way, or if the blood by active or passive hyperemia is forced into the lesion in increased amount, we have variations in the opsonic index which indicate that something has occurred in the body to elicit a protective response against the organism to which the index varies. Passive hyperemia induced by Bier's bandage thus becomes a valuable diagnostic measure when combined with the opsonic index. The bandage is applied for one-half hour and blood specimens obtained before and at varying times after. The opsonic indices are then estimated against the suspected organisms, and whichever organism shows a variation from the normal in the index is the probable cause of the disease. If the index is low before the application there will be a rise and later a fall. If the index is high at the start there will be a drop after the application, following by a rise. This technique in the hands of an experienced opsonist is one of the most delicate and accurate that can be applied.

It must be borne in mind, however, that general

and indiscriminate massage of infected joints or lymphatic glands is not advocated, each being weighed on its own merits. At St. Mary's Hospital Bier's method of passive congestion is constantly used as a means of producing a diagnostic autoinoculation, and cautious exercise of a previously immobile joint has been shown by Matthews and others to give valuable indications as to the nature and activity or otherwise of any infection, if opsonic indices before and after movement are taken.

Spontaneous and artificially induced autoinoculations have been made use of by skilled immunizators not only for purposes of diagnosis, but also as agents to bring about a cure. The treatment used to stimulate the infected area, whether it be exercise or massage, not only produces an inoculation with effects similar to those produced by an appropriate bacterial vaccine, but by increasing the local circulation through and about the focus of infection causes an increased outflow of lymph, whereby a greater quantity of protective substances is carried into the infected areas and thus healing tends to result.

Bier thought when he devised his apparatus that he did good by flushing away toxins from the joints of his patients by inducing hyperemia; whereas according to Wright he is in reality inducing an autoinoculation each time he uses his apparatus by letting loose into the general circulation live bacteria or their products from the infected area or joint.

The successful application of this theory depends upon the judgment of the physician as to the proper amount of massage, Bier's bandaging, or exercise applicable to a given case. Thus in the case of a badly or acutely swollen and inflamed joint our treatment must be very gentle and for a short time only; while in chronic inflammations and subacute conditions the treatment must be more frequent and more prolonged if beneficial results are to be obtained. This fact explains why certain tuberculous patients improve under moderate periodic exercise or massage, followed by a period of complete rest, whereas the patients who overexercise or who take exercise at too frequent intervals do not improve or may even be harmed. This is demonstrated experimentally by estimating the opsonic index before and after Bier's bandaging in the one case and exercise or massage in the other, and bears out the analogy to an overdose or to too frequent doses of a vaccine doing harm where bacterial inoculations are employed.

Very complete experiments have been undertaken and interesting reports made as to the part played by autoinoculation in pulmonary tuberculosis by Dr. M. S. Paterson, medical superintendent of the Brompton Hospital Sanatorium at Frimley, near London, England, and Dr. A. C. Inman, superintendent of the laboratories of Brompton Hospital for Consumption and Diseases of the Chest, London.* Their observations convince them that many patients suffering from tuberculosis of the lungs are benefited, and many others cured by systematic exercise and graduated labor. Experiments with the patient's blood and determination of the opsonic indices before and after exercise or work have enabled them to demonstrate that the work or exercise causes an autoinoculation of the patient, which is indicated by the rise of temperature. This is followed by a period of improvement, if the exercise was of the right amount, corresponding to the negative and positive phase following a vaccine inoculation. It frequently happens that patients who fail to improve on a certain grade of work do improve on harder work, on the theory that the harder work gives rise to an autoinoculation, whereas the lighter work fails to do so. In other words, the work must be adapted to the exact medical condition of each patient. The examination of the blood with determination of the opsonic index is an essential element of success in the treatment of cases in this manner, because by it we are enabled to pick out the patient who is autoinoculating himself properly as indicated by a normal or high index, and also patients who from excessive autoinoculations have continuously low indices.

In Dr. Paterson's scheme the work-exercise is very carefully graduated, beginning with gentle walking and ending with concrete making, excavation work, etc., the last grade being full navvy work, almost as severe as it is possible for even a healthy individual to accomplish. The treatment has been remarkably successful. The essentials for success are (1) The most careful graduation of the exercise, and (2) close observation of the temperature chart, work being at once stopped if fever appears. In this way we produce carefully graduated, artifically induced autoinoculations. The autoinoculation induced by the stimulus of exercise and its systematic graduation may with the aid of the opsonic index be regulated with scientific accuracy and results obtained most certainly and accurately.

The index is important because it saves time by determining within a week whether the patient is fit for harder work, when clinically we might hesitate to come to such a conclusion. Many patients who do not improve on light work show marked improvement on harder work, and even patients who overexert themselves, thus getting an overdose of an autoinoculation, if they are kept at rest for a few days, do themselves no lasting harm. The difficulty is to determine the correct amount of exercise and the proper intervals of work and rest. The temperature must be carefully watched and the above treatment applies only to patients whose temperature does not exceed 99° F.

While the opsonic index, when estimated by a careful and well trained worker, is the best and safest guide, many successful immunizators have learned to dispense with it, except as an occasional confirmatory control. The careful and correct interpretation of the clinical signs becomes then a sufficient guide to the experienced inoculator.

The thorough comprehension of the phenomena of autoinoculation enables us to explain many clinical problems hitherto obscure. An intelligent understanding of its *modus operandi* will be a valuable aid to the general practitioner. Thus in all active febrile infections autoinoculations may be excessive, and measures to control them, such as ice, absolute rest in bed, etc., are imperatively indicated. Poultices or other measures to induce increased circulation through the diseased focus may do serious harm in generalized infections by causing still further escape of bacteria or their products into the circulation. For example, in a severe pneumonia with hyperpyrexia, fomentations to the chest may induce excessive autoinoculation and retard recovery by causing a prolonged negative phase.

In chronic conditions and in all non-febrile con-

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ditions, in which bacterial vaccines are indicated, much good may be accomplished by periodic autoinoculations, artificially induced by exercise, Bier's apparatus, massage, or any of the various measures at our command for the production of an increase of circulation through the infected part.

Unless the protective substances in the circulating blood have free access to the infected area, a high opsonic index may not necessarily react in the direction of a cure. The walls of an old sinus with a poor blood supply by reason of pent-up discharge, due to obstruction to outflow, or coagulation, offer the infective microorganisms a highly suitable nidus in which to multiply. Again the contents of an infected cavity, whether it be the peritoneum, pleura, or an ordinary abscess, may be low in protective substances while the by-circulating blood may contain an excess. Lymphogogues are indicated in such cases. Flushing the sinus with a solution containing 4 per cent. of sodium chloride and 1 per cent. of sodium citrate in sterile water promotes by its hypertonicity increased osmosis through the sinus walls, and a more copious flow of lymph ensues. Inasmuch as the sodium citrate prevents coagulation, the lymph, rich in protective substances, will find its way to the surface uncoagulated. In the case of a cavity, on the other hand, drainage is followed by the introduction of fluids from the blood, containing an excess of protective substances, and the cavity is quickly healed.*

The same precautions must be observed against inducing an excessive negative phase from an autoinoculation as are followed in using vaccines.

In comparing the respective advantages of autoinoculation and inoculations with bacterial vaccines as a means of treatment in bacterial infections, we must not forget Wright's warning that in the former method we use unmeasured doses of living cultures and therefore it must be uncertain and can never be altogether dissociated from risk.

SOME METHODS OF PHYSICAL EXAMINATION IN THE DIAGNOSIS OF SURGICAL DISEASES OF THE KIDNEY.†

By HAROLD NEUHOF, M.D.,

NEW YORK,

SURGEON TO THE HEBREW INFANT ASYLUM; ASSISTANT SURGEON TO THE NEW YORK NEUROLOGICAL INSTITUTE; ADJUNCT ADMITTING PHYSICIAN TO MOUNT SINAI HOSPITAL.

For the past two years the large number of patients suffering from renal affections that have been examined in the Admitting Department of the Mount Sinai Hospital have been studied in order to determine whether by some methods of physical examination not generally employed, vague and obscure symptoms complained of by patients could not more frequently be connected with surgical disease of the kidney‡ as the cause of the symptoms. It is hardly necessary to state that when a patient first appears for examination and suspicion of surgical disease of the kidney is aroused, the more refined methods of renal examination, cystoscopy, ureteral catheterization, etc., are not at once employed. It is, therefore, of importance that at the first examination of the patient one should have at his disposal methods of physical examination of the kidney which may be termed gross methods. It is with these methods that we are here concerned.

I. *Inspection.* Regarding the ordinary methods of physical examination of the kidney—inspection and palpation—there is little to add to what is generally known. It is, however, of interest to observe that when one kidney is the subject of an acute affection, the corresponding lumbar and abdominal regions remain almost or quite immobile, whereas there is normal respiratory mobility on the opposite side. If the patient be placed on his back in a light so cast that the lateral chest and abdominal walls are in shadow, we have sometimes observed, in such affections of the kidney as acute pyelonephritis, for example, that the shadow overlying the lateral abdominal region moves with respiration on the normal side, but remains immobile on the diseased side. This phenomenon corresponds to Litten's sign.

II. *Cutaneous Hyperalgesia.*—In an article published by Dr. Elsberg and the author on the "Diagnostic Value of Cutaneous Hyperalgesia (Head's Zones) in Abdominal Disease,"* the following statements were made concerning kidney and ureter zones: "The kidney zone is widest at the posterior median line, where it begins, and gradually narrows anteriorly. Its greatest breadth is at the spinal column, where it extends from the 10th to 12th dorsal spinous processes down to the lowest lumbar spine. It narrows to make a triangular area, with a rounded apex, situated a little to that side of the anterior median line on which the zone lies. We have never seen the kidney zone quite reach the anterior median line. Each zone is strictly limited to its half of the body. There is no difference in contour between the right and left kidney zones. The kidney zones are complicated by the additional ureteral zones that are present in certain cases. The ureteral zone springs, so to speak, from the lower margin of the kidney zone at the anterior axillary line. In an average adult it is about three inches wide at this beginning. It narrows in its downward course and passing obliquely downward and forward, it terminates on its side of the penis and scrotum in the male; the labia in the female. After the first narrowing it widens again well below the umbilical level. In the male, after this swell, it can be ascertained that the zone spreads fanshape to the anterior median line over the pubic area and its half of the scrotal and penile skin. There are anterior and posterior kidney maximal areas. The ureteral zone seems to be made up of a series of maxima. The kidney and ureteral zone is most often present, as in the other intraabdominal affections, in the presence of pain and tenderness. We have examined fourteen patients with renal calculus and have found a more or less marked zone six times. In most of the cases in which the symptoms were slight no hyperalgesia could be demonstrated. Two of four cases of pyelitis had zones, as had one patient with an acute pyelonephritis; one of infected hydronephrosis due to calculi, one of septic infarct in acute endocarditis, one of pyonephrosis. The more acute the renal affection the more apt is there to be a cutaneous hyperalgesia. Thus we have not found a zone in the large majority of patients with tumors of the kidney, with the exception of one case, in which the operation showed that there was a large fresh

*John Matthews, *The Lancet*, September 26, 1908.

†From the Admitting Department of Mount Sinai Hospital.

‡By surgical disease of the kidney is meant all suppurative conditions within the kidney and its pelvis, calculus, tuberculosis, and new growths.

*Elsberg and Neuhof: *American Journal of the Medical Sciences*, November, 1908.

hemorrhage into the tumor. When a calculus passes into the ureter from the kidney the kidney zone is apt to disappear and a ureteral zone develop. We have observed this in several instances and have been able to follow the passage of the calculus along the ureter by means of the skin hyperalgesia. Of eight cases of stone in the ureter, there was a more or less well-marked zone in six. In a case of rupture of the kidney there developed a well-marked ureteral zone after a severe colic. The colic and zone disappearing after the passage of a blood clot. The diagnostic value of localized areas of skin hyperalgesia in kidney and ureteral affection is not as great as in other abdominal affections, but in some patients it has had practical usefulness."

My additional experience in the main bears out these observations. Cutaneous hyperalgesia, however, has provd to be at least of equal value in the diagnosis of acute renal affections as of other acute abdominal conditions. In some of the less acute diseases of the kidney, pyelitis or calculus pyonephrosis causing pain, for example, we have frequently found more or less marked cutaneous hyperalgesia in the corresponding lumbar region. Such areas of hyperalgesia may be of irregular shape and distribution and thus may not conform to the typical zone as described by Head. Indeed, there is such variation in the shape and size and intensity of these irregular areas that they can scarcely be referred to as zones. They have, however, aided us in localizing disease to the kidney in not a few obscure instances.

III. *Muscular Spasm and Rigidity.*—Although rigidity and spasm of the lumbar muscles may sometimes be observed on inspection, the muscular contraction is much more readily discoverable by light palpation. There may be spasm not only of the quadratus lumborum group, but also of the corresponding erector spinæ and of the lateral abdominal wall. In very acute cases the entire hypochondrium on the affected side may be rigid, but however slight, it is the spasm of the quadratus lumborum that is of special significance in the diagnosis of obscure renal disease. When this physical sign is found correlated with the patient's history, we have learned to consider it almost pathognomonic of surgical disease of the kidney.

IV. *Lumbar Tenderness.*—Attention has been directed by Brewer and others to the point of tenderness in the costovertebral angle in cases of so-called unilateral septic nephritis. We have had but small experience with this disease. In the few instances in which it could with fair probability be diagnosticated, tenderness was present over the entire lumbar region on the affected side. We wish, however, to call attention here to a small area of tenderness that we have found many times in milder or subacute surgical diseases of the kidney, for example, in cases of pyelitis, renal tuberculosis, or tumor of the kidney associated with pain. This area of tenderness overlies the lowest two or three ribs at the margin of the erector spinæ or partly overlaps that group of muscle. It varies in size from the diameter of a dime to that of a silver dollar. Deep palpation may be required to elicit the physical sign. It is best accomplished by pressure by the tip of the crooked thumb. This tender area overlying the lowest ribs has often been found when tenderness in the costovertebral angle has been absent. It is apparently dependent upon the anatomical position of the kidneys, situated, as they are, in largest part in front of the lowest ribs. The physical sign has proven of considerable diagnostic value, especially as one of the signs that first calls attention to the kidney as the seat of disease in mild and obscure cases.

V. *Movements of the Trunk.*—It is, of course, only in ambulant cases not suffering much pain that one will attempt to employ movements of the trunk as an aid in the effort to associate vague symptoms complained of by individuals with disease of the kidney. The method is as follows: The patient stands with hands on his hips, is asked to hyperflex and hyperextend his spine and to bend his spine to the right and to the left. The hips may be supported by the observer, in order to permit of extreme trunk movements. In several otherwise obscure instances of surgical affections of the kidney this method has aided us in the correct localization of the disease.

VI. *Percussion of the Kidney Regions.*—Scant mention is made of this subject in text-books and monographs devoted to disease of the kidney and to the physical diagnosis. When at all mentioned renal percussion is generally dismissed with the statement that it is of no diagnostic value. Nevertheless, in our experience, percussion of the kidney regions has sometimes yielded very definite results. As far as can be ascertained from the literature, the only contribution to the subject of renal percussion in which a positive opinion as to its value is expressed, is a recent article by Lerch.* This observer employs "plexor-pleximeter" percussion (percussion hammer and an ivory plate) and uses a drop stroke and not the generally employed tapping method. He finds "that these organs (kidneys) can be mapped out with accuracy and ease, showing changes in size of a small fraction of one centimeter." According to this observer even the pelvis of the kidney can be outlined by percussion and "it is immaterial whether the colon is filled with fecal material or distended with gas." We have devoted considerable attention to the subject of renal percussion, but our results have not been at all comparable to those of Lerch. It is, however, but fair to state that we have only employed the ordinary percussion methods. In our earlier experiences we often found it difficult or even impossible to note if in any given case we were actually dealing with an area of dullness dependent upon the kidney. At that time many observations were made that were proven incorrect by further examination or by subsequent operation. It was found, however, that areas of renal dullness could be fairly well outlined in the lumbar regions if the colon was inflated. Since we have employed inflation of the colon as an aid to renal percussion, marked prolapse of the kidney or great enlargement of the organ (by a tumor, for example) have been correctly diagnosed in a number of instances. In obese individuals the method has usually proven of no value. It is in but one connection, however, that we believe percussion of the kidney to be of distinctly practical value, and that is in determining the presence or absence of the organ on one or the other side. Especially when combined with colonic inflation percussion of a kidney region will give a clear tympanitic note if the organ is absent on that side. We have seen this strikingly illustrated in three cases, one of which is the following: A thin, unmarried female, aged 20 years, applied

*Lerch, Otto: "On percussion and percussion of the kidneys," MEDICAL RECORD, February 4, 1911.

for admission to Mount Sinai Hospital, complaining of pain in the right iliac region where she had felt a tumor. She was referred to the hospital with the diagnosis of solid ovarian tumor. Upon physical examination, in the Admitting Department, the lower pole of the right kidney could just be felt in its normal position. In the right lower abdomen was an orange-sized mass that appeared to rise from the pelvis. From its contour suspicion was aroused that the tumor was an ectopic kidney. Percussion of the kidney regions demonstrated pure tympany on the left side, dullness on the right. The subsequent course of the history in the hospital proved that the diagnosis of left ectopic kidney was correct. Only by further experience with instances of completely displaced or absent kidney can an estimation of the practical value of percussion in the diagnosis of these conditions be made.

It has not been our object to decry the value of the more refined methods of renal examination: cystoscopy, ureteral catheterization, examination of the segregated urines, pyelography, etc., but to call attention to some methods that we believe should first be employed in cases of suspected surgical diseases of the kidney. No great originality is claimed for the methods of eliciting physical signs above described. Yet they are not in general use and when taken together they have aided greatly in pointing to the kidney as the seat of surgical disease in many otherwise indefinite cases. If an attempt be made to determine their value in obscure instances in which surgical renal disease is suspected, the aim of this paper will have been fulfilled.

1275 Madison Avenue.

A CASE OF ABORTIVE POLIOMYELITIS.

By RICHARD STEIN, M.D.,

NEW YORK,

VISITING PHYSICIAN TO THE GERMAN HOSPITAL.

Although the virus of acute anterior poliomyelitis has not as yet been demonstrated nor the mode or modes of transmission of this disease definitely traced,[1] considerable advance in the nosology of this disease has lately been made: infantile paralysis is an infectious as well as contagious disease; its early diagnosis and careful isolation will go far toward preventing the spread of the epidemic. Of especial interest are those cases of poliomyelitis of the abortive type, the nature of which is very difficult to recognize; in fact their relation to typical cases of poliomyelitis during the existence of an epidemic is often the only evidence we possess that they belong to the epidemic. Completely isolated cases of the abortive type will, as a rule, pass unrecognized. A communication of the American Orthopedic Association and American Pediatric Society states in its circular to the health authorities[2]: "Of particular significance are the so-called abortive cases . . . . (they) are undoubtedly a source of infection, and their record and study is of much importance. In a community where cases of infantile paralysis occur cases of illness with sudden onset of fever and meningeal symptoms should be closely watched and regarded as possibly infectious." Such a case was observed by me in my summer service at the German Hospital, New York:

J. W., six years old, born in the United States and residing on the upper east side of New York City, entered the hospital September 4, 1910, and was discharged cured September 21, 1910. Diagnosis: Acute dysentery, meningism. Family history: Father alive and well, mother died of consumption. Personal history: Born at term, breast-fed; measles last February. For the last few weeks he has been restless at night. On September 3 at noon he was seized with a chill, then complained of headache which gradually became very severe. He also gave evidence of drowsiness and gradually became unconscious. At the same time vomiting and diarrhea set in. Examination: Medium sized, pretty well nourished boy; he is in a state of coma, but responds if aroused. No general enlargement of glands. Rigidity of the neck and tenderness of spine. Examination of eyes, ears, and nose, negative. Pupils small, but there is tardy reaction to light. Pulse regular, not retarded, never accelerated. Examination of abdomen, negative. Spleen not enlarged. Slight Kernig sign of both lower extremities and Babinski reflex. Other reflexes normal. The highest temperature recorded was 103°. Further course of the disease: The case ran the course of an acute dysentery with hourly evacuations of a mucoid-blood, and, later, purulent nature. Microscopic examination showed an absence of amebæ. The number of stools gradually decreased. The urine never showed more than a trace of albumin. The complicating symptoms referable to the nervous system became very marked: opisthotonus, delirium, sleeplessness, and periods of extreme restlessness. Meningism, as a complication of acute dysentery, was noted as a rare occurrence. Lumbar puncture was made the day after admission; a clear fluid was obtained, which escaped under moderate pressure. The number of stools gradually diminished and the temperature and pulse became normal in the course of a week. The symptoms of meningism—stiffness of neck, Kernig's sign, etc.—subsided; the reflexes were never absent at any time. The patient was discharged cured after two weeks' illness. At no time was there any sign of paretic or paralytic condition of the extremities.

Although meningism occurs in many infectious diseases, especially in children, its occurrence in the course of acute dysentery was considered very remarkable, and hitherto not noted. On reading some of the literature on poliomyelitis, and hearing some reports of the gastroenteric type of this disease which occurred during the summer of 1910 on the Jersey coast, it was thought possible that this case of dysentery, described above, may have been a case of abortive poliomyelitis, on account of its cerebrospinal complications. This suspicion was strengthened after hearing the lecture by Dr. Flexner on poliomyelitis, October 24, 1910. After communicating with Dr. Flexner, Dr. Blumgarten, my house physician, and myself visited the residence of the patient. As far as could be ascertained, there were no other cases in the tenement at the time. The patient was perfectly well. Two ounces of blood were taken from the median cephalic veins and subjected to the neutralization tests by Dr. Flexner.[3] These tests showed a positive result. As there was nothing in the patient's history pointing to an attack of poliomyelitis previous to the illness for which he was treated by us in the hospital, it can be inferred that we were dealing with a case of abortive poliomyelitis.

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ALBUMINURIA OF ADOLESCENTS IN RELATION TO LIFE INSURANCE.

THE question of the nature and prognostic significance of the various forms of albuminuria, usually of intermittent type, occurring in adolescents and young adults, is one involved in much obscurity. Formerly albuminuria was albuminuria and its occurrence was regarded as a sign of impairment of kidney function prejudicial to the health or life of the subject. Today there is a tendency to belittle its importance, although the insurance companies are not yet ready to ignore it as a factor in determining the acceptance or rejection of risks. The question was very thoroughly discussed and possibly brought nearer a definite solution, at two recent meetings (April 25 and May 2) of the Medical Section of the Royal Society of Medicine of London. The discussion was opened by J. F. Goodhart with a paper entitled "The After-History of Cases of Albuminuria Occurring in Adolescence." The author based his remarks upon a review of his case-records for the last twenty-seven years embracing 237 cases, though several of these were excluded for various reasons. He preferred the term "cyclic" as applied to these cases, rather than "postural," for he was not inclined to regard posture as influencing the excretion of albumin. He was of the opinion that the fault is largely a digestive one, due to the fact that defectively prepared products or even acceptable materials reach the kidney in too great an excess for the secreting cells to deal with. He was able to obtain a definite after-history in only 38 of his cases. In these the last observation was separated from the first by intervals of from thirty years down to two, 28 having more than a five-years' after-history. In all of these cases the report stated that the albuminuria had disappeared, and the author believes that in many if not in most of the other cases the outcome was equally favorable, for the patients were in the hands of competent observers and had they turned out badly he would no doubt have heard of it, at least in a certain proportion of the cases. His conclusion was that the albuminuria of the adolescent has no sinister effect upon health or upon the duration of life, and that with due circumspection such cases ought not to be excluded from the advantages of life insurance.

The majority of those who took part in the discussion differed from the reader of the paper in his explanation of the condition of adolescent albuminuria, regarding it as, in most cases, purely postural or orthostatic. They were, however, in accord with him in looking upon it as a condition of little gravity and of no serious prognostic significance, for it almost invariably disappeared with the termination of school life and the abandonment of strenuous athletic contests, and sometimes after the marriage of the subject. Saundby stated that he had been able to follow up 24 of his cases, extending over a period of from five to thirty years. Of these patients only one had died, the cause being acute myelitis, but the albuminuria had disappeared several years before the onset of that disease. All the others were living and in good health. His opinion was that, if each case of albuminuria was carefully studied and set down as albuminuria of adolescence only when all means of investigating it had been exhausted, a good prognosis could be safely given. Clement Dukes expressed the conviction that adolescent albuminuria does not lead to organic disease, but is of a temporary character during growth. He repeated what he had written in a paper read at the meeting of the British Medical Association in 1905: "I enter a decided protest against these albuminurics having their education interfered with, their games prohibited, their food supply curtailed, with consequent insufficient nutriment for growth, and their life insurance deferred." Mitchell Bruce had gone through a certain number of his case-books and had found 13 cases of typical albuminuria of adolescence. Two of these cases he could not trace, one patient had died of Bright's disease, the remaining ten were now freed from albuminuria. Nestor Tirard was not inclined to regard the condition as lightly as did most of the other speakers, and he thought great caution was necessary in accepting cases of so-called functional albuminuria for life insurance, notwithstanding that he admitted having seen a number of instances in which albumin disappeared from the urine after marriage. Many interesting points were brought out in the discussion regarding the varieties of adolescent albuminuria, its nature and mode of causation, and the associated mental and physical conditions, but space forbids more than this reference to them here.

The general consensus of opinion of the many experienced clinicians of London and the Provinces who took part in this discussion, as to the benign character of the albuminuria of adolescence, can but be consoling to the individual subject, if he takes any serious thought of his condition one way or another, and especially to his physician, but how far it will go toward solving the problem as it is presented to the medical examiner or director is another matter. The family physician, when meeting with a case of albuminuria in one of his young patients, can study the case at his leisure, examining the urine passed at different times of the day, and over long periods, observe the relation of albumin excretion to the varying conditions of exercise and rest, study, mental anxiety, etc., and note its association with the ups and downs in the general physical state. The insurance ex-

aminer, however, sees the applicant but once, and if he finds the urine loaded with albumin his report is likely to be unfavorable. If the general health is otherwise good, a second urinary examination may be made, but unless the morning urine is examined the report will probably be the same. A long-distance diagnosis by the home office of adolescent albuminuria would, in such a case, be a risky procedure, and so the application would in all probability be turned down or deferred. In the meantime the applicant might go elsewhere, and then, if the urine happended to be examined at an albumin-free period, he would be accepted, and another company would secure a good risk. It is evident that the problem of albuminuria of adolescence is one of great practical interest to insurance medicine, for the diagnosis of the condition is not easy, even to the family physician and still less to the medical examiner or director.

THE SERUM TREATMENT OF INFLUENZAL MENINGITIS.

Within recent years many cases of influenzal meningitis have been reported as the result of the increasing practice of bacteriological examination of the cerebrospinal fluid. The recovery of only six out of fifty-eight cases of influenzal meningitis indicates the high mortality of this disease. In view of these facts considerable importance must be accorded to the recent investigations which have resulted in the preparation of an immune serum with a specific curative action in the case of experimental influenzal meningitis in the monkey.

These investigations have been performed by Martha Wollstein, who describes her results in the *Journal of Experimental Medicine*, July 1, 1911. Her preliminary experiments had shown that it is possible, with the aid of virulent cultures of the influenza bacillus whose pathogenicity has been maintained by frequent passage through the rabbit and occasional passage through the monkey, to produce influenzal meningitis in the latter animal by introducing suspensions of the cultures into the subarachnoid space in the lumbar region. This injection is followed by a meningitis which is identical with the clinical form in human beings, and which terminates fatally in from thirty-six hours to four days. Dr. Wollstein's next step was to produce by means of repeated injections, over a period of eighteen months, of living virulent cultures of the influenza bacillus into the goat, an immune serum possessing moderate agglutinating and high opsonic power, which is capable, when injected into the subdural space, of arresting the progress of experimental influenzal meningitis in the monkey and of bringing about recovery. As the result of the serum injections the influenza bacilli are more freely taken up by the leucocytes, their number is reduced, their capacity of growth diminished, and their invasion of the blood arrested. At the same time the local inflammatory process subsides, and rapid recovery of health ensues.

The use of this serum has not yet been resorted to in the case of human beings, yet there can be little doubt that it will prove as efficacious in influenzal meningitis as the antimeningococcus serum in the epidemic form of the disease. Dr. Wollstein emphasizes the importance of applying the serum early and by repeated injections, by means of lumbar puncture, after the prompt bacteriological diagnosis has been made by the immediate microscopical examination of the cerebrospinal fluid, without the employment of cultural methods. This diagnosis may be confirmed later by cultural tests. It is to be hoped that a supply of this serum will soon be available for use in human beings.

METASTASES TO THE BRAIN.

The laws which govern the formation of metastases, especially those of proximal location, are by no means fully understood. That such laws exist and apply equally to neoplasms and pyemic abscesses is sufficiently evident; and it is of great clinical interest that the proximal metastases are often in evidence before the primary focus, and that in rare cases no primary focus can be found.

At a recent meeting of the Freie Vereinigung der Chirurgen Berlins (*Deutsche medizinische Wochenschrift*, May 25) Groth read a paper on cerebral metastases which provoked an extensive discussion. He stated that in a preponderance of cases both metastatic abscesses and metastatic neoplasms proceeded from primary foci in the pulmonary organs. It appears at first sight paradoxical that in endocarditis metastases to the brain are relatively rare. In cancer of the lung the metastases are usually limited to the brain. A case was cited in which, six months after operation for a metastatic growth in the brain, the primary focus in the lung first made itself evident clinically. The fact that metastatic cerebral abscesses may be multiple need not deter the surgeon from operating.

Neumann called attention to the fact that cerebral abscesses may represent true metastases even though the primary focus be seated in one of the nasal sinuses. One cannot straightway conclude that all such lesions develop as a result of phlebitis. Borchardt called attention to the association of a metastatic tumor focus with suppuration. In such a case the clinical diagnosis may be metastatic abscess. In an example cited the primary focus was a carcinoma of the lesser curvature of the stomach. Mühsam showed a preparation of a metastatic brain tumor following a deciduoma malignum which had been successfully removed. Most of the viscera participated in the metastases. In such cases the brain deposits are not proximal in character, but part of a general process. Zeller, quoting from Prof. Sonnenburg's material, stated that it was extremely rare for the surgeon to operate successfully in metastatic abscess. Much of the discussion dealt with localization symptoms, from which it appears that our knowledge of centers of associated movements is notably asymmetrical. Much is known of some centers and little of others.

Ochronosis as a Familial Disease.

The tendency of rare and newly described diseases to appear in blood relatives, and of some of them to occur only in children of a single family, is well

known, and is exemplified in the fact that the very rare affection known as ochronosis has been reported as affecting three sisters. This endogenous ochronosis must not be confounded with an exogenous type due to chronic carbolic acid poisoning. Ochronosis was first known as a pathological affection, and as such has been mentioned in textbooks on pathology since Virchow's time as a species of pigmentation. At a later period a clinical syndrome of the affection was isolated. Not over twenty-six such clinical endogenous cases are upon record for analysis. Five others are not sufficiently described. Of the twenty-six cases, sixteen presented alcaptonuria. Other clinical phenomena are a discoloration and hardening of the external ear and a diffuse macular gray discoloration of the sclerotic coat of the eye. Less common are a blueness over the nasal cartilages and a comedo-like appearance of the face, a brown discoloration of the palms, black ear wax, and greenish axillary perspiration. At autopsy pigment changes in the bones and cartilages are found, in frequent association with cardiovascular changes. Kolaczek, from whom we have cited the above data, read his paper before the Tübingen Society of Naturalists and Physicians last February (*Münchener medizinische Wochenschrift*, April 25) and reported three cases of the affection in sisters aged between thirty and forty-six years. He controlled a total family membership of thirty-five living individuals of three generations, all of whom were tested for ochronotic changes and alcaptonuria. Aside from the three sisters, who presented both ochronosis and alcaptonuria, all these individuals were normal. The parents of the sisters were first cousins. Simple alcaptonuria, occurring without ochronosis, has already been placed on record both as a family affection and as one connected with consanguineous marriages. It may therefore be a sort of parent affection to ochronosis.

Pyretogenic Action of Sodium Chloride.

A generation ago works on materia medica did not recognize such a class of drugs as pyretogenics. It was of course understood that in severe cases of poisoning the heat center might be affected; but of a class of remedies acting especially on this center, or otherwise able to cause pyrexia, there was no general recognition. The tuberculin febrile reaction was perhaps the first phenomenon to call attention to such a possibility, but with biological reactions so-called we have nothing to say in this connection. It is quite apparent that bacterial toxins should be able to produce fever, whether generated without or within the organism. The power of nuclein-containing substances to produce fever when injected subcutaneously, and of adrenalin to induce the same phenomenon in animals need not be discussed here. It must, however, be remarked that our knowledge of the pyretogenic power of drugs is derived very largely from animal experiments. At a meeting of the Heidelberg Union of Natural History and Medicine (*Deutche medizinische Wochenschrift*, April 27) Freund discussed salt fever. Sodium chloride can induce fever in rabbits, which fever is antagonized by calcium and other salts. The salt phenomenon belongs under the head of aseptic fever, and occurs in mankind in certain cases with special predisposition. The resemblance to adrenalin fever is so marked that the author entertains the supposition of the power of sodium chloride to mobilize the adrenalin in its native glands. Both fevers are accompanied by glycosuria, and both are antagonized by calcium salts. But salt fever is offset specifically by the action of cholin and pilocarpine, which may suggest that sodium chloride acts pyrogenetically through the vasomotor system.

Exhaustion of the Chromaffin System.

The chromaffin system comprises the suprarenal bodies, carotid glands, and paraganglia, all of which structures produce adrenalin. It receives its name from the fact that certain cells in these organs color immediately with solutions of chromium salts. The product of the chromaffin cells or adrenalin exerts a tonic influence throughout the organism. This is shown by the fact that in Addison's disease, sepsis, pneumonia, and diphtheria, where there are much prostration and threatened collapse the natural supply of adrenalin is largely exhausted, and this deficit may be antagonized by the prophylactic use of artificial adrenalin. At a recent meeting of the Verein für wissenschaftliche Heilkunde of Königsburg (*Berliner klinische Wochenschrift*, June 12) Carl after summing up our knowledge of the chromaffin system mentioned an autopsy upon a bicyclist who died in collapse after extreme exertion. The cells in the adrenal bodies refused to stain with chromium. Again, when frogs were exhausted from strychnine convulsions the same refusal to stain was apparent. In discussion two of the members pointed out a possible source of fallacy as far as the strychnine experiment is concerned. The alkaloid may possibly affect the chromaffin cells directly and without the mediation of exhausting convulsions. It is possible to strychninize a frog without the production of reflex convulsions. If strychnine is an antidote to adrenalin, as has been claimed, it might exert a direct action on the chromaffin cells.

News of the Week.

Cholera in New York.—Because of the development of a case of cholera after the patient had been detained in Quarantine for five days, it has been decided that it will be necessary to lengthen the period of detention to ten days. The patient in this case arrived in New York on the Italian steamer *Duca degli Abruzzi*, and after the usual detention was allowed to proceed to Brooklyn. Four days later she was taken ill with symptoms of cholera, and was removed to the Quarantine hospital, where she died. On several other steamships arriving from Mediterranean ports suspicious cases have been found, and the United States Public Health and Marine-Hospital Service is cooperating with Dr. Doty in safeguarding the port.

Deaths in New York.—To the excessive heat in New York during the week ending July 8, 197 deaths were ascribed, the total number of deaths in the city being 1,746, or 74 more than during the corresponding week of 1910. The deaths from heat were almost entirely among persons over forty-five years of age, the mortality among infants seeming to be but little affected by the unusual weather conditions. During the week there were 343 deaths among children under one year of age, whereas a year ago there were 438, and the deaths due to diarrheal diseases decreased 50 per cent. During the first six months of 1911 there were 7,337 deaths from all causes among infants under one year of

age in New York, a decrease of 10 deaths as compared with the same period of 1910, though the death rate fell from 121 per thousand to 117.

Plague in Manchuria.—Dispatches from Irkutsk announce that a fresh outbreak of pulmonary plague has appeared in Manchuria.

School of Tropical Medicine.—Beginning with the next session, the Medical Department of Tulane University, New Orleans, will inaugurate laboratory and systematic courses in tropical medicine, hygiene, and preventive medicine, which it is hoped will in time be expanded into a full School of Tropical Medicine and Hygiene. The initial course will open on September 29, 1911.

The Rockefeller Institute.—Announcement is made that the Rockefeller Institute for Medical Research, New York, will devote its resources very largely during the present season to the study of infantile paralysis or anterior poliomyelitis, and to the treatment of acute cases of this disease in its hospital. Physicians and health officers desiring to cooperate in this investigation may do so by sending information concerning the occurrence and prevalence of this disease, or by referring acute cases to the hospital of the Rockefeller Institute. Dr. Flexner renews his request of last year, that whenever possible a portion of the spinal cord and of the nasopharyngeal mucosa derived from fatal cases of the disease be sent to him. Specimens should be preserved in glycerin and sent by mail to Simon Flexner, M.D., Sixty-sixth street and Avenue A, New York, N. Y.

Experiments on Pike's Peak.—Dr. J. A. Haldane and Dr. Gordon Douglas of Oxford University, England, who intend to conduct a series of experiments during the summer on the summit of Pike's Peak to determine the effect of high altitudes on the human blood, arrived in Colorado Springs on July 7. They will be assisted by Dr. Yandell Henderson of Yale University and Dr. E. C. Schneider of Colorado College.

Dr. Herbert Fox has been elected director of the William Pepper Laboratory of Clinical Medicine in the University of Pennsylvania. For the past five years Dr. Fox has been the first Chief of Laboratories of the Pennsylvania State Department of Health.

Dr. Robert Lamb, medical superintendent of the Matteawan State Hospital, tendered his resignation to the Superintendent of State Prisons on July 7, to take effect immediately. Dr. Lamb has been in the State service since 1891, and was formerly superintendent of the Dannemora State Hospital.

A Sane Fourth.—The New York State Department of Health announced on July 5 that for the first time in the history of the department no cases of tetanus had been reported following the celebration of the Fourth of July. Eighteen cases were reported in 1910.

University of Pennsylvania.—The following changes in the Medical Department of the University of Pennsylvania have been announced: Dr. T. Turner Thomas has been promoted to be associate professor of applied anatomy, and Dr. George W. Norris to be assistant professor of medicine in succession to the late Dr. A. O. J. Kelly. Dr. J. Rex Hobensack, Dr. P. G. Skillern, and Dr. Nate Ginsburg have been made assistant demonstrators of anatomy, Dr. Norman L. Knipe, assistant instructor in obstetrics, and Dr. Oscar H. Plant, demonstrator in pharmacology. Dr. J. H. Austin, demonstrator in pathology, is to become associate in research medicine; Dr. A. B. Eisenbrey, associate in research medicine, is to become instructor in gynecology; Dr. J. G. Hickey, absent on leave, will resume duty as assistant in physiology; Dr. A. H. Hopkins will become assistant instructor in gynecology; Dr. Ralph S. Lavenson, absent on leave, will resume duty as instructor in medicine; Dr. W. H. MacKinney will become associate instructor in genitourinary diseases; Dr. W. C. Rose will become instructor in physiological chemistry, and Dr. A. H. Woods will become lecturer on electrotherapeutics in succession to Dr. A. R. Allen.

Summer Courses in Medicine.—The College of Physicians and Surgeons, Columbia University, New York, opened its summer session on July 5, courses being offered in bacteriology under Prof. Wadsworth, in clinical pathology under Prof. Wood and Prof. Vogel; in physiological chemistry under Prof. Gies and Mr. Rosenbloom; in nutrition under Dr. Foster, and in physical and medical diagnosis under Dr. James A. Miller, the last course being given at Bellevue Hospital.

Slaughter Houses in New York.—The Bureau of Municipal Research of New York has been investigating the conditions in the East Side slaughter houses in the city, and has reached the conclusion that the law is being violated, and that the "Department of Health has not only not stopped but has permitted the violations in one instance," in permitting the rendering of shop fat. The report says that blood is allowed to flow into the East River from the slaughter houses, and that tuberculous cattle have been slaughtered, and the meat sold in the Brooklyn slaughter houses, although this practice has been stopped for the time being. In conclusion the report says that it is possible to conduct every legitimate part of the slaughter house business without committing a nuisance, and that the "fundamental deficiency is with the attitude and manner of supervision of the Department of Health."

Crusade Against Smokers.—The Non-Smokers' Protective League of America has asked for incorporation papers in New York State. The stated purpose of the organization is the enforcement of all laws and regulations against smoking in public and semi-public places, to attain which end it promises to cooperate with boards of health and police and other peace officers. Lecture bureaus will be conducted, and the organization will publish books and magazines, and establish auxiliaries in all parts of the country.

Gifts to Charities.—St. John's Guild and the Adirondack Cottage Sanatorium receive bequests of $10,000 each under the will of the late Mrs. May Cossitt Dodge, and also share in the residuary estate. The Lincoln Hospital of New York also receives a bequest of $25,000.

The Roosevelt Hospital, New York, receives a bequest of $500 under the will of the late Josephine Clay Strong of Setauket, Long Island.

Mt. Sinai Hospital receives $1,000, and the New York Medical School for Women, St. John's Guild, and the New York Skin and Cancer Hospital $500 each by the will of the late Mrs. Esther Hermann of New York.

The Seventh International Congress on Tuberculosis will be held in Rome, Italy, on September 24 to 30, 1911, under the presidency of Prof. Guido Baccelli. The congress will be divided

into three sections: I, Combined hygienic work; II, pathology and therapeutics, with two sub-sections, (1) medical, and (2) surgical; III, etiology and epidemiology.

Montreal (Quebec) Medico-Chirurgical Society.—At the last regular meeting held on June 24 the following officers were elected for the ensuing year: *President*, Dr. J. M. Elder; *Vice-President*, Dr. D. J. Evans; *Treasurer*, Dr. R. P. Campbell; *Secretary*, Dr. S. Handford McKee; *Trustee*, Dr. C. J. Martin.

The Georgia Association of Physicians and Surgeons was organized recently at Atlanta with Dr. George Brown of Atlanta as *President*, and Dr. C. M. Curtis of College Park as *Secretary* and *Treasurer*.

Obituary Notes.—Dr. Edmund L. Cocks of New York, a graduate of the Bellevue Hospital Medical College in 1885, visiting dermatologist to Randall's Island and the Harlem Hospital, and clinical assistant at the Skin and Cancer Hospital, a member of the New York State and County Medical Societies, and of the New York Academy of Medicine, and professor of dermatology in Fordham University, died at his summer home in Far Rockaway, on June 5, after a short illness, aged 55 years.

Dr. Abner C. Matthews of Earlville, N. Y., a graduate of the University of Vermont College of Medicine, Burlington, in 1894, died suddenly at his home on June 27.

Dr. Walter S. King of Cedar Rapids, Ia., a graduate of the Rush Medical College, Chicago, in 1894, attending physician to St. Luke's Hospital, coroner of Linn County, and a member of the American Medical Association, the Iowa State and Linn County Medical Societies, and the Iowa Union Medical Society, died in St. Luke's Hospital, Cedar Rapids, on June 16, from injuries received in an automobile accident a few days before, aged 59 years.

Dr. Thomas S. Mitchell of Pensacola, Fla., a graduate of the Atlanta Medical College, Georgia, in 1866, and a member of the Florida State and Escambia County Medical Societies, died suddenly of apoplexy at his home on June 20, age 75 years.

Rear Admiral Edward Shippen, United States Navy, retired, a graduate of Princeton University and of the Medical Department of the University of Pennsylvania in 1848, a surgeon in the Navy since 1849, at one time Chief Medical Inspector of the Naval Academy at Annapolis, and from 1872 to 1879 in charge of the Philadelphia Naval Hospital, and a member of the College of Physicians of Philadelphia, died at his home in Chestnut Hill, Philadelphia, on June 16, aged 85 years.

Dr. Thomas Hunter of Philadelphia, a graduate of the Medical Department of the University of Pennsylvania in 1872, died at his home on June 20, aged 61 years.

Dr. Robert Carter, formerly a surgeon in the United States Navy, died at his home in Philadelphia on June 22, aged 84 years.

Dr. J. W. Coble of Tamaqua, Pa., a graduate of the Medical Department of the University of Pennsylvania in 1867, and a member of the Pennsylvania State and Schuylkill County Medical Societies, died at his home on June 22, aged 69 years.

Dr. Julia Hibben Flagg of Vancouver, Wash., a graduate of the Medical College of Indiana in 1890, a member of the Clarke County and Washington State Medical Societies, and of the Portland, Ore., City and County Medical Societies, and an ex-member of the Indianapolis Medical Society, died at her home on June 2, of cerebral laceration as the result of an accident. Dr. Flagg had seen much service in the Philippines with her husband, Major Flagg of the United States Army Medical Corps, and was at one time connected with the Division Hospital at Dagupan.

Dr. James Carmichael Hutchison of Troy, N. Y., a graduate of the College of Physicians and Surgeons in 1866, a member of the New York State and County Medical Societies, and for twenty-three years attending physician to the Troy Hospital, died at his daughter's home in Rockford, Ill., on June 11.

Dr. Mason Thomson of New York, a graduate of the Bellevue Hospital Medical College in 1876, died at his home on July 6.

Dr. Thomas H. Wilde of Baldwin, L. I., N. Y., a graduate of the Long Island College Hospital in 1906, died at his home, of pneumonia, on July 4.

Dr. Samuel Zeigler of Greenville, Pa., a graduate of the University of Pennsylvania in 1899, and a member of the Pennsylvania State and Mercer County Medical Societies, was killed in an automobile accident at Dunkirk, N. Y., on July 2.

Dr. Henry P. Calhoun of Cottonwood, Ala., a graduate of the Atlanta Medical College in 1895, and a member of the Alabama State and Houston County Medical Societies, died at his home of paralysis on June 26.

Correspondence.

ELABORATION OF HOSPITAL ORGANIZATION.

To the Editor of the Medical Record:

Sir:—I have just read in your issue of June 24 Dr. Blake's and Dr. Thompson's articles on the organization of hospital staffs, as well as the discussion of their papers at the meeting of the Practitioners' Society.

It may be that in some directions and for good reasons the plans outlined with much talent and clearness and indeed now in practice at Bellevue Hospital, may be found desirable to give accurate, systematic instruction of advanced kind to those who are able to follow it closely and sufficiently. On the other hand, will it be found especially useful later to many who are obliged to practise their profession outside university or other hospital wards and for the benefit of private patients? I do not believe it will unless it be understood and insisted upon that many things which are daily routine in hospitals are almost impossible to follow elsewhere, unless means are large and assent is given to their practical value. If this be true, whatever additions must occur in further scientific medical pursuit will only add to the difficulty.

Again, science is one thing; art another. Science of medicine teaches in heart disease, for example, that the time, intensity, rhythm, and variation of every heart murmur are significant. Art of medicine declares these findings, so far as treatment of and consequences to patients are concerned, have frequently little importance. Science would make it essential to analyze stomach contents after a test meal and follow this procedure frequently with other physical interference, such as the exhibition of large doses of bismuth, the taking of an *x*-ray picture, and inflation of the bowels, whereas art

recognizes that despite their revelations symptoms may be and are relieved until diagnosis is evident and without previous doings of advanced knowledge. In any event, and not to multiply examples, it should be widely disseminated that the best practitioner is not necessarily the man who is expert in newest methods—which experimentation, pure and simple is constantly producing—but is the man who has observed long and well and who holds his judgment in reserve while utilizing everything valuable that is acquired for the benefit of his patients. Such a one is the medical Judge of the Court of Appeals, so to speak, who decides what is best to do for the patient when all the facts are known. Among these facts—and here science is often sadly amiss and art triumphant—the personal equation of the patient stands out as a subject for closest study and interpretation. I claim, and rightly, that sympathy in our daily walks of practice, hospital or other, should essentially control, and this need is largely ignored when we follow ceaselessly science in medicine with faint consideration for the art which always notes the variable, trustful, emotional human aspect in every case of disease.

Beverley Robinson, M.D.

New York.

LONDON LETTER.

(From our Regular Correspondent.)

CORONATION HONORS—THE INSURANCE SCHEME, REPRESENTATIONS OF MEDICAL CORPORATIONS AND INDIVIDUALS—EFFECTS OF DRINKING HARD WATER—RESEARCH DEFENCE ASSOCIATIONS—THE BUTLIN DINNER—OBITUARY.

London, June 23, 1911.

Coronation week! The long anticipated event has arrived and is past. It has seemed to displace almost all other subjects of conversation but you will have had full descriptions by cable The one medical point of interest is that in the long list of honors conferred on the occasion the profession is not left out. Among twenty baronetcies the following well-known names are found: C. B. Ball, H. T. Butlin, J. F. Goodhart, William Osler, and W. T. Stoker. There are fifty-five knighthoods conferred and among them on A. A. Bowlby, A. Dempsey, F. W. Hewitt, and F. C. Wallis. Promotions from C.B. to H.C.B. are Ronald Ross and A. Whitelegge; to the K.C.M.G., J. Pringle, and J. R. Bradford. The C.M.G. is given to J. W. Barrett (Melbourne), T. Zammit (Malta), and D. Christie of the Chinese missionary body. The agent-general in London for Tasmania is a doctor, viz. Hon J. McCall, M.D., and he is knighted.

In the Military Division of the Bath, C. C. Godding, William May, J. G. MacNeece, G. W. Robinson, C. F. Willis, and T. Grainger become companions, and A. S. Reid, W. L. Gubbins are promoted to the upper rank. In the civil division, H. Todd, W. Bassett-Smith, P. B. Giles, H. R. James, and G. S. Elliston are made companions.

In the Royal Victorian Order, B. Dawson becomes knight, A. R. Bankart, R. N. M. Rees, and Mayo Robson are made companions, and William Fairbank becomes a member. In the territorial force J. R. Thomas, M.D., and Damar Harrison, F.R.C.S., are appointed as Honorary Physician and Surgeon to the King, respectively.

Sir James Reid, Bart., who has been physician to the late King Edward and to the late Queen Victoria, has been authorized to add to his armorial bearings a special honorable augmentation, in consideration of his services to those sovereigns. But these honors and even all the magnificent ceremonies of the coronation cannot diminish the intense interest and excitement produced in the profession by the state insurance scheme. Meetings of medical men all over the country, articles and letters in the press and other evidence of this is being forced on the attention of Parliament and the public. Mr. Lloyd George has replied to the representations of the General Medical Council in a letter to the president, Dr. Macalister. In this "considered reply" he makes some apparent concessions, such as that he has always intended to put doctors upon the advisory committee, adding that the bill provides that they should be on the local health committee. But other points he passes lightly over, partially agreeing or saying it is "not proposed," or he "will consider," or similar expressions. He refuses a wage limit and his remarks about the free choice of a doctor are insulting. Moreover, he seems determined to rush his bill, if possible, through its remaining stages as recklessly as he has so far pushed it, and that in spite of the general demand for delay which I told you was urged. The Royal College of Physicians has added its voice to the call for delay and has invited its licentiates to supply it with facts as to how the scheme will affect their practices to enable the college to deal with the question.

The Edinburgh College of Surgeons, which led the demand for delay, has sent a second letter to the Chancellor urging that it is increasingly evident that reconsideration is necessary and that "if this measure be rushed through Parliament with all its imperfections it will, we fear, produce a deadlock greatly to the disadvantage of the general public."

The Central Hospital Council for London has passed a resolution with regard to the work of the hospitals all over the country to "impress on the government the necessity of sufficient time being allowed for the consideration of the bill in all its aspects." Other bodies are putting forward their objections and individual members of the profession are expressing their views in the public papers or addressing their representatives in the House of Commons. Sir T. Barlow, as I mentioned, thinks that medical attendance had better have been left out of the scheme, a view which not a few hold. Payment for services rendered is a just plan and has always worked well, while contract practice has proved by long experience intolerable.

Sir Alfred Pearce Gould, who would make a splendid leader if all would rally to the support of his views, has pointed out that a mistake has been made from the first by objecting to details, when the principle of the bill should have been opposed. He would say to the government "we will have nothing whatever to do with contract practice or *per capita* payments." The profession, if united, could thus settle controversy and continue its beneficent work as heretofore.

The influence of calcareous water in health and disease has lately been much talked about. It was, therefore, an appropriate subject for the Balneologists who held an annual meeting at Folkestone which situated by the sea and on chalk has been reported by the public to cause gout, eczema, constipation, and numerous other maladies. Dr. Percy Lewis of the town opened a discussion in a paper

stating a number of antitheses, such as A. says hard water does harm in, etc., while B. says the contrary. Dr. Pernet followed and held that drinking calcareous water did not excite eczema though locally its effect was bad. At the seaside the climate was often responsible for aggravating the disease. Dr. Bagshawe said hardness was not always due to calcium; at Hastings there were no chalk rocks and the water was only hard at times from an irregular quantity of iron dealt with by magnetic filtration. Dr. Tyson pointed out that in inland towns calcareous water did not seem a factor of the diseases attributed to it by the sea and he thought they were due to climate. Dr. Clippendale from a study of the Chiltern Hills concluded that the process used for softening the water had diminished the tendency to calculus but increased that to gout. Dr. Lennox Wainwright said there were three factors to consider—the diathesis of the patient, the climate, and the water supply. Londoners who had led strenuous lives came to Folkstone and required individual care as to diet including water. Hard water was usually free from contamination. Softened and distilled waters were hardly possible in town supplies. Chalk could be got rid of but lead and disease might still be carried. Dr. Leonard Williams said the acids, uric and oxalic, were responsible for the formation of calculi—not the calcium base which could not be got rid of even if one wanted to. Dr. Bateman said Folkestone water contained from 2½ to 3 grains per pint, but when boiled only about ½ a grain—not enough to be deleterious. Dr. A. F. Street said if water from chalky soils had the ill effects some alleged the people and the practitioners around must be familiar with them. The evidence was against the allegations.

The Research Defence Association held its annual meeting on Monday at the Royal College of Physicians, when Lord Cromer presided. Mr. Sydney Holland moved the report and said the membership had increased to 4,600 and its importance grew every day. It was monstrous that their opponents should have opened shops exhibiting wilful distortion of truth. Dr. Sandwith seconded, Sir F. Treves and Mrs. Garrett Anderson supported. Lord Cromer said one set of opponents distorted facts and wilfully calumniated a noble profession. Another set adopted an impossible ethical standard and might be respected but nothing would influence their prejudices. A third category of critics admitted the necessity of experiment but urged that pain should be obviated as far as possible. Here they were on common ground. In reference to his being vice-president of the society for preventing cruelty to animals, he did not think it inconsistent with the presidency of this association as some extremist had declared. He would admit any reasonable safeguard that the Royal Commission would suggest. Dr. Sandwith bore testimony as an eye-witness to the reforms Lord Cromer had effected in Egypt as to the treatment of animals.

The dinner to Mr. Butlin on the 13th inst. was a remarkable success. I do not remember a compliment of this kind so universally approved. In reply to the toast of his health he touched on the absorbing subject of the Insurance Bill and disposed of the assertion of the Chancellor that the loss inflicted on some could be balanced by gain in increase of the number of poorer patients. He said many doctors living on practices of £200 a year would be ruined and it was no comfort to them that some others might be better off. The gain of A. was no consolation to the loser B. He would not support threatening language but he thought trade unionism as legitimate for the medical as for the legal profession. Everyone seems specially gratified that the name Henry Trentham Butlin, President of the Royal College of Surgeons, appears in the list of coronation honors. He now ranks as Baronet.

Sir Rubert Boyce, F.R.S., M.B., London, dean of the Liverpool Tropical School, and professor of pathology in the University, died on Saturday morning. His special researches on tropical diseases and his work in organizing the expeditions of the school will be familiar to you. He was founder of the school in conjunction with Major Ronald Ross and the late Sir Alfred Jones and in 1906 he was knighted as a slight recognition of his services in these matters. He had also been awarded the Cross of Leopold II and was on the Commission on Tuberculosis. He wrote a "Text-book of Morbid Histology," "Mosquito or Man," and "Health Progress in the West Indies." This year he published a work on "Yellow Fever and Its Prevention," intended as a manual for students and practitioners, in which he relates his experience and investigation in Honduras, New Orleans, Central America, the West African colonies, and other parts from 1905 to date. In this he goes very thoroughly into a number of questions concerning yellow fever, its epidemiology, entomology, and prevention. He held that the disease was not always recognized because many cases of bilious or remittent fevers were in reality mild forms of the more grave infection. He thought that African natives acquired immunity through such mild forms in early life, but might when adults furnish a supply of virus to the stegomyia, which abounds on the African coast, and speedily attacks new arrivals. There is general regret at his loss just as he had submitted his views to the consideration of the profession.

Dr. Moses Thomas, one of the senior practitioners in Glasgow, has died in his 82nd year. He took the License of the Faculty in 1857 and in 1862 the M.D. of St. Andrews. He was superintendent of the Royal Infirmary from 1867 to 1902, when he resigned. In 1874 he published an account of the results of amputations in the infirmary for 80 years preceding, covering the time of the introduction of Listerism and its effects.

Deputy Surgeon-General Arthur Grey Elkington, who died on the 31st ult., in his 79th year, served in the Crimean War, was wounded at the battle of Inkerman, and was present at Balaklava and at Sevastopol. He received medals and clasps and the Turkish Order of the Medjidie. He was in the Guards from 1853 to 1887, when he retired.

THE CANADIAN MEDICAL ASSOCIATION; FORTY-FOURTH ANNUAL MEETING.

(From Our Special Correspondent.)

MONTREAL, June 19, 1911.

THE address in surgery was given by Dr. A. Primrose, professor of clinical surgery in the University of Toronto. The speaker said, in part, that the present status of surgery in Canada had been one of gradual evolution from the time when the country was sparsely settled up to the present time. Being a young country, something of the spirit of the pioneer settlers had been inherited and Canadian

surgeons were more ready to develop along lines which might be new and revolutionary in character. The consequence of this adaptability and willingness to learn had been that nowhere was work in surgery done with more uniform efficiency than could be found in the hospitals of Canada to-day. Speaking of conservatism in surgery the speaker said that conservatism was good, but pure prejudice often passed as conservatism and, therefore, it was fitting that no prejudice should be harbored and that conservatism should in no way hinder our better judgment. We should preserve an open mind, abandon incorrect ideas, and "hold fast to that which is good." Scientists of old well represented extreme conservatism or prejudice and all new ideas had to undergo bitter criticism. Better equipment had enabled one to better test the validity of any claim that might be made of things new. Prejudice, however, still existed. The greater part of the speaker's address was devoted to Lister and his works, taking him as an example of the modern scientific man. Lister had difficulty in establishing the germ theory of disease for he met considerable opposition from his medical contemporaries of his own country. The speaker pointed out that, although the views of many eminent physicians were not unanimous in upholding the germ theory of disease, it was a remarkable fact demonstrating the genius of Lister that he had seldom found it necessary to recede from any position that he had once assumed. It was, too, a remarkable circumstance that foreign surgeons had been more quick to be convinced of the great value of antiseptic treatment than those of his own land. The speaker cited Lister as the possessor of the almost perfect type of the logical scientific mind, urged for students a prolonged and efficient course of instruction in the preliminary sciences, and combated the view held by many that such training was unnecessary. He regarded the fact that some of the Canadian surgeons still alive were closely associated with Lister in his life work as one of which Canadians should ever be proud. Among Lister's old house surgeons were Mallock of Hamilton, Stewart of Halifax, and Grasset and Baldwin of Toronto. In conclusion the speaker said: "I desire to emphasize the fact that we, as surgeons, are required to-day more than ever to possess the true scientific spirit. Conservatism is surely to be commended, but that type of conservatism which is tempered with an ability to use calm and deliberate judgment in determining what is best for our patients, and when new light is thrown upon some obscure problem we should be ready to abandon any erroneous ideas which we may have hitherto held and be prepared to advance, seeing no finality in our present-day methods, but always endeavoring to attain the ideal."

An address on the surgical treatment of gallstone disease was given by Dr. William J. Mayo of Rochester, Minn. The speaker said that in reviewing 4,000 operations which the Mayo brothers had performed upon the gall-bladder and the biliary passages they had been impressed with the fact that the mortality was due to the complications incident to the disease rather than to the removal of gallstones from the otherwise normal gall-bladder. Not only was the mortality greatly increased by the involvement of the deep bile passages, the liver, pancreas, and neighboring viscera, but the gall-bladder might also be found in such a condition as to render an attempt to save it impracticable and fraught with a possibility of a recurrence of symptoms. The gallstones were, however, the responsible agents in the production of these complications, inasmuch as they set up a train of events which would not have occurred had the gallstones been removed early in the history of the disease. It was in this early period that operation furnished an easy, safe, and efficient cure. Cholecystostomy with temporary drainage of the gall-bladder to the surface was the operation preferred because it saved this valuable organ for future function. The danger of reformation of gallstones after cholecystostomy was exceedingly small. In their series they observed but three cases in which stones had reformed in the gall-bladder and it was probable that in most cases of supposed reformation of gallstones the stones had not reformed, but were incompletely removed at the primary operation, an accident which did not often happen when the operation was done early. In the class of cases in which the gall-bladder was contracted down upon a mass of stones secondary carcinoma was liable to develop. In their experience two and one-fourth per cent. of all operations upon the gall-bladder and biliary tract had shown malignant complications. The danger of carcinoma alone was five times greater than the mortality following operations for the relief of simple gallstone disease. So long as the stones were confined to the gall-bladder the trouble remained local in an organ which was not essential to life, but with the entrance of stone and infection into the deep duct of the liver two fundamental organs which were essential to life were liable to be involved in the process, namely, the liver and the pancreas. Stones in the common duct not only impaired the health of the patient, but complications directly threatening life might arise at any time. In the 4,000 operations the average mortality was 2.75 per cent. In 2,920 the disease was local and confined to the gall-bladder and cystic duct. The operative mortality was 1.8 per cent. In 2,165 of these cystostomy was performed with a mortality of 1.5 per cent. In 755 cases cystectomy was performed with a mortality of 2.4 per cent. These data were contrasted with 492 cases in which the common duct was involved, with an average mortality of 8 per cent.; a mortality which depended not so much upon the operation itself as upon the extent of involvement of the liver and pancreas and the bad general condition of the patient. Pancreatitis as a complication occurred 359 times in the 4,000 cases.

The address in medicine was delivered by Sir James Barr of Liverpool in the Gallery of the Art Association of Montreal on the evening of June 8. The speaker, in addition to being a well-known British surgeon, has made for himself somewhat of a reputation as a speaker and as a wit. The title of the address was "Preventive Medicine the Medicine of the Future."

The speaker began by saying that the great advances of medical science had been of enormous advantage to individuals and had enabled innumerable persons to live who would otherwise have succumbed to the stress of circumstances, but how far that had been an advantage to the evolution of the human race as a whole was a disputable point. He claimed on behalf of the medical profession that whether they had always been right or not they had ever had been actuated by a spirit of altruism. The process of vicarious charity at the expense of the medical profession had gradually so grown that

in the present day at least, a fourth of the population of England received free medical advice. The reason why such a large proportion of the human race was being pauperized was because an inferior race was being produced. Professor Arthur Thomson had said that what children usually died of was their parents and what a nation died of was lack of men. In future medical men must not be content with treating the diseases of the community, but must also point out the lines along which the nation was to be improved by encouraging the multiplication of the fit and controlling the increase of the unfit. The maintenance of health was much more important than the treatment of disease. That prevention was better than cure was one of those half truths which readily commanded public acceptance as axioms which could not be gainsaid; but it was not nature's method and medical men were incessantly talking about following the laws of nature. The prevention of disease was very important to the individual, but when it enabled undesirables to go on generation after generation propagating their species it could be of no advantage to the race. If the public were alive to their own interests they would pay medical men liberally for directing them in the paths of truth and in the ways of health, rather than for treating their diseases. If the money which was spent in the treatment of disease had been devoted to the preservation of health, our huge hospitals would not have been half filled, the necessity for surgeons and specialists would largely have disappeared, and physicians would have been fully occupied in advising their clientèle on the preservation of health and in looking after the aged. The speaker said he was afraid we were still a long way from those halcyon days when hospital buildings would be pointed out as relics of a decadent age; but still one should at least aim at transmitting high ideals to one's successors. These ideals could be best attained by improving the stock; no environment would produce a genius. Referring to Canadians in particular, he remarked that they had a young country, a virgin soil, and they should see that it was peopled by a vigorous and intellectual race. They should shut out all degenerate foreigners as they would a mad dog. Dealing with tuberculosis the speaker said: Dr. Osler, in a recent lecture in Dublin on the fight against tuberculosis, said: "And, lastly, for our great consolation, we know that the disease is not hereditary, and for this let us be thankful." Sir James retorted: "We know nothing of the kind, although we are constantly having it dinned into our ears by medical men who ought to know better. We know that the tubercle bacillus, which is a necessary element in the production of tuberculosis, is not transmitted in the germ plasma, but the long, narrow, flat chest, delicate lungs, and feeble resisting power to the tubercle bacillus and to many other germs are undoubtedly inherited, just as much so as the shape of your nose or the color of your hair." Medical men who were shutting their eyes to the truth and encouraging matrimony and the propagation of the species by mental and physical weaklings were incurring fearful racial responsibility, and their action should be condemned in no uncertain language. Both for the prevention of insanity and consumption one should discourage and prevent the propagation of the species by mental and physical weaklings and raise up a race which would not be catching tuberculosis or anything else. While showing all possible kindness to the insane and mentally defective, they were to be given clearly to understand that with them their breed must come to an end. Insanity and mental deficiency were largely questions of inheritance. With the insane and other mental and physical degenerates prevention was certainly better than cure, but success could never be reached in either prevention of cure by maudlin sentimentality. Commenting on the large death rate from pneumonia, the speaker remarked that alcohol was a strong predisposing factor to pneumonia, because it immeasurably lowered the resisting power of the individual and increased the mortality rate. Another common cause of the high mortality from pneumonia arose from the lack of proper treatment, often owing to the fact that some medical men took two or three days to diagnose the disease and then called it congestion of the lungs, treating it carelessly as a matter of no great importance for fear of frightening the patient until the unfortunate individual was too ill to be frightened by anything. In conclusion the speaker said he was not now so much concerned with the prolongation of life as with the preservation of health. They as medical men were not concerned with any useless attainment of longevity, but with the prolongation and efficiency of life. When a life ceased to be efficient it could retire into obscurity, be withdrawn from circulation, or receive an old age pension. Alluding to Paul Bert's dictum that the aged deserved congratulations, ease and consideration, but that the prolongation of their lives did not demand any special solicitude from society, he remarked that if Bert had lived longer he would have modified his opinion. The speaker, in the course of his address, made several shrewd hits at surgeons. Among others he remarked that surgeons lived largely on the failure of physicians and he admired intensely their worth and envied their fees, which, like the falls of Niagara, were magnificent. He advised surgeons to make hay while the sun shone for fear that the millennium would arrive sooner than they expected. In reference to Ireland and tuberculosis, the speaker said: "If you abolish the tubercle bacillus from Ireland, then it will certainly become a question of 'God Save Ireland.'"

(To be continued.)

SANITATION IN AUSTRALIA.

(From Our Philippine Correspondent.)

PERTH, WESTERN AUSTRALIA, April 20, 1911.

PROBABLY nothing occasions more surprise in Australia in connection with public health matters than the small amount of vaccination against smallpox that is being done. In a country that has made such exceptional progress in supplying itself with weapons against preventable disease, it seems scarcely possible that such a vulnerable point in the public health armor should be left unprotected. The medical men of Australia have been valiantly protesting for years against such a state of affairs, but so far their recommendations have gone unheeded or such weak laws have been placed upon the statute books that nothing much could be expected from them. During the year 1909 the official records show that only 21,344 persons were vaccinated throughout the whole of Australia. No doubt quite a number were vaccinated by private physicians or for other reasons did not get into the official records, but at best these factors would not swell the total so very much. It appears that the small number vaccinated is not due to any general

or well defined anti-vaccination sentiment, but rather to general apathy. This is due to the fact that smallpox is scarcely known in Australia. In years past, due to its great isolation, it has remained virgin territory. But in more recent years it has been in frequent communication by swift vessels with the great Oriental endemic centers of the disease. So far the very efficient maritime quarantine has prevented smallpox from gaining a firm foothold. It is however too much to expect that quarantine will always prove effective and when the disease is once planted successfully upon that fertile soil many lives will be uselessly offered and probably an equally large number will go through life disfigured, all as the price for the present indifference.

In Queensland there is a vaccination act but it has not been proclaimed, and from 1901 to 1910 no official vaccinations have been reported. In New South Wales there is no compulsory vaccination act. In Victoria vaccination is indirectly enforced under the Health Act of 1890, and it is estimated that 70 per cent. of the children whose births are registered are vaccinated. South Australia has a vaccination law but the "conscientious objection" clause renders it of little value. Only 13 per cent. of the children are reported as vaccinated. In Western Australia there is a compulsory law but it has never been enforced. Tasmania has a vaccination act, but the "conscientious objection" clause makes it almost a dead letter.

In view of the fact that meat, and especially fresh meat, is comparatively very cheap in Australia, and in consequence its use probably very much more general than in any other country, it may be interesting on account of meat being frequently associated with cancer to note the incidence of this disease. In 1908 the total number of deaths reported in the Commonwealth was 46,426. Of this number 2,921, or 6.29 per cent., were due to cancer. If the population is estimated at 4,500,000 the incidence would be one death per annum in every 1,540 of the population. This rate is very much lower than that of the United States, Great Britain, or Germany.

The typhoid rate for the Commonwealth is also very low. During 1908 there were 736 deaths from this cause reported, which gives an incidence of one in 6,114 of the population.

The water supply of Australia, at its best, must be regarded as very unsatisfactory, and it is therefore interesting to note that as this is improved there is a coincident reduction in the water-borne diseases. Almost the entire continent is surrounded by a fringe of high coastal hills. The slopes toward the sea shed their water by the means of short rivers into the ocean and the water collected upon the inland slopes soon becomes lost beneath the surface of the great desert interior. To overcome such natural disadvantages it has become necessary to undertake water projects which are simply colossal when the size of the population is taken into consideration. One of the largest of these projects is the so-called "Coolgardie Water Scheme," which consists of a pipe system 351 miles long and capable of delivering daily 5,000,000 gallons of water. The water is pumped from the Helena River, near Mundaring, in Western Australia, to Bulla Bulling, which is 1,200 feet higher than the river from which it is pumped. This means that 5,000,000 gallons of water, weighing approximately 22,300 tons, are lifted 1,200 feet and propelled 351 miles. The water is first pumped into the Mundaring reservoir, which has a capacity of 4,600,000,000 gallons. In order to make the water available to towns that have sprung up along the route, twelve smaller reservoirs, with a total capacity of 31,500,000 gallons, have been constructed. The total cost of this project was over $15,000,000. The return realized from the water amounts to about $1.18 per thousand gallons. The actual cost including interest upon capital, depreciation, and operation expenses was $1.75 per thousand gallons. The annual loss, which is at present about $400,000, is borne by the government.

Lately it has been found that by means of artesian wells much of the water that disappears in the great sand wastes of the interior may be recovered. These wells have been an important factor in improving the public health and at the same time they have transformed vast barren areas into fertile land upon which valuable crops are now being grown. Practically all of these wells are over 500 feet deep and some of them reach a depth of over 5,000 feet. The average wells yield 70,000 gallons of water daily. In a few instances a daily capacity of 4,500,000 has been reached. Unfortunately much of the water is very alkaline or strongly impregnated with sulphuretted hydrogen.

The only one of the major quarantinable diseases in Australia is leprosy, and this only prevails to a limited extent. Queensland, the most of which has a tropical climate, has the majority of the lepers. Seven new cases were reported during 1910. In New South Wales there were two cases reported during the same period. The remaining states of the Commonwealth reported no new cases.

There is a federal law for the segregation of leprosy and this is rigidly enforced.

New South Wales takes care of its 23 lepers at the Coast Hospital, which is located upon the outskirts of Sydney. Here these unfortunates have excellent quarters and receive good treatment. Gynocardate of magnesia is used in ascending doses and the physician in charge believes that its use is as satisfactory as chaulmoogra oil and is much better borne by the patient.

Progress of Medical Science

Boston Medical and Surgical Journal.

June 29, 1911.

Suprapubic Intraurethral Enucleation of the Prostate. J. B. Squier.
The Value of the Guinea-Pig Test in Genitourinary Tuberculosis. J. D. Barney and E. L. Young, Jr.
Remarks on a Forbidden Case of Cancer, Involving Tongue, Tonsil, and Pharynx, Permanently Cured by Radical Excision. M. H. Richardson.
A Case of Diabetes Treated by Feeding of Calves' Pancreas. W. N. Cowles.

Enucleation of the Prostate.—J. B. Squier states the perineal route of operation is not the ideal one. The average end results of the suprapubic operation are more brilliant than those of the perineal and postoperative incontinence of urine never occurs. The author describes his technique of performing the suprapubic operation.

Guinea-Pig Test in Genitourinary Tuberculosis.—J. D. Barney and E. L. Young state that the guinea-pig test for tuberculosis, when carefully done, is by far the most delicate and invariably accurate diagnostic weapon at one's disposal and that a negative test is of indisputable value.

Cancer of Tongue, Tonsil, and Pharynx.—M. H. Richardson reports a case of this condition permanently cured by radical excision.

Pancreas Feeding in Diabetes.—W. N. Cowles reports a case of diabetes in a man twenty-three years old, in which improvement followed the administration of

fresh calves' pancreas. Three years later the patient died from the effects of a large carbuncle of the neck, and at autopsy the pancreas was found to be represented by a fibrous cord about one-fourth the size of the normal gland.

New York Medical Journal.

July 1, 1911.

A Case of Pseudochylous Ascites. F. P. Henry.
The Operation of Choice in Carcinoma of the Rectum. J. A. Blake.
The Selection of Operation in Biliary Disease (Primary Cholecystectomy *versus* Cholecystostomy. H. Lilienthal.
Perforating Duodenal Ulcer with Reports of Cases. J. A. Lichty.
Alcohol Injection in Trifacial Neuralgia. F. C. Keller.
Notes on Metastatic Growths of the Central Nervous System. B. Sachs.
Clothing and Regulation of the Body Temperature. H. F. Wolf.
A Comparative Study of a Case of Paresis and one of Tabes Dorsalis after the Administration of Salvarsan. A. L. Wolbarst.
The Academy of Medicine in Paris. F. Dowling.
The Prolongation of Heart Life. W. F. Waugh.

Pseudochylous Ascites.—By F. P. Henry. See MEDICAL RECORD, Vol. 79, page 1118.

Carcinoma of the Rectum.—J. A. Blake states that in all growths necessitating the destruction of the sphincter it is preferable to institute a permanent inguinal anus and extirpate the remainder of the rectum. He has done this in fourteen consecutive cases without mortality. This he would consider the operation of choice for all cases were it not for the formation of a permanent artificial anus. It has a low mortality because there is no secondary infection of the wound, the fecal current being deflected from the site of operation. In the case of neoplasms lying above the anal canal so that it, or at least the sphincter, can be left, the competency of the latter can be even better conserved by the abdominal than by the perineal method on account of the extent of the incision and the risk of injury to the nerves in the latter operation. If the lower limit of the growth is three inches or more from the anus, the gut can be divided below the growth through the abdominal incision and the operation completed without a perineal wound other than a stab drainage opening.

Selection of Operation in Biliary Disease.—H. Lilienthal concludes that, as a rule, any gall-bladder which is worth operating on at all for biliary disease may with advantage be removed; that in the majority of cases this removal may be safely accomplished at the primary operation; that when for any reason this procedure appears dangerous or otherwise undesirable one should look forward to completing the work at a subsequent sitting, surely at the first sign of disorder of the bile passages.

Perforating Duodenal Ulcer.—By J. A. Lichty. See MEDICAL RECORD, Vol. 79, page 1025.

Alcohol Injection in Trifacial Neuralgia.—F. C. Keller states that a successful injection, or series of injections, is followed by relief for about the same length of time as that following a first resection of a peripheral nerve. Reinjection for recurrence gives a longer period of relief than a repeated resection. In cases in which it might be deemed advisable to do a resection of the Gasserian ganglion, or the Frazier operation, the injection would no doubt be a valuable preliminary treatment to put the patient in better condition for the radical operation.

Metastatic Growths of the Central Nervous System.—B. Sachs states that these provide one of the saddest chapters in all medical practice, and for the neurologist the helplessness in the presence of slight spinal symptoms seems almost mortifying. In several instances in which root pains of the lumbar or sacral plexus signalized the invasion of the central nervous system the author has been sorely tempted to ask that an exploratory operation be done to remove at least these foci of the disease, and perhaps for the time that the patient was to live to prevent the invasion of the cord itself and the subsequent paralysis and other distressing symptoms, but the surgeon is not willing—and properly so—to attempt the removal of such growths. In cases of sarcomatosis he injected Coley's fluid, but the results observed were not satisfactory.

Clothing and Regulation of Body Temperature.—H. F. Wolf states that clothing tends to make the skin more sensitive and may thus prevent the so-called "hardening." By proper hygienic measures the skin can recover to a great extent its adaptability to changes of climate. One must recommend to the public clothing which is sufficiently porous and yet does not prevent evaporation and more especially change of air about the body. Proper protection against cold should be accomplished not by heavy underwear but by suitable outer garments.

Salvarsan.—A. L. Wolbarst presents a comparative study of a case of paresis and of a case of tabes, in both of which salvarsan was used. In the former there was a decided but temporary improvement after the injection; in the latter an immediate ill effect was observed, which continued up to the patient's death twelve days after the injection.

The Academy of Medicine in Paris.—F. Dowling states that this institution is the official advisory council of the French Government in all matters pertaining to public health and sanitary science.

Prolongation of Heart Life.—W. F. Waugh states that the basal facts in the treatment of heart diseases are the reduction of cardiac duty and the regulation of the tonicity of the vessel walls.

Journal of the American Medical Association.

July 1, 1911.

Organized Medicine: Its Influence and Its Obligations. J. B. Murphy.
Race and Alcohol Insanity. G. H. Kirby.
Chronic Pancreatitis in Association with Gallstone Disease. J. B. Deaver.
Traumatic Tetanus. Recovery Following the Administration of Tetanus Antitoxin. E. N. Liell.
Influenzal Meningitis and Its Serum Treatment. S. Flexner.
The Ether Rausch. A Safe and Certain Method of Producing Brief General Anesthesia with Ether. W. T. Coughlin.
A New Splint for Traction and Countertraction in Fraction of the Humerus. A. A. Crane.
A New and Simple Method of Removing a Renal Calculus. H. A. Kelly.
A Case of Incarcerated and Obstructed Diaphragmatic Hernia with Operation and Recovery. B. V. Caffee.
A Plate-Changing Device for Stereoscopic Radiographs of the Chest. S. Lange.
A Vest-Pocket Case for Carrying Everything Necessary for Making a Blood-Count. M. B. Katzenstein.
Treatment by Vaccine Therapy of a Carbuncle in a Diabetic. C. L. McDonald.
Sodium Cacodylate in Syphilis. J. H. Long.
Comparative Results of Dry and Wet Test-Meals. A. F. Chace.
Injury to the Chest Producing Signs of Abdominal Injury. F. G. Dyas.

Organized Medicine.—By J. B. Murphy. See MEDICAL RECORD, July 1, page 44.

Race and Alcoholic Insanity.—G. H. Kirby reports an analysis of 1,762 cases of alcoholic insanity of both sexes, and the racial divisions recognized were the Irish, German, Italian, negro, Jewish, and those born of native parents, all other races being lumped together under one head. He finds the largest percentage of alcoholic cases (20 per cent.) in the Irish; next comes the mixed group, with 10 per cent., followed by the German with 9 per cent., the Italian and the American with 5 per cent. each, the negro with 4 per cent., and the Jewish last with only 0.6 per cent. Alcoholic insanity was most frequent among males in all groups except Americans, where there were as many women as men.

Chronic Pancreatitis with Gallstone Disease.—J. B. Deaver states that chronic pancreatitis may be suspected of having complicated gallstone disease when the symptoms point to severe recurrent disease of the cholcdochus with marked emaciation and disturbance of the carbohydrate metabolism or evidence of insufficient action of the pancreatic ferments on the food in the intestine. The treatment is closely bound up with the surgery of the bile passages. As Mayo Robson has shown, free drainage of the biliary tract and, through this, of the pancreatic duct may in many cases enable the pancreas to cast off the infection.

This is the principle of the treatment. The best cure, however, is prevention by prompt surgery in biliary diseases.

Traumatic Tetanus.—E. N. Liell reports a case of tetanus following a pistol wound in a boy aged ten years, in whom recovery followed the use of 55,000 units of tetanus antitoxin.

Influenzal Meningitis and Its Serum Treatment.—S. Flexner describes the results obtained by Martha Wollstein. (See page 131.)

The Ether Rausch.—W. T. Coughlin describes this method of producing brief general anesthesia by the administration of ether with very little air.

Arm Traction Splint.—A. A. Crane describes a new splint for producing traction and counter-traction in the treatment of fractures of the humerus.

Renal Calculus.—H. A. Kelly describes a transrenal plan of nephrolithotomy which, except in the simplest cases, with an easy exposure, is, he believes, quicker and safer than pyelotomy or any other transrenal operation.

Diaphragmatic Hernia.—B. V. Caffee reports a case of diaphragmatic hernia following a stab wound. Operation was successful.

X-Ray Plate Changes.—S. Lange describes a device for the rapid changing of plates for taking stereoscopic pictures of the chest.

Blood-Counting Apparatus.—M. B. Katzenstein describes a vest-pocket case for carrying the pipettes and solutions necessary for making a blood count.

Carbuncle.—C. L. McDonald reports a case of carbuncle occurring in a diabetic, which was successfully and rapidly treated with the aid of an autogenous staphylococcus vaccine.

Sodium Cacodylate in Syphilis.—J. H. Long reports unfavorable results from the use of this drug in three cases of syphilis.

Dry and Wet Test-Meals.—By A. F. Chace. See MEDICAL RECORD, Vol. 79, page 1025.

Gunshot Wound of Chest.—F. G. Dyas reports a case of this condition in which the abdominal findings were those of peritoneal injury with marked distention, tenderness, and pain. Upon opening the abdomen no lesion was found.

The Lancet.

June 24, 1911.

Why Samuel Pepys Discontinued His Diary. D'Arcy Power.
The Significance of Pus in the Anterior Chamber. J. H. Parsons.
Salvarsan and Mercury in the Treatment of Syphilis. H. C. Ffrench.
Wassermann's Reaction in Relation to Cancer. A. Foerster.
A Case of Appendicitis Illustrating the Necessity of Early Operation. D. D. Malpas and P. de Lostalot.
Chloretone in Seasickness. D. A. Welsh.
A Case of Hydatid of the Uterus. A. E. Giles.
A Case of Infantile Paralysis in a Girl Aged Five Years. Treatment by Electricity and a Specially Devised Boot with Concealed Supports. F. Hernaman-Johnson.
The National Insurance Bill and Preventive Medicine. H. M. Richards.
Sir Charles Bell and the Functions of the Fifth Nerve. A. D. Waller.

Why Samuel Pepys Discontinued His Diary.—D'Arcy Power states that hypermetropic astigmatism was the cause which led Pepys to end his diary prematurely at the age of thirty-six.

Pus in the Anterior Chamber.—J. H. Parsons states that hypopyon is always of serious import; that the prognosis is fair if the cause is merely exogenous toxic absorption, bad if exogenous bacterial invasion. In endogenous infection, whether syphilitic or septic, the prognosis is better even in cases of actual bacterial invasion, but much irretrievable damage is often done to the eye, with consequent serious defect of vision.

Salvarsan and Mercury.—H. C. Ffrench believes that salvarsan is far inferior to mercury in the treatment of syphilis.

Wassermann Reaction in Relation to Cancer.—A. Foerster states that as an active etiological factor syphilis plays a small rôle in cancer, if any at all. Epithelioma of the tongue is far more frequently preceded by syphilis than any other form of cancer. The right to place lingual cancer among the parasyphilitic lesions, next to tabes and general paralysis, must be questioned. It is possible to prepare an antigen extract for Wassermann's reaction from purely cancerous material. A serodiagnosis of cancer on the lines of Wassermann's reaction is at present not possible.

A Case of Appendicitis.—D. D. Malpas and P. de Lostalot report a case of perforative appendicitis in which the subjective and objective symptoms were exceedingly mild.

Chloretone in Seasickness.—D. A. Welsh reports the good effects in seasickness of chloretone given in doses of 5 to 10 grains.

Hydatid of the Uterus.—A. E. Gales reports a case of this condition.

Poliomyelitis.—F. Hernaman-Johnson reports a case of this condition in a child treated by means of electricity and a specially devised boot with concealed supports of steel.

National Insurance Bill and Preventive Medicine.—H. M. Richards states that the national insurance bill proposes to arrange for the compulsory insurance of every third person in the United Kingdom against sickness and disablement. He suggests a scheme by which the necessary medical organization in the area of each county or county borough would include medical referees to check malingering, medical attendants in midwifery emergencies, medical and surgical consultants attached to a clinic, a sanatorium physician, a laboratory director, and domiciliary attendants on the insured. In the author's opinion such a staff can best be organized by combination with the medical departments of the county and county borough councils. This would combine economy with efficiency for both the public health and insurance services.

Sir Charles Bell and the Function of the Fifth Nerve.—A. D. Waller states that the gross misunderstanding about whether motor and sensory applies to the fifth nerve proper or to the entire fifth inclusive of the nerve of mastication was, and still is, a confusing circumstance in the discussion of the motor and sensory functions of the fifth nerve. It plays quite a conspicuous part in the early days of the University of London.

British Medical Journal.

June 24, 1911.

An Address on the Early Recognition and Prevention of Carcinoma of the Stomach. J. Sherren.
Acute Jejunal Obstruction in a Case of Advanced Pregnancy; Operation; Recovery. E. A. Roberts and F. C. Wallis.
Treatment of Appendicitis in Children. W. A. Rees.
Pyocyaneus Infection in Dogs and Its Similarity to Rabies. W. F. Harvey, R. M. Carter, and H. W. Acton.
A Case of Blackwater Fever in England. J. Rooth.
The Rapid Treatment of Gonorrhea. A. C. Magian.

Prevention of Gastric Carcinoma.—J. Sherren states that considerably over a third of the cases of carcinoma of the stomach originate in chronic ulcers and are therefore preventable.

Acute Jejunal Obstruction.—E. A. Roberts and F. C. Wallis report a case of this condition occurring during advanced pregnancy. Operation revealed the obstruction high up; there was no volvulus, band or adhesion, but merely a flattened piece of intestine, which was not inflamed or kinked.

Appendicitis in Children.—W. A. Rees believes that in the child, with the same degree of acuteness of onset as in the adult, the case is more likely to go on to form an abscess than in the adult. The less done in abscess cases the better; opening and simply draining an abscess cavity can often be done in ten minutes and is most frequently all that is necessary.

Pyocaneus Infection and Rabies.—W. F. Harvey, R. M. Carter, and H. W. Acton have found that infection with the pyocyaneus bacillus occurs in dogs and that this infection may, both as regards symptoms produced and tests applied, lead to confusion with rabies.

Blackwater Fever in England.—J. Rooth reports a fatal case of malarial hemoglobinuria occurring in a young male three weeks after his arrival in England from Burma.

Rapid Treatment of Gonorrhea.—A. C. Magian describes a treatment for gonorrhea which he claims will effect a cure in five days. The patient is given copious irrigations with a solution of potassium permanganate, distilled water, and solutions of protargol, chloride of gold, sulphate of zinc, and nitrate of silver. The patient also uses injections of protargol and urethral bougies of protargol and antipyrine.

Berliner klinische Wochenschrift.

June 12, 1911.

Bacterial Anaphylatoxins.—Neufeld and Dold believe that bacterial anaphylatoxins throw light on the nature of infectious processes. Bacteria form their own special toxins, which are more or less specific for the particular germ during its life. From dead bacteria soluble endotoxins are also set free. But, aside from these specific products, others are formed at times which are nonspecific in character and which do not, like the specific toxins, produce antibodies. Much of the clinical picture of infection is due doubtless to these anaphylatoxins. The formation of the latter is antagonized by bacteriolysis and phagocytosis. This conception of anaphylaxis does not exclude other sources for the latter. Thus in anaphylaxis from the use of antisera we may infer that the anaphylatoxin is produced in the formation of the antibody and without the intermediation of the bacteria. However, in the author's opinion, the anaphylatoxin in such cases originates remotely from the latter.

Unilateral Atrophy of the Lung.—Döblin and Biernath describe two cases of this very rare congenital anomaly and give the meager literature of the subject. The nature of the affection is obscure. It appears to represent an agenesia and yet may be due in part to a congenital bronchiectasis. The state of the lung does not differ essentially from that due to a frank obstruction of the bronchi in earliest infancy. It is also known that, given a congenital atelectasis of the lung, bronchiectasis develops secondarily from attempts of the lung to expand. The two patients were in advanced middle life. One had been dyspneic for many years, a sufferer presumably from asthma and emphysema. She had recently gone through pneumonia, which brought her under observation. Despite all evidence of absence of lung tissue in the right half of the thorax, there was none of the retraction which follows destructive disease of the lung parenchyma. As the patient lives an accurate diagnosis can hardly be made, but in the opinion of the best authorities the total absence of deformity is tantamount to the presence of a congenital aplasia of the lung. The sound lung was much hypertrophied and the heart pushed to the right. The second was an autopsy case. The man had complained of his chest for about two years only. The diagnosis was congenital bronchiectasis with aplasia of the right lung, compensatory hypertrophy of the left lung with emphysema, persistent foramen ovale, and a general hypertrophy with dilatation of the right heart, with failure of the circulation, as shown by serous effusions and stasis in the abdominal viscera. The pulmonary vessels showed degenerative changes with venous thrombosis. There was congenital narrowness of the aorta. In these cases the Röntgen shadow should aid materially in the diagnosis.

Suprarenal Bodies in Laennec's Cirrhosis.—Dominici gives a full account of our knowledge of the histology of the adrenals in this affection. We know that the disintoxicating activity of the liver must be compromised by a disease like Laennec's cirrhosis, and it is evident that compensatory activities must be invoked. Since the adrenals have a marked disintoxicating function it is important to study them in this disease. But since naked eye anomalies are not always in evidence we must needs make a careful research for functional aberrations and especially for histological changes. The author investigated five cases from this point of view. The most significant changes appeared to indicate a hypofunction of the medulla in four cases. In the other case there was hyperfunction, which comes in relation with the fact that this patient, unlike the others, had arteriosclerosis. In all the cases there were evidences of cortical hyperfunction, believed to be compensatory in character. The medullary hyposecretion is believed to explain some of the phenomena in the hepatic cirrhosis, notably the diminished vascular tonus, which cannot be explained on purely mechanical grounds. This was, of course, excluded in the arteriosclerotic subject. The cytological examination is naturally very complicated, many color tests requiring employment. The chromaffin tests could not be made on account of the age of the specimens. That there was hypofunctioning of the medullary cells was evidenced by the numerous appearances of degeneration, including the presence of numerous fat droplets. Hyperfunctioning cells in both cortex and medulla were indicated by an exaggeration of the characteristics of the normal cells.

Münchener medizinische Wochenschrift.

June 13, 1911.

The Ovarian Hormone as the Cause of the Growth of Uterine Myoma.—Seitz invokes the hypothesis of a pathological ovarian hormone as the natural exciter of the growth of uterine myomata. That the latter are arrested by castration is, of course, well known, and it is also well understood that the ovary possesses a principle—or principles—which stands in close relationship not only to menstruation and uterine hyperplasia but also to the growth and nutrition not alone of organs which constitute secondary sexual characters but to other organs which bear no known relation to sex. The author believes that the same principle which presides over the increase of the muscle fibers of the uterus in pregnancy is also responsible for the growth of uterine myomata; but that in the latter case the hormone is no longer physiological but the product of a diseased ovary. This conception of hormone action is somewhat novel, but the original definition of hormones is such that it can be made to include any principle derived from an organ which when taken into the blood can modify the action of a remote organ. This view brings us at once to the subject of the causation of neoplasms in general. Hypothetical chemical substances have already been postulated as causes of tumors, for example, the attraxines of Fischer. To return to uterine myomata, their tendency to increase in size during pregnancy is well known, as is also the opposite tendency to improve even as soon as the puerperium. The favorable action of the *x*-rays on myomata appears to be due to their destructive action on the ovaries.

Nutrition with End Products of Protein Digestion.—Frank and Schittenhelm speak most hopefully of great possibilities in connection with nourishing the sick with the presumably easily utilized end or near end products of albumin digestion, which may be employed by the rectum as well as per os. Animal experiment has been made to show the eminent practicability of the idea, some results being styled as brilliant. It is assured that the end products are fully equal in food value to a definite quantity of natural albumin; that they are well tolerated, and highly

palatable. Exact details are not supplied, and it is not denied that the idea is being commercialized and that some of the great German manufacturing houses are about to introduce food preparations of this sort for exhibition by mouth and rectum respectively.

Diagnosis of Variola.—Paschen makes an important communication on the diagnosis of smallpox with especial reference to differentiation from chickenpox. Four years ago he discovered in both vaccine lymph and variola virus, as well as in the virus of sheeppox, certain minute corpuscles with special tinctorial properties. He has since tested a great variety of exudative cutaneous lesions for these bodies, but always with negative results. In the Brazilian epidemic of 1908 Prowazek and Aragao rediscovered the same corpuscle and learned incidentally that the virus of the disease does not pass through colloid filters. These bodies are apparently none other than Guarnieri's vaccine corpuscles (*Cytoryctes*). However, the vexed question of the specific cause of variola is beside the mark, for in this connection the author is merely considering a method for differentiating variola from varicella. With the natural improvements in technique which have accrued from the labors of those who have studied these corpuscles the author feels sure of his ability to diagnosticate or exclude variola by the presence or absence of the latter. Of six apparent cases of variola occurring recently in his vicinity the diagnosis was readily made by ordinary clinical methods in three. In the others the resemblance to varicella was notable. The diagnosis was readily established by the discovery of the corpuscles, and it was possible to isolate the patients and vaccinate the exposed at a very early date. These patients were elderly men unvaccinated since childhood, who contracted variola of the mild type.

Deutsche medizinische Wochenschrift.

June 15, 1911.

Treatment of Recent Infantile Paralysis with Recumbency and Immobilization.—Mayer reports two cases treated in this manner. Any curative management must combat the inflammation, hyperemia, hemorrhages, and leucocyte migration and thereby prevent the sclerosis of the anterior motor ganglia. Recumbency and immobilization favor this fortunate termination in some manner. They clearly protect the cord from reflex insults and antagonize the contractures. The treatment was first described by MacKenzie, an Australian, in 1909, and soon afterwards the author called the attention of his German colleagues to the paper. Since that time plaster-of-Paris casts and the plaster bed have been tested. The method is best understood through a case recital. One of the author's patients, aged 2½ years, was attacked in January, 1910, with pains in head, back, and limbs, and high fever. On the following day all the limbs and trunk were paralyzed, the pains increasing in severity. In about a week the arms recovered their function. The pains, however, had not abated and the possibility of spondylitis was entertained. The case was seen on the twelfth day and the lower extremities were at once immobilized in plaster-of-Paris, the chief indications being the prevention of contracture and the already beginning equinus. After four weeks of immobilization the muscular functions were seen to be improving. Treatment continued until July, when patient was allowed to get up. Aside from a mild paresis of the tibialis anticus, the musculature was quite normal. The slight impairment in the gait could be noted only by the trained observer.

Specific Treatment of Tricophytosis.—Bruck and Kusonoki of Prof. Neisser's clinic have been making use of the so-called tricophytin—the toxin-like substance obtained from cultures of the tricophyton—in the treatment of the cutaneous lesions caused by that parasite. The latter was cultivated on a special medium and the culture filtered. After making sure of the sterility of the filtrate phenol was added as a preservative. The possibility of a diagnostic cutaneous reaction is being separately investigated. The therapeutic use of tricophytin is by intradermic injection. Thus far but few cases have been treated. One was an instance of severe ringworm of the beard which had resisted *x*-ray treatment and epilation (röntgen epilation) as well as the use of parasiticides. A diagnostic intradermic injection was made with tricophytin from two separate strains of fungi. The seat of injection was the upper arm, and positive results were obtained (fever, local irritation). The lesions of tricophytosis were not affected by the tests. Nevertheless, on the following day these lesions began to improve and disappeared in a surprisingly short time. He was discharged cured on the fifth day. The diagnostic test, repeated, was still positive. While it is not expressly so stated, this remarkable therapeutic result appears to have been due to the accidental outcome of a diagnostic test. The reaction set up by the tricophytin in the sound skin was marked in severity, both locally and constitutionally. The erythematous area about the puncture was as large as the palm, and the funtion of the arm was somewhat interfered with. The fever persisted for several days, and was accompanied by malaise, prostration, and headache. The reaction from the second injection was also notable, although somewhat weaker. The authors are unable to explain the rationale of the therapeutic result.

Bacterial Cause of Chronic Urethritis.—Von Wahl has for some years made a study of chronic gonorrhea with regard to its contagiousness. In 1904 he published an article on the bacteria of the normal urethra with especial emphasis on gram-positive and gram-negative flora. He has been able to follow up certain cases of gonorrhea bacteriologically for years. That in chronic cases we do not often find gonococci, but ordinary pyogenic cocci, has indeed long been taught, but we have not known to what extent the latter have acted independently in causing sequelæ. The author's researches tend to show that certain streptococci are able to set up chronic urethritis without previous gonorrhea, and that they are capable in association with gonococci of causing a mixed infection of the urethra. Finally, the majority of cases of chronic, as distinct from acute, urethritis are due to streptococci. The author's results also tend to show that the accused streptococcus is not the familiar *S. pyogenes* but a special form of coccus. It is admitted that in a small percentage of cases chronic urethritis is due to the staphylococcus. The streptococcus of urethritis greatly resembles the gonococcus. The author has differentiated it from the diplo- and streptococci previously found in the urethra. The author appears to have demonstrated that under certain conditions his urethral streptococcus can behave much like the gonococcus, *i.e.* it can set up an acute, contagious discharge, and can also give rise to the various local complications of acute gonorrhea, together with arthritis. Under ordinary conditions the streptococcus does not cause complications beyond chronic prostatitis and rarely epididymitis. It does not lead to cystitis or metastases.

Mental Development of the Young.—Moxom states that it has been said that the foundation of most mental disorders occurring in adults is laid in childhood and adolescence. However this may be, it is certainly true that among the ever-increasing number of our asylum inmates and among the larger number outside who suffer with various forms of psychoneurosis many are found who owe their condition in large measure to the fact that they have not learned, when young, how to lead self-controlled and efficient lives.—*New York State Journal of Medicine.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

By THE INSURANCE EDITOR.

Tact and Judgment.

The rules of ethics and policy play an important rôle in examining for life insurance, and an observance of them, as far as circumstances allow, will not only smooth the path of the examiner but help satisfy the other parties concerned. It will not be out of the way, therefore, to offer a few suggestions on these lines before taking up the subject from a purely medical point of view.

The two attributes, tact and judgment, are invaluable assets to every professional and business man, and are particularly useful when a physician is acting in the capacity of medical examiner. Success has only too frequently come to those who, though deficient in medical training and skill, have been the possessors of these admirable qualities; and then others, though adequately equipped and brainy, have not prospered because they would not or could not handle their clients and fellowmen with the requisite amount of tact and judgment. The successful life insurance examiner most highly appreciated by his company is the one who, while quick, skillful and firm in his decisions, retains the respect and good will of the applicant and agent through his courtesy and ease of manner and who, furthermore, can be counted upon to calm the ruffled feelings of an irritated applicant or regain the good will of a discontented policy holder.

The management of the average applicant is a delicate proposition, for as a rule he does not seek life insurance and has probably yielded to the persuasion of the agent after a long and persistent struggle. Later on he is apt to be thankful at what he considers his own foresight in throwing this protection about his family, but, for the time being, he may be very reluctant in submitting to the examination—not anxiously seeking it as an examiner will sometimes suppose. Even if he had any enthusiasm in the beginning, his ardor may become chilled at any stage during the preliminary steps required before a policy can be placed. The examiner has little opportunity for previously studying the mood of each applicant, of knowing whether he is to meet a willing or unwilling subject, and he should, therefore, take it for granted that each case will present its individual difficulties and that the subject may be more or less sensitive to brusque or impatient treatment. The applicant may go further and display an unwilling and disobliging spirit; at such a time it is doubly important for the examiner to be diplomatic rather than show signs of irritation and perhaps cause the agent to lose the business. The strong, able examiner always keeps absolute control over his feelings, no matter how provoking the circumstances may be, whereas the weak will give way. The wrong word from an examiner in an unguarded moment has cost the agent the loss of many long days, even weeks, of trying, arduous work. An examiner should always remember that there are others—the company and the agent—whose financial interests in the matter are greater than his own, and for this reason he ought to ignore the occasional inconvenience and trouble he may encounter. Furthermore, it should be his endeavor to leave the applicant and agent good friends to himself and the company, even when it is his unpleasant duty to give an opinion adverse to their interests, for not only will he then serve the company better, but, also, will add to his own popularity in the community.

Notwithstanding what has been stated in regard to the importance of keeping up agreeable relations with the agent, it should always be distinctly understood that the examiner is to elicit a full history from and make a careful examination of the applicant without allowing the agent to interfere or intrude to the slightest degree. A company cannot conserve the interests of its many policy holders without insisting on careful work by impartial and uninfluenced examiners and on rigidity in selection. The examiner must be decidedly firm in this respect, and his ability to do so and at the same time remain on pleasant terms with the agent and applicant correspondingly increases his value as a medical representative of the company.

While in a general way, tact, and judgment should be observed at all times, they are especially called for whenever some unavoidable emergency interferes with promptness in keeping the appointment as to time and place, in propounding the many pointed questions in regard to personal and family history, in inquiries concerning the use of alcohol and drugs, when requesting the applicant to remove sufficient clothing to allow a thorough examination, in the examination of women especially when interrogating them about the functions and diseases peculiar to their sex, and in procuring subsequent additional information.

The examiner with small experience may hesitate to completely carry out some of the requirements through fear of upsetting the mental equilibrium of the applicant. That all the demands and queries can be made when diplomacy is employed and not give rise to irritation, is proved by the experience of the carefully picked examiners on duty at the home offices. They come in contact with applicants only found in the large centers —the leaders in industry and finance, powerful and forceful—men having heavy demands on every minute of their time, and accustomed to rule their fellow beings. They are difficult to approach, and it would be natural if they chafed in submitting to the full requirements which are invariably exacted by these examiners. Yet, the latter, through their quick appreciation of what is fit, proper and right, secure the cooperation of the applicant and carry out their mission thoroughly from beginning to

Insurance.—(See page 130.)

Albuminuria of Adolescents in Its Relation to Life Insurance.—(See page —.)

National Insurance Bill and Preventive Medicine.—(See page 141.)

The Apparently Unchanged Death Rate Within Recent Years Among Risks Insured in This Country Under Ordinary Policies.—James D. Craig suggests that the decrease in general mortality within recent years does not appear to be caused by any marked improvement in longevity among the people who insure under ordinary policies, but is confined almost exclusively to the industrial classes. Mr. John K. Gore, actuary of the Prudential Life Insurance Company, presented a paper to the Fourth International Congress of Actuaries in which he showed a death rate of 28.3 per cent. during the years 1851-1863, as against 21 per cent. during the years 1889-1901, which is a decrease of 730 deaths for each 100,000 of the population. From a comparison of the records of different companies, or of the different records of a particular company, the same general conclusion is reached that the improvement in the mortality of ordinary risks during the last generation has not

been material, while among the population it has been conspicuous, and the question immediately arises, is this condition being continued to-day? Is the mortality of the industrial masses still improving, while that of the ordinary classes remains constant, or are both classes improving? Within the last few years the decrease in the death rate among industrial lives has been marked. On the whole, a comparison of the tables of various insurance companies seems to show that American mortality among the ordinary class of insured is not improving, although Craig admits that the evidence in this direction is not conclusive. At the same time, when each little result points to a similar conclusion, the suggestion is very striking. It may be that while medicine, surgery, and science have been combating fevers, tuberculosis, etc., the prosperous condition of the country has been producing a state of nervous activity among many business men, which tends to increase the death rate; or possibly the intense competition for new business has caused companies to accept more risks among the residents of southern countries, or more risks which a generation ago would have been considered inferior, with the result that the standard has been reduced.—*Proceedings of the Twenty-first Annual Meeting of the Association of Life Insurance Medical Directors.*

Acute Articular Rheumatism and Insurance.—Loser objects to a circular from the Gotha Life Insurance Bank, directing special care in insuring applicants with a history of acute articular rheumatism, even in the absence of cardiac disease. He considers that complete recovery from the disease and even occasionally from a cardiac defect may take place, though general opinion is against the latter possibility. Loser reminds physicians of the time when recovery from tuberculosis was considered impossible. Leyden, Senator, Fräntzel, Gerhardt have all mentioned the possibility of cure of a valvular lesion by absorption of infiltrations and compensatory enlargement of the healthy portions of a valve. Loser has recommended several applicants, refused by other examiners, all traces of alleged valvular lesion having disappeared; he has never had any reason for regretting such recommendations. If the diagnoses in such cases were not absolutely sure then a diagnosis of a valvular lesion should not be taken every time as seriously as is the custom nowadays. Loser has seen the disappearance of all signs of an aortic insufficiency in one case and of a mitral in another; the aortic lesion may have followed syphilis, the mitral, however, followed an attack of acute articular rheumatism in childhood.—*Blätter für Vertrauensärzte der Lebensversicherung,* March and April, 1911.

The Statistical Method in Medicine.—H. Selfe Bennett discusses the difficulty of comparing statistics, in many instances the impossibility of so doing. He shows that, owing to advances in pathological science, many of the figures, for instance of the returns of the Registrar-General of England and Wales, have from time to time to be "finally" adjusted, and are thus incapable of comparison with those of past decades. The author confesses himself as being anti-statistical and contends that the statistical method, undeniably necessary and fundamentally important as it is for a wide survey, is often unsuitable to its purpose in medical details, not only because of the intrinsic difference between the two kinds of mind employed, but also on account of the natural complexity of the facts dealt with. He positively asserts that "collective investigation" so far as medicine, though not perhaps surgery, is concerned is a failure and that all our classifications of natural phenomena, whether in the mass or in detail, are merely working hypotheses, theories invented for use, but not an immutable and infallible system.—*Transactions of the Life Assurance Medical Officers' Association,* London, 1910.

Accident and Apoplexy.—Kutner details the history of an applicant for accident indemnity, who hit his head against an iron support while lifting a heavy piece of steel. One week later he showed evidence of cerebral hemorrhage or thrombosis occurring in the right cerebral hemisphere. The symptoms included partial paralysis in the region of the third cranial nerve, disturbance in the motor functions of the left upper and lower extremities, and tendency to fall toward the left side. To bring an accident in connection with a cerebral hemorrhage or thrombosis, it must be shown that the injury was considerable enough to produce clinical symptoms at the time or shortly afterward. The applicant's injury was not serious enough to be noticed by a fellow-worker at the time, and he continued his work, though later he said he had felt ill while doing so, for several days afterward. Physical examination showed a disease of the mitral valve, which could easily have led to an embolus with subsequent cerebral thrombosis. If the accidental injury had anything to do with favoring such an embolism, the latter would have occurred immediately after the accident. Kutner's decision in this case was that any connection between the accident and the applicant's condition was improbable.—*Zeitschrift für Versicherungsmedizin,* April, 1911.

Danger of Marital Infection in Tuberculosis.—As early as 1898, Gollmer of Gotha showed that in such cases of marital infection as have come to the notice of life insurance companies, the person last infected has even before marriage shown a predisposition to the disease. In 1906 Ruge of Berlin was able to confirm this conclusion. Married applicants, therefore, exposed to infection because of tuberculosis of the wife or husband, may, it is asserted, be accepted for insurance, especially if the applicant is found to have no predisposition to the disease so far as heredity, history, and physical examination show. As illustrating the absence of danger in such cases, the writer gives the history of one applicant whose first wife died of tuberculosis and whose second wife was likewise afflicted; he personally showed no signs of infection and no predisposition to it. He was insured and married a third time after the death of his second wife. He lived to an advanced age and died of heart failure, having escaped all infection during his intimate association with two tuberculous persons.—*Blätter für Vertrauensärzte der Lebensversicherung,* January and February, 1910.

Expert Opinion in a Case of a Paranoid Form of Dementia.—Eschle reports in full a case of this disease, with results of expert examinations. The article is not adapated for abstracting.—*Zeitschrift für Versicherungsmedizin,* March, 1911.

Workmen's Accidents.—According to certain figures recently published by the French Ministry of Labor, the number of accidents arising out of employment and giving rise to incapacity lasting over four days was 389,249 in 1910, or an increase of 8 per cent. over the figures of 1909. This increase is noted in all forms of labor with the exception of cutters of precious stones and bakers. The industry in which the greatest number of accidents was reported was that of metallurgy, a proportion of 277 accidents for each 1,000 men so employed. Stone workers had 156 accidents per 1,000 employed, ordinary metal workers 149 per 1,000, and laborers in the chemical industry 143 per 1,000. English statistics, so far as they are available, support these figures. The dangerous trades, so far as accidents to ordinary workingmen are concerned, must, therefore, be considered those in which—as in metallurgy, for example—ordinary laborers are put to certain work, which, although not skilled labor in the strict definition of the term, is yet of a nature to demand special aptitude and a certain amount of training. How far the law of cause and effect rules in these accidents is not as yet fully known. There are many points of great interest connected with what may be called the physiology of certain skilled and unskilled trades, and it is time that science devoted some consideration to these points. It is considered desirable that medical men should pay more attention to the study of the problems of labor than they have hitherto done.—*The Hospital.*

Book Reviews.

The Dawn of the Health Age. By Benjamin Moore, M.A., D.Sc., M.R.C.S., L.R.C.P. Price, $1.40. London: J. and A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1911.

This volume is devoted to a discussion of some of the problems that are just now confronting the rank and file of the medical profession; some of them also concern the men "higher up." The chapters are entitled: How we tinker with disease instead of stopping it; the follies of our present public health service, the doctor and his patient in private practice and in state practice; our hospital systems, their evils and abuses; the warfare with the great white plague; and the evolution of the national medical service. The book makes interesting reading, and many of the conditions mentioned are present also on this side of the water. Much of what the author has to say about the abuse of the hospital system and the trials of the club doctor will bear thinking over. There is no party politics in the book, and no muck raking; but the absence of these only adds to the value of the volume.

Joint Tuberculosis. By Leonard W. Ely, M.D.; Consulting Orthopedist to the County Hospital; Attending Orthopedist to the Children's Hospital, Denver, Col.; Member of the American Orthopedic Association and of the American Medical Association; Associate Fellow of the New York Academy of Medicine; formerly Surgeon to the Sea Breeze Hospital; Consulting Orthopedist to the Roosevelt Hospital; Consulting Orthopedic Surgeon to the Metropolitan Hospital, New York, etc. Illustrated. Price $2.50 net. New York: William Wood & Company, 1911.

The subject of joint tuberculosis is one that touches closely many branches of medicine and surgery. It interests not only the orthopedic surgeon, but also the general surgeon, the internist, and the pediatrist. It is a subject, nevertheless, that has not been accorded an intensive scientific study commensurate with its importance, and very few works have been written dealing with this subject exclusively. The present volume represents the most recent contribution to this very scant literature, and, in addition to its thorough presentation of the most advanced knowledge of joint tuberculosis, it enables the author to publish for the first time the results of his original investigation into the pathology of this disease. This is a phase of the subject that has been sadly neglected by former writers. Emphasis has been laid chiefly upon the clinical aspect of tuberculosis of the joints, and practically nothing has been contributed within recent years to the knowledge of its etiology and pathology. The author deserves credit for the years of patient laboratory investigation that has enabled him to formulate an ingenious hypothesis of the pathogenesis of bone tuberculosis. The researches that led up to this hypothesis are described in minute detail and are illustrated by means of a large number of excellent photomicrographs. According to this theory the tubercle bacilli after gaining access to the body are carried in the lymph channels to a node where the lymphoid cells wage battle for their destruction. If this battle is unsuccessful the bacilli leave the node accompanied by their natural antagonists, the lymphocytes. The fight may be resumed at the next node, and the bacilli and lymphocytes may finally reach the blood. In the red marrow of the bones the battle is renewed. In this tissue, rich in lymphocytes, the latter gather to the attack and form the initial tubercle. If the lymphocytes prevail, the disease is arrested without causing any symptoms; if not, it goes on to the production of joint tuberculosis. The author advances the theory that joint tuberculosis is the result of Nature's effort to rid herself of the disease, and is essentially an excretory process. Moreover, the accepted relation of the lymphocyte to the tubercle bacillus is at least not invariable. It is assumed that the lymphocytes and certain other similar cells are not Nature's defensive organism, but the natural food of the tubercle bacillus. This would explain why the tubercle bacilli thrive so well in the bone marrow. An operation causes the disappearance of red or cellular or lymphoid marrow in the ends of the bones, and thus shuts off the food supply of the bacilli. If secondary infection be added, the resulting suppuration furnishes the supply of cells peculiarly adapted to the growth of the tubercle bacilli, and tuberculosis invades the yellow marrow also. The author does not carry this theory further, resting satisfied that it explains all of the phenomena of bone tuberculosis. This theory is a most ingenious one, and is valuable particularly because it rests upon a firm foundation of laboratory investigation. In addition to this original feature, this volume presents the other important phases of joint tuberculosis: its etiology, symptomatology, diagnosis, differential diagnosis, prognosis, and treatment. Chapters on these subjects comprise the first section of the work. Those on diagnosis and differential diagnosis are particularly thorough. The second section of the book takes up in order the special forms of bone tuberculosis, as of the spine, hip, knee, ankle, wrist, etc. There is a chapter in the appendix on "Some Pathological Processes in Tuberculosis," by Dr. Gerald Bertram Webb. A large number of case histories are also appended. The volume is illustrated with many *x*-ray photographs and photographs of microscopic preparations, apparatus, and patients. The excellence of these illustrations and of the typography, paper, and binding, forms a fit setting for Dr. Ely's work.

Principles and Practice of Modern Otology. By John F. Barnhill, M.D., Professor of Otology, Laryngology, and Rhinology Indiana University School of Medicine; Otologist and Laryngologist to Deaconess and State College Hospitals, etc., and Ernest de Wolfe Wales, B.S., M.D., Clinical Professor of Otology, Laryngology, and Rhinology Indiana University School of Medicine; former assistant in Otology Harvard Medical School; former assistant Aural Surgeon Massachusetts Charitable Eye and Ear Infirmary, etc. With 314 original illustrations, many in colors. Second edition, thoroughly revised. Price, $5.50. Philadelphia and London: W. B. Saunders Company, 1911.

It is four years since the appearance of the first edition of this work, and the favor with which it has apparently been received, and recent advances in the science of otology have necessitated the preparation of a new edition. In this the high character of the former edition has been maintained, with the following important additions: The chapter on the examination of the function of the ear includes the uniform system of tests accepted by the Eighth Otological Congress at Buda-Pesth in 1909; a more extended statement regarding operative injury to the facial nerve; a description of the conservative radical mastoid operation, commonly called the Heath operation; several paragraphs relating to the symptoms, pathology, and surgical treatment of labyrinth suppuration. In the preparation of this book the authors have succeeded in their aim of modernizing the subject of otology, of correcting certain traditional beliefs, of advocating the earliest possible prophylaxis or treatment, of emphasizing the importance of a thorough examination and definite diagnosis as a basis for rational treatment, and of thoroughly illustrating the text. The text is conspicuously clear and direct in statement, qualities which particularly commend this book to student and practitioner alike. The large number of admirable illustrations combine with the excellence of type, paper, and binding in making this book a representative one among the many modern masterpieces in medical book making.

Disease of the Pancreas. Its Causes and Nature. By Eugene L. Opie, Professor of Pathology, Washington University, St. Louis, Mo., formerly member of the Rockefeller Institute for Medical Research and Pathologist to the Presbyterian Hospital of New York City. Second edition rewritten. Illustrated. Philadelphia and London: J. B. Lippincott Company, 1910.

When the first edition of this volume appeared, some seven years ago, it excited a great deal of interest because it contained among other things one of the first systematic attempts to connect the clinical syndrome of diabetes with a definite lesion in the pancreas. A great many papers followed the appearance of the book, some favoring the author's views, others showing that the lesions in the islands of Langerhans were not constant even in well-marked cases of diabetes. The original material investigated was small. In the new edition the author has collected a much larger number of cases and has examined them in the light of more recent knowledge. The result is a position somewhat less dogmatic as to the occurrence of a definite type of lesion in diabetes. Experiments on animals have also shown us that other organs play an important part in the pathogenesis of diabetes. In the light of this new lore the revision of the various chapters has necessarily been extensive, the literature being cited down to 1909. Hemorrhagic pancreatitis, fat necrosis, chronic interstitial pancreatitis, calculi, cysts, and tumors are among the subjects treated. The chapter on the pathology of the pancreas in diabetes mellitus contains the results of a recent summary by Cecil of ninety cases of diabetes. A short section on hemochromatosis completes the best work in English on the pathology of the pancreas.

Society Reports.

AMERICAN THERAPEUTIC SOCIETY.

Twelfth Annual Meeting, Held in Boston, Mass., May 11, 12, and 13, 1911.

(Special Report to the MEDICAL RECORD.)

THE PRESIDENT, DR. HARVEY W. WILEY, OF WASHINGTON, D. C., IN THE CHAIR.

Thursday, May 11—First Day.

AT the opening session the annual reports were presented and obituaries of two ex-Presidents of the Society were read by the Secretary, Dr. Noble P. Barnes, of Washington, D. C.; that of Dr. Howard H. Barker, of Washington, having been prepared by Dr. D. Olin Leech, and that of Dr. John V. Shoemaker, of Philadelphia, by Dr. James M. Anders.

Report of Committee on Competitive Therapeutic Research.—The Committee on Competitive Therapeutic Research, Dr. Reynold Webb Wilcox, of New York, Chairman, reported that no essays had been sent in in competition for the annual prize of $100. Subsequently the Council voted to offer $200 for the prize of 1912. This competition is limited to members of the Society, and the subject is limited to a substance or preparation which is official in the U. S. Pharmacopœia. The research work reported may be either wholly laboratory or clinical, or laboratory and clinical combined.

Address of Welcome.—This was delivered by Dr. Clarence J. Blake, of Boston, representing the Harvard Medical School, and the response was made by Dr. Wilcox.

Address of the President: Bromatotherapy.—Dr. Wiley said that diet was an important factor in the prevention of disease, and could also be made so in its treatment. Excessive production of tissue, especially adipose tissue, was in some respects just as much an effect of disease as the loss which we associated with most diseases, and disease which resulted in hypertrophy could often be controlled by diminishing the amount of food. On the other hand, to combat the exhaustive waste of tissue attendant upon many diseases, and stimulate anabolism, food of a proper kind was one of the most valuable resources of the physician. Dietetics as related to the treatment of disease was discussed by the speaker in a variety of aspects, and one section of the address was devoted to the subject of alcohol. A bitter controversy, he said, had been raised over the question, is alcohol a food? Again the respiration calorimeter has come to our assistance in this matter, and it had been shown by Atwater and his assistants that the average adult human organism is able to oxidize with practical completeness about three ounces of alcohol per day, if the ingestion is distributed over different periods of the day. The old idea that if one is going to make unusual exertion or be exposed to extremes of climatic conditions the body should be fortified by alcohol had disappeared. It was quite certain now that the taking of alcohol did not make one any less apt to freeze, but more so, and that it did not produce any such amount of energy as to be at all compensatory for the injury it might otherwise cause. On the witness stand he had stated that he considered alcohol a food because a certain quantity of it was burned in the body, resulting in the production of heat and energy. In the light, however, of recent investigations, and from theoretical considerations, he was inclined to the opinion that the effort to rid the body of alcohol, although only in the small amount mentioned, perhaps consumed much more energy than was furnished by its combustion, and that upon the whole alcohol could not be regarded as a food, even in the limited sense referred to. Without question it was a substance which did not nourish the body, build tissue, or repair waste, and it was quite likely that its value either as a food or medicine had been greatly overestimated. The susceptibility to certain diseases in persons addicted to alcohol had been noted by many writers, while the records of death by sunstroke showed that a very large percentage of the victims were alcoholics. Dr. Reid Hunt, in a paper on the effect of nitrils on small animals, reported that mice which had previously been given alcohol were much more susceptible to toxic influences than those which had not. The tendency which alcohol undoubtedly had to weaken the body resistance was not a matter to be left out of consideration. The general result of the study of this problem had been an accelerated movement to restrict the use of alcohol in medical practice, and especially hospital practice. A few years ago some alcoholic beverage was regarded as necessary in the treatment and elimination of the causes of disease. Now, however, both as a means of preventing disease and as a remedy for disease, it was rapidly falling into disuse, and it seemed likely it would become a mere memory in the materia medica and in the pharmacopœia. The causative effect of alcohol in the production of insanity had been recognized by most authors, though all were not agreed upon this question, and the same was true in regard to cirrhosis, which many writers attributed solely to the consumption of alcoholic beverages. That alcoholism in parents influenced unfavorably the mentality, morality, and physical characteristics of the offspring seemed to be a well-recognized fact. The question therefore naturally arose whether there was any further necessity for the use of alcohol except for tecnical purposes.

The Delusion of the Stimulant and Tonic Effects of Alcohol.—Dr. T. D. CROTHERS of Hartford, Conn., read this paper. Thirty years or more ago alcohol was considered a stimulant and tonic, and was used freely without question or doubt, while the textbooks of that and earlier periods urged that it was indispensable as a therapeutic agent. The modern physician regarded with astonishment the theories and delusions of the past, in thus mistaking the action and effects of alcohol, and was equally surprised to note that some physicians and authors of eminence still adhered to these erroneous ideas. Exact research and a study of the facts of the case had now convinced the great mass of the profession that physiologically alcohol was a depressant, anesthetic, and narcotic. As early as 1845, when it was beginning to be used as the great stimulant drug in disease, a number of observers denied its stimulant properties, and in the sixties and seventies several English physicians asserted the same. Laboratory work began about this time, and here the researches showed that the claims of its value were unsupported. Kraepelin of Heidelberg assumed that if the physiological action were that of a stimulant or tonic, such effect could be most readily seen in a study of the senses, and his carefully conducted experiments showed that in no instance did alcohol increase the acuteness of the senses, but, on the contrary, had a depressant effect on them. Thus, the sight, hearing, smell, taste, and touch were all deranged and lowered to an extent measurable by instruments of precision. There was an exactness in this study which could not be gainsaid, and similar experiments were carried on by various observers. One of these studies was a measurement of the muscular output of laborers and others with and without small doses of alcohol. In all instances irritant effects were noted at the first. The heart's action was increased and the blood-pressure raised, and there was an apparent increase in muscular power, but this was convulsive and of short duration, and was followed by marked depression; so that the output was greatly lowered, instead of being increased. Many studies were made to determine the action of alcohol on the brain and nervous system. The

ability to discern impressions on the senses and to reason as to their significance was found to be always lowered. There were slowness of thought, loss of ability to recognize sudden unusual conditions, and enfeeblement of memory. The heart's action was increased, and with it the cerebral circulation. From this there resulted more or less confusion and lack of clearness and power of concentration. The apparent stimulation was simply irritation, and not increased power or capacity. One very large and carefully conducted experiment was made with typesetters in a government office in Germany, where the results of small doses of alcohol, given at intervals, were increased errors, lessened work, greater fatigue, and measurable anesthetic action. A great variety of similar experiments, with the same results, had also been made in this country. It was a curious fact that a large part of the literature regarding the value of alcohol as a stimulant and tonic was based on tradition, superficial views, and unsupported personal opinion. The teachings of prominent authors had been accepted without question. Thus, Todd, Bennett, and other clinicians who extolled the stimulant properties of alcohol made an army of converts, who unhesitatingly accepted their conclusions, and even to-day physicians of the older school insisted that these early teachings were correct. One of the first breaks in this delusional evidence was furnished by mortality statistics showing a higher death-rate under the use of alcohol as a stimulant. Dr. Crothers spoke of its employment in pneumonia, diphtheria, tuberculosis, and other affections, and said that many papers in this country had called attention to the fact that alcohol was a very dangerous drug in collapse states, particularly following typhoid fever. Here, while there would be an apparent resuscitation for a short time, the depression which followed resulted in more profound collapse. Like other delusions in medicine, founded on misconception and false reasoning, this idea of the stimulant quality of alcohol continued tenaciously and died very slowly; but theories and traditions of the past could no longer be accepted unless they were in harmony with the teachings of science in the laboratory and at the bedside.

Dr. A. D. Blackader of Montreal said he could not deny that under certain circumstances he still found alcohol of some value. There was no question that Trousseau and some of the older authorities used it in too large quantities, but he did not believe that the time had yet arrived when this agent should be banished from our pharmacopœias.

Dr. F. E. Stewart of Philadelphia agreed with Dr. Blackader that alcohol was undoubtedly a valuable remedy in certain cases.

Some Observations on Vaccine Therapy.—Dr. E. W. Nagle of Boston said that, to secure an active vaccine one must have a virulent type of bacteria, these must be killed at the correct time, before they began to lose their cultural characteristics, and it was essential to subject them to the lowest degree of heat for the shortest possible time necessary to kill them. The question of dosage was a difficult one. The speaker did not depend upon the opsonic index, but relied entirely on the clinical symptoms. Usually the beginning dose was a small one: ¼ of 1 c.c. (150,000,000 in the case of staphylococcus vaccine); increasing to ½ c.c., ¾ c.c., and then 1 c.c., and continuing with this dose if there had been marked improvement. Sometimes it was necessary to increase the dose to 2 c.c. before there was improvement. In cases in which it seemed imperative to bring the patient quickly under the influence of the vaccine the dose was not increased gradually, but after the first small dose a large one was given at once. In cases where vaccine was administered oftener than twice a week smaller doses were given. The injections were given in the arm, alternating right and left in order to give the site of the injection the longest possible time to recover from the soreness. Chronic suppurative ear cases appeared to be especially amenable to vaccine treatment, but Dr. Nagle had not met with the same success in nose cases.

Friday, May 12—Second Day.

Dioxydiamidoarsenobenzol as a Patented Product.—Dr. F. E. Stewart read this paper. We were told, he said, that Ehrlich made an arrangement with a German manufacturing house by which this house furnished him with the money required to carry on the 606 experiments which resulted in the discovery of the drug named, with the understanding that if a product was obtained of sufficient value to warrant its commercial introduction it was to be patented, and the patent controlled by the manufacturing house. The speaker expressed the opinion that the arrangement thus made represented a plan of cooperation between professional and commercial interests which, if purged of the monopolistic feature now pertaining to it, might be made in every way commendable. Medicine, including pharmacy, was an altruistic profession. Its object was to prevent disease and heal the sick; not to exploit the sick-room for gain. Cooperation between the medical and pharmaceutical professions and the great manufacturing houses with that end in view meant progress, but such cooperation must include control of the pharmaceutical arts by licensed practitioners of medicine and pharmacy, and compliance with rules for the advancement of pharmaceutical science. The following summary was given by Dr. Stewart: 1. The object of the patent law being to promote progress in science and the useful arts, it logically follows that its proper application to materia medica products will promote progress in materia medica science and the arts of preparing medicines and applying the same to the healing of the sick. As now applied, however, the patent law hindered progress in the knowledge of drugs as therapeutic agents and injures the professions of medicine and pharmacy. 2. Product patents were monopolies granted to persons who were not required to be interested in promoting science or in advancing the arts of medicine and pharmacy. 3. Progress in materia medica science and in the pharmacological arts was dependent upon the cooperation of those engaged in the practice of the pharmacological arts and in the results of the publication of their researches for the benefit of science. 4. The position assumed by certain members of the medical profession, that it was immoral for physicians to make money out of the sale of drugs, was unwarranted. The wrong was in carrying on what ought to be a professional business in a commercial manner. 5. Materia medica products could not be properly introduced to science without using the educational machinery of the profession, namely, medical societies and the press. When products were controlled by commercial introducers their introduction to science by the cooperative work of the profession was impracticable, because the opening of the medical journals and societies to their discussion would convert the educational machinery of the profession into a great advertising bureau for the exploitation of monopoly. 6. Most of the experimental work necessary for determining the value of new therapeutic agents was carried on in hospitals, dispensaries, and other charitable institutions. When the results were appropriated by commercial houses for building up monopolies beneficence was turned into commercial exploitation, a crime against humanity. 7. Under a system of competition it was safe to open the educational institutions and their laboratories to the manufacturers of materia medica products, and ask their cooperation in developing the science of materia medica. 8. Under the system of product patents maintained in this country the

medical journals were forced to give the manufacturers advertising space which millions of money could not purchase; being compelled to do this in order to keep up with the foreign journals in publishing important news.

Chronic Acetanilide Poisoning; Describing a Definite Symptom Complex as a Result of Its Continuous Ingestion.—Dr. H. C. Gordinier of Troy, N. Y., read this paper, the conclusions which he drew from his study of the subject being as follows: 1. Chronic acetanilide poisoning was productive of the following perfectly definite and easily recognized symptom complex—chronic cyanosis, cardiac insufficiency, a distinct blood-picture showing profound disorganization, and definite renal changes. 2. The acetanilide habit was much more common than was generally supposed, and enslavement by it was comparable with or worse than that by opium or alcohol. 3. Acetanilide had a special predilection for the cardiovascular system, acting as a virulent hemolytic agent.

Dr. C. E. de M. Sajous of Philadelphia said that in his experience cases of acetanilide addiction were not so difficult to manage as those of opium addiction. He called attention to the constriction of the arterioles produced by the coal-tar products, as demonstrated by experimentation, and expressed the opinion that this was the chief cause of the cyanosis.

The Uses and Limitations of General Anesthesia as Produced by Subcutaneous and Intravascular Injections.—Dr. W. Wayne Babcock of Philadelphia referring to Burkhardt's method of inducing anesthesia by the intravenous injection of chloroform and ether, said that chloroform soon had to be abandoned, but ether was still employed to a limited extent, especially in Russia. In the 75 or 100 cases now on record there had been one death and several instances of pulmonary embolism. The method was not therefore to be recommended. He then went on to speak of the production of anesthesia by the subcutaneous injection of narcotics, which, he said, was a revival of a very ancient use for these agents. It was not, as a rule, well adapted for children, but in adults he had met with a very fair measure of success with it. In 10 per cent. of the cases in which it was tried he had found it possible to induce complete anesthesia, with abolition of the reflexes, and in from 50 to 60 per cent. sufficient anesthesia for operative purposes, though without entire abolition of these. The drugs employed were of three classes: (1) hyoscine or scopolamine; (2) morphine and apomorphine; (3) alcohol and similar agents. In regard to apomorphine, he was convinced that its main action was that of a sedative. It was therefore a terrible mistake to administer it in cases of narcotic poisoning, as was sometimes done. The method which Dr. Babcock had found most satisfactory was to give a subcutaneous injection of ⅛ grain of morphine with 1/100 grain of hyoscine or scopolamine, and also an enema of decinormal salt solution containing from 1 to 3 ounces of alcohol. In fifteen minutes the hypodermic injection was repeated, if necessary, and in fifteen minutes more a third injection might perhaps be required. When apomorphine was employed, only a very slight emetic effect, or none at all, had been noted. Objections to this method were, first, that as a rule it was not suitable for abdominal operations, and, second, that if toxic products were present in the system the narcotics would tend to retard elimination by closing up the emunctories. It was an ideal method for operations about the mouth, throat, and nose, where ether proved dangerous and unsatisfactory, and when it was used we could often dispense with tracheotomy. It was essential to watch the breathing of the patient very carefully, and sometimes it was necessary to pull the tongue forward.

Therapeutic Value of Sodium Cacodylate.—Dr. Spencer L. Dawes of Albany, N. Y., said that, at the meeting of the American Therapeutic Society in 1907, he had read a paper by Holmes C. Jackson and himself entitled, "The Physiological Action, Elimination, and Therapeutic Application of Sodium Cacodylate, Used Hypodermically," and as certain authorities had so emphatically insisted that sodium cacodylate was possessed of no arsenical properties whatever, he gave a summary of the findings then reported in order to demonstrate the incorrectness of such statements. He also stated that many of these findings had been confirmed by Runnels and other observers. He then went on to say that it was generally accepted that the value of arsenic as a therapeutic agent, where indicated was limited only by its toxicity, evidenced mainly in the gastrointestinal tract, and, in his opinion, herein lay the justification for the use of sodium cacodylate hypodermically; for the experiments made had shown that much of that drug was changed into inorganic arsenic and was stored in the tissues and utilized as rapidly as it could be taken care of, without effect upon the mucosa of the digestive tract. Experience had taught him that in giving small doses, with intervals of non-treatment, he had erred on the side of prudence, and that in most instances satisfactory results could be obtained only by using relatively large doses daily, without intermission and often several weeks. This was especially the case in anemias of long standing. There had been reported to him 14 cases of pernicious anemia treated with this agent. Of these, 4 patients had short periods of improvement alternating with exacerbations, and finally died. Of the remaining 9, reported as cured, 5 had been so recently discharged that they could not be claimed as having yet positively recovered. He had records of 410 cases of simple anemia treated by himself and others, and in every uncomplicated case there had been complete recovery. He had yet to see an instance of anemia in which the administration of this salt has not markedly, and usually quickly, increased the percentage of hemoglobin and, as a rule, the red cells. His records showed 22 cases of neuritis treated, with 16 recoveries. One patient with tic douloureux of six months' duration recovered; another improved and then was not benefited Of 17 patients with eczema, most of them of squamous type, 15 were cured. Twenty-two subjects of psoriasis were treated, with but 9 recoveries, while several were apparently aggravated. Neuralgias and gastralgias responded favorably in almost every instance, and certain types of malaria, such as are seen in former residents of tropical and semitropical regions, gave the most remarkably quick and permanent response. Sodium cacodylate had proved much more satisfactory in the treatment of chronic rheumatism than other forms of arsenic, and in one case rheumatoid arthritis had apparently been checked by its use. In the administration of the drug it was most important to secure a perfectly pure salt free from arsenous oxide. He had established for his own convenience an arbitrary standard of one milligram for each pound of body-weight to start with, gradually increasing the dose to 0.2 gm., and frequently to 0.3, and he felt sure that the failures to get results were more often due to insufficient dosage than to any other cause. It would appear that this salt was of service in the same class of cases as arsenic, and, because of its non-toxicity, it was far more desirable in many cases where large dosage was indicated. In conclusion, Dr. Dawes said it had seemed to many clinicians that if dioxydiamidoarsenobenzol was of value in syphilis, theoretically sodium cacodylate, being less toxic and having a slightly larger percentage of arsenic, ought also to be of value. That this reasoning was fallacious had been very tersely stated by Nichols. Since December, 1910, Dr. Dawes had received reports on the use of sodium cacodylate in various forms of syphilis from many observers, and many cases

had been reported in the medical journals. While in some instances there had seemed to be satisfactory results, the greater number of observers reported it of no value, and he was inclined to believe they were correct. If it were used, however, he thought that massive doses (0.6 gm.) should be employed, in order to overwhelm the spirochetes, if possible.

Dr. Gordinier reported that in tabetic pains he had seen remarkable relief afforded by the intramuscular injection of sodium cacodylate.

Epithelial Conductors and Obstructors.—Dr. Robert T. Morris of New York said that the chief obstructor of the development of epithelium on raw surfaces was peroxide of hydrogen, a substance now in universal use throughout North America. Next to it in this regard, and also next most commonly employed, was gauze; and the third most destructive agent for young epithelial cells was some form of ointment. Then came the so-called protective coverings, such as guttapercha, which allowed culture media to collect underneath. At 10 o'clock the next morning one might see all these obstructors put into use in every hospital in the country. Among conductors of new epithelium one of the most remarkable was the moist skin of an egg, which some of the old surgeons used to believe actually carried a vital principal. Other good conductors were animal membranes, like Cargile membrane, silver foil (much used at the Johns Hopkins Hospital), and oiled silk (if properly sterilized). Substances which were entirely impervious were conductors to a very limited extent if cut into strips and employed with great care. These might be said to be on the borderline between conductors and obstructors.

Diabetes Mellitus from a Surgical Standpoint.—Dr. Alfred King of Portland, Me., said there was a time when surgery was defined as that part of the healing art which required manual or instrumental means in the treatment of disease. The surgeon, however, never had been and never would be a mere tool, for he had to deal with processes calling for the finest training of the mind, the most complicated study, the most conscientious, strenuous, and heroic efforts. In diabetes it was essential that there should be a careful and complete examination of the urine and a study of its changes, a consideration of the metabolic changes taking place in the fluids and tissues of the body, especially as regards nutrition and the processes of repair, and also a general examination, including the blood, blood vessels, emunctories, and the power of resistance. Gangrene, which was generally due to arteriosclerosis, often called for surgical treatment, preventive, palliative, or operative. In the lower extremities the process might affect only one or more toes. In such cases if the line of demarcation formed early, if the adjacent parts were not inflamed, and if there was a good pulse in the posterior tibial artery behind the internal malleolus and in the dorsalis pedis, the removal of the dead portion alone might be sufficient. If, however, the line of demarcation formed slowly, if the foot were inflamed, and if the pulse in the arteries mentioned were but feebly felt if at all, operations on the foot were harmful. In such cases the amputation should be above the knee. The diabetic might require any kind of surgical procedure. Because of his disturbed metabolism, impaired nutritive and reparative processes, reduced resistance, and depressed nervous system, the most careful consideration for the patient was called for, and also the most skilful application of the principles of surgery in the treatment of wounds. If, however, proper precautions were taken, and the patient were properly prepared beforehand, a large proportion of diabetics could be operated on as safely and satisfactorily as other individuals. It was very evident that diabetics presented various types and that the term diabetes mellitus conveyed no definite concept to the surgeon or physician. When it was said that diabetes contraindicates certain operations, some more definite reason should be given. Diabetics presented a number of different types or groups besides acute, subacute, and chronic, or mild and severe cases. It was well for the surgeon to classify them, even though the dietetic or other treatment might change them from one class to another. These cases should be considered in the class to which they belonged at the time of the operation. They might be divided into two general classes, one containing those having glucose only in the urine, and the other, those having both glucose and the acetone bodies in the urine. The first class might be subdivided into still two other classes, one in which the glucose came from the carbohydrate foods ingested, the other in which sugar persisted when carbohydrate and proteid foods were restricted. The first class of cases varied very much as to the amount of carbohydrates which could be taken without glycosuria. Sometimes the omission from the diet of sugars alone was sufficient to remove the glycosuria, and sometimes a slight limitation of the starch, as well, would produce the same result. Dietetic and other treatment for a time might produce a still further tolerance for starch. This class of cases, and it was a large one, offered little, if any, contraindication to any operation. The second class of these cases, under dietetic and other treatment, might have but a small amount of glucose in their urine, and generally were unconscious of any impairment of health. With careful attention, they bore operation well. The other general division, embracing those cases with both glucose and acetone bodies in the urine, might be subdivided into three classes. The first included those cases in which the acetonuria was due to improper diet. The starch taken was insufficient; but if the amount of starch was increased the acetone bodies disappeared, and these patients should then be considered as belonging to the other class of diabetics. The injury done by the improper diet was relieved in a short time, and these cases also, after a brief treatment, showed but little disturbance under operative procedure. The second class included those cases in which the glucose and acetone bodies were due not only to foods taken, but to changes in the body-tissues themselves. These cases were of a more serious character, though changes in adipose tissue were of less grave import than those in the muscular tissue. In such cases the general condition of the patient, the nature and need of the operation, and the amount of ammonium carbonate in the urine should be taken into account in deciding upon an operation. The third class was a more severe form of the second, and had urine containing glucose, acetone bodies, and a markedly increased amount of ammonium carbonate. They were the most serious of the cases; yet much could be done to put them into the other classes, and, if possible, this should be accomplished before operating. The condition of the kidneys should not be lost sight of in this connection, and the knee-jerk should be tested, as its absence indicated impaired functional activity or sclerotic changes in the central nervous system. The matter of preparing a patient for operation was worthy of careful consideration. The circumstances of the case might permit of no preparations except those directly connected with the operation itself, but fortunately this was rare. When there was time for preparation the most serious mistake made was to put the patient on a carbohydrate-free diet for a few days, with the idea of getting the excessive amount of glucose out of the blood. It was not realized that by this course mild cases were made worse, and that severe cases were made much worse, and might even be brought into a state of coma with fatal termination. The best method was to put the patient to bed for a few days, as rest lessened food requirements and the activity of tissue changes. Water should be freely given to dilute the poisons in the blood and promote their elimina-

tion. In the way of food, starch, to the amount of three ounces in twenty-four hours for each 150 pounds of body-weight should be allowed. Sometimes one food acted much better than others, but it was generally advisable to use a variety at this time. The amount of each would depend upon the percentage of starch. For proteins, beefsteak, chicken, and eggs might be employed, and for fats, beef fat, oleomargarine, or olive oil. Celery, radishes, lettuce, and cabbage formed good green stuffs, and for drinks, water, tea, and coffee without sugar, brandy, whisky, or wines might be given. For a tonic, strychnine sulphate, 1/30 grain every four hours, and when there was edema some form of iron was advisable. Thirty grains of sodium bicarbonate every four hours was helpful, and if there was much acidosis it should be given every two hours. When the acidosis was severe it was better to avoid butter and cream. For laxatives, rhubarb and soda, cascara, castor oil, and mercurials were serviceable. Water alone, freely taken for twelve hours before the operation, favored elimination, and was attended with benefit from lessened metabolism. Ether was the safest and best anesthetic to use. After the operation care should be taken to add to the diet the minimum amount of starch required as soon as possible.

Hypodermic Medication; Its Advantages and Technique.—Dr. J. Blake White of New York said it was not the intention of his paper to add to our knowledge of this subject, but rather to emphasize the value of a more general use of the hypodermic method and a proper recognition of the various details essential to success in its practice. These, we all knew, were too frequently disregarded, a neglect which resulted in detriment to the patient, if not in effects that greatly detracted from the usefulness of this system of treatment. His paper no doubt would appear rather elementary to those who regularly practised subcutaneous injection, but there were others to whom these details might naturally seem not to be of sufficient importance to warrant the very careful attention which they really required. If we paused a moment for reflection we would see that all the most certain results obtained to-day with therapeutic agents were achieved through this method of applying them, and it was natural to suppose that this already wide field would in the future be still further developed and enhanced in value.

Saturday, May 13—Third Day.

Remarks on the Treatment of Chronic Disease.—Dr. J. Madison Taylor, Philadelphia, presented personal experiences and convictions in treating cases of chronic or protracted diseases and disorders. He laid stress on the fact that the body was not made up of various detached and independent pieces like an insentient machine, but consisted of one living entity, in which all the parts depended for maintenance of integrity upon (1) the physiological interdependence of each part upon the whole; (2) the efficient cooperation of all those mechanisms or systems which contributed to the vital processes, among which were (*a*) the noble organs, (*b*) the systems, nervous, circulatory, digestive, respiratory, genito-urinary, not forgetting the practical compensatory functions of the skin and muscles, all whose actions must be encouraged and enhanced; (3) the autoprotective forces, consisting chiefly, as made clear by Sajous, of the adrenal system (adrenals, thyroid, pituitary), and (4) the whole dominated by the psychomotor and other machinery of consciousness. To secure best results in protracted disorders which constituted complex blends of disordered thinking, feelings, and willing, along with depression or exaltation of function and structural disintegration, it was important to reach not only an actual diagnosis of the major pathological states, but also a relative estimation of the functional integrity, *i.e.* the vital status of the individual. No matter what the organic or other tissue damage, or the kind, degree, or curability of the more obvious morbid processes, it was usually entirely possible to secure such mitigation of distresses, disabilities, or even structural disintegration, by rational and general therapeusis, as would prove gratifying. It was even possible to go far toward holding in check these losses in vital equilibrium. He showed how these desirable results could often be obtained, how relative cures could be effected by consistent and persistent employment of simple, rational procedures, included under the term "reconstructive personal hygiene." He urged that clinicians make a diagnosis of the status of the potential equilibrium, as well as of the specific pathological status, not neglecting either. The treatment indicated included customary measures, and also a more faithful scientific study of collateral factors, which contributed to uniformity in well being, physiological harmonies. The only way to do full duty to sufferers from lingering maladies was to give them every available opportunity for reaching a higher level of mental and physical efficiency. This could be done, often to a surprising degree, by measures well enough known, but too often inefficiently applied, because the clinician had omitted to attain skill in their application or direction. Dr. Taylor showed from his own experience how use could be made of a number of forceful measures available in any home, by any physician, which not only conserved and enhanced the pleasure of living contracted lives, but added much to the power of specific medication. To do so it would seem important that the clinician become familiar with neuropathology and also psychopathology in order to attain skill in broader lines of diagnosis, based on these and on physiology; also with the use of efficient auxiliary or rational measures, some of which were usurped by irregular practitioners.

The Treatment of Chronic Universal Perihepatitis.—Dr. Reynold Webb Wilcox of New York read this paper. Since Pick published his article, in 1896, this affection had usually been known as Pick's pseudocirrhosis. Rokitansky was the earliest to recognize the condition, in 1842. The anatomical characteristics were a chronic adhesive pericarditis and enlarged liver, with ascites; although the autopsy might show other pathological conditions in addition, as pleurisy, peritonitis, hepatic cirrhosis, and red and nutmeg atrophy of the liver. The usual symptoms were pain and fulness over the liver and enlargement of the abdomen from ascites, which, however, was not accompanied by edema of the lower extremities. Jaundice was commonly slight and might be absent. The pericarditis usually escaped recognition. The ascites was significant in its amount, rapid recurrence, and its apparently slight effect on the general health. The large number of paracentesis operations which might become necessary was notable. The identification of the disease was not difficult if one was posted as to its characteristics. It was not, however, described by systemic authors, as a rule, and although his first patient had been under observation for some time previously, Dr. Wilcox did not recognize the disease until he read the work of Pick. As yet the etiology was uncertain, although various infectious diseases might precede the onset. Modern pathologists were inclined to ascribe the causation of chronic obliterative pericarditis, as well as of similar conditions in other serous membranes, to the tubercle bacillus; yet all instances of this disease were certainly not of tuberculous origin. It was true, however, that the terminal lesions might be tuberculous. Symptoms resulting from the pericarditis might be insignificant or entirely absent, but those from the perihepatitis and peritonitis were striking. The ascites usually called for paracentesis, which might have to be repeated indefinitely. That the physical condition of the patient remained good under these circumstances should be a valuable hint as to the correct diagnosis. The measures advised in the treatment of

hepatic cirrhosis were of comparatively little service because the lesions were largely perihepatic or, at least, were not hepatic until very late in the disease. The methods of treating plastic pleurisy in vogue were applicable, as also those for adhesive pericarditis, if this were recognized. In the acute exacerbations, which might appear very alarming to one not familiar with the disease, Dr. Wilcox, after considerable study and experimentation, had found that antipyrine salicylate, given in ten grain doses every two to four hours, would relieve the symptoms and shorten the attack. Failing a definitely known causation, although this condition always suggested an infection, the treatment should be based upon experience and that, indeed, was based upon the limited number of examples likely to be encountered.

Hypoadrenia as a Cause of Death in Infections, and Its Treatment.—Dr. C. E. DE M. SAJOUS of Philadelphia said that by hypoadrenia he meant that form of adrenal insufficiency which occurred late in the course of a febrile disease, as a result of the exhausting secretory activity, probably aggravated by temporary local lesions, to which the adrenals were subjected during the early or febrile stage of the diseases. In lobar pneumonia and bronchopneumonia, for instance, resolution might be considerably delayed, and convalescence likewise. Late in the case there were extreme adynamia and a low blood pressure, the temperature was below normal, the pulse was weak and rapid, and death from heart failure was not infrequent. In typhoid fever hypoadrenia was commonly observed, the disease assuming what was now known as the cardiac type, with, late in the case, extreme prostration, a rapid, weak, and sometimes irregular pulse, hypothermia and a marked tendency to vertigo, fainting, and cardiac failure. As stated by Morichau-Beauchant, the adrenals seemed to show a special predilection for certain infections. This was particularly the case as regards diphtheria. If at the end of an infectious disease the patient, instead of going on to convalescence, remained in a condition of asthenia, with low blood-pressure and temperature, there was good reason for the assumption that terminal hypoadrenia had occurred. The secretory activity of the adrenals having been inhibited by their exhaustion during the acute process, these symptoms resulted from inadequate oxidation of, and metabolic activity in, the tissues. The patient complained of chilliness, and the surface of the body was pale owing to the poverty of the blood in cellular elements and hemoglobin, as well as to recession of the blood-mass to the deeper vascular trunks. Anorexia, nausea, diarrhea, and more or less frequent fainting spells might be concomitant symptoms in such cases, which were markedly exposed to relapse or to sudden death from heart failure. Various complications of infectious nature were also liable to occur, since the immunizing processes were greatly weakened through the deficiency of adrenal secretion. In short, the body was rendered vulnerable to the attacks of almost any pathogenic organism. Disorders of nutrition, cholelithiasis, and even Addison's disease likewise might appear. In the special type in question no adrenal lesion might be discernible. In the majority of instances, however, the organs were congested and enlarged, and might show here and there a limited hemorrhagic area. Occasionally they were the seat of suppuration, especially when the causative disease was, or included, a streptococcic infection, pneumonia, or meningitis. In these cases the use of adrenal gland or of pituitary body, which acted very similarly though with less violence and more lasting effects, sometimes gave surprising results. The adrenal product supplied precisely what the body needed, the resumption of all oxidation processes. This meant the restoration of general metabolism and nutrition and a rise of blood-pressure which caused the blood to circulate normally in all the organs. Indirectly it increased the contractile power of the heart, which was thus rendered capable of projecting the blood with more vigor through the lungs, causing more complete oxygenation of the blood. From these features alone considerable benefit was derived, but from the assistance of the immunizing action of the adrenal secretion we had also the added factors of the freeing of the blood from any intermediate (and therefore toxic) wastes, bacterial toxins, etc., it might contain, and of the increase of phagocytic activity. Kirchheimer and others had used large doses of the adrenal active principle hypodermically in the collapse of pneumonia, diphtheria, and scarlet fever. A better plan, Dr. Sajous believed, was to inject it with saline solution (at 108° F.) intravenously, the needle of the syringe containing it being attached to the rubber tube of the saline solution apparatus. Such measures, however, were indicated only in emergency cases. In the average case the glandulæ suprarenales siccæ of the U. S. P., administered by the mouth, were fully as effective if a good preparation was obtained as soon as asthenia and low blood-pressure appeared. The powder in 3 grain doses, gradually increased to 5 grains, three times a day, usually sufficed. When the cardiac adynamia disappeared the addition of a small dose of thyroid, with iron and strychnine, hastened convalescence.

The Treatment of Leucemia with the Mixed Toxins of Coley.—Dr. RALPH C. LARRABEE of Boston said that five cases had been previously reported and he had now to report thirteen additional ones, nine of his own, three of Boldoff's, and one of Coley's. Under this treatment the general condition of the patients, some of whom had been treated with the *x*-ray without benefit, usually improved markedly, and in many instances there was a very marked diminution in the number of leucocytes. In other cases the leucocytes did not diminish, though the general condition improved. It was noticeable that while the myelogenous cases were often benefited, the lymphatic cases showed no improvement. This mixed toxin treatment was to be regarded as merely palliative, not curative; but in many instances it added greatly to the comfort of the patient, and no doubt prolonged life. It should not be forgotten, however, that it was a dangerous treatment and ought therefore to be employed with the greatest caution.

Malignant Endocarditis in New York City; a Study.—Dr. THOMAS E. SATTERTHWAITE of New York read this paper. (See page 109.)

Dr. F. E. STEWART of Germantown, Pa., said that one of the most important parts of the paper was that in which Dr. Satterthwaite referred to bacterial therapy. Three factors were always to be considered in relation to the use of bacterins and sera as therapeutic agents, namely: (1) the nature of the infecting germ or germs; (2) the character of the bacterium or serum employed; (3) the amount and interspacing of the doses. First, in regard to the nature of the infection. We were beginning to realize more and more that many cases of disease caused by pathogenic bacteria are mild infections. It was not enough to say, "Use antistreptococcic serum for streptococcic infection." There might be other pathogenic germs present. In a recent case of meningitis in Philadelphia in which Dr. Stewart advised the use of antistreptococcic serum, because examination of the spinal fluid apparently demonstrated the cause of the meningitis to be a streptococcic infection, postmorten examination revealed the presence of the *Bacillus tuberculosis*. The patient improved under the antistreptococcic serum, and no streptococci were found after death, but the primary infection was evidently by tubercle bacilli. Second, the character of the serum or bacterium. In the treatment of streptococcic infections with antistreptococcic serum it was always necessary to use a polyvalent serum, and the same thing was true in regard to streptobacterin. There were many varieties of strains of streptococci, and we should use a serum or bacterin prepared from strains

of streptococci identical with those causing the pathological condition in our patient. This was an argument in favor of autogenous vaccines; but the use of these was not always practicable, and autogenous sera did not exist for many obvious reasons. Polyvalent, as referred to a bacterin for example, meant that the suspension contained bacteria of the same species, but from many different sources. The bacteria used for its preparation should not only be all streptococci, but streptococci obtained from a great variety of human infection. The same principle applied to the preparation of a serum. Manifestly, better results would be obtained from polyvalent antistreptococcic serum than from one not polyvalent. In reporting the results of bacterial therapy this should be borne in mind. Mixed bacterins should be employed in mixed infections unless an autogenous vaccine was used. A mixed bacterin was one containing the various bacterial species generally present in a mixed infection. A mixed gonorrheal infection might show the presence of no less than seven kinds of bacteria. Third, in regard to the amount and interspacing of doses. Dr. Barton Cook Hirst, who had had much experience with a certain brand of antistreptococcic serum, had told him that it was essential to use at least 100 c.c. in twenty-four hours to obtain the brilliant results frequently secured by its employment in his service at the hospital of the University of Pennsylvania. Dr. Stewart said he used the expression "certain brand" because Dr. Hirst also called his attention to the great discrepancy in reports of results due to the use of different brands. This illustrated why there should be common standards for serums and bacterins. Clinical control for the guidance of dosage was more practical than the opsonic index. The amount of bacterin to be given as an initial dose was not as important as it was to learn how much to give and how frequently to repeat succeeding doses. He hoped the time would soon come when the American Therapeutic Society would work in cooperation with the American Pharmaceutical Association in fixing standards for the nomenclature, character, quality, and strength of the newer products constantly presented to the profession.

Other papers read during the meeting were: "Note on Fluorescence Excited Within Human Tissues as a Method of Treatment," by Dr. W. G. Morton, New York; "A Modified Vaccine Therapy in Pneumonia, with Animal Experiments," by Dr. P. K. Brown, San Francisco; "The Use of Nickel Sulphate in Medicine," by Dr. L. Kolipinski, Washington; "Panhysterocolpectomy: Complete Excision of the Uterus and Vagina, with Closure of Vagina, for Prolapsus," by Dr. A. E. Gallant, New York; "The Newer Heart Remedies," by Dr. W. F. Boos, Boston.

Election of Officers.—The following officers were elected: *President,* Dr. Alexander D. Blackader, Montreal; *First Vice-President,* Dr. Howard Van Rensselaer, Albany; *Second Vice-President,* Dr. Robert T. Morris, New York; *Third Vice-President,* Dr. Clarence J. Blake, Boston; *Secretary,* Dr. Noble P. Barnes, Washington; *Treasurer,* Dr. A. Ernest Gallant, New York; *Members of the Council:* Drs. Noble P. Barnes, Spencer L. Dawes, Edward D. Fisher, A. Ernest Gallant, and J. Madison Taylor; *Editor of the Transactions,* Dr. P. Brynberg Porter, New York.

Next meeting, June 6, 7, and 8, 1912, at Montreal, Canada.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF GEORGIA.

Atlanta, May 2, 3, and 4, 1911.

ANATOMY.

1. Beneath what points on the anterior chest walls are the apex and base of the heart, and the cardiac valves?
2. What blood vessels pass to and from the liver? What arteries unite to form the basilar artery?
3. Name principal lobes of brain and fissures dividing them. What are the Meibomian glands?
4. Name twelve pairs cranial nerves. What cranial nerve has the widest distribution? Give its four principal points of distribution.
5. Name the five muscles of the shoulder. Describe briefly the quadriceps extensor femoris.
6. With what bones does the clavicle articulate? Name divisions of vertebral column, and mention marked characteristics of cervical and dorsal vertebræ.
7. Give boundaries of anterior mediastinum. Name subdivision of alimentary canal.
8. Locate and describe briefly the ilio-cecal valve. Name lobes and fissures of liver.
9. Locate the kidneys. Name arteries and veins passing to and from kidneys.
10. Describe briefly the uterus. Give divisions of the male urethra. What portion of the bladder is uncovered by peritoneum?

PHYSIOLOGY.

1. What is human physiology?
2. Mention the digestive organs.
3. (*a*) What is the difference in chyme and chyle? (*b*) What are the functions of bile, and how much is poured into the intestines in 24 hours?
4. How and where do the various types of foods, when digested, enter the body?
5. (*a*) What is systole? (*b*) diastole? (*c*) Explain how the two distinct heart sounds are produced.
6. Name the ductless glands and give the theory as to their functions.
7. What is the function of (*a*) the Eustachian tube? (*b*) the semicircular canals?
8. Describe and give the origin of the (*a*) white blood-corpuscles; (*b*) red blood-corpuscles.
9. Describe the structure of (*a*) striated muscle; (*b*) nonstriated muscle; (*c*) which is involuntary, and why?
10. (*a*) Give the physiological explanation of rapid breathing in pneumonia; (*b*) explain why pneumonia patients should be given plenty of fresh air; (*c*) what is the vital capacity of the lungs?

CHEMISTRY.

1. (*a*) What is chemistry? (*b*) What is organic chemistry? (*c*) What is inorganic chemistry?
2. What is (*a*) a molecule? (*b*) an atom? (*c*) an element? (*d*) What is synthesis? (*e*) What is valence?
3. How is (*a*) nitric acid and (*b*) hydrochloric acid made? Express the reactions in the process by giving the formulas and chemical equations.
4. What is (*a*) an acid? (*b*) a base? (*c*) salt? Give chemical formulas illustrating each.
5. Give chemical formulas for table salt, cooking soda, Epsom salts, calomel, corrosive sublimate, acetic acid, iodoform, blue vitriol, sal ammoniac, plaster of Paris. (Answer any five of these.)
6. Give chemical antidote for each of the following: carbolic acid, nitric acid, zinc salts, lead salts, iodine, caustic alkali, tartar emetic, strychnine, phosphorus, sulphuric acid. (Answer any five of these.)
7. What is a chemical antidote for arsenic? and give test for arsenic.
8. What is an alkaloid? Name one of belladonna, cinchona, pilocarpus, nux vomica, hyoscyamus, erythroxylon coca, and four of opium.
9. Name and describe test for (*a*) albumin in urine. (*b*) Sugar in urine. (*c*) Give test for indican. (*d*) In what pathological conditions is an increased elimination observed in the urine?
10. Mention a good substance used for disinfection after the prevalence of contagious diseases, and explain the chemical action in the process.

MATERIA MEDICA AND THERAPEUTICS.

1. (*a*) Name the official digestive ferments; (*b*) compare their therapeutic uses; (*c*) and tell how each is made.
2. (*a*) Give the modes of applying the hot pack; (*b*) and state the indications for its use.
3. What are the physiological effects and medicinal uses of the preparations of belladonna?
4. (*a*) Give the physiological action of ergot; (*b*) and mention its therapeutic uses.
5. Mention the medicinal uses of turpentine.

PATHOLOGY.

1. State conditions which will cause enlargement of the lymphatic glands.
2. Give pathology of erysipelas.
3. Macroscopically, state differences in throat lesion of diphtheria from that of follicular tonsillitis

4. Pathology of acute poliomyelitis.
5. Describe pathologic appearance of acute parenchymatous nephritis.
6. Name the diseases in which intestinal ulceration is an essential feature. Name the portion (or portions) of the intestinal tract in which the ulceration is found in each of these diseases.
7. Give a diagrammatic representation of a boil.
8. State difference between congestion and inflammation. Give example of each.
9. In a case of supposed abscess of appendix, what would a blood picture be worth, and how would a differential count bear to a total leucocyte count as to the prognosis of the case?
10. Name the pyogenic organisms, and differentiate each.

PRACTICE OF MEDICINE.

1. Differentiate between (*a*) chlorosis; (*b*) progressive pernicious anemia, and (*c*) leukemia; (*d*) and mention the pathological changes occurring in these diseases.
2. Distinguish between the terms (*a*) illusion; (*b*) delusion, and (*c*) hallucination as used in diagnosis.
3. Uncinariasis; (*a*) definition; (*b*) etiology; (*c*) frequency; (*d*) modes of infection; (*e*) symptoms; (*f*) skin symptoms; (*g*) diagnosis; (*h*) prognosis; (*i*) treatment to minutest details.
4. Differentiate (*a*) aortic and (*b*) mitral valvular diseases of the heart.
5. Differentiate (*a*) aortic stenosis and (*b*) aortic insufficiency.

PEDIATRICS.

1. Define (*a*) inanition, (*b*) marasmus, (*c*) malnutrition. Give etiology, symptoms, diagnosis, prognosis, and treatment of each.
2. Define pemphigus. Give its etiology, symptoms, diagnosis, prognosis, and treatment.
3. Give etiology, symptoms, diagnosis, prognosis, prophylaxis, and treatment of ophthalmia neonatorum.
4. Define cholera infantum. Give its etiology, pathology, symptoms, diagnosis, prognosis, prophylaxis, and treatment.
5. Define erythema. Give its causes, symptoms, and diagnosis. Name five drugs which frequently cause an erythema.

OBSTETRICS.

1. Give diagnosis and treatment of placenta prævia coming under your care after the beginning of labor.
2. What difficulty would you expect to encounter in occiput-posterior position and how would you overcome it?
3. Under favorable conditions of mother, would you immediately repair a lacerated perineum? Give technique of repair in superficial and in complete median lacerations.
4. What would cause recurring postpartum hemorrhage?
5. Give direction for the immediate care of the infant.

GYNECOLOGY.

1. Define caruncle of urethra and give treatment.
2. When would you use the curette? Give steps of the operation in detail.
3. Name causes of hemorrhage in a non-pregnant uterus. Give treatment.
4. State causes of leucorrhea and give treatment.
5. State immediate and remote effects of gonorrhea in the female and give treatment.
6. State the early objective and subjective symptoms of cancer of the uterus. How would you treat same?
7. What is meant by plastic operation? Describe operation for perineorrhaphy and trachelorrhaphy.
8. Give symptoms and treatment of uterine fibroids.
9. Treatment of pruritus vulvæ.
10. Give varieties of fibroid tumors of uterus.

SURGERY.

1. Name the inflammatory diseases of the bones. Define fracture; dislocation. Give differential diagnosis. Mention cardinal principles to be observed in treatment of fractures. Describe reduction of dislocation of shoulder joint by Kocher's methods.
2. What agents are employed for the production of general anesthesia, and what are the contraindications respectively of the three principal ones?
3. Describe ligation of femoral artery at Scarpa's triangle. Describe anastomosis after its ligation. What arteries are required to be ligated in amputation at middle third of leg?
4. How are wounds classified? What are the sources of wound infection? Describe briefly aseptic and antiseptic treatment of wounds.
5. Give symptoms of cholecystitis. Give symptoms of gallstones in common duct. Give treatment. Describe intussusception. Volvulus.
6. Define hernia. Name varieties of abdominal hernia. What is hydrocele? Differentiate between hydrocele and scrotal hernia. Describe briefly any one operation for the radical cure of inguinal hernia.
7. Give differential diagnosis between concussion and compression of brain. Give classification of burns. State briefly the constitutional effects and give treatment of burns.
8. What is a tumor? How are they classified? Name principal malignant tumors. Name principal varieties of mild tumors.
9. What is chancre? Chancroid? Give diagnosis of each and treatment.
10. Name varieties of fistula in ano and give treatment. Describe an operation for removal of hemorrhoids. Give symptoms and treatment of ischiorectal abscess.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF GEORGIA.

Atlanta, May 2, 3, and 4, 1911.

ANATOMY.

1. The *apex* is in the fifth left intercostal space, about 3¼ inches from the median line. The *base* is on a line drawn from the second left interspace, about 2 inches from the median line, to the upper border of the third right intercostal cartilage, about 1¼ inches from the median line.

The *aortic valves* are behind the third intercostal space, close to the left side of the sternum. *Pulmonary valves,* in front of the aortic, behind the junction of the third rib, on the left side, with the sternum. *Tricuspid valves,* behind the middle of the sternum, about the level of the fourth costal cartilage. *Mitral valves* behind the third intercostal space, about one inch to the left of the sternum.

2. The hepatic artery and portal vein pass *to* the liver; the hepatic veins pass *from* the liver.

The two vertebral arteries unite to form the basilar artery.

3. See Cunningham's "Anatomy" (1909), page 555; or Gray's "Anatomy" (1910), page 917. The *Meibomian glands* are small sebaceous glands situated in the tarsal plates of the eyelids; they are nearer the conjunctival surface.

4. *The twelve pairs of cranial nerves* are: (1) Olfactory. (2) Optic. (3) Motor oculi. (4) Trochlear or Pathetic. (5) Trifacial. (6) Abducens. (7) Facial. (8) Auditory. (9) Glossopharyngeal. (10) Pneumogastric or Vagus. (11) Spinal Accessory. (12) Hypoglossal.

The pneumogastric has the widest distribution. *Four principal points of distribution:* Heart, lungs, stomach, and larynx.

5. Deltoid, supraspinatus, infraspinatus, teres major, teres minor. See Cunningham's "Anatomy" (1909), page 357; or Gray's "Anatomy" (1910), page 510.

6. The *clavicle articulates with:* Sternum and scapula.

The *divisions of the vertebral column* are: Cervical, dorsal, lumbar, and sacral.

The *cervical vertebræ* have a foramen in the transverse process, for the transmission of vertebral artery. The *dorsal vertebræ* have facets or demifacets for articulation with the ribs.

7. The ANTERIOR MEDIASTINUM is bounded *in front* by the sternum; *behind,* by the pericardium; *at the sides,* by the pleuræ.

Subdivisions of alimentary canal: Mouth, pharynx, esophagus, stomach, small intestine (duodenum, jejunum, and ileum), large intestine (cecum, ascending colon, hepatic flexure, transverse colon, splenic flexure, descending colon, sigmoid flexure, rectum).

8. See Cunningham's "Anatomy" (1909), pages 1077, 1114, and 1115; or Gray's "Anatomy" (1910), pages 1302, 1323, and 1324.

9. See Cunningham's "Anatomy" (1909), pages 1130 and 1140; or Gray's "Anatomy" (1910), pages 1345 and 1354.

10. See Cunningham's "Anatomy" (1909), page 1187; or Gray's "Anatomy" (1910), page 1404.

Divisions of male urethra: Prostatic, membranous, and spongy.

The under surface, lower half of posterior surface, and lower two-thirds of anterior surface of the bladder are generally uncovered by peritoneum; the fuller the bladder the more of the anterior surface uncovered.

PHYSIOLOGY.

1. *Human physiology* is that branch of science which treats of the functions of the human body in a state of health.

2. The digestive apparatus consists of: mouth, pharynx, esophagus, stomach, small intestine (duodenum, jejunum, and ileum); teeth, salivary glands, liver, and pancreas.

3. (*a*) *Chyme* is a semi-solid mass of partly digested food at the end of stomach digestion, when it is ready to be passed on into the duodenum.

Chyle is the fluid taken up by the lacteals from the intestine during digestion. (*b*) *The functions of the bile* are: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has very feeble antiseptic action. The amount of bile secreted varies from about a pint to a quart (in twenty-four hours).

4. The products of digestion find their way into the blood by two routes: (1) By the blood-vessels of the gastrointestinal tract, which unite to form the portal vein, and (2) by the lymph vessels of the small intestines, which converge to empty into the thoracic duct. The water, inorganic salts, proteids, and sugar go by way of the portal vein to the ascending vena cava; and the fats go by way of the thoracic duct to the junction of the left subclavian and internal jugular veins.

5. *Systole* is the period of contraction of the heart, chiefly of the ventricles. *Diastole* is the period of dilatation of the heart, chiefly of the ventricles.

There are two normal heart sounds which follow in quick succession, and are succeeded by a pause. The first, or systolic, sound is dull and somewhat prolonged; the second, or diastolic, sound is sharper and shorter. The *causes* producing the *first* sound of the heart are not definitely ascertained; the following are supposed to be causatory factors: (1) The vibration and closure of the auriculoventricular valves, (2) the muscular sound produced by the contraction of the ventricles, and (3) the cardiac impulse against the chest wall. The *second* sound is caused by the vibration due to the closure of the semilunar valves.

6. The *ductless* glands are: The spleen, thymus, thyroid, parathyroids, suprarenals, carotid, coccygeal, pituitary, and pineal glands.

The function of the spleen: The following theories have been held: (1) It is a source of production of the white blood corpuscles; (2) it is a source of production of the red blood corpuscles during fetal life; (3) it is a place where the red blood corpuscles are destroyed; (4) uric acid is produced in the spleen; (5) an enzyme is produced in the spleen and is carried by the blood to the pancreas, where it converts the trypsinogen into trypsin.

The function of the thyroid is not definitely settled; (1) it has some trophic function, regulating oxidation in the body, and it is supposed to have also a special influence on the vasomotor nerves, the skin, the bones, and on the sexual functions; (2) it is supposed to antagonize toxic substances, and (3) it produces an internal secretion.

The *function of the thymus* is not settled; it is said: (1) To be a blood-forming organ; (2) to have influence on growth and nutrition; (3) in hibernating animals it is supposed to store up materials which can be utilized during the period of inactivity.

The *function of the suprarenals* is not definitely settled; they produce an internal secretion which is probably necessary to life; it is supposed that they are able to destroy or remove some toxic substance produced elsewhere in the body.

The function of the *other* ductless glands is unknown. They all, or nearly all, furnish an internal secretion.

7. *The function of the Eustachian tube* is to keep the atmospheric pressure within the tympanic cavity the same as that on the outside.

The function of the semicircular canals is to aid in preserving equilibrium and in giving an idea of one's position in space; it is also believed, by some, that the semicircular canals aid in keeping the muscles of the body in a state of *tonus*.

8. The *red blood corpuscles* are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin. Their *function* is to carry oxygen from the lungs to the tissues.

In the *embryo* the red blood corpuscles are derived from cells in the vascular area of the mesoblast; in the *adult* they are derived chiefly from the red marrow of bones, also from the spleen.

The white blood cells are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear, (3) transitional, (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their *functions* are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

9. See Gray's "Anatomy" (1910), page 355.

10. The rapid breathing in pneumonia is due partly to the loss of functioning surface in the lung, partly to the fever and to the toxemia. The pneumonia patient needs fresh air to aid the aeration of the blood, to tone up the cardiovascular system, to lessen the cyanosis, and to diminish the toxemia.

The *vital capacity of the lungs* is the sum total of the complementary, tidal, and reserve air; it is about 225 to 230 cubic inches, and represents the amount of air which a person can expel from his lungs after the deepest possible inspiration.

CHEMISTRY.

1. *Chemistry* is that branch of science which treats of the composition of substances, their changes in composition, and the laws governing such changes. *Organic chemistry* is the chemistry of the carbon compounds.

Inorganic chemistry is the chemistry of substances which do not contain carbon.

2. A *molecule* is the smallest quantity of any substance which can exist in a free state.

An *atom* is the smallest quantity of an element which can enter into chemical action or that can enter into the composition of a molecule.

An *element* is a kind of substance which we cannot, by any known means, split up into any two or more dissimilar substances.

Synthesis is the process of forming compounds out of simpler compounds or elements.

Valence is the combining power of an atom of an element (or radical) as compared with that of an atom of hydrogen.

3. *Nitric acid* is made by the decomposition of potassium nitrate by sulphuric acid:

$$KNO_3 + H_2SO_4 = KHSO_4 + HNO_3.$$

Hydrochloric acid is made by the action of sulphuric acid on sodium chloride:

$$H_2SO_4 + 2NaCl = Na_2SO_4 + 2HCl.$$

4. An *acid* is a compound of an electronegative element or radical with hydrogen, part or all of which hydrogen it can part with in exchange for an electropositive element, without the formation of a base. *Examples:* H_2SO_4, sulphuric acid; HNO_3, nitric acid.

A base is a compound which on entering into double decomposition with an acid produces a salt and water. *Examples:* KOH, potassium hydroxide; NH_4OH, ammonium hydroxide.

A *salt* is a substance derived from an acid when the hydrogen of the latter has been partially or completely replaced by an electropositive element or elements (a metal or metals). *Examples:* $KHSO_4$, monopotassic sulphate; K_2SO_4, dipotassic sulphate.

5. Table salt, NaCl; cooking soda, $NaHCO_3$; Epsom salts, $MgSO_4$; calomel, Hg_2Cl_2; corrosive sublimate, $HgCl_2$; acetic acid, $CH_3.COOH$; iodoform, CHI_3; blue vitriol, $CuSO_4$; sal ammoniac, NH_4Cl; plaster of Paris, $CaSO_4$.

6. *Chemical antidote,* for *carbolic acid,* alcohol, or a soluble sulphate; *nitric acid,* magnesia, or soap; *zinc salts,* sodium or potassium carbonate, milk; *lead salts,* magnesium sulphate; *iodine,* starch; *caustic alkali,* dilute vinegar; *tartar emetic,* tannin; *strychnine,* tannic acid; *phosphorus,* old French oil of turpentine; *sulphuric acid,* magnesia.

7. The *chemical antidote for arsenic poisoning* is freshly prepared ferric hydroxide. The ferric hydroxide changes the arsenic into ferrous arsenate, which is non-poisonous.

Test for arsenic: Reinsch's test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry glass tube, open at both ends, apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

8. An *alkaloid* is a basic nitrogenous substance capable of combining with acids to produce salts in the same way that ammonia does. *Belladonna,* atropine; *cinchona,* quinine; *pilocarpus,* pilocarpine; *nux vomica,* strychnine; *hyoscyamus,* hyoscyamine, *erythroxylon coca,* coacaine; *opium,* morphine, codeine, narcotine, and papaverine.

9. *Test for albumin*: "The urine must be perfectly clear. If not so, it is to be filtered, and, if this does not render it transparent, it is to be treated with a few drops of magnesia mixture, and again filtered.

"The reaction is then observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral or alkaline, it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present, a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of nitric acid."

Test for sugar: First remove any albumin that may be present, then "render the liquid strongly alkaline by addition of sodium carbonate. Divide about 6 c.c of the alkaline liquid in two test-tubes. To one test-tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color."

Test for indican in the urine: The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3:1,000 of ferric chloride, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess. (From Witthaus' *Essentials of Chemistry.*)

There is an increased elimination of urine: In diabetes, chorea, hysteria, epilepsy, granular atrophy of the kidneys; after the ingestion of much fluid, and during the absorption of large effusions.

10. Sulphur dioxide, SO_2 is a good disinfectant where penetration is not required. The presence of moisture is necessary, when $H_2O + SO_2 = H_2SO_3$. This sulphurous acid is really the disinfecting agent.

MATERIA MEDICA AND THEREPEUTICS.

1. (*a*) Pepsin and pancreatin. (*b*) Pepsin is only of use in an acid medium, as in an alkaline medium it is decomposed; pancreatin acts in an alkaline medium. Pancreatin is preferred for the predigestion of albuminous foods; and pancreatin alone will digest other kinds of foods. Hence pancreatin is of more use than pepsin. (*c*) Pepsin is made from the glandular layer of the fresh stomach of the hog; pancreatin is made from the fresh pancreas of the hog.

2. *Hot pack.* "A bed is prepared by covering it with a rubber blanket. Over this is placed a dry woolen blanket. A large, heavy blanket is now dipped in very hot water and then wrung out, and the naked patient quickly wrapped in it, the dry blanket being folded over him after several hot-water bottles have been placed alongside the patient. Finally the sides of the rubber sheet are drawn around and over the patient and an ice-cap placed on the head. A thermometer should be placed in the mouth every half hour, and if the patient's temperature becomes febrile (101°) he should be taken out of the blankets and rubbed dry."—(From Hare's *Practical Therapeutics.*)

The hot pack is used, not only to cause sweating and so relieve the patient of poisons and fluid in renal diseases, but also to relax muscle spasm and to relieve nervous excitement and nervous insomnia. It is particularly efficacious in the nervous insomnia of severe chorea in children.

3. Belladonna and Its Preparation. *Physiological effects:* Anodyne, mydriatic, inhibits secretions, depressant of terminations of nerves, accelerates the heart beat, causes rise in blood-pressure, but toxic doses cause the blood-pressure to fall, stimulates the respiratory center, but large doses depress the same; it may cause vertigo, restlessness, excitement, delirium, or mania.

Medicinal uses: To relieve pain, relax spasm, check sweating, as a mydriatic, for night sweats, to check griping of purgatives; in asthma, to check fevers, in heart disease, shock and collapse, acute coryza, urinary incontinence, chordee, low delirium of fevers, mania, alcoholism; as an antigalactagogue, and for spasmodic cough.

4. Ergot. *Physiological action:* Ergot stimulates and causes contraction of involuntary muscle fibers, hence it is a vasoconstrictor, hemostatic, and oxytocic. It is also a cardiac sedative, it raises the blood-pressure, it increases peristalsis, and is an emmenagogue. *Principal therapeutic uses:* To promote uterine contractions during third stage of labor; fibroids, menorrhagia, postpartum hemorrhage. Some forms of amenorrhea and dysmenorrhea, dysentery, arterial hemorrhage, congestive headaches, laxity of sphincters, of bladder or rectum, hemorrhoids, aneurysm, diabetes, urinary incontinence, direct paralysis of the sphincter vesicæ, atonic spermatorrhea.

5. *Turpentine* is used as a rubefacient or counterirritant; in sciatica, lumbago, neuralgia, chronic rheumatism, sprains, dysentery, hemorrhage of intestines; as a vermifuge against tapeworm; chronic bronchial affections and chronic affections of the genitourinary tract.

PATHOLOGY.

1. *The lymphatic glands are enlarged* in: Hodgkin's disease, lymphatic leukemia, filariasis, syphilis, malignant disease, tuberculosis, gonorrhea, adenitis, and sometimes in some of the acute infectious diseases.

2. See French's "Practice of Medicine" (1910), page 218.

3. See French's "Practice of Medicine" (1910), pages 183, 187, and 735; or Osler's "Practice of Medicine" (1909), pages 198 and 446.

4. See French's "Practice of Medicine" (1910), page 1068; or Osler's "Practice of Medicine" (1909), page 915.

5. See French's "Practice of Medicine" (1910), page 911; or Osler's "Practice of Medicine" (1909), page 687.

6. *Intestinal ulceration* is an essential feature in: (1) *Typhoid fever,* in which it occurs chiefly in Peyer's patches, and opposite the mesenteric attachment; (2) *Tuberculosis of intestine,* in which it may occur in any part of the intestine; (3) *Peptic ulcer of the duodenum;* (4) *Burns,* chiefly found in duodenum; (5) *Syphilis of intestine,* in Peyer's patches, and lower part of intestine and rectum; (6) *Dysentery,* generally large intestine (cecum, rectum, and hepatic and sigmoid flexures).

7. See Rose and Carless' "Surgery" (1908), page 398; or Da Costa's "Surgery" (1908), page 1056.

8. See Da Costa's "Surgery" (1908), page 73.

9. In *appendicitis:* The mildest and the severest cases show no leucocytosis. The total absence of leucocytosis in a case not obviously mild is a very bad prognostic sign. An increasing leucocytosis means a spreading process, and may be the only evidence of the fact. A steadily increasing leucocytosis is always a bad sign; it is of far more significance than a larger count which does not increase.—(Cabot.)

10. See Rose and Carless' "Surgery" (1908), page 57; or Da Costa's "Surgery" (1908), page 42.

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), pages 523, 520, 529, and 531; or Osler's "Practice of Medicine" (1909), pages 722, 726, and 733.

2. A *delusion* is a belief in something which has no real existence, but is purely imaginary; and out of which the person cannot be reasoned. An *illusion* is a false or perverted impression, received through one of the senses. An *hallucination* is the same as an illusion, but without any material basis.

If an individual believes himself to be made of glass, and is afraid of being touched lest he be broken, he is suffering from a *delusion.* If the whistling of the wind is mistaken for a voice telling a person to do a certain thing—that would be an *illusion.* If a person fancied he heard a voice when there was nothing at all to be heard, that would be an *hallucination.*

3. See French's "Practice of Medicine" (1910), page 505; or Osler's "Practice of Medicine" (1909), page 404.

4.

AORTIC DISEASE.	MITRAL DISEASE.
Symptoms are mainly due to anemia, viz.:	Symptoms are mainly due to venous congestion, viz.:
1. Pallor.	1. Cyanosis.
2. Throbbing of the carotids.	2. May get pulsation in the veins of the neck.
3. Attacks of an "angina pectoris" type of pain.	3. Sudden attacks of severe dyspnea—actual acute pain is rare.

AORTIC DISEASE.	MITRAL DISEASE.
4. Breathlessness on slight exertion.	4. Breathlessness, but often present without exertion.
5. Nervous symptoms are prominent, owing to cerebral anemia. Syncopal attacks are also common.	5. Pulmonary symptoms are most prominent, *i.e.* cough in the morning, chronic bronchitis, hemoptysis, dilated right side of heart, and later symptoms due to tricuspid leakage.
6. The *left ventricle* is usually much hypertrophied.	6. The *left auricle* is somewhat hypertrophied, but the main hypertrophy is that of the *right ventricle*.

—(From Wheeler and Jack's *Handbook*.)

5. See French's "Practice of Medicine" (1910), pages 603 and 599; or Osler's "Practice of Medicine" (1909), pages 803 and 799.

PEDIATRICS.

1. *Inanition* is exhaustion from lack of food or from food that has not been assimilated. *Marasmus* is extreme emaciation or atrophy, not due to any specific or obvious cause. *Malnutrition* is faulty nutrition due to non-assimilation of food.

INANITION may be *due* to the child refusing food, or only taking a very small amount; inadequate or improper food; feeble powers of digestion. *Symptoms:* Loss of weight, temperature high or subnormal, pulse weak and rapid, urine scanty and diminished chlorides; cold extremities, muscular relaxation, pallor, cyanosis, collapse. *Prognosis* uncertain. *Diagnosis:* It is distinguished from malnutrition by its greater severity, and from marasmus by its more acute character. It may be mistaken for indigestion meningitis, gastroenteritis. *Treatment:* Procure a wet nurse if necessary, breast milk should be diluted and given with a spoon or medicine dropper, whey mixtures or rectal feeding may be tried, rectal injections of salt solution, spraying or tepid baths, and stimulants are all indicated.

MALNUTRITION may be hereditary, due to syphilis or tuberculosis, or alcoholism or gout, prematurity or improper feeding. *Symptoms:* Weight is subnormal, development poor, the head is relatively large, mentally the child may be bright, indigestion is common, anemia may be present. *Diagnosis:* Must distinguish between tuberculosis, syphilis, rickets, malaria, blood diseases, organic conditions; the etiology must be studied. *Prognosis* depends on the cause and the possibility of its removal. *Treatment* is mainly dietetic and general, drugs are of small service. Food must be according to the child's digestive capacity. Regular hours, freedom from excitement, open-air exercise, limited mental work, tonics, cold spraying, etc.

MARASMUS may be congenital, due to poverty or artificial feeding, overcrowding. *Symptoms:* Loss of weight, an old look, wrinkled skin, legs like drum sticks, prominent abdomen, hollow temples, shrunken fontanels, large eyes, sharp features, anemia, hemic murmur, edema, vomiting, loss of appetite. *Diagnosis* depends on symptoms, but it may be difficult to differentiate it from malnutrition. *Prognosis* depends on age of infant and extent of disease. *Treatment* consists in proper feeding and fresh air; good cow's milk or wet nurse's. No drugs are required.—(From Holt.)

2. PEMPHIGUS is an eruption of bullæ on a red base with serous contents. It may be due to traumatism, or syphilis, or infection. There is a bullous eruption on abdomen, neck, face, or thighs; generally first seen on trunk; the bullæ may rupture in one or two days and a crust forms, which latter falls off, leaving a red or violet patch on the skin. The important point in the diagnosis is to distinguish between the syphilitic and non-syphilitic variety. *Prognosis* is variable; good when there are but few bullæ, serious when many are present. *Treatment* consists in cleanliness, antiseptic powders or lotions, or a 1 per cent. solution of ichthyol.

3. OPHTHALMIA NEONATORUM. *Causes:* The gonococcus or some other pyogenic microorganism; the secretions of the mother contain the infecting agent, and transmission may occur directly during parturition, or indirectly by the fingers of physician or nurse, cloths, instruments, etc. *Symptoms:* Swollen eyelids, with copious purulent discharge; ulceration of the cornea may ensue. *Prophylaxis:* Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 per cent. solution of nitrate of silver, immediately after birth. *Treatment:* Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burnt.

4. See French's "Practice of Medicine" (1910), page 800; or Osler's "Practice of Medicine" (1909), page 507.

5. *"Erythema simplex* is a circulatory disturbance of the integument characterized by variously sized and shaped areas of redness unattended by elevation or depression. It is accompanied by mild itching or burning, and disappears on pressure. It may be due to exposure to extremes of temperature, exposure to the sun's rays, injury, irritation of poisonous plants, or to the absorption of drugs, antitoxins, ptomaines, etc.

"Erythema intertrigo or chafing is the variety of hyperemia encountered in regions such as the buttocks, genital regions, and flexures of joints, in which the skin surfaces are in apposition and rub one on the other. In the obese and in infants it is very frequent and often develops into a true dermal inflammation. Redness, heat, and burning are symptoms; and sometimes there may be a mucoid discharge."—(Hughes' *Practice of Medicine*.)

Five drugs which may cause erythema: Belladonna, quinine, morphine, salicylic acid, chrysarobin.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), pages 814 and 816; or Hirst's "Obstetrics" (1909), page 577.
2. See Williams' "Obstetrics" (1909), page 266; or Hirst's "Obstetrics" (1909), pages 404 and 407.
3. See Williams' "Obstetrics" (1909), page 325; or Hirst's "Obstetrics" (1909), pages 609 and 867.
4. See Williams' "Obstetrics" (1909), page 818; or Hirst's "Obstetrics" (1909), pages 585 and 586.
5. See Williams' "Obstetrics" (1909), page 346; or Hirst's "Obstetrics" (1909), pages 344 and 373.

GYNECOLOGY.

1. *Urethral caruncle* is a small red fleshy growth generally situated on the posterior part of the meatus of the urethra. There are local pain and tenderness, which may be excessive; a burning sensation is experienced on urination; it may bleed. The proper treatment is to excise it or destroy it with the thermocautery.

2. CURETTAGE. *Indications:* For diagnosis, to remove pieces of retained placenta or decidua, endometritis, mucous polypi, hemorrhage, dysmenorrhea, endocervicitis. *Dangers:* Sepsis, perforation of uterus, hemorrhage, abortion, inflammation of uterus or adnexa. *Procedure:* All antiseptic and aseptic precautions are necessary, the patient should be in the dorsal position, the vagina is to be disinfected, and the cervical canal dilated; a speculum is introduced into the vagina and the cervix is drawn down with volsella; the uterine cavity is irrigated with creolin or lysol; a curette is inserted to the fundus and moved down to the internal os; the operator should begin at one cornu, and go in the same direction all around till he reaches the starting point, and if necessary repeat till no more spongy or hyperplastic tissue appears; the fundus should be scraped separately by moving the curette along it from side to side; in going towards the fundus no scraping should be done, and care must be taken not to perforate the uterus; should this happen no fluid must be injected; otherwise the uterus and vagina are again irrigated, and one or more strips of iodoform gauze are inserted into the cavity to act either as a hemostatic plug or as a drain, which is diminished with two days' interval and withdrawn on the sixth day. A hemostatic tampon should be placed in the vagina and withdrawn the following day. If any fever arises the tampon is at once removed and the vagina douched with antiseptic fluid every three hours. If not, the vagina is only swabbed with the same every day, and packed loosely with iodoform gauze. After the final removal of the gauze the antiseptic douche is given twice a day until there is no more discharge. The patient should remain in bed for a week.

3. *Hemorrhages occurring in the non-pregnant woman:*

A. In virgins before the age of thirty: Caused by (1) uterine congestion, the result of cold or exposure; (2) endometritis; (3) polypi and fibroid tumors.

B. In married women before the age of thirty: Caused by (1) subinvolution; (2) laceration of the cervix; (3) endometritis; (4) retrodisplacements of the uterus; (5) polypi and fibroid tumors.

C. In women after the age of thirty: Caused by (1)

carcinoma of the cervix; (2) carcinoma of the body of the uterus; (3) sarcoma of the uterus.

4. *Leucorrhea may be produced by:* Pelvic congestion, endometritis, retroversion of uterus, vulvitis, vaginitis, gonorrhea, benign and malignant growths.

Treatment consists in removal of cause, rest, vaginal douches (cleansing, or astringent, or antiseptic, according to the cause).

5. Gonorrhea. *Symptoms:* Pain and burning in the vulva; pain and burning on micturition; dyspareunia; yellowish or greenish discharge, in which the gonococcus can be found; the vagina is hot, red, swollen, and tender. *Possible results:* Cystitis, urethritis, vulvitis, endometritis, salpingitis, septic peritonitis, sterility, condylomata of vulva, abscess of Bartholin's glands.

Treatment: Rest, if possible in bed; freedom from alcoholic or sexual excitement; a mild and unirritating diet; salines and diuretics; plenty of water to drink; a warm sitz bath; douching of vagina with about a gallon of a 1:5000 bichloride solution, or of borax (1 dram to the quart); the douche is to be taken in the recumbent position.

6. See Rose and Carless' "Surgery" (1908), page 1286.

7. *Plastic operations in gynecology* are such as are done: (1) for the repair of lacerations of the perineum or cervix; (2) for vaginal fistulæ; (3) for the narrowing of the vagina, and the treatment of cystocele or rectocele; and (4) various other operations on vulva, urethra, or anus.

For *perincorrhaphy*, see Obstetrics, Question 3.

For *trachelorrhaphy*, see Hirst's "Obstetrics" (1909), page 857.

8 and 10. See Rose and Carless' "Surgery" (1908), page 1280.

9. *Treatment of pruritus vulvæ* consists in removing the cause, if possible; cleanliness, fresh air, tonics, and general attention to hygiene; local applications of solution of bichloride of mercury, 1:2000; or carbolic acid, 1:100; or lead and opium; dusting powders of bismuth subnitrate, calomel, or zinc oxide are also useful.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), pages 567, 464, 609, 475, and 622; or Da Costa's "Surgery" (1908), pages 431, 440, 446, 579, 460, and 590.

FRACTURE.	DISLOCATION.
1. Crepitus may be present.	1. Crepitus never present.
2. Preternatural mobility.	2. Rigidity rather than mobility.
3. Easily reduced—but	3. Difficult to reduce—but
4. Deformity more liable to recur after reduction.	4. Deformity less liable to recur after reduction.
5. The head of the bone is in its proper place.	5. The head of the bone is not in its proper place.
6. The socket containing the head of the bone is not empty.	6. The socket which should contain the head of the bone is empty.
7. When rotated the bone does not move as one piece.	7. When rotated the bone moves as one piece.

2. See Rose and Carless' "Surgery" (1908), pages 1321 and 1326; or Da Costa's "Surgery" (1908), page 1025.

3. See Rose and Carless' "Surgery" (1908), page 340; or Da Costa's "Surgery" (1908), page 423.

Anastomosis after ligation of femoral artery at apex of Scarpa's triangle: (1) External circumflex; with muscular branches of femoral, anastomotica magna, superior articular of popliteal, and anterior tibial recurrent. (2) Perforating and terminal of profunda; with muscular branches of femoral, and muscular and superior articular branches of popliteal. (3) Comes nervi ischiadici; with perforating of profunda and articular of popliteal.

In amputation at middle third of leg, the anterior tibial, posterior tibial, and peroneal arteries require to be ligated.

4. *Wounds are classified* as:

I. Contused and open wounds.

II. Open wounds may be: Incised, lacerated, contused, punctured, gunshot, or poisoned; also penetrating and perforating.

III. Aseptic and septic.

Sources of wound infection: Air; water; patient's skin, hair, or clothing; hands of surgeon, assistants, or friends; instruments and dressings; solutions; insects.

See Rose and Carless' "Surgery" (1908), pages 264 and 266; or Da Costa's "Surgery" (1908), page 51.

5. See Rose and Carless' "Surgery" (1908, pages 1059, 1060, 1061, 1119, and 1113; or Da Costa's "Surgery" (1908), pages 883, 885, 891, 894, and 837.

6. See Rose and Carless' "Surgery" (1908), pages 1068, 1265, 1072, and 1081; or Da Costa's "Surgery" (1908), pages 971, 1201, 1000, and 978.

7.

CONCUSSION OF THE BRAIN.	COMPRESSION OF THE BRAIN.
Unconsciousness is incomplete; patient can be made to answer, though it may be briefly and in simple words.	Complete unconsciousness; may scream into patient's ear at the top of the voice, but will receive no answer.
Special senses, though greatly blunted, are not abolished.	Special senses entirely suspended.
Power of movement not destroyed; if the position of a limb be changed the patient will resist or bring it immediately into the original position.	Complete or partial paralysis; in most cases hemiplegia.
Respiration is quiet and feeble.	Respiration full and noisy.
Pulse feeble, frequent, and intermittent.	Pulse full and slow, and sometimes laboring.
The stomach sickens and rejects its contents.	The stomach is insensible to any impression; no nausea or vomiting.
The feces may be discharged incontinently, as may also the urine, though not usually.	Bowels are torpid, and the bladder incapable of emptying itself, though the urine may escape by overflow.
Deglutition little impaired.	Deglutition difficult or impossible.
Pupils variable, though generally contracted; the eyelids somewhat open.	Pupils variable, though generally much dilated, and the eyelids closed.
Temperature of the body less than natural.	Temperature almost natural, a little below the normal standard.

—(From Treves' *Manual of Surgery.*)

See Rose and Carless' "Surgery" (1908), pages 115, 116, and 117; or Da Costa's "Surgery" (1908), pages 1052 and 1053.

8. A *tumor* is a pathological new growth which tends to persist independently of the structures in which it lies, and which performs no physiological function.

Tumors are classified as follows:

I. Those derived from mesoblast:
  (*a*) *Benign:* Lipoma, fibroma, chondroma, osteoma, myxoma, myoma, neuroma, glioma, angioma, lymphangioma.
  (*b*) *Malignant:* Sarcoma.

II. Those derived from epiblast or hypoblast:
  (*a*) *Benign:* Adenoma, papilloma.
  (*b*) *Malignant:* Carcinoma.

III. Cystic tumors.

IV. Teratomata.

9. See Rose and Carless' "Surgery" (1908), pages 140, 144, 141, and 157; or Da Costa's "Surgery" (1908), pages 276, 277, 288, and 1179.

CHANCRE.	CHANCROID
First lesion of a constitutional disease, viz., syphilis.	A local disease.
Due to syphilitic infection.	Due to contact with secretion from chancroid.
Generally a venereal infection.	Always a venereal infection.
May occur anywhere on the body.	Nearly always on genitals.
Period of incubation never so short as ten days.	Period of incubation always less than ten days (generally about three).
Generally single.	Generally multiple.
Not autoinoculable.	Autoinoculable.
Secretion slight.	Secretion profuse and purulent.
Slightly or not at all painful.	Generally painful.
As a rule only occurs once in any patient.	May reoccur in same patient.
Buboes are painless and seldom suppurate.	Buboes are painful and usually suppurate.

10. See Rose and Carless' "Surgery" (1908), pages 1134, 1136, 1152, and 1132; or Da Costa's "Surgery" (1908), pages 1009, 1010, and 1015.

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CONSTANT OCCURRENCE OF MIXED INFECTIONS.

BY W. HANNA THOMSON, M.D., LL.D.,

NEW YORK.

IN the management of any infections disease the aim of the practical physician should be to prevent the infection from becoming multiple. If he succeeds in keeping it single, even the worst of them, like tuberculosis, may develop into a comparatively mild affection. Thus as the tubercle bacillus has no liking for fresh air and is killed in a few minutes by sunlight, it finds that in the peritoneum it is quite safe from both air and light and may give rise there to an extensive tuberculous inflammation. Meanwhile, however, in these dark recesses it is quite lonely and without help from its common powerful allies. The surgeon, therefore, on opening the abdominal cavity finds the peritoneum studded with tubercles, but, on sewing the wound up, both the peritonitis and the tubercles forthwith disappear, to the wonderment and gratification of the operator. The explanation is that the exposure during the operation to air and light so weakened the tubercle bacillus that nature's great resource, viz., the vital resistance of the tissues, put an end to this debilitated enemy's further proceedings. It is only when it can call in the aid of other organisms that tuberculosis becomes the scourge of the human race.

Hence the importance of remembering that there are two factors always present in every infection. The first is the invading microorganism itself, and the other is the opposing resistance of the tissues and fluids of the body invaded. The issue will then depend on which of those two forces is the best equipped for the contest. We will soon show how the most dangerous multiple invasions may be safely left to the vital powers of the system, provided that they are properly helped by the physician and that not by medicine.

These principles are particularly well illustrated in smallpox, for in this disease we may have three wholly separate infections. The first is the attack of smallpox itself, whose causative agent has not yet been identified. Its onset is quite characteristic, beginning with vomiting, severe headache, aching of the back and limbs, and high fever. But by the fifth day everything subsides, the temperature falls, the tongue cleans, the stomach is no longer irritable and the appetite returns. Sleep now becomes possible and the patient feels as if he were getting well. Meantime, however, the eruption appears, at first as a solid pimple, tipped with its specific vesicle. But soon a wholly different infection follows, which is virtually a surgical disease. On account of the myriads of cocci swarming over it, no surgeon will make the smallest incision through the skin until he has washed and scrubbed the part with disinfecting lotions, and then he will wash his own hands and clean his finger nails, or, still better, wear thoroughly disinfected gloves, before he once touches the knife.

Now the pustular eruption of smallpox does exactly what the surgeon aims to prevent with his aseptic procedures. Every vesicle becomes invaded, usually with the *Staphyloccus pyogenes aureus*. The original variola agent is there still, with increased vigor from its new allies, but the case has now become one of true surgical pyemia. Every pustule lends its contingent of pyogenic cocci to cause a new fever along with the ulcerations, which so disfigure the features beyond recognition, ultimately leaving behind life-long scars.

There must, however, be some specific influence operating in this papular eruption, because extensive eruptions of pimples occur in other affections without becoming so purulent as they do in smallpox. That specific agent is in the original clear vesicle of the variolous eruption. If the patient has not been vaccinated before, and thus the original virulence not lessened, we have the spectacle of confluent smallpox, instead of the discrete varioloid. Therefore, to call a noisy opponent of vaccination an ass is not quite fair to that quarduped, who does show some intelligence compared with his biped rival, while he brays so loudly against the safest and most effectively preventive inoculation in the world.

Years ago, at the New York Quarantine, I was physician to a large smallpox hospital. I then turned all the patients into the likeness of Congo negroes by painting face and hands with a saturated solution of nitrate of silver. It worked admirably, for when they got well and shed their skin, they were not only no longer Ethiopians, but their faces afterward showed no scars. I did not known then what staphylococci or streptococci were, nor why this procedure seemed to be so generally beneficial. But it occurs to me now to ask whether we could not prevent this secondary infection in smallpox, which of itself so often kills, by frequently washing the skin on the first appearance of the pimples with Lawrence Smith's solution of bromine, a solution which is not locally irritating, but which no coccus of any form can stand.

There remains the third and most malignant secondary invasion, that of hemorrhagic smallpox. This invasion occurs very early, usually before the specific eruption appears, so that I have known the best trained physicians to be caught napping by this terrible enemy. That it is due to a secondary invasion is proved by an examination of the blood, which reveals a general and intense *streptococcemia*. Now, smallpox itself is not caused by a streptococcus, for then it would long ago have been so identified. How this streptococcus makes its fatal entry we do not know, but it teaches us the important lesson that the original infecting agent may have

its virulence indefinitely heightened by alliance with another microbe, for many deaths have followed unwitting attendance on the funeral of hemorrhagic smallpox victims.

These principles, however, have their most striking illustrations in scarlet fever and in diphtheria. On that account, I cannot refrain from quoting some passages from a paper read before the American Association of Physicians, Washington, and reported in the MEDICAL RECORD, August 28, 1909. The title of the paper was "A Severe Case of Scarlatina and of Diphtheria Successfully Treated Without Medicines." The case, in brief, was this. A little girl, aged five, was suddenly taken with scarlatina in the night. The throat was severely affected and the characteristic rash ran its usual course, with a temperature of 104.2°. Three days after the rash appeared a diphtheritic exudation developed in the throat and extended with great rapidity, in spite of the injection of 15,000 units of antitoxin. I was then called in consultation by the attending physician, Dr. George B. Ferguson, of the Bronx Borough of New York, on the sixth day of the scarlatina and the third day of the diphtheria. The appearance of the throat was then bad enough, the diphtheritic exudation covering the uvula, both palatal arches, the tonsils, and the pharynx so that all these parts were practically hidden by the overlying membrane. The child was wholly unable to swallow, the glands on both sides of the neck were swollen, and the breath had a gangrenous odor. What concerned me most, however, was the unfavorable aspect of the countenance. The child was apathetic and presented a picture of serious septic infection. The pulse was weak and thready. I told the doctor that it was useless to think of administering medicine, first, because the child was wholly unable to swallow, and, secondly, because we had no medicinal remedies for any of the exanthemata, while it was plain that the diphtheria antitoxin would no longer avail in this case. Meanwhile, the hypodermics of strychnine given for her cardiac and general prostration would be no more effective than emptying the little syringe into the grate fire. The only recourse, therefore, was to deal with her throat as we would wash a dirty sidewalk with a hose. I recommended, therefore, that two gallons of hot water, with two teasponfuls of chlorate of potassium and five drops of oil of peppermint dissolved in it, be made to pour in her throat every two hours, day and night, from a fountain syringe bag elevated six feet above her head. To prevent her gagging or swallowing of the water, her mouth was to be kept wide open by a rubber plug held between the teeth.

For the first few days the patient felt such relief from this douching that she offered no resistance. Great quantities of the exudates came away with the return current. On my second visit, two days afterwards, though the patient was still unable to swallow, I was gratified to note a marked change in her expression, and the enlarged cervical glands looked smaller. On my third visit, two days after that, she could swallow, though extensive diphtheritic patches still remained. I then told the doctor that now we were as if in a canoe shooting a rapid with these rocks ahead. First, abscesses in the ears from the scarlatina; secondly, pneumonia, which, in my experience, carries off 20 per cent. of the fatal cases of scarlatina; thirdly, pleurisy, with a special tendency to empyema; fourthly, cardiac paralysis from the toxin of diphtheria, and lastly, scarlatinal nephritis. All of these occurred in their order, except the last, the kidneys never showing the least disturbance. The very next morning after my third visit, Dr. Samuel Goldstein, the aurist, found abscesses in both ears, which, on puncturing the drum, discharged profusely, and continued to do so for over a week, but by his assiduous and skillful management the ears recovered perfectly. On the eighth day of her illness, the temperature, which had fallen to 102°, rose to 105°, and with it there was a marked rise in the leucocyte count. I then found a patch of pneumonic consolidation in the left midscapular region, which was farther surrounded by an area of pleuritic râles extending to the base of the lung posteriorly. Nothing was prescribed for this complication except to continue the throat douching. In five to seven days both the pneumonic signs and the friction râles disappeared; the throat was clear of all diphtheritic patches, the cervical glands had become normal, and the patient was very hungry. But the pulse now became very weak and intermittent, and then, for the first time, on the twenty-fifth day of her illness, she took medicines in the form of cardiac stimulants in a pill of powdered squills, caffeine, and strychnine. I may add that I was careful not to administer digitalis, because I have seen very painful results from giving digitalis in diphtheritic weakening of the heart, not only because digitalis then fails to increase the power of the heart's systole, but because the arteries at such times seem to become especially sensitive to the arterial contraction, which is one of the effects of this drug. However, the recovery of the heart was very slow, and it continued to be weak and intermittent for six weeks. The child continued to show for some time weakness of the legs and a muffled, nasal voice from paralysis of the palate, but ultimately recovered and is now the picture of health.

The history of this case seems to me to support the view that the characteristic complications of scarlatina arise not so much from the original infection as from the invasion of virulent streptococci through the portal opened for them by the local angina in the throat. From them it is that the successive series of tissue changes and inflammations develop. In other words, the exanthem first inflames the throat, and the streptococci then do the rest. In this sense scarlatina becomes as local a source of toxemia as diphtheria itself is. With diphtheria also, when ulcerated surfaces are present, mixed infections occur which may wholly neutralize the action of its specific antitoxin.

Our case, therefore, emphasizes these practical lessons: 1. The diphtheritic exudation is altogether a local affair, for its bacillus rarely enters the blood. All its serious or lethal effects are due to its absorbed toxins. By washing away the exudation so thoroughly we diminish by so much the quantity of toxins which the system had to neutralize. The same result was secured with the infections due to the scarlatina, only that here the washing prevented the entrance of myriads of streptococci from the ulcerated sore throat. Whatever causes such ulcerations opens the way for this mixed streptococcal infection, and hence this occurs also in the throat ulcerations of diphtheria, often sufficiently to neutralize the effects of its specific antitoxin. It is my custom now to order thorough throat douching in every case of scarlatina from the earliest beginning of the sore throat, and I am sure that nearly every complication of this disease could be thus prevented.

The conclusion, therefore, seems legitimate that though otitis, pneumonia, and pleurisy were not prevented in this case, yet they each ran a much milder course because the patient's powers of vital resistance did not have so much with which to contend as they otherwise would. Moreover, it is a familiar clinical fact that virulence is directly proportional to the size of the dose of the invading microorganism, for when few they are scarcely able to do harm.

Mixed infections are the rule in inflammatory affections of the respiratory passages in children. Dr. L. Emmet Holt proves this in a published report of his examinations in which the post-mortem findings corresponded with the clinical findings by sputum cultures. Thus the growth from the lungs of 76 pneumonia cases showed: *B. influenzæ* alone, 2; pneumococcus alone, 4; streptococcus alone, 1; *Staphylococcus aureus* alone, 8; *B. influenzæ* and pneumococcus, 5; *B. influenzæ* and streptococcus, 5; *B. influenzæ* and staphylococcus, 7; pneumococcus and streptococcus, 1; pneumococcus and staphylococcus, 11; pneumococcus and catarrhalis, 5; staphylococcus and streptococcus, 10.*

Such a hopeless list of mixed infections emphasizes the importance of immediately dealing with the bronchitis of children. But when once under way it would seem as if no recourse remains but to try vaccines of polyvalent serums.

Our quotation from Dr. L. Emmet Holt about the host of mixed infections which occur in the bronchopneumonia of children prepares us now to understand what the special dangers of pulmonary phthisis are.

We begin with bronchitis. Our text books all share the same defect that while they give every particular about auscultation, they wholly omit a subject of much practical importance, namely, how to recognize the significance of the sound of a cough. There are two sorts of coughs which can be distinguished at once from each other by their sound; first, the expectorant cough, and, second, a cough which has nothing to do with expectoration. Of the first, or the expectorant cough, there is only one kind; of the non-expectorant there are fourteen kinds. The practical point is that the expectorant cough always should be promoted, while every one of the non-expectorant coughs should be suppressed if possible, for it can only do harm. A little practice is all that is needed to tell one kind from the other simply by its sound. The expectorant cough is like a chain running over a pulley, *i. e.* each cough is linked to that which precedes it and to that which follows, nor can it be stopped until it ends in expectoration. In the non-expectorant coughs the sounds, however numerous or loud, are independent of each other, like the blows of a hammer. Thus I was called by two physicians to see a man who had not been able to sleep for more than a week, owing to a violent cough which kept up day and night, notwithstanding opiates and other sedatives. When I heard the cough I knew that he had nothing in his bronchial tubes to expectorate, and soon found that he had had an extensive pleuritic effusion which had been absorbed, leaving the pleural surfaces covered with plastic layers to rub against each other with loud creaking or auscultation. I ordered the whole chest on that side to be firmly strapped with adhesive plaster, and the patient dropped asleep before the strapping was quite finished. Likewise while a medical friend was visiting me we heard a lady in the waiting room keeping up a loud, barking cough, which, without yet seeing her, I told my friend was not due to anything in her bronchi. On examination, I found a large polypus protruding from the os uteri, after the removal of which the cough soon ceased. Every aurist also knows of severe coughs occurring in children from a bean or like object in the ear. On the other hand, as we have just said, an expectorant cough cannot be stopped short of expectoration. I knew a man who was the terror of ladies in church, for his cough, soon after he began, changed into a series of rapid little squeaks, while his whole body swayed to and fro and he grew black in the face, until he ended with a sort of hallelujah, which announced that the tough pellet had reached his pharynx. The one indication in such a case is to render the secretion fluid instead of viscid, because in hemoptysis, for example, there may be so little cough that the patient is uncertain whether the blood came from his lungs or from his throat.

But an instructive case, illustrating the value of the sound of a cough, was that of a stout young German in Bellevue Hospital, who, I was told by my house physician, had pneumonia. Just then he coughed, and at once I said that he very likely had pneumonia, but that his cough was not pneumonic, but most probably was due to a foreign body occluding a large bronchus. The sound was like that of laryngeal croup or that caused by an aneurysm. I soon found that no air entered his right lung, and then elicited from him that he had been on a drunken bout and the last thing he could remember was his cracking a filbert between his teeth. After marking the spot on his chest where to cut I had him transferred to the surgical side, where Dr. Willi-ton Wright and Dr. Joseph Bryant operated and found the offending filbert in the designated place.

Now, there is no pneumonic process which works such havoc with lung tissue as that caused by an occluded bronchus. Quite different from the exudate of an ordinary lobar pneumonia which may be absorbed, leaving the delicate walls of the air vesicles intact, this destroys them and then extends to the interstitial connective tissue. There must also be something debilitating in its work, for instead of the exclusive presence of leucocytes which carry away the exudate in lobar pneumonia, we find every variety present of bacteria, such as pneumococci, streptococci, etc., with, of course, their toxins.

But just this result follows the occlusion of the smaller bronchi in the scattered areas of bronchopneumonia. Those little tubes are not constructed to contain anything but air, and if filled with a fluid secretion, especially if viscid, the same thing happens to them that occurs to a whole lobe whose bronchus has been plugged. Bronchopneumonia therefore specially prepares a part for the development of the tubercle bacillus, particularly if preceded by the bronchitis caused by the influenza bacillus, as is shown by the great increase of phthisis after every epidemic of influenza.

Bronchitis is an early and afterwards a constant accompaniment of phthisis. But we become so accustomed to ascribe everything to the presence of the tubercle bacillus in the lung that we overlook the fact that without bronchitis the tuberculosis would remain as isolated there as does tuberculosis in bone. The facts are that in the lung the initial tuberculous lesion is kept from healing by the incessant move-

*Quoted from an instructive article by Dr. E. Mathew Gill, MEDICAL RECORD, April 22, 1911.

ments of breathing. A sore on the shin would not heal if it were briskly rubbed up and down from twenty to thirty times a minute. But in the lung, coughing, particularly if the expectoration be abundant and viscid, makes things worse and worse. Nothing could be more damaging to diseased lung tissue than prolonged hard coughing, for soon every variety of mixed infections supervene, until in the last stages the case is virtually one of general pyemia.

Consumption, therefore, should be treated according to the two principles which should guide in the management of all infections, namely, first, by weakening or lessening the number of the invading microorganisms, and, secondly, by increasing the resisting powers of the system. Now, the open air fortunately acts by weakening both the tubercle bacillus and the pyogenic microorganisms. The human race is the most prone to consumption, because we all live indoors. Hence the consumptive does best according to the quantity of pure air which he breathes, while his vital powers are proportionately increased thereby. His diet also should be of the most concentrated kind, by making him, as it were, a carnivorous animal.

The complication of bronchitis, therefore, should never be neglected. This is best treated by making the expectoration very liquid, and for that purpose oils should be administered. All oils cause a free flow of fluid from mucous membranes when applied locally, as one would find out if he introduced a drop of olive oil into his nose. Many oils, if they enter the blood, are then sent to some mucous surface, to be there excreted as castor ol is sent to the intestine. But castor oil also causes watery flow from other mucous membranes, especially if it does not act freely on the bowels. Hence castor oil should not be given to infants with commencing bronchitis because of their feeble powers of expectorating anything. Cod-liver oil certainly loosens cough, besides promoting good nutrition and increasing more than iron, or any other agent, the number of red corpuscles. But it is linseed oil which acts most effectively on the bronchial mucous membrane, a fact empirically discovered long ago in the use of flaxseed tea. Flaxseed or linseed oil, therefore, is my mainstay against bronchitis, whether acute or chronic.

It is difficult, however, to make a palatable emulsion of linseed oil without it being done in a churn. My formula for this emulsion is:

℞ Olei lini, ʒ ixss
Ol. gaultheriæ,
Ol. cinnamomi, āā ♏80
Acidi hydrocyanici dil., ♏80
Glycerini, ♏190
Syrupi, ʒ vi ss
Mucil. chondri, q.s. ad ʒ xxxii
M. S. One to four fluid drachms.

For acute bronchitis:

℞ Emuls. olei lini, ʒ vi
Morphinæ sulph., gr. i
Chloralis, ʒ iss
M. Dose, tablespoonful an hour after meals.

In cases of acute bronchitis there often occurs a useless irritant cough mixed with the expectorant cough. This can easily be recognized by its husky sound and by sibilant râles, and for suppressing it and rendering the cough purely expectorant a small dose of morphine and of chloral is added, to designate which I write Mist. Olei lini comp. The dose of this for an adult is a tablespoonful an hour after meals. I now never prescribe the old expectorant mixtures containing ammonium chloride, squills, etc., as they are so inferior to the linseed oil. This preparation is very advantageous also in bronchitic asthma where the asthma is consecutive to chronic bronchitis. When severe coughing comes on in pulmonary phthisis I direct the patients to restrict themselves to the linseed emulsion for several days until the cough subsides, after which they can resume their previous line of treatment.

There remains one common source of mixed infections, and that is from the intestinal mucous membrane. But as a year ago I published a paper on this subject (Medical Record, May 28, 1910,) with the title "Acute, Subacute, and Chronic Infection of the Kidneys and of Other Organs by the Bacillus Coli." I will only briefly refer to it. It is as great a mistake to suppose that *Bacillus coli* is a harmless denizen of the intestine as to suppose that streptococci and staphylococci on the skin are harmless because they are always there in health, without injury until some cutaneous lesion allows them to enter. There are a number of similar ways for the colon bacillus to infect the system and cause acute nephritis with high fever and rapidly developing coma; or complicate the course of typhoid fever with new and alarming symptoms; or cause dangerous delirium from an intercurrent subacute infection without fever; or the matting together of the pelvic viscera with caseous exudates closely resembling tuberculous masses, or blindness from choroiditis, etc. I have found, however, that nothing is so common as failure to diagnose the presence of colon bacillus infection, doubtless because both physicians and surgeons have heretofore not had their attention directed to it.

The sad case has recently come under my observation of a lad, ten years of age, brought to me by his parents from East Orange, New Jersey, with the history of a continued fever for over seven weeks, first diagnosed as typhoid fever. I found that ruled out by the presence of 18,000 leucocytes in his blood count, and then learned that he first fell from his bicycle and struck the region of his left kidney. This after four weeks was followed by a sudden discharge of pus in his urine, but his fever continued just the same, with frequent afternoon chills. I was pretty sure that he had a mixed infection of *Bacillus coli,* with some pyogenic organism, and on examination this proved to be the case. Under treatment, both the pus and the colon bacillus disappeared from the urine, but the fever continued. My assistant, Dr. J. Edgar Welch, then found the *Staphylococcus pyogenes aureus* in his blood and made a vaccine culture therefrom, but before it could be used the boy succumbed, with a temperature of 106°. Had the nature of his case been diagnosed earlier, the result might have been materially different.

Our review of this subject of the constant occurrence of mixed infections demonstrates that it is as reasonable to expect the host of pathogenic microorganisms to infect us singly as that a variegated carpet be woven out of one material of the same hue and texture. Whenever we are dealing with an infectious disease a sudden change for the worse in the patient affords us good reason to suspect that a new infection has supervened. A full recognition of this ever-present liability is therefore of very great importance both for diagnosis and for treatment.

70 East Fifty-fourth Street.

SOME OF THE LATTER-DAY ENDEAVORS IN THE TREATMENT OF DIABETES.*

By HEINRICH STERN, M.D.,

NEW YORK.

Inasmuch as we have no knowledge concerning the underlying cause or causes of the diabetic process, it is, of course, out of the question to speak of a causal treatment of the malady. All our efforts directed toward amelioration of the diabetic state are empiric in nature, and our therapy is purely symptomatic. In the following I shall dwell upon some of the symptomatic remedial measures which have been advanced in the last few years.

Physical Measures.—External temperature. In a paper read at the Kongress für innere Medizin in April, 1905, Luthje[1] brought out the interesting fact that in dogs with grave diabetes after the removal of the pancreas the surrounding temperature had a decided influence upon the intensity of the glycosuria, inasmuch as the latter is markedly depressed when the external temperature is high (up to 30° C. or 86° F.) He ascribes the influence of the surrounding temperature upon the fluctuations of the sugar excretion to regulatory processes in connection with the body heat, because the experiment animal, exposed to the cold, in the endeavor to maintain its momentary most important function, the retention of its body-heat, suddenly excretes large amounts of sugar. The same author also tried to employ high external temperatures for the treatment of human diabetes. He had four diabetics under his observation for from one to one and a half months. Of these, two cases were severe, one mild, and the last one moderately severe. In temperatures varying between 15° and 30° C. he also noted fluctuation in the sugar excretion, but not as marked as in the dogs. Under the influence of a high external temperature tolerance (for what is not stated), body-weight and general vigor rapidly increased.

In the discussion of this paper Klemperer[2] pointed out that the experiments of Lüthje tended to clear up some hitherto unexplainable facts of clinical experience. It was known to him for a long time, he said, that a cure at Carlsbad in winter did not agree as well with diabetics as one in summer, and that the beneficial influence of bed-warmth and alcohol upon grave cases of diabetes could now also be accounted for. In the same discussion Kühn[3] mentioned the case of a patient living in Java whom he found affected with a severe type of the disease, and which he had already unfavorably prognosticated years ago. In spite of the ingestion of large amounts of carbohydrates (rice, etc.), the patient was still alive, and Kühn concludes that the patient's prolonged life may be attributable to the relatively high temperature of his abode.

Busquet[4] studied the influence of the external temperature on the intensity of the glycosuria in three cases of diabetes. His tests demonstrated conclusively that the glycosuria constantly decreased when the temperature surrounding the patients was warm, while it increased when it was cold. He never placed his diabetics in temperatures above 20° C. (68° F.), but his clinical findings tallied with those of Lüthje in every respect.

At a discussion at the meeting of the British Medical Association in 1908 on diabetes in the tropics[5] attention was drawn to the frequent occurrence of glycosuria and diabetes in the natives of India, and to the fact that acute cases are rather infrequently met with in the tropics, where the diabetic is not emaciated and his appetite less abnormal. Sir Havelock Charles made the interesting statement that the progress of the diabetic process in the East Indian is often slower than in the European, and that the disease may last twenty-five years.

The foregoing are practically all the references in regard to the influence of the external temperature on the degree of the glycosuria and the course of diabetes which I could gather from a brief search of the literature. I have known from personal experience for a number of years that diabetes occurring in certain districts of Central and South America, irrespective of a diet very abundant in carbohydrates, often runs a protracted and very mild course. This is also the case to some extent with the diabetic affection in certain localities of our own South. A patient from Mississippi since dead from old age (he died in the North) assured me that he has had diabetes for over thirty years. From a number of diabetics, who have repeatedly come from the South to consult me, I know that they lost weight and excreted large amounts of sugar when they were in New York for a few weeks, but that their body-weight increased and the glycosuria decreased soon after they had left the flesh pots of the North for the hot corn and sweet potatoes of their Southern homes. Furthermore, it is a well-known fact that rest in bed is of beneficial influence in many instances of grave diabetes; the good effect thus obtained is, however, universally credited to the rest and not to the bed-warmth.

Without intending to go into statistical details as regards my own observations concerning the question of surrounding temperature and the course of glycosuria, I wish to state my conclusions: (1) The external temperature exerts a distinct influence upon the intensity of the diabetic glycosuria inasmuch as this is depressed by warmth and raised by cold. (2) A temperature of from 80 to 90° F. of the surrounding *dry* air may be employed therapeutically to reduce the degree of a diabetic glycosuria. (3) A surrounding temperature of from 80 to 90° F. may *per se* reduce the sugar output by from one-fourth to one-third. (4) A warm external temperature does not materially influence the acetonemia concomitant with grave cases of diabetes. (5) A warm external temperature has no noticeable influence on mild cases of diabetes, but exerts a salutary effect on moderately severe and severe instances of the malady. (6) The salutary effects of a warm surrounding temperature on the diabetic organism, besides the reduction of the glycosuria, consist of the production of an increased tolerance for carbohydrates and proteids; the increase of body-weight, resistance, and vigor; the lessening of gastrointestinal disorders, and the subduing of neuritic and angiosclerotic pain.

The most efficacious way to obtain the proper external warmth for the diabetic patient is, of course, to let him live in an evenly warm and dry climate all the time, or at least during the period when it is cold in his own town. Unfortunately, it is only a small minority of our patients who can radically change their place of living, even for six months in the year. Patients affected with the severer forms of diabetes and who stay at home during the cold season should live, when out of bed, in well-ventilated rooms heated to from 75 to 85° F. They should wear flannels and be in a very mild perspira-

*Read at the meeting of the Medical Association of the Greater City of New York, March 20, 1911.

tion for one or two hours after the midday repast. They should be in bed, well covered, for from ten to sixteen hours every day, during which time the surrounding temperature of the room may be lowered to about 65° F. The temperature under the bedcovers, however, should be somewhat higher than that of the fully clothed body in a room heated to from 75 to 85° F. To obtain the necessary bedwarmth the hot water bag or the electrical heating pad must occasionally be resorted to. Superheated air or the leucodescent lamp, applied for the usual brief periods, cannot replace the continuously warm surrounding atmosphere, and have no special value as far as the treatment of the severe types of diabetes is concerned.

Electricity. Since the publication of the reports of some French electrotherapists anent the value of high-frequency currents in diabetes, very little has been said in favor of this method of treatment by leading internists. But a good deal has been written disputing or denying the therapeutic influence of these currents on the diabetic process. It is a significant fact that nearly all the advocates of this agent are electrotherapists and not internists, in whose domain the treatment of diabetes really belongs. De Kraft, at the meeting of the American Electro-Therapeutic Association in 1909[6], asserted that five cases of diabetes with pronounced constitutional manifestations and a glucose output varying from 7 to 9 per cent. have remained sugar-free for many months and showed decisive improvement in general health after having been treated with high-frequency currents. He applies the latter preferably by autocondensation, or by the effluve to the insulated patient with grounded metal to the back. High-frequency currents when employed in this manner, he theorizes, regulate the circulation when it is unbalanced through pronounced influence on the sympathetic nervous system, improve the tone of the arterial wall, lower blood-pressure, check the formation of toxins, and strengthen the natural defenses of the body. These currents have a marked stimulating action on cell life and on the nutrition of cells at the farthest point, and increase the reducing power of hemoglobin, thereby augmenting tissue oxidation. There ensue, the same writer continues, increased renal and glandular activity, and larger amounts of sugar appear in the urine for a time, continuing until the glycogenic balance in the liver cells and the muscles is restored, after which, under continued treatment, the amount of sugar excreted steadily diminishes, to disappear entirely in favorable cases.

Tousey[7] remarks that the application of the high-frequency currents may be harmful in instances of advanced diabetes, and that the glycosuria may not yield to this treatment in certain cases. He maintains, however, that the general strength and the cutaneous and other symptoms are improved to such a degree by high-frequency currents that they should form an essential part of the treatment of every case of diabetes, and that there are numerous cases of the affection in which the glycosuria disappears entirely. At the same time he admits that his own cases cannot serve as conclusive evidence of the efficacy of the electric procedures *per se* as he did not insist upon discontinuance of medical treatment. On the other hand, he is able to declare that cases of diabetes which have fared badly under medical treatment alone have improved under the combined medicinal and electric treatment. According to the same author most electrotherapists having obtained beneficial results in diabetics employed the following technique: "The secondary terminals of an induction coil are connected with the internal armatures of two condensors and the spark-gap is between the latter. The outer armatures are connected by a small solenoid, from two turns of which wires lead, one to a metal electrode held in the patient's hand and the other to foot-plate or foot-bath making contact with the patient's foot."

I have seen a great number of diabetic patients during and after their treatment by electrotherapists, and I have myself employed the high-frequency currents, both by effluve and autocondensation, in more than sixty instances of the various types of diabetes. My deductions concerning the effects of the high-frequency currents on the diabetic process are: (1) The high-frequency currents *per se* do not influence in one way or the other the intensity of either the glycosuria, azoturia, or acetonuria. (2) A diabetic glycosuria irreducible by diet cannot be reduced when high-frequency currents are employed in addition thereto. (3) High-frequency currents employed together with a suitable and well-regulated diet will occasionally yield better results as far as the general condition of the patient is concerned than when an antidiabetic regimen alone is being pursued. (4) Eventual benefits accruing from the combination treatment are more lasting when the patient is surrounded by a high external temperature. (5) Mild cases of diabetes are not at all benefited by the high-frequency currents; neither is the preponderating majority of grave and advanced instances of the malady.

Dietary Measures.—The Diet in General.—Three different opinions prevail to-day as to the energy requirement of the diabetic. Some contend that the caloric value of his food should not essentially differ from that of a healthy individual; others, and these are still in the majority, assert that there will ensue a metabolic deficit if sufficient extra calories are not added to his ration; and others again maintain that the nutrition of the diabetic should be kept at a comparatively low level. Each one of these rules is right and wrong at the same time. Adherence to one may benefit one patient and infinitely harm another. Iron-clad rules have no place in the management of the diabetic state. Diabetics affected with a mild type of the disease and above fifty years of age, for instance, will often get along very nicely on a diet of a caloric value similar to that of the normal individual of the same age and doing the same kind and amount of work; in other cases of diabetes, especially in the preacetonemic forms of childhood and adolescence, the energy requirement of the body may demand a somewhat larger amount of fuel, and in many cases of diabetes of the obese and in instances of far-advanced diabetes a low diet seems to be often imperative.

Once for all, it must be understood that a diabetic regimen of rather scant caloric value (25 to 30 calories per day and kilogram of body-weight) is better adapted to enhance the tolerance for both carbohydrates and proteids than is the ordinary, time-honored, highly calorific antidiabetic dietary. Furthermore, it should be remembered that the method of determining the fuel value of the ingesta has absolutely nothing to do with food assimilability and catabolisity in the diseased organism. We must always reckon with the inability of the diabetic organism to utilize rationally many foodstuffs; however, we must not lose sight of the fact that nutriments a diabetic frequently profits by if supplied in

limited amounts may not be entirely assimilated or will often give rise to more or less serious disturbances when ingested in larger quantities as a substitute for ordinarily not well-tolerated foodstuffs. Hence the more recent thought to rather keep down the total nutrition and reduce the intake of all types of food in certain forms and stages of diabetes than to risk the production of untoward phenomena—possible precursors of a fatal issue.

Carbohydrates. The tolerance of various diabetics to certain carbohydrates is dissimilar. This diversity seems to be due in part to the absorptive qualities of the patient. The slower and more imperfect the absorption of the carbohydrate yield the lower will be the degree of the resulting glycemia. This apparent fact may be made use of for therapeutic purposes. Lenné[8], for instance, reminds us that the carbohydrates are best tolerated by the diabetic in that form which is absorbed and enters the blood-current most slowly; coarse, tough, moist bread is therefore better suited for the diabetic than is fine, dry, and toasted bread, and Saratoga chips better than well-mashed potatoes. Hence, in order to enhance the tolerance of the diabetic for carbohydrates, it would be only necessary to render the latter somewhat difficult of absorption. The employment of cellulose in the diet of diabetics, as suggested by Schmidt and Lohrisch[9], means practically nothing else but the ingestion of material which is slowly, if at all, absorbed. They found cellulose of service in such cases in which the glycosuria endures in spite of the total withdrawal of all carbohydrates. While cellulose does not prevent loss of body albumin it has a certain caloric value. These observers have found that patients who could not tolerate the ingestion of 10 grams of grape-sugar or 20 grams of starch could well metabolize from 18 to 36 grams of hemicellulose in the form of a pulverized agar-agar preparation. It goes without saying that sawdust, no matter whence derived and how manipulated, has very little tendency to increase an existing glycosuria; but it is improbable that a diabetic derives any real benefit from material which is ordinarily absorbed in minute quantities only and which is of but small caloric value for the human economy. Suggestions of this sort which contradict all physiological reasoning must never be taken seriously; they are only too often a bid for royalties from the manufacturers of patent foods.

Clinical experience has demonstrated that the ingestion of a single type of carbohydrate may occasionally temporarily improve certain cases of grave and far-advanced diabetes. Such cases exhibit an apparent elective tolerance for *one* specific carbohydrate. Oatmeal is one of these carbohydrates; and there is no doubt that, if no other carbohydrate be ingested at the same period, the glycosuria as well as an existing acetonuria may be depressed transitorily. Oatmeal in respect to lessening the glycosuria exerts no effect other than that following the intake of material rich in cellulose. Large amounts of oatmeal, as prescribed in von Noorden's oatmeal diet, exhaust the activity of the special organs concerned in the elaboration and absorption of the nutritive principles; and but small amounts of these enter the blood-stream at any one time. There is an additional factor precluding the total absorption of the carbohydrate derived from the oats, namely, being lodged in the intestinal tract for an unusually long period, a large portion of the oat-carbohydrate undergoes fermentation and is not absorbed. Of course, this does not explain the diminution of acetonemia. Klotz[10] believes that oatmeal is transformed beyond the stage of sugar and is taken up as an aglycogenic, anhepatic carbohydrate, thus reducing the acetonemia. The antiacetonemic effect of an oatmeal diet, however, is commonly grossly exaggerated; such an effect ensues in comparatively few instances of diabetic acetonemia, and it may in such cases be just as often procured if some other single carbohydrate, particularly rice, is being ingested. Fresh milk, especially when skimmed, is in my opinion that anti-acetonemic single carbohydrate which is best suited in advanced cases of diabetes. Some of my cases of very grave diabetes were not only rendered sugar-free, but also acetone-free for from two to three weeks when they were under an exclusive skimmed milk-yolk regimen.

Proteins. In every grave case of diabetes even the carbohydrate derived from the protein molecule is not utilized. The albuminous ingesta do not only augment the glucose output in such cases, but are apt to putrefy in the alimentary canal, whereby butyric and valerianic acids, the precursors of the acetone bodies, are formed. In instances of this kind the proteid intake should invariably be kept at a minimum; and it is best to restrict it to the ingestion of but one type during a given period. The so-called vegetable days purport a diminished food intake, especially of proteid material. To all intent such days are practically starvation days because nothing but cellulose and some fat are partaken of. On account of the insufficient nutrition the glycosuria is, of course, diminished, but the acetone bodies appear in increased amounts. For this reason, the much-heralded vegetable or starvation days should be reserved for comparatively mild cases of diabetes, as for instance for those occurring in the obese; in grave types of the malady such dietary stunts are entirely out of order. Vegetable days will only have a beneficial effect when large amounts of fat yielding no volatile fatty acids, and consequently giving no occasion to the production of the acetone bodies, are ingested together with the vegetables.

Fats. Concerning the fatty ingesta in diabetes, especially when this is complicated with acetonuria, nothing new has been advanced since my publications on this subject in 1904, 1905, and 1906. I occupy at this day the same standpoint as then. In the following I shall quote from some of my former publications[11].—If we wish to cope successfully with acidosis without aggravating the diabetic condition we can neither add comparatively large amounts of carbohydrates to the nourishment for any length of time nor can we in most cases increase the amount of proteid substances. Therefore, nothing remains but to turn again to the fats, that is to such fatty ingesta which, if at all, contain but small amounts of fatty acids of low molecular weight. The fatty acids which may be considered mother substances of acetone bodies are valerianic, butyric, and caproic acids; fatty acids of high molecular weight, like palmitic, stearic, and especially oleic acids, yield comparatively little acetone. Hence, butter and cream are productive of largely increased acidosis, while lard, suet, and particularly olive oil do not cause a very marked augmentation of the acetone bodies. The clinician who is attending a case of grave diabetes complicated by pronounced acidosis, finds himself in a dilemma. Were he to prescribe a diet consisting of nothing else but small amounts of proteids and large quantities of lard, suet, or olive oil, the patient would soon be tired of this regimen and his nutrition would not only be not improved but his

digestive organs might become seriously disordered. Besides, and this should not be forgotten, the vegetable oils are, as a rule, not well tolerated if they are used in larger than the ordinary amounts, and lard and beef suet can neither be relied upon for suppressing an already existing acidosis nor to improve the nutrition of the diabetic organism. There is only one fatty article of food which I found well adapted to the needs of the diabetic organism when acidosis is established—this is the yoke of the hen's egg; I have but on two occasions seen it to produce or increase the acetone substances, and but in one case to cause digestive disturbances. Partaken of in the raw or semi-raw condition, fresh yolks may be consumed in large quantity without calling forth satiation or fulness. The rationale of the "yolk cure" in diabetics I ascribe to the following main factors: (1) Yolk-fat, in its native state, in suitable admixture is well borne and assimilated by the vast majority of diabetics. (2) The great absorbability of yolk-fat; the residue left by yolk-fat in the feces is smaller than that of any other animal fat. (3) The fat-components of the yolk of the hen's egg, palmitin, stearin, and olein, yield no, or hardly any, volatile fatty acids, and consequently give no occasion to the production of the acetone bodies. (4) The large amount of lecithin contained in the yolk tends to the restoration of nerve force and acting as a general reconstructive ameliorates the cachectic condition. (5) The occurrence in the yolk of a diastatic ferment assisting in the conversion of amyloid substances. (6) The property of the yolk to stimulate the digestive secretions.

Medicinal Measures.—On account of the general application of the dietary methods to the management of the various glycosuric states and on account of injudicious prescribing and the polypharmacy of former years, medicinal treatment has for a number of years been relegated to the rear. In the degree, however, in which the influence of diet on amelioration of all the forms of mellituria has been overestimated, the potency of a number of medicinal agents on the various substrata of the glycosuric symptom is nowadays unquestionably underrated (Heinrich Stern)[12]. All medicinal substances thus far employed in the various forms of diabetes are, at the best, only symptomatic remedies. Rudisch[13] advocates the use of atropine sulphate and atropine methylbromide in diabetes. He asserts that the action of atropine causes reduction of sugar excretion and increase of carbohydrate tolerance. He observed that glycosuria disappeared more rapidly when atropine was added to the usual antidiabetic diet than when the latter alone was pursued, and that traces of sugar remaining in the urine when dieting were entirely suppressed when atropine in sufficient dosage was administered. According to the same author, the influence of atropine in increasing carbohydrate tolerance manifests itself in two ways. An amount of carbohydrate sufficient to cause glycosuria in a patient whose urine has become free from sugar but is not taking atropine will be well tolerated as soon as the atropine is administered. Again following protracted administration of atropine the tolerance for carbohydrates increases much more rapidly than after a period of anti-diabetic diet alone. He has given as an initial dose of the methylbromide 2/15 grain t.i.d. to adults, gradually increasing this by 1/15 grain until 8/15 grain t.i.d. are being taken. The initial dose of atropine sulphate should be 1/150 grain t.i.d., that may be gradually increased to 1/20 grain t.i.d. The author asserts further than these very large doses of atropine are well tolerated, provided the initial dose is small and the increase gradual, and that it is not necessary to administer the maximum dose in the majority of instances.

The employment of atropine in diabetes is not of recent origin. In an article on "The Glycosuric Symptom of Disease and Its Medicinal Treatment," which appeared in the *Journal of the American Medical Association,* March 14, 1903, I stated that glycosuria on the basis of a traumatic neurosis sometimes yields to belladonna or atropine. In the same paper I mentioned that, generally speaking, the neurogenous type of glycosuria is the one in which medicinal treatment seems *à priori* indicated, and among the various medicaments propounded for that purpose I also named belladonna. New, however, is the large dosage of the drug as advocated by Rudisch. I have employed atropine methylbromide, according to his method, in about one dozen cases of moderately severe and grave cases of diabetes—in more cases I did not dare to. In all these cases there ensued more or less pronounced atropine poisoning; in two cases of the moderately severe type the glycosuria disappeared after a few weeks' dieting and the administration of atropine, an increased tolerance for carbohydrates was not noted in these cases thereafter; in none of the remaining instances, which were nearly all of the grave type, did the atropine produce any other effects than those of a toxic nature.

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250 WEST SEVENTY-THIRD STREET.

NERVOUS DISORDERS AND THE NEUROLOGIST IN RELATION TO THE PROFESSION AND THE PUBLIC.*

BY TOM A. WILLIAMS, M.B., C.M. (EDIN.),

WASHINGTON, D. C.

MEMBRE CORRESPONDANT DE LA SOCIÉTÉ DE NEUROLOGIE ET PSYCHOLOGIE DE PARIS; MEMBER OF THE AMERICAN ASSOCIATION PSYCHOPATHOLOGISTS, ETC.; NEUROLOGIST TO THE EPIPHANY FREE DISPENSARY.

IT is unfortunate that the name of neurologist has been assumed so generally by charlatans without pretensions to even the elements of medical science and skill. Of course, we medical men know the

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difference; but the laity may be grossly deceived. But of the other term, "psychotherapeutist," coming within the scope of my paper, a clear differentiation is not always made even by physicians, who have allowed medical amateurs of various kinds to preëmpt the psychic treatment of disease, to the great detriment of the public and with a distinct diminution of honor to the medical profession, for the fact that we have permitted the intrusion of any blatant pretender to psychopathological knowledge indicates to the public our own shortcomings in that science.

The functions of the neurologist of the old school, some of whom survive, were confined to refinements of diagnosis in matters of organic nervous disease, in most of which treatment, as then conceived, was of little avail. This is nowadays regarded as a very small though still essential part of a neurologist's work. Although of course it is impossible that all and sundry can learn from him, however excellent a teacher, diagnostic refinements which have taken him years to acquire, yet a modern neurologist should be a source from which should flow a fertilizing stream of knowledge conveying at least the broad principles of the advances of neurological science and art. These are tremendous, and only one who specializes is capable of compassing and estimating them justly. The service of acquainting his professional brethren and the laity with the advances of neurology is the counterblast and antidote against the always pernicious doctrines of the psychologist-amateur, the crack-brain enthusiast of psychic phenomena, the religious doctrinaire who affects the art of healing, and the most widespread of all, the advertising charlatan who seizes upon and perverts each new scientific acquisition with which at once to terrify and give promise of cure to a credulous public. The more this is done, the clearer will medical men see that neurology, like the rest of medicine, perfects itself by observing and analyzing phenomena which appear to resemble one another, until characters are found which show their essential difference. When this is done the phenomena are regrouped in another synthesis or series according with characters which are essential. These principles in general medicine have led to such distinctions as those of renal from cardiac albuminuria, typhoid from typhus fever, catarrhal from croupous pneumonia, and scrofula from neoplasm. The groupings may be illustrated by that which brought together pulmonary phthisis, tabes mesenterica and struma cervicalis into the common rubric of tuberculosis. It was by these means that, from the layman's rubric of "paralysis," Duchenne was able to separate motor disability into the three types of spastic, flaccid, and ataxic. Since then more numerous distinctions have enabled us to still further classify these types, and in combination with sensory symptoms and modification of the reflexes to construct a nosology which would have been unrecognizable fifty years ago.

The syntheses of modern neurology are perhaps best illustrated by the myopathies and the dyskineses. The separately described types of muscular atrophy, Landouzy-Déjérine, Erb-Klumke, pseudohypertrophic, facioscapulohumeral, etc., after being first differentiated from the spinal hyopathies and the neural degenerations, are now grouped together into the nosological entity of primitive muscular dystrophy. Analysis of dyskineses shows that their fundamental character cannot be determined by tonicity, clonicity, or by situation or intensity of movement, but must be ascertained by its genesis above all, although certain subsidiary characters are often confirmative. By this, the usual process of clinical medicine in differentiation, Brissaud demarkated the tics, the knowledge of which is so important in the prognosis and treatment of nervous disease. But the neurologist, like all scientists, does not stop here. He knows that only by the experimental method are some problems to be solved. It is by the application of this method that the phenomena of hysteria have been elucidated. In producing at will by psychic means hysterial phenomena, and by removing them when desired, the psychogenesis of this disorder has been clearly established. Not only this, but psychogenesic mechanisms have been and are being studied in animals. The epoch-making work of Pawlow need only be mentioned, as it is so well known.

These clinical supplements to post-mortem studies lead us to divide the causes of functional perturbations of the nervous system into three classes. 1. Alterations of the structure of the nervous system, as by inflammation, infiltration, degeneration. 2. Alterations of the medium in which the neurons are to perform their work by chemical substances, whether infections, intoxications, or perverted secretions. 3. Alterations of the forces by means of which the neurons act harmoniously with one another.

Only when these dynamic disorders are confined to the lower nerons should the term neurosis be applied, *e. g.* angioneurotic edema and other disorders are entirely beyond the control of the patient by any psychic means whatsoever. But when the disorder is generated, either from within or without, by impressions upon the sensory apparatus which arouse and associate themselves with the stored-up impressions of other portions of the cerebrum to form a psychological unit known as idea, whether accompanied by emotion or not, then we are entitled, and indeed compelled, to use the term *psychosis* for such a disturbance. The symptoms of hysteria certainly arise by means of this kind of mechanism. It is a moot point whether the symptoms of psychasthenia also arise thus. At all events, it is quite clear that an understanding of this genesis will prevent a clinician from confusing hysteria, really a psychosis, with such a neurosis as excessive vasomotor liability. The mixed term psychoneurosis is no more rational than are such exploded parallels, typhomalaria and typhopneumonia. There is no more essential connection between psychosis and neurosis than between typhoid, malaria, and pneumonia.

I have found that a grasp of these principles greatly aids a practitioner in knowing when he requires to consult a neurologist, for he will not be content with such a vague and indeed unintelligible notion as "hysteroneurasthenia," as expounded in the textbooks. If he is a clear observer, his experience has shown him the frequent failure of the therapeutic blunderbus recommended for these cases; and he wants to know why he failed with some and succeeded with others. Even though he can eliminate structural disease, he often finds himself incapable of a pathogenic diagnosis, and it is then he realizes the need of assistance. Nothing has been more gratifying to me in Washington than the successful issue of cases where patients have been seen for the purpose of making such an analysis in order that the physician might feel that he was directing his therapeutics in the right way.

This is the more so as it is impossible for a neurologist to himself treat all the cases he sees, time lacking and energies being limited. Besides, every doctor who cures a neurological case after consultation feels his power much added to, and himself becomes a sun of flaming ray to scorch up the weed of charlatanry. A relation of a few such cases will be instructive.

Case I.—Hysterical typhlitis after appendectomy. A girl of twenty was referred by Drs. Watkins and Stavely because of recurrence for three months of right iliac pain with nausea and vomiting, but normal temperature and pulse. Two months before, the right iliac fossa, controllable by indirect suggestoms and found little changed, though containing a concretion of lime. At the time the ovaries and gallbladder were found normal. The pains recurred every few days, lasted some hours, and were relieved by morphine or the Scotch douch. Examination showed only a psychogenic hyperesthesia in the right iliac fossa, controlable by indirect suggestion. Some sacral atonia, a slight retroversion, and intestinal sand could not explain a manifestly psychogenic tenderness. So after a few days, Dr. Watkins, armed by conviction derived from the consultation, entered the fray, and after a struggle of nearly two hours convinced the young woman that determination to conquer a longing for the comforting and anodynes which sickness brings would cure her. She went back to Illinois next day, and has remained well. Such rapid success is not common. The following similar case illustrates the need of persistence in persuasion.

Case II.—Coccygodynic neurasthenia. A spinster of thirty-four was referred by Dr. Lemon because unbenefited by uterine suspension, amputation of the coccyx, and other gynecological measures. She was lying stiffly in bed for fear of hurting the coccyx, with intense right iliac pain and tenderness. I found the latter modifiable by suggestion, as was the stiffness. There was a false, *i.e.* volitional, Kernig's sign, and the reflexes were sluggish. She wore the martyr smile. She professed anxiety to recover and to go to work. Her condition was manifestly psychogenetic; but her sister's belief in its organic nature hindered recovery, in spite of the persistency of Dr. Lemon. But at my instigation he kept persuading until finally improvement began, and one day the young woman determined to put it to the proof, went to work, succeeded in the fierce struggle against giving way, and is now more capable than she has ever been before.

Case III.—Hysterical hemiplegia from worry; simulated Babinski sign. A chief clerk, aged 54, always rather peculiar in disposition, was seen with Dr. Clayton because of hemiplegia which occurred suddenly, apparently in his sleep one night. He had no pain but was numb all over, could not get up properly, stuttered, lisped, his tongue seeming tied. At 11 A.M. Dr. Clayton found the right eye wider than the left (equal next day), and that all movements could be made, but the right grip was weaker than the left. He thought it hysterical on account of the history. But as in a few days the patient became completely hemiplegic, I was called in consultation. The reflexes were equal and not exaggerated, but volitional contraction suppressed the right gluteal reflex. The right toe extended on stroking the sole. This, however, was done voluntarily. We shall discuss this later. The right arm was quite motionless, but moved when he yawned; the leg moved with difficulty; the contralateral synergic responses were, however, equal. The patient stuttered in speaking, and sensibility was normal. Psychic examination. This showed the pathogenesis. He was particular to the extent of old maidishness and was dyspeptic all his life. He was subject to petty worries and easily annoyed. Lately he has feared losing his position to a pushing subordinate and little family worries have occurred. A son had studied medicine; and he himself often had gone to the lectures; he understands the mechanism of his affection to be "a failure of the will to connect with what moves the arm." He defied me to make him move the arm by suggestion. Treatment. Entirely acquiescing, I explained the fault was not in the connection but in the controller himself, and admitted my inability to make his arm move, but declared that he could do so by practice. Having disarmed him thus, I easily inaugurated movements on the spot by suggestion, and he flexed and rotated the forearm and moved the fingers. Then his wife and doctor were called and shown the improvement. An encouraging prognosis was given, and a week's horseback tour advised. The iron was not struck while hot; so he did not recover for some time, but is now well. This case is a strong recommendation to neurological consultation. The simulation of Babinski's reflex could not have been detected without a very thorough training in clinical neurology. Again, the psychotherapeutic tact which acquiesced in his rebelliousness emanates from a clear grasp of the psychopathology of hysterical incapacity. It was only after I had made him move that I explained to him the genesis of his affection, showing that it was in the first place a defense reaction against his business and domestic troubles, a desire to escape from which caused a reaction in the semiconsciousness of a troubled night,* which dramatized one of the pictures he had memorized as an amateur of medicine.

Case IV.—Hysterical phobia vertigo founded upon slight arteriosclerotic occurrences. A clerk of 53, sent by Dr. H. A. Parker; the complaint was fearing crowds and anticipating evil. A hypertrophied heart, a blood pressure of 200, albuminuria and vertigo had been improved by nitrites, warm baths, and less meat. Pressure now 155. Lues treated seventeen years ago. Now he often veers in walking and has once fallen in the street. He worries over small matters. He has "blank" attacks lasting for a second or so. Reflexes: slight inequalities everywhere. Sensibility: attitudes not clearly perceived especially on right wrist, otherwise normal. Motility: normal save a slight spread of the right foot in walking. Rotation tests negative, no nystagmus. Psyche: no defects nor anxieties. Thus cerebellar vestibular anomalies could not be the cause of the alleged vertigo. So it was explained that his fear of vertigo was suggested by his former real vertigo which had greatly improved so that he could be reassured; for there was no organic disease of the nervous system other than a slight arteriosclerosis. He was not likely to grow worse if he followed his doctor's advice. He continues at work six months later.

Case V.—Supposed hysteria from cardiac dyspnea in a Christian Scientist. A woman of 64 was recommended by Dr. Ramsburg because the Christian Scientist healer was feeling her limitations and

* See author's "Genesis of Hysterical States in Childhood," also articles on "Hysteria," Medical Record, October 2, 1910; *International Clinics*, August, 1908; *American Journal of Medical Sciences*, August, 1910.

"wanted a nerve specialist." It is possible that she believed a neurologist was more likely to diagnose a psychogenic affection and thus indirectly justify her treatment. The poor woman had for months been forcing herself to ignore the intrusins of "mortal mind," and had made a valiant struggle against insomnia, dyspnea, anguish, and fear, due to a greatly hypertrophied heart with failing compensation (pulse 120), and arteriosclerosis, possibly contributed to by an old hyperthyroidism. There was no albumen. She was advised to go to bed, take light diet, and call in a proper doctor; and I was most explicit to the healer who was convinced, in spite of herself, that here was something against which her doctrines availed nothing. They did not go to the doctor whom I had recommended; but I am told that the woman's condition is now tolerable.

The Mental Alienations. A most important function of the neurologist is presented by cases of severe nervous perturbation due to the prodromes of some major psychosis leading to legal insanity.* An example of such a case was referred by Dr. M. E. Miller.

Case VI.—"Hysterical" behavior due to dementia precox. It was a youth of 23, who declared to me: "I can hardly express my trouble, not finding the right words. It signifies vocation and environment, *i.e.* to find the pursuit which fits me." This declaration was suspicious, although many an ill-instructed lad might at times have rational doubts as to his career, and become mentally disturbed by difficult environment such as this boy's, who was in the government service after a university course paid for by working his way and by the hard earnings of his father, a mechanic. The psychoanalysis, however, soon revealed that during a previous breakdown, "confusedly and deferring to his father's authority and outside influences, he yet felt within a light penetrate his brain with prophetic fire." A ball of fire in the sky was later interpreted as a sign; but the "Chancellor explained it was simply Jupiter.' Two years later, the "sign of love," "the call of man for his mate" brought him to the District of Columbia. The analysis is too long to detail, suffice it to say that several weeks of insomnia produced an excitement and erratic and libidinous behavior which drew attention. It was not difficult to diagnose dementia precox. The importance of the diagnosis is the sparing of expense to a family ill able to afford it. Loss of memory is often the first index of some neurological condition. To determine the source of this sometimes needs all available technique.

Case VII.—Supposed hysteria due to amnesia by sclerosis. A woman about 50, referred by Dr. Balloch, is an example of aphasic amnesia of organic cause. It is characterized by emotional distress and fear of insanity due to the loss of power to express the thought in words, although the patient feels that the idea is there, and can sometimes explain it in a periphrasis. My patient, even after ten minutes study, is unable to recall and relate in words the story of Noah Webster. The following is her account with much questioning. It begins with "N. Noel? No. Noah? No. Newel? No. Noah? That's like it." Recognizes Webster. "College? Yale. Profession? Lawyer. What did he do when young? Taught school. What else? Don't know. A book? Yes. Kind? Don't know. Dictionary? I suppose. Date? 1790, too late. Why? My idea earlier but I don't get the rest. Was it in war time? The other one. Name? Against whom? All other kinds in United States. Civil? Yes, that is it. Date? 1861. Did Webster live then? Too soon. Against whom then? He was not old enough, don't remember now though he taught school." She did not recollect the capital of Germany, nor in what country Edinburgh was situated, although she had once been a school teacher; but she could reply quite intelligently to any question if she remembered the word to answer, and she could read and write; but in the latter there were frequent omissions of words, of which she was quite aware and which she deplored. She could not recall the word she wanted, although she at once recognized it when proffered. Her condition intermitted more or less, but never became normal. The importance of the case is its diagnosis from a purely psychic amnesia; and to ascertain whether it was not due to a chronic intoxication or whether it was caused by the cerebral necrosis of arterial defect; on the latter diagnosis I finally decided, as metabolic treatment failed to ameliorate the condition, and its oscillations were very slight. That it was not a psychic case is shown by its entire unamenability to psychotherapy, by its genesis apart from any psychological cause, and by the nature and extent of the responses to psychometric tests too long to detail here.

Simulated Disease. The detection of this is often a task of the neurologist. In my case of simulated hysteria described last year at the Tri-State Medical Association* you will recollect that a criminal had been so often examined by physicians unaccustomed to the technique of clinical neurology that he simulated consciously the hemianesthesia of the hysterical type, *i.e.* absolute anesthesia, extending to and ceasing at the mid line, and affecting all segments equally in the same limb. Although, of course, he was not amenable to persuasion, he was detected by reacting to pain while his attention was diverted.

Case VIII.—Simulated quadrantic hemianopsia. An ex-sailor of 41 was referred by Dr. Henning to whom he had been sent by Dr. Burch because of inability to perform more than light work. He has a small pension and has applied for an increase. He declares that he was believed epileptic in the navy, and that since the accident of falling out of his hammock while asleep fifteen years ago, after which he was totally blind, remembering nothing, life has seemed a dream; it is hard to understand people; his memory is poor and he is very nervous on the street, not being able to see out of one side of the eye, and bumping into objects. As the hemiopic person always carries his head turned towards the side of the sound retina and has to turn his head still further to see objects on that side of him, I suspected this man at once; for there was no deviation of the head. I accordingly nonchalantly asked him to move a dark screen so that he could be hidden while stripping. He did this in a dark corner without any head movement to indicate loss of vision in the periphery of either visual field. But on approaching the field with test objects in the usual way, he declared that objects were only seen as they impigned upon the right upper retinal quadrant, *i.e.* below and to the left. As to his apparent good faith there was added a loss of the right Achilles reflex, and some inequality of others along with an

*See "Differential Diagnosis of Neurasthenia," *Archives of Diagnosis*, January, 1909.

* See Transactions of the Tri-State Medical Association, 1910; also *American Journal of Insanity*, October, 1910.

uncertainty of the sensibility of the diapason on the malleoli it was necessary to confirm either the patient's opinion that his visual field was restricted or my own that it was not. As the pupils reacted normally and the optic papilla was not diseased, an anterior lesion was excluded. The diagnosis of simulation was clinched by his winking when I placed before the right field of the right eye the percussion hammer with which I was ostensibly testing the orbicular response to a tap on the facial nerve. This took place, both from above and below, on the left and right side, and conclusively proved that he actually perceived objects with all parts of the visual field. It is hardly conceivable that such a syndrome had occurred by suggestion in medical examination; and I believed that it was intentional. This was proven when he visited me for the second time, after I had told his doctors what I had found; for on presenting the hammer in the same manner as before no wink occurred, the patient staring fixedly before him and declaring that he saw nothing except when the hammer was below to the left. It was, however, easy to show that he was feigning, by holding opposite the midhorizontal plane of the eyeball just within the visual field two strips of color. He saw only the one color; and when they were reversed similarly. But he saw the color which impigned upon the blind field and not that upon the field which saw. Hence, his feigning was deliberate, as he had suppressed the reaction by which it had been formerly detected, and yet still showed, unknown to himself, that his blind field saw.

The Traumatic Neurosis.—A clear understanding of the psychogenesis of this disorder has emanated in recent years mainly from the labors of Babinski and his associates. Nowhere is there more need of a clear differentiation of that which is due to disorder of the nutritive functions and that which arises purely from a false belief giving rise to morbid apprehensions. In the MEDICAL RECORD, October 2, 1909, I endeavored to show and illustrate by the analysis of a successful case the mode of genesis of this affection. It was there made clear that a knowledge of neuropathology and diagnosis was necessary to form a correct opinion in these cases, for a general presumption is liable to error. The efficient cause of this disorder was the suggestions either derived from others after the accident or inherent in the milieu in which the patient had lived before. I need not therefore again elaborate the argument concerning this important subject.

Brain Tumors.—The proper treatment of intracranial neoplasms, their early removal, is possible only when diagnosis is made before most practitioners even suspect a tumor. The need of a thorough examination by one versed in neurological technique was insisted upon at a recent symposium here and need not engage us to-night.

CASE IX.—Barking and bowing tic of hysterical type. A striking instance of the success of rational procedure where empirical ones had failed occurred in a young Hebrew in North Carolina with iliocolitis. He suddenly developed on going to bed one night an intense clonic contracture of the recti abdominis and diaphragm. This recurred every night, often keeping him awake for hours. It became less and less controllable, and soon occurred on sitting during the day. Then it began to come on standing, until his life was a burden. The application of electricity with the fervid assurance of its efficacy had made no impression, nor did "powerful and infallible" medicines. The boy came to Washington and was at once referred to me by his physician, Dr. T. C. Martin. On recognizing that the disorder was a tic of hysterical type,* the psychomotor discipline devised by Brissaud was employed. In this case, it consisted of inducing the patient to perform slow, even, rhythmical contractions of the recti, while taking slow, deep breaths. In this way, control was gained over the muscles, so that when the paroxysms were about to begin he had now a means of mastery, and substituted the newly learned movement for the automatic one which formerly took its own bent. He learned in one day; too quickly as it proved; but after a slight relapse two days later, another sitting cured him; and he was shown recovered. Even for this very simple case, empiricism had failed where a little psychopathological knowledge reached the cause, and led to the very simple means used for its removal without either psychoanalysis or reconstruction of the mentality. Such a symptomatic cure must of course be extended to a pathogenic one, *i.e.* the reeducation of the patient's hysterizability.

Laboratory diagnosis cannot completely replace clinical acumen. Before the Wassermann reaction and examination of the cerebrospinal fluid were available, perhaps the most important diagnostic function of a neurologist was the detection of syphilis of the nervous system. There is a widespread belief that these laboratory methods have put an end to the need of the technique of clinical neurology. This is by no means the case; for of tabetics only 50 per cent. react to Wassermann's test, and even cytological examination may be negative for a time in a few cases. I have already reported (*New York Medical Journal,* March, 1910) two "neurasthenic cases which by means of refined clinical methods were correctly diagnosed as preparesis and pretaboparesis, and in consequence of the early treatment thus made possible are now completely recovered. I wish here to report a case of pretabes in which the clinical signs enabled me to persist in this diagnosis in spite of a constantly negative Wassermann reaction, and the clearing up of bladder symptoms under local treatment. By pretabes is signified the pathological condition of chronic luetic leptomeningitis involving the spinal roots or cranial nerves.† The irritation of the nerve fibers is characterized clinically by pains of variable kind, paresthesiæ, hypoanesthesiæ, rarely hyperesthesiæ of the limbs, trunk, and viscera; usually diminution of the reflexes, hypotonia, some asthenia, and occasionally temporary paralysis and muscular atrophy. I persisted in this diagnosis because of the radicular distribution of intermittent burning and twisting pains on the internal surface of the right leg, along with a loss of the Achilles and right patellar and gluteal and diminution of left patellar and bulbocavernosus reflexes, along with a hypotonia of the hamstrings and a slight Rhomberg of the right leg, with diminution of deep sensibility and slight hyperesthesia of the lower lumbar and upper sacral segments. It was not until after a mercurial course which cleared up the symptoms for a month that a lumbar puncture was made revealing an increase of plasma cells. Ehrlich's salvarsan was then given, with relief for only a week, and mercury has now been resumed. In the meanwhile a partial positive Wassermann reaction declared itself. Thus.

*See "Tics and Spasms," *Monthly Cyclopedia,* January, 1910.

†"Pathological Prodromes of Taboparesis," MEDICAL RECORD, February, 1910.

the correct interpretation of neurological signs has spared five months of degenerative changes to a patient to whom early treatment is of the profoundest importance.*

Ataxia is a symptom which does not mean tabes in all cases. It sometimes comes from cerebellar disease,† sometimes from disease of the peripheral nerves, and may be psychic occasionally. It is a delicate neurological task sometimes to make these distinctions, which are of the greatest importance in prognosis and treatment. I have under observation three cases of cerebellar defect: one of eleven years standing due to malarial thrombosis for which nothing can be done; the second of unknown origin similarly hopeless; a third, seen recently, probably of familial type. A fourth case, a child of four, was the progeny of a diabetic mother and is possibly due to an agenesis of the cerebellum. A fifth case recently seen at Norfolk in consultation with Dr. Lile of Lynchburg, showed marked ataxia of cerebellar type. As it was a child under seven one might have suspected congenital dystrophy but a progressive dementia made one believe it a case of juvenile paresis, which opinion was confirmed by a positive Wassermann reaction. In the differentiation of convulsive movements, too, neurological knowledge and skill are essential. As for example in the convulsive attacks of symptomatic epilepsy, of which I have spoken in a recent article, giving examples in which early diagnosis led to proper treatment and arrest of the causative process, which was sclerogenic toxicosis. It was adequate neurological diagnosis again which differentiated the condition of these patients from epilepsy proper.

Three Cases of Narcolepsy.—Fits of various kinds have to be differentiated from one another, not only as to character but as to pathogenesis. I have recently seen four cases having narcoleptic attacks. One occurred in a young man of nineteen from cyclical intoxication, possibly through pancreatic disorder, as he showed the Cammidge reaction in the urine and was intolerant to meat proteid. It was possibly congenital, as his sister has gone through a depressive episode of confusional type of metabolic origin. The second case occurred in a boy of eighteen, who on several occasions lost consciousness for three hours, the first time after drinking cold water on a hot day. He has a slow pulse, and eats enormously of buns and ice cream and drinks a large amount of coffee. There were no epileptic phenomena except irritability and sullenness of temper. A third case was a girl of twenty-one who gained forty-five pounds in weight in four months, and had sudden dimness of vision and loss of memory. Suspecting pituitary enlargement, the visual fields were examined, and showed respectively lateral and inferior partial scotomata. The *x*-ray showed a deepened sella turcica. It would have been gross error to have given bromides to any of these cases. All are doing well, the first and second upon proper diet and hygiene, and the third by *x*-ray treatment of the pituitary hyperplasia, which immediately terminated the narcoleptic attacks and removed the headaches and depression. But it was neurological experience which permitted of the diagnoses.

Intermittent Claudication of Labyrinthine Vessels Mistaken for Psychasthenia Cured by Opotherapy.—Vertiginous attacks in a woman of twenty-nine, referred by Dr. Barton, had persisted for seven years. Groaning (roaring) in the head ushered in the attack. An aurist had treated her without avail. She frequently fell, always forward; and sometimes vomited during the attack. A perfectly natural phobia had developed in consequence and caused Dr. Barton to diagnose phychasthenia and thus send the case for advice. The absence of objective neurological changes as well as of initial psychic disorders, and the presence of dermatographia made me believe this a vasomotor neurosis, due perhaps to adrenal aberrance. I recommended adrenalin to increase vessel tonus. She has only had one attack since taking it, and is in every way in better health. Now this case might have been diagnosed epilepsy, cerebellar disease, or hysteria as well as psychasthenia by an observer not well acquainted with the interpretation of neurological signs. And an operation, bromides, or psychotherapy might have been tried without benefit to the patient, and to the discredit of our profession.

The Relics of Poliomyelitis.—Only by a skilled neurological examination is it sometimes possible to predicate a former poliomyelitis. I have seen a number of cases lately which illustrate this. Complete paralysis of one serratus magnus was all that remained of a poliomyelitic attack, which had caused unilateral tremor, hyperesthesia, and oculo motor paralysis with some weakness of the arms, in a woman of 30, referred by Dr. Dunlop. Another case which had not been diagnosed during and after the acute phase, although examined by three well known Boston men, was referred to me four months after the attack for electrodiagnosis by Dr. Dunlop, who suspected that a weakness of the legs might be poliomyelitic. I found the Achilles reflexes absent and the right aural muscles irresponsive, and the left hardly so even to strong currents. On the one side, the excitability of the anterior tibial group was diminished, and on the opposite side that of the peroneal; and one rectus abdominis was less excitable than its fellow. The diagnosis of multiple neuritis, which had been given, was utterly inconsistent with so unequal a distribution of muscular atrophy and the absence of sensory symptoms. So I considered the case one of poliomyelitis, a diagnosis which the patient's mother saw confirmed by Starr, Schaffer, and Holt of New York. A proper neurological diagnosis in the first place would have spared this child much delay in treatment.

Sexual Aberrations.—In disharmonies of the sexual functions, neurologists may afford much help to practitioners unaquainted with psychopathology. It is necessary to find out whether simple asthenia, hysterical fixed idea, or psychasthenic obsession or phobia is responsible for a psychic abnormality of the healthy sexual life. Besides this, the effect of shame, which has become attached to much of the sexual life through prudish misconceptions of social relationships, is often an important element in the life of neurotic patients. After it has been unraveled by a psychopathologist, I believe it quite possible that an intelligent physician interested in this aspect of therapeutics might well conduct the reeducation and guidance of such patients. It has not yet fallen to me to collaborate in such an arrangement, all the doctors who have consulted me in such cases preferring that I, myself, should conduct the treatment, and this is far

*See "Treatment of Parasyphilis of Nervous System," Transactions of the American Therapeutic Association, 1910; and in *Monthly Cyclopedia*, December, 1910.

†"Diagnosis of Diseases of Cerebellar Apparatus," *Archives of Diagnosis*, January, 1910.

too complicated and demands too many psychopathological data to be described in this paper.

I have related only successes. Of course there are failures. If I have not cited them it is from no intention to misguide you by rose-tinted lenses. But it is high time that the prevailing "non possumus" which it is fashionable to cry regarding nervous disorders should be substituted by an attitude more rational because more true. So I have adduced facts to-night, merely to show the absurdity of the current pessimism. It is only the cry of the incompetent and of him who has observed only the work of the charlatan, whether pundit or quack. He who, however, thinks that cures can be effected by assurance without knowledge, vastly miscomprehends modern neurology and has reason for pessimism.

In these days of the howling from the mountain top, only the expert is competent to estimate the value of claims in the more recondite fields of human knowledge. As the Scotch say, "facts are chiels that winna ding." The facts that I have laid before you are pregnant with meaning for those who think. They show how greatly therapeutic power is augmented by the diagnostic assistance of a properly trained neurologist. I have taken it upon myself to present this thesis because I have been convinced it is hardly at all realized, and because we see so widely and deplore so much the vogue of the illicit medical practice which preys mainly upon the very patients who are most in need of neurological diagnosis. It is incumbent upon us to see that proper neurological training is given to the coming generation of medical men.* To do this, properly trained men, able to convey their knowledge clinically, must be appointed and given facilities in the hospitals, so that students and medical men can receive the benefit of the advance of knowledge and power. Only in this way can we combat the charlatan. Of the even larger work of neurological science in aiding social measures against disease, time will not allow me to speak. But even the laity are beginning to realize the need of special assistance in preventing mental unsoundness, in neurological inspection of children, in sociological measures for helping people who are peculiar, in the means of preventing crime and of reforming criminals. In all these, the science of psychopathology is indispensable; and every enlightened body of laymen would be the better for the assistance of a neurologist of deep learning and broad outlook. The pathogenetic interpretation of nervous symptoms due to artesiosclerosis is of great importance from a therapeutic point of view. Three such cases will be published this month, all successfully treated and now at work as a result of correct diagnosis. They were seen with Drs. Roy, Ballock, and Atkinson, respectively.

Blood-Pressure in Acute Nephritis of Children.—L. Gordon states that in the cases of acute nephritis occurring in young children the blood-pressure is raised and often raised to a marked degree.—*Archives of Pediatrics.*

Lactose in Infant Feeding.—H. P. Helmholz states that clinically excessive amounts of lactose may cause a chain of symptoms, namely, fever, diarrhea, leucocytosis, prostration, and death, which closely resemble the effects which follow the absorption of certain true bacterial toxins.—*Archives of Pediatrics.*

*See "Requisites of Treatment of the Psychoneuroses and the Abuse of Psychotherapy by the Laity," *Old Dominion Journal, Monthly Cyclopedia, California State Medical Journal*, etc., July-August, 1909.

CARDIOSPASM IN INFANTS.*

By WM. GERRY MORGAN, M.D.,

WASHINGTON, D. C.

PROFESSOR OF GASTROENTEROLOGY, GEORGETOWN UNIVERSITY.

Until the last several years comparatively few cases of spasm of the cardia had been reported at any age and more cases have been noted in these first ten years of the present century than in the whole seventy-nine years of the last century since Parton's first description in 1821. The occurrence in children is still so rare as to be notable and in infants, to judge from the paucity of reports, it is of the rarest of conditions. It may be that in the future cardiospasm in children and infants will duplicate the history of congenital pylorospasm, which latter trouble has turned out to be a not so rare condition. Indeed it would not be surprising to learn that cardiospasm in children is more common than is supposed when we consider that besides an exciting cause there is a predisposition which is certainly present from birth in a considerable number of those who later develop the spasm. Fleiner even goes so far as to look upon the dilatation of the esophagus, which is practically always present above the location of the spasm, if the trouble is of any duration, whether as cause, result, or associated condition, as a congenital defect in the large majority of patients, believing that a latent state may exist for years. If this is so there must be an appreciable number in whom the condition does not remain latent, but gives symptoms of dilatation and spasm in infancy and childhood.

So rarely, however, is the diagnosis of cardiospasm with dilatation of the esophagus made in early life that I have thought it worth while to collect the few cases which have been so far reported in infancy and to add to them one of my own. I have been able to find records of but five cases occurring below two years of age, the first being that of Mèry[1] in 1906. This author seems to be particularly interested in the subject of spasms of the digestive canal in the young, having made two contributions on the subject; but among his cases is only this one in which the cardiac end of the stomach was affected. Mèry's patient was an infant of ten months when his observations were made, although some digestive symptoms had existed from birth. The diagnosis was confirmed by radiography. Adams[2] of Washington reported a case before the American Pediatric Society in 1908 which came under his notice at six months of age, although symptoms had existed almost from birth. His patient presented the typical symptoms which have been noted in all these cases, vomiting during or soon after feeding following marked efforts to swallow, the presence at times of glairy mucus with the food expelled, and periods of complete absence of symptoms for some days. Cold water would often precipitate an attack as well as long naps and exposure to drafts. Here as in other histories the parents are quoted as not being of a particularly nervous temperament. Autopsy of this baby showed the presence of an anatomic cause for the spasm in the form of a broken-down tuberculous gland with one diverticulum of the esophagus above and two below.

In 1909 La Fetra[3] of New York described the third case, which was really a spasmodic stricture of the esophagus, but as it differed from cardiospasm only in being two inches higher up we can

*Read before the American Gastroenterological Association, at Philadelphia, April 19, 1911.

with propriety include it with these cases. His patient was sixteen months of age at the time of examination, but there had been some vomiting and regurgitation since birth. One of the interesting points in this case is the fact that often after a few mouthfuls of food the baby would put her hand down her throat, and, as it were, pull out a handful of mucus and food, after which she could often finish the rest of the meal in apparent comfort. The diagnosis was substantiated by physical examination, an area of dullness appearing on the front of the chest from the first to the fourth interspaces after eating, and by radiography. At the time the report was made this little patient had improved wonderfully, first under the use of codein and fifteen drops of olive oil before feeding and later substituting tincture of belladonna for the codein. Only during the past two months has Bech[4] reported in the *Monatschrift für Kinderheilkunde* two cases of cardiospasm in infants in his practice. In one of the babies milk was introduced into the stomach by means of the tube at first, but the condition progressed in both until the cardia was impassible. Rectal feeding was necessary for a time and then after small doses of tincture of opium gradual feeding was started by mouth and recovery ensued.

This then concludes the number of previously reported cases as far as I have been able to ascertain and I will now briefly outline my own case. I herewith will give you the mother's report of her baby's illness exactly as she wrote it out for me because she was a graduate nurse and competent to judge of his condition.

January 27, 1911. Brentwood, Md. Raymond Krebs, aged nine months. Complaint: Persistent vomiting since third week of life. Family history: Maternal grandfather died at fifty-four of Bright's disease. Maternal grandmother living, aged sixty-two, in good health. Paternal grandparents living and in good health. Mother living, aged thirty-five, in good health. One brother living, age four years, in good health. No brothers or sisters dead. Previous history: Birth natural, labor not especially difficult; duration, about five hours. Breast-fed during first six months. Weight at birth, about eight pounds; at third month, about sixteen pounds, and at ninth month, seven and one-half pounds. Present illness: Baby was born April 4, 1910. Not a large child, but well developed, seemed perfectly healthy, only color a little too blue. Beginning at third week my child began vomiting a small amount of nourishment after each nursing; although attention was called to it I was assured it was nothing, as the child had probably nursed too fast or taken too much. Although vomiting occurred after each nursing, my child gained in weight until the third month, when it began to lose. During the first two months there seemed to be a great deal of gastric flatulence, which from the third month entirely ceased. My child also hiccoughed a great deal, when he would lie with his head retracted like a case of meningitis. While gently kneading his abdomen one day I noticed a rounded lump about the size of a walnut. I first noticed it on the right side and mistook it for hard fecal matter, although the child's bowels had moved on the previous day, and gave a soap enema with no result. The same day I gave another enema with the same result; that night I gave the child castor oil, after which the bowels moved well, and yet the hard lump remained on the right side. Several days later I noticed the lump on the left side and became worried and took my child for treatment, with negative results, the vomiting after each nursing with regurgitation through nostrils continuing. Seeing the child become emaciated I changed doctors. After giving second dose of Dr. K.'s medicine my child went into a state of coma for three-quarters of an hour; the face and body were icy cold and covered with profuse perspiration; on reaction he seemed very weak and from then on his decline was very rapid. I then refused further treatment from Dr. K., although he said he hoped to cure my child with a third dose of his medicine. He diagnosed the case as simple infantile marasmus. Then I took my child to see Dr. G., who told me the child's condition was marasmus; in other words the child was starving to death probably from malassimilation or other causes, and I requested an examination. The abdomen was examined while the infant was being fed and it was at this time that the abnormal movements of the abdomen were seen. The waves were so marked that they could easily be seen. The bulging produced seemed to travel across the belly, then slowly disappear. Dr. G. told me the child had a very rare condition which he called congenital hypertrophic stenosis of the pylorus. He advised taking my child from the breast and putting him on whey for a few days; in the meantime a brother of the child was taken ill with diphtheria and Dr. L. took charge of the case. He also advised feeding my child a very small quantity at each nursing. Still the vomiting continued and my child was losing weight very rapidly. A consultation between Dr. S., Dr. G., and Dr. L. took place, after which the child was given champagne, ten drops every half hour. Two level teaspoonfuls of a cereal proprietary food were added to ten ounces of whey, of which a dessertspoonful every fifteen minutes, day and night, was given. Sodium bromide powders (I do not recall what dose) were given every four hours. My child improved for about one week and then lapsed into his former condition. The urine was suppressed; his extremities and body had a very marked edema, and I was told by Dr. L. that there was no hope for my baby. He ordered me to give hotpacks and keep him wrapped up warm until free sweating was produced and then to rub him off with a warm dry towel and to keep him moderately warm. Although the vomiting continued the child seemed to improve for several days, when Dr. L. decided to take my baby to the Children's Hospital to have an *x*-ray of the stomach taken and in order that Dr. W. might examine him. Dr. W. decided not to *x*-ray my baby. After the trip to the hospital the baby became worse; the body at intervals was covered with small red spots; the extremities were blue and ice cold. The stools were green and slimy and contained undigested curds. The vomiting, apart from its persistency, was as though it was pumped up. Its large amount showed that the vomits represented more than one feeding, perhaps the accumulation of several feedings. The vomitus often came through the mouth and nostrils at the same time. The milk came up just as it was swallowed; it was never sour or curdled and often contained much slime. When the baby was laid down the milk ran out as from a bottle. The vomiting did not seem influenced by diet. In every case the improvement was only short lived, perhaps for a day or two or at most three weeks, when the vomiting would become more profuse and persistent and leave the child each time in a weaker condition. Every second day cold sweats occurred and the child would go into a state of coma and remain in that

condition from one to four hours. On November 18, 1910, my child went into a state of coma for seven and a half hours and on reaction was so feeble it could not move its upper or lower limbs or even turn the head. A consultation between Dr. L. and Dr. G. decided that the only and last chance was in an operation, which I opposed. Dr. C. was called in and after examination he declared the child to be suffering from infantile paralysis and spinal meningitis with an abscess forming on the left side of the head back of the ear. Dr. C. insisted that such was the disease and the child was given pure meat juice, one teaspoonful every four hours; cream and water, equal parts, one teaspoonful every four hours, and orange juice, one teaspoonful three times daily. The child improved for two weeks, when a complete collapse occurred, the worst which it had had, and Dr. S. was again called and after several days' treatment advised me that my child was in a very critical and hopeless condition. Then I had Dr. W. see my baby and he advised thyroid treatment and feeding by nutrient enema, which was already being done by Dr. S. My child did not respond to this treatment and in a dying condition I took him to Dr. W. G. M., who told me my child was dangerously ill with stoppage at the inlet of the stomach and that his only chance was by placing him in Garfield Hospital under the immediate care of one of the doctor's nurses. This we did and my baby never had another bad symptom and has steadily gained until it weighs seventeen pounds and is well to-day."

Before we had seen the baby the mother told us that the diagnosis was pylorospasm. I at once decided to attempt to dilate the pylorus by Einhorn's method, which th latter had used so successfully in a similar case. Dr. Clark telephoned Dr. Einhorn for the loan of his apparatus, which request was granted. When, however, we examined the little patient and got a detailed record of the case we readily recognized that the cardia and not the pylorus was in spasm. On further examination we proved that at that time probably very minute quantities, if indeed any fluid at all, were reaching the stomach, all being retained in a dilated esophagus. Attempts to pass even the smallest bougie failed. We then tried with a soft rubber catheter (No. 8 French), and after some manipulation it seemed to pass the point of obstruction and slip into the stomach. To determine this we ran some warm water through the tube and then blew a little air in by means of a small glass syringe while a stethoscope was held over the midepigastrium. A distinct bubbling was heard immediately under the stethoscope and a succussion splash was obtained when the epigastric region was palpated. The second swallowing sound was absent. The infant would at times eagerly take the food to the amount of from 100 c.c. to 150 c.c. and retain it until laid down, when the fluid would run out of its mouth and nose. At other times after taking from 60 c.c. to 90 c.c. he would cough and there would be heard a rattling sound in the chest. This preceded the regurgitation. When held in an upright position after feeding some dullness was to be noted on percussion over the lower end of the esophagus. There was no evidence of the presence of any of the liquid in the stomach.

The child was exceedingly emaciated, so that it was quite easy to examine its viscera. The position of the stomach was normal, but its capacity was greatly reduced, holding no more than 120 c.c. The pylorus, as the subsequent history proved, was functionating quite normally. When we first saw this baby his skin was in an unhealthy condition due to the repeated baths in oily medicaments. The catheter was left *in situ* and he was at once given through it 15 c.c. of warm milk every hour. He was given a warm soap and water bath and a gentle alcohol rub, was wrapped in soft linen and covered with a light woolen blanket, after which he immediately fell into a quiet sleep. Dr. Clark, my assistant, and Miss Donahue, my secretary, took turns in watching and caring for the little sufferer during the first twenty-four hours and to their efforts during this critical stage is largely due the successful outcome in this case. From the very first feeding the little patient thrived and seemed almost to appreciate the efforts being made in his behalf. The feeding tube was kept *in situ* continuously for four days and the amount of milk was gradually increased, but we were never able to give more than about 60 per cent. of the quantity normal to an infant of that age. At the end of the fourth day the tube was withdrawn after the last feeding at night and reintroduced on the following morning. Then we decided to take it out each night after the last feeding so that the child would have a more restful night. At the 3 A. M. feeding we allowed him to nurse the bottle and the milk seemed to pass into the stomach without difficulty as there was no regurgitation. The next feeding also was taken and retained in a natural manner. After the third feeding, however, the mother noticed the baby was restless, coughed from time to time, and finally some of the milk was regurgitated. Just before the next feeding the tube was put in and left in place for the remainder of that day's feedings. We continued to have the tube taken out at night and the child took nourishment the next day from the bottle until signs of spasm at the cardia came in evidence, when the tube was again put back. More and more of the feedings were taken in the natural way and by the end of the second week it was unnecessary to use the tube at all. During the second week, when it became necessary to put in a tube, we would have larger and larger catheters used so that a stretching effect would be produced. Thus little by little he was led back to the way of life normal for a youngster of his age.

As a matter of interest and to show what the human system, even in the case of a frail, half-starved infant, will endure, I append the mother's unclassified list of the foods and medicaments which were at one time or another administered to this infant, and the lesson therefrom is easily drawn: Milk, lime water, sugar of milk, albumin water, beef tea, meat juice, four different proprietary infant foods, cod liver oil, extract of beef, whey, pure cream, and water, orange juice, pineapple juice, beef, chicken, and lamb broths, champagne, whiskey, brandy, olive oil, white of egg, thyroid extract, camphor water, strychnine sulphate, sodium bromide, Fowler's solution, hypophosphites, morphine and other drugs too numerous to mention, given in prescriptions; and for massage, cod liver oil, olive oil, sweet oil, goose fat, and a mixture of whiskey, olive oil, and alcohol.

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SURGICAL INDICATIONS IN LESIONS OF THE LARGE INTESTINE.

By RUSSELL S. FOWLER, M.D.,

BROOKLYN, NEW YORK.

In former years physicians were content to advise operation only in the face of acute or chronic intestinal obstruction, but as time wore on operations were occasionally performed for the relief of stasis of the intestinal contents without obstruction until at the present time many operations are being performed for the relief of mechanical constipation *per se*. It has seemed to the writer that it is possible that the pendulum may swing too far in this direction and that many inadvisable operations may be done, since at the present time so many men are doing surgical work who, with a few years' experience, are following the footsteps of men of many years' experience, supposedly duplicating their procedures, but in reality lacking the judgment of the more experienced men and who are not able to differentiate between those conditions in which operation is advisable and those in which it is not. The risk of operations involving the resection of the large intestine is such that experienced operators undertake the operation with misgiving and it is not uncommon for even surgeons of prolonged experience to meet with disaster. Unfortunately it is not always the disasters that are reported, and which are held up as examples to the younger generation of surgeons, but the brilliant results. It would, therefore, seem fitting that the indications for such intestinal operations be clearly defined. We will first consider briefly the commonly accepted indications for these operations.

In acute obstruction there can be no question as to the advisability of immediate operation. Of all cases of acute intestinal obstruction operated upon by me over two-thirds have come in the last stages of exhaustion from prolonged vomiting and absorption of intestinal contents. The cases which have been saved have been those which have come under observation in the first few hours of their obstruction. The fault in most of these cases lies in the inability of the physician to make an early diagnosis. The very term, intestinal obstruction, is misleading, for with an intestinal obstruction there may be a movement of the bowels following the initial pain, and if the obstruction be incomplete there may be several movements or gas may be passed from time to time. There is, however, one symptom of acute intestinal obstruction which is always present, and that is the initial pain, which is always severe and usually agonizing, and accompanied within a few hours by peristaltic movements above the site of the obstruction caused by an attempt on the part of the as yet unparalyzed bowel by normal peristaltic efforts to force its contents past the complete or partial occlusion. The average practitioner under such conditions gives the patient a hypodermic injection of morphine without, in most instances, considering the possibility of an intestinal obstruction. It is by so doing that the chance of making an early diagnosis is lost. Morphine quiets the attempts at peristalsis which are diagnostic, overcomes the shock, allays the pain, gives the patient a sense of well-being, and slows the pulse, the acceleration of which is of value in the determination of acute abdominal conditions. By so doing many valuable hours are lost and it is not until reverse peristalsis has begun that the physician is in a position to see that the patient has intestinal obstruction. There is a reason for every acute pain in the abdomen. The localization of the pain will often afford the only symptom for diagnosis in many acute intraabdominal lesions. This is particularly true in diseases of the appendix, gall bladder, and pancreas, diseases which need operation at some time and are better operated at the onset of the disease. These diseases are those which are commonly confused with acute complete or incomplete obstruction. The physician should also disabuse his mind of the idea that in acute complete obstruction the bowels do not move. There may be one movement or two movements, an enema may be effectual in bringing away some gas, for the contents of the intestine below the obstruction are still able to be moved downward by normal peristaltic movements of the intestine which, in the first few hours of the attack, are not yet weakened. In many incomplete obstructions peristaltic efforts are sufficient to force large amounts of fecal matter past the site of the incomplete obstruction, but the passage of the fecal current at this point will be accompanied by pain, and if morphine is administered this pain may be so hidden as to be lost sight of. It is hardly necessary to call attention to the necessity of making a thorough examination of the patient for causes of abdominal pain outside of abdominal conditions such as tabes, pneumonia, and diaphragmatic pleurisy.

In chronic obstructions, which are usually acute obstructions by the time they come to the surgeon, it would seem that the practitioner should arrive at a diagnosis earlier than he does, and I think the reason for his failure to do so is for the most part due to not making a thorough examination of the patient. Many cases come to me which have been treated for months for hemorrhoids in which a digital examination reveals an inoperable carcinoma of the rectum. In these cases the practitioner has never made a digital examination, but has prescribed ointments and enemata. It is reasonable to suppose that had these cases been carefully examined when they first presented symptoms of rectal distress the disease would not have been so far advanced as to preclude the possibility of removal. Many cases of malignant disease of the large intestine come to me with a history of gradually increasing constipation. An abdominal examination reveals a tumor and it is reasonable to suppose in these cases also that when the constipation was becoming more marked had an *x*-ray plate been made the disease would have been recognized before it had attained an inoperable stage. These two examples should be a lesson to all. It should teach us not to rely upon the textbook pictures of carcinoma of the rectum or of carcinoma of the large intestine in any of its course, but to investigate by all the means in our power the first interference with the function of the rectum or of the large intestine, and fortunately in both of these parts of the anatomy an early diagnosis of malignant disease is easily made, either digitally in the case of the rectum or by the *x*-ray in the case of the large intestine. Not only in these diseases, but in all dieases at the present time we should investigate the apparently trifling errors in function as they occur. They are the precursors in many instances of serious disease. That errors must occur from time to time is unquestionable, but I have yet to see a too early diagnosis in these diseases. To summarize, in the cases of acute complete or incomplete and the chronic cases of intestinal obstruction,

the former may be diagnosed by the pain and attempts of peristalsis early in the course of the lesion, the latter by investigating the at first apparently trifling functional disturbance, the increasing constipation.

As regards intestinal operations in cases which do not present either acute complete, incomplete, or chronic obstruction, that is, the class which present evidence of constipation, either alone or with more or less indefinite pains, with perhaps occasional attacks of sharp but not agonizing pain, or with pulling pains in various parts of the abdomen during the process of large intestinal digestion or during defecation, or with recurrent attacks of not very severe colic, or constipation associated with marked changes in the well being of the patient, this may be said: In the first place, in the course of several thousand laparotomies for other disease I have observed a large number of cases of ptosis of the various parts of the colon and sigmoid. Operation has only been done on these conditions if there were symptoms which seemed directly referable to these displacements. I am not speaking now of Glenard's disease, but of ptosis of some part of the large intestine alone. Many of these cases have not presented any functional disturbance of the large intestine whatever; therefore it is pertinent to say here that given a case in a female patient, for instance, with retroverted uterus, with symptoms of interference with the function of menstruation, and with vague, indefinite sense of discomfort in the left iliac region and in which a radiograph shows a prolapse of the transverse colon into the pelvis with some prolapse of the sigmoid, but with no symptoms of interference with the function of the large intestine, that it would not be good surgery, however brilliant the final result might be, to subject such a patient to an intestinal resection or even suspension of the colon in addition to the necessary operation upon the uterus and adnexa. What I wish to bring out is this, that no mattetr how displaced the large intestine, or for that matter any of the viscera, may be, providing these organs functionate properly there is no reason for operation upon them. Should, however, these displacements be due to tumor or to adhesions from former operations, then the tumor or adhesions should be attacked. But in the case of ptosis *per se* great caution must be used in advising operation, especially operations involving much risk, as for example resection and anastomosis. The condition of ptosis is so common and so frequently observed in connection with other abdominal lesions at operation that we must exercise great care in differentiating the symptoms of the main lesion from the symptoms of the ptosis. Particularly is this true since radiography has taken such strides in aiding us in the diagnosis of vague abdominal conditions, for the most extreme conditions of ptosis will be shown by the radiograph, and if one is not careful one may place upon the condition of ptosis the burden of bearing all the responsibility for the abdominal symptoms. Therefore in every case presenting ptosis it is best to start with the knowledge that ptosis is common and may not present symptoms. Also we must remember that the risk of major operative interference such as resection or anastamosis is much more in the large intestine than in the small, therefore the risk must be very carefully weighed in comparison with the degree of discomfort suffered before a decision is made. If the pain is severe or frequent or at times disabling, or if there is marked interference with the well being of the patient, either through malnutrition or nervous symptoms aside from all vague nagging abdominal discomfort, there is no question but what the risk may be undertaken. When there is any doubt as to the advisability of the operation mechanical measures such as support, massage, hydrotherapy and allied methods of treatment should be first undertaken

There is a class of patients who present symptoms comprising intermittent attacks of constipation without pain or with slight pain referred either to the epigastrium or about the umbilicus. These patients may have occasional nausea and vomiting. The symptoms may be confused with chronic appendicitis. These are cases of enterospasm of the large or small intestine. In the case of the large intestine the *x*-ray will substantiate the diagnosis by showing in a series of plates made during the attacks the contracted portion of the intestine, but even if this were not verified by the *x*-ray such symptoms as above stated are sufficient for an exploratory laparotomy, the advantage of the radiograph examination being that at least in the case of the large intestine the site of the enterospasm can be definitely located and resection at this point undertaken, for it is true that these enterospasms are not constant, so that unless located by the *x*-ray definitely they may easily be overlooked in the course of the exploratory laparotomy.

To summarize the indications for intestinal operations for constipation, we may say that no matter what mechanical displacement is present, operation should only be done when the function of the organ is interfered with either constantly or intermittently to such an extent as to be a source of so much discomfort as to negative the risk of a major intestinal operation.

It goes without saying that we would like to cure patients who present symptoms of abdominal distress or general symptoms from prolapse of the colon with interference with its function. At the present time the cure of such cases must be operative in most cases. Suspensions are inadequate and unreliable in many cases; anastomosis is also a makeshift and uncertain. There remains for consideration resection. It is the cure *par excellence*, but the risk is too great to take except in cases with marked symptoms, as stated above. Logically it follows that we must seek for some method of resection of the large intestine which will not only be efficient, but which will be safe. The danger resides in the length of time necessary to resect, in the possibility of stricture, and in leakage. The time consumed is to a great extent dependent upon the accurate planning of the operation. Less time is usually lost in the actual steps of the operation than in arriving at a decision as to what is the best procedure to follow. The danger of stricture may be largely overcome by proper technique. Leakage is due in part to bad technique. Leakage may occur at the mesenteric border or at other points. In the latter event it is usually due to lack of care in providing for an efficient blood supply. In resecting the large intestine there should be free bleeding from the cut intestinal wall. If there is not one cannot be sure of the blood supply. The bleeding points can be individually tied with fine catgut. The mesenteric angle should be first approximated with one or more mattress sutures, taking in all the layers of the gut and carefully inverting the mucous membrane at this point. For the remainder of the

anastomosis two layers of continuous sutures are best, one of chromic gut made pliable by immersion in 30 per cent. alcohol to approximate all layers but the serosa, beginning at the mesenteric suture and ending there, being tied first to the first end which has been left long; the other, a Lembert stitch of paraffin silk or Pagenstecher approximating the serous surfaces and necessarily dipping into the subserous tissues in order to grip well, begins at, secures the leaves of both mesenteries, and after surrounding the gut again pierces both leaves of the mesentery and ends there, being tied to the first end, which has been left long for this purpose. Both sutures should be interrupted at every sixth or seventh stitch, by a back stitch, so that puckering or a purse-string effect, which would tend to form a subsequent stricture, does not occur. The cut in the mesentery should be approximated and any available tab of fatty tissue made use of to further protect the line of suture. If one is in doubt as to its security the anastomosis may be surrounded by a sling of gutta-percha tissue, which is led out of the abdominal wound, as advised by Mayo. This serves to support the anastomosis and acts as a telltale in case of leakage.

301 DeKalb Avenue.

A PRELIMINARY REPORT ON THE EFFECT OF SALVARSAN ON SYPHILITIC AND METASYPHILITIC AFFECTIONS OF THE EYE AND UPON THE APPARENTLY HEALTHY EYES OF SYPHILITICS.

By M. ROSENBAUM, M.D.,

NEW YORK.

OPHTHALMOLOGIST GERMAN POLIKINIK; ASSISTANT ATTENDING OPHTHALMOLOGIST PEOPLE'S HOSPITAL.

It has been my opportunity lately through the courtesy of Drs. A. L. Wolbarst and V. C. Pedersen to study the results of salvarsan on the different lesions of the eye that are produced by syphilis. While observing the effect on various eye manifestations, I have also had the opportunity of observing its action on the apparently healthy eyes of syphilitics in all stages, who showed other lesions of lues than those of the eye. I shall give a résumé of the history of twenty-two cases, so far as they relate to the eye affections and the observations made before and after injection of salvarsan while the patients were at the People's Hospital of New York City.

Let us first consider the various lesions of the eye that may be the result of a luetic infection. We know that syhpilis may attack any and every part of the eye, though the uveal tract, owing to its vascularity, is the most often attacked, and especially so during the secondary stage. Iritis, cyclitis, choroiditis, and hyalitis are the most common during that stage. The frequency of iritis in syphilis is variously estimated by different authorities; some place it as low as 4/10 of 1 per cent., and others as high as 5 per cent. In my service at the German Polyclinic during the last five years I have found it to be about 3 per cent. of all cases treated. A. Cantonnet considers iritis the most frequent manifestation of lues. Cyclitis and choroiditis are the next in frequency and the former more so than the latter. Choroiditis when accompanied with the fine dust-like opacities of the vitreous is pathognomonic of syphilis. I have not seen a single case where a history of lues was not obtainable. Syphilis may attack the optic nerve directly or indirectly through a lesion in the brain; the sphincter of the iris and ciliary muscle may be likewise affected. Optic atrophy is often the first sign of tabes, and may precede it by many months and even years. Erb has proved that tabes dorsalis in 90 per cent. of all cases is due to syphilis. We see, therefore, that lues may attack any part of the eye or its nerve, and the damage may be such as to be irreparable. The treatment of all such cases heretofore has been a thorough antisyphilitic one, and in the early stages, *i.e.* before destructive damage was done, it has been quite effective in a majority of cases. With the introduction of salvarsan, a new field has been opened for the treatment of syphilitic affections of the eye. I propose to divide the twenty-two cases into various divisions, according to the anatomical portion of the eye attacked.

Case I.—Tabes dorsalis, optic atrophy (partial). Dr. Wolbarst's patient. J. N., male, aged thirty-six, had gastric crises, and marked ataxia. Denies venereal history of any kind. First symptom of illness appeared six years ago, in the form of gastric pains, accompanied by occasional attacks of vomiting. Was treated for gastric disease until six months ago, when the diagnosis of tabes dorsalis was made by Dr. George J. Saylin of Buffalo, N. Y. These symptoms were then present: Absence of knee jerk, marked ataxic gait, Romberg symptom, Argyll Robertson pupil, gastric crises with vomiting, shooting and lightning pains in the legs. Optic atrophy, loss of flesh and strength. Wassermann reaction strongly positive. Urine negative as to sugar and albumin. Was put under treatment consisting of injections of salicylate of mercury and arsenic. Strychnine internally for the optic atrophy. October 21, 1910. Marked ataxia, necessitating use of two canes and other support. Stumbles in the dark. All diagnostic symptoms of tabes marked and unmistakable. Eyes examined by Dr. E. Gruening: "O. D. 3/100; O. S. 3/200. Both fields concentrically limited. Absolute color blindness. Optic atrophy." Examination of viscera, heart, lungs, and kidneys, normal. Pulse 96, not very strong. Wassermann reaction strongly positive. At the earnest solicitation of the patient, and on his assuming all liability as to the outcome, he was admitted to the People's Hospital October 24, 1910, for treatment. On that date I examined the patient at the request of Dr. Wolbarst and found the same lesions as were found by Dr. Gruening. He was injected with 0.5 gram salvarsan, Alt method. October 28, 1910, I reexamined the patient and found that vision was not as good as before. O. D., fingers at five feet; O. S., fingers at three feet. Atrophy somewhat advanced. November 2, 1910, he left the hospital, feeling much better, except for his sight. December 3, 1910, a communication from his physician, Dr. Saylin, to Dr. Wolbarst states: "Despite progressiveness of optic atrophy, gait and general condition show improvement. Patient is inherently hysteroneurasthenic, yet, after careful observation, I can say that his condition has improved markedly, except his vision." December 13, 1910, a communication from Dr. Saylin to Dr. Wolbarst states as follows: "Wassermann reaction, December 10, taken by Dr. A. A. Thibaudeau, is positive, but less strongly so than formerly." As regards this case we can

say that although all the other signs of tabes were much improved, nevertheless, salvarsan could not stop the progress of the optic atrophy.

Case II.—Complete optic atrophy. H. G., age twenty-six (Dr. Wolbarst's patient), was admitted November 14, 1910. He gave a history of having been infected in 1903. Two years ago became blind suddenly on the right eye and six months later on the left. One year ago the right side of body was paralyzed. Control of the rectum and bladder was lost, but under treatment recovered. On examination I found both nerves completely atrophied with no perception of light. He received 0.6 gram salvarsan intramuscularly, and on November 22 I reexamined him, found no change for better or worse, although the patient said that he saw flashes of light. On November 26 I examined him again, but found no more change than the last time. The flashes were still present. On December 19, at his own request, he was again admitted and reinjected. I examined him on December 21 and 23 and found no appreciable change, subjective or objective.

Case III.—Syphilitic iritis. W. S., male, aged twenty-three (Dr. Wolbarst's patient). Admitted to the hospital on October 17, 1910, suffering with a cutaneous syphilide, and a severe syphilitic iritis of the left eye, with two distinct nodules at the pupilary margin of the iris. The iritis dated back since September 5. The fundus also showed a very distinct chorioretinitis and exudate into the vitreous. Initial lesion on the penis in May, 1910. He was injected on October 17, 1910, with 0.5 gram salvarsan and atropine was ordered. Vision, O. D., 12/12; O. S., 12/100. October 24, 1910, circumcorneal injection diminished, one nodule disappeared; the iris was gradually returning to a healthy condition. October 28, 1910, iris normal, no sign of iritis except for a single synechia. Vitreous retina and choroid clear. Vision, R., 12/12; L. 12/50. October 30, 1910, iris normal, vision about same as at last examination. Patient left the hospital perfectly well.

Case IV.—Cerebral syphilis. A. A., aged twenty-nine (Dr. Wolbarst's patient). Admitted November 2, 1910. Primary affection in 1905. Was treated irregularly with mercurial injection. Eighteen months ago suffered an attack of right hemiplegia while under the influence of alcohol. On examination the left eye shows some deposits on Descemet's membrane from previous iritis. Retinæ and optic nerves normal. He was injected November 3, 1910, with 0.5 gram of salvarsan. November 5, 1910, he was reexamined; no material change in the iris, vitreous, choroid, retina, or nerve. November 9 and 13, no material change. November 14 he was discharged, practically well.

Case V.—Tabes. E. M., aged thirty, male (Dr. Wolbarst's patient), admitted November 2, 1910. History: Does not know when he was infected. Has all the symptoms of tabes; walks with two canes. Ataxia marked. Injected November 3, 1910, with 0.6 gram of salvarsan. November 3, 1910, O. D. normal; O. S. iridoplegia. All the other muscles of the eye not affected. This was probably due to a gumma in the region of the crus. November 5, reexamined; pupil slightly contracted. November 14 the pupil reacts fairly to light. November 15, discharged. Result, marked improvement.

Case VI.—Secondary syphilis. J. S., aged twenty-four, male (Dr. Wolbarst's patient). Admitted to the hospital October 23, 1910. History of an infection five months ago. Many mucous patches in the mouth and throat. Injected October 23, 1910, 0.6 gram salvarsan. Examined October 23, 1910; no lesions of the fundi, except myopia. Vision, O. D. 12/70; O. S. 12/100. October 28, 1910, reexamined; no apparent change in the fundi. October 30, 1910, no change; discharged.

Case VII.—L. F., primary and secondary syphilis; aged 25, male (Dr. Wolbarst's patient). Admitted to the hospital November 14, 1910. History of infection six weeks ago. Injected November 14, 1910, 0.6 gram salvarsan. Examined November 14, 1910. O. D., normal, O. S., physiological excavation of the optic nerve. November 18, no change in the fundi. November 22, reexamined; no material change in the fundi. November 24, no change, patient discharged.

Case VIII.—Supposed case of gumma of femur. A. A., age forty, male (Dr. V. C. Pedersen's patient). History: Began to have pain in one leg in February, 1909; pain situated in the right thigh, above the knee. A few days later the leg from the knee to the groin became swollen and remained so for some time, when an abscess formed at the knee, which was opened and healed. At the time of the operation, which was on September 9, 1909, the patient states, a half cupfull of bloody water came from the wound. On September 19, 1910, the wound was opened the second time and healed, but there still remained an enlargement of the lower end of the femur. The patient was injected on a supposition that it was a gumma of the bone. Admitted November 17, 1910. Injected November 18 with 0.5 gram salvarsan. Examined November 17. Both eyes normal. Vision, O. U. 20/20. Reexamined December 3, 1910. O. U. 20/20. Complaint of a dull pain in the left eye. No objective signs in any portion of the eye.

Case IX.—Tertiary syphilis, A. C., male, age twenty-seven (patient of Dr. Wolbarst). Portuguese by birth. Initial lesion six years ago. The patient gives a history of all primary and secondary lesions. There is a perforation of the hard palate. Examined November 22, 1910. Vision, O. U. 20/15. Fundi, normal. Injected November 23 with 0.5 gram salvarsan. Reexamined December 3, fundi showed no change. December 5, 1910, no change; discharged.

Case X.—Tabes dorsalis; M. G. C., age twenty-seven, male (Dr. Wolbarst's patient). Admitted November 22, 1910. History: Initial lesion eighteen years ago. He gave a history of a secondary lesion and was treated irregularly for two years. At present the pupils do not react to light or accommodation. Knee jerks, absent; Romberg sign, present. Injected November 22, 1910, with 0.5 gram salvarsan. Examined November 22; vision, O. D. 20/20. Fundi, normal. November 27, fundi normal. December 3, same condition as on previous examination. Discharged, symptoms distinctly improved. December 23, 1910, a communication from Dr. E. E. Foster, New Bedford, Mass., states: "O. D. 6/6, with + 2; exophoria 14°; O. S. 6/5 with—2. Right hypophoria ½°. Discs pale. No atrophy. Field of vision normal."

Case XI.—Secondary syphilis; F. G., age twenty-seven, male (Dr. Wolbarst's patient). Admitted November 22, 1910. History: Initial lesion nine months ago. Three months later developed a rash over the body, which disappeared under mercurial injections. Now the roseolea has returned, while under treatment. Injected November 22 with 0.5

gram salvarsan. Examined November 22. Eyes, normal. Reexamined November 27 and 30, and December 1; no appreciable change. Patient discharged.

Case XII.—Tertiary syphilis. J. K., age fifty-six, male (Dr. Wolbarst's patient). Admitted November 26, 1910. History: Initial lesion eleven years ago. Eighteen months after suspected intercourse developed a sore throat and was told it was due to lues. He was treated irregularly since that time. At present he shows a few mucous patches at the angle of the mouth. Leukoplakia of the tongue. Examined November 27. Vision, O. D. 15/70, astigmatism. Fundi, normal. Injected November 27, 0.5 gram of salvarsan. Reexamined November 30. Fundi show no material change. Reexamined on December 3, 7, and 9. Same condition as on previous examination. Patient discharged. Result, no bad effect.

Case XIII.—H. W., age nineteen, male (Dr. Pedersen's patient). Previous history negative. Family history negative. Gonorrhea four years ago. A clear history of secondary syphilis. Treated with twenty-six mercurial injections. Iodide by mouth for fourteen months. At present he has a feeling of malaise and syphilitic laryngitis. Wassermann, positive. Admitted November 27, 1910. Injected November 29. Examined November 28. Fundi normal; blood-vessels show a distinct arteriosclerosis. December 3, reexamined; no material change in the fundi or in the walls of the blood-vessels. December 9, 12, and 19, same conditions as on previous examinations. Result, no change.

Case XIV.—O. A. F., age twenty-six, male (Dr. Pedersen's patient). History: Chancre on the lip two years ago, followed by secondary symptoms. Admitted November 28, 1910. Eyes examined November 28. Fundi normal. Injected November 29 with 0.5 gram salvarsan. Reexamined December 3. No change in the fundi. Patient discharged.

Case XV.—J. H., age thirty-eight, male (Dr. Pedersen's patient). Perforation of the palate. History: Initial lesion four years ago, followed by a rash on the body two months later, with sore throat and headaches. Two swellings appeared on the forehead three years later, which disappeared under treatment. At present he has a perforation of the hard palate and a broken down gumma of the forehead. Examined December 5, 1910. Vision, O. U. 20/15. Fundi normal. Injected December 5, 0.5 gram salvarsan. Reexamined December 7 and 10. Fundi and vision the same as on previous examination. Patient discharged.

Case XVI.—Gumma of the tongue. S. R., female, age twenty-one (Dr. Pedersen's patient). History: Three months ago she noticed a little blister on the anterior third of the tongue and she began to use mouth washes. The blister was also cauterized. Admitted November 30, 1910. Examined November 30. Found both eyes to be normal. Vision, O. D. 15/15; O. S. 15/70; astigmatism. Injected November 30 with 0.5 gram salvarsan Reexamined December 5 and 11; no material change in the fundi. Patient discharged. Result, no bad effect.

Case XVII.—B. S., female, age thirty-seven (Dr. Wolbarst's patient). Perforation of the palate: destruction of nasal septum. History of initial lesion could not be obtained, but seventeen months ago she noticed pain in the knee and pain in the nose. She was told that the nasal septum is rotting away and pieces actually came out. At present she has a perforation of the hard palate, a partial destruction of the nasal septum, and the nose is full of hard crusts. The eyes, on examination, showed that the fundi were normal; vision, O. D. 20/20, O. S. 20/50. Admitted December 11, 1910. Injected December 12 with 0.5 gram salvarsan. Reexamined December 15, 21, and 24; no material change in the fundi.

Case XVIII.—E. C. H., male, age twenty-nine (Dr. Wolbarst's patient). Admitted December 12, 1910. History: He was infected nine years ago from a chancre on the upper lip and received local treatment. He then went to Hot Springs and was treated for two months. Present history: He has a copper colored rash over the left lumbar region, covered by crusts and small ulcerations. The tip of the nose is thickened, enlarged, and the skin purplish red in color. The eyes on examination, December 12, 1910, were both normal. Vision, O. U. 6/6. Injected December 12 with 0.6 gram salvarsan. Reexamined December 15, 19, and 21. No material change in the fundi or in vision.

Case XIX.—M. K., male, nineteen years (Dr. Wolbarst's patient). Admitted December 29, 1910. He was infected one year ago and was treated at the City Hospital for a chancre. At the time he had a rash on his body, a sore throat, no alopecia and no headaches. On examination we found he had a perforation of the hard palate; he was pale, anemic, and showed he was suffering from a constitutional disease. Wassermann test was positive. The eyes, on examination, showed no abnormality; fundi were normal. Vision, O. D. 6/15, O. S. 6/30. Corrected by glasses. Reexamined January 2 and 5, 1911. No material change in the fundi. Patient discharged.

Case XX.—B. S., age thirty-nine, male (Dr. Wolbarst's patient). This was a case of chancre in the meatus and Dr. Wolbarst demonstrated the spirochete. I examined his eyes on December 19, 1910, and found them to be healthy, except for myopia, with — 6.00 Sph., 20/20. Admitted to the hospital December 20 and received 0.5 gram salvarsan on the same day. I reexamined him on December 21, 26, and 30, and January 2, 1911, and found no change in fundi. Patient discharged.

Case XXI.—E. D., female, age twenty-three (Dr. V. C. Pedersen's patient). She gave a history of having been infected from her brother. Six months ago she had a sore throat and pain in the bones, and headache. Three months ago an eruption appeared on the body, palms of the hands, and soles of the feet. Present history: She has a typical copper colored rash all over the body and gummatous ulcers over both tibias. Admitted December 19, 1910. Injected December 20 with 0.5 gram salvarsan. I examined her eyes December 20 and found both fundi normal. Vision, O. U. 20/20. Some physiological cupping. I reexamined her December 26, 1910, January 2, 4, and 8, 1911, and have on no occasion found any abnormality of the fundi. She was discharged January 10, 1911, much improved in the other lesions and no deleterious effect on the eyes.

Case XXII.—M. G., male, age thirty-three (Dr. Pedersen's patient). Admitted December 21, 1910. History: Two years ago he noticed a sore on his penis, followed by a rash on his body, alopecia, and headache. Present history: The patient shows a paralysis of the right side of the face, the tongue deviates to the right. The eyes show no abnormality of the fundi. He was injected on December

24 with 0.6 gram of salvarsan. Reexamined on December 30 and found the paralysis was improving. The fundi showed no change and vision was normal. I saw him again on January 2 and found no change. January 3, patient discharged.

From these twenty-two cases we can see that in Cases I and II, one of complete atrophy of the optic nerve and the other a far advanced case, salvarsan neither cured one nor materially improved the other. In Cases III and IV we can see the good effect on iritis within one or two days after injection. Case V shows what a marvelous effect this arsenical preparation has on gummatous deposits. The remaining seventeen cases prove conclusively that salvarsan has not the slightest deleterious effect on the healthy eyes of syphilitics and is far superior to atoxyl, which may produce atrophy of the optic nerve. Ehrlich contraindicates salvarsan in optic neuritis and beginning optic atrophy.

Although we have not had an opportunity of seeing any case with optic neuritis where it has been tried, nevertheless, we have seen it in cases with advanced optic atrophy and no deleterious immediate effect was noticed. Fehr (*Deutsche medizinische Wochenschrift*, Vol. 41, No. 10) does not believe it is contraindicated in beginning optic neuritis and beginning optic atrophy. Another question may arise, and that is, can salvarsan produce an iritis or a neurochorioretinitis? We have not seen such an occurrence in the twenty-two cases here mentioned. Fisher reports such an occurrence, but it seems more probable that the iritis mentioned would probably have occurred, owing perhaps to the fact that the injection was insufficient to destroy all the spirochetes in the body, and a few having lodged in the eye, a very favorable nidus, started a new growth which manifested itself in the iritis mentioned. In view of the fact that all the cases are so recent, it is still too early to speak of permanent results. However, the immediate results can be formulated thus:

1. The preparation is very effective in secondary and tertiary manifestations of the uveal tract.
2. It causes no appreciable subjective or objective symptoms on the healthy eyes of syphilitics.
3. No appreciable improvement has been noticed in parasyphilitics and in cases of optic atrophy.

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604 East Fifth Street.

School Sanitation.—The following health program has been recommended by the Nebraska Association of School Principals and Superintendents: (1) Compulsory installation in school houses of ventilating heating plants. (2) Compulsory cleaning and disinfecting of school houses at least twice a year. (3) Compulsory medical inspection of school children. (4) Compulsory submission of all school house plans to the state architect for approval. (5) Compulsory medical inspection of all school teachers.—*Bulletin of the Russell Sage Foundation.*

The Complications of Adenoid Operations.—G. Hicquet and A. Fallos give the results of observations on adenoid operations, which are done by them to the number of 600 per year at the hospitals and in private practice. A precaution to be observed is always to operate when there is no rise of temperature, such as may occur in an acute adenoiditis. Nor should we operate during an epidemic of measles, diphtheria, or scarlet fever. In young girls we should avoid the menstrual period. Hemophilia, tuberculosis, albuminuria, and diabetes should contraindicate operation. In children under two years of age narcosis is not absolutely necessary. From fifteen years up local anesthesia can be used. Between two and fifteen years a general anesthestic should be used. The Beckman curette is preferred, used with gentleness lest the surrounding structures be injured. Fragments left behind may be a cause of hemorrhage Primary or secondary hemorrhage is the most frequent complication. Primary hemorrhage lasts but a short time. A marked hemorrhage may result from an anomaly of the arterioles of the mucosa, cutting the tubercle of the atlas, or fibroid condition of the adenoid, preventing contraction of the vessels. Secondary hemorrhage comes at the end of about a week, on the fall of the eschar. Nervous troubles sometimes occur after the operation. Infections are not rare; a diffuse catarrh of the pharynx is common; it is due to mouth breathing after the operation. Abscess, lacunar tonsillitis, and otitis also may occur. The adenoid child is a chronically infected being, and exacerbations may occur at any time. If the patient keeps to the house after the operation infection is less likely to occur. The author recommends that the child be kept in bed two days, fed on liquid, unirritating foods, given a purgative the day after the operation; and that it should go out of doors at the end of a week. With these precautions the operation is simple and benign. —*La Policlinique.*

Evolution of Language in Reference to Phonetic Teaching and Medicine.—Vincenzo Cozzolino says that language is a system of articulate voice used to convey the internal processes of thought. The first cry of the infant simply shows the excitability of the respiratory centers in the medulla. It is not a conscious expression of pain. The infant is incomplete; up to the sixth month the medulla alone functionates reflexly. Sight and hearing are both incomplete. After some weeks sounds are made that are the beginning of articulation imitation, and conscious reproduction. Automatic repetition follows. The teacher should understand the development of speech in the child in order to understand the various faults of hearing and language. The child begins to notice not the articulation of those about him, but the accent, character, intensity, and modulation of the voice. Between the fifteenth and eighteenth months the child begins its real language by simple exercises of vocalization. The first syllables are exclamatory, like the language of echolalia and onomatopeia. The perception of sound and sight are closely connected. At this moment of coordination between the peripheral expression and activity of the center of ideation it is that if the child becomes deaf there is complete mutism, since the sense of auditive memory is rudimentary The progressive coordination of language runs parallel with the acquirement of voluntary muscular movements. Autology guides the child in the construction of phrases. The hearing, normal infant repeats involuntarily the words heard; then fits the image seen to the word heard. Finally he gets an emotional idea of the things seen. Retardation of language does not necessarily denote retarded mentality, nor vice versa. For the perfect development of speech and writing we must have three factors, perfect cerebral function, good auricular and visual function, and normal motility of the vocal organs and those devoted to writing.—*Giornale Internazionale delle Scienze Mediche.*

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE UNDEVELOPED FIELD IN LIFE INSURANCE.

THE educational campaign recently inaugurated by life insurance companies for the purpose of diminishing disease and increasing longevity represents only the beginning of a movement that bids fair to attain extraordinary momentum. Efforts have thus far been directed solely with the view of influencing the individual policy holders, who are quick to perceive that their own interests and those of the company are identical. But the problem of conserving health and prolonging life is one that can not be solved solely by the efforts of each individual so far as his own particular mode of life is concerned; it requires the concerted action of entire communities in the improvement of those manifold conditions that are comprised under the term "public health." In order to make their campaign an effective one, the insurance companies must enlarge its scope by directing their efforts, not merely toward the individual, but toward the collective community.

This is the keynote of a report submitted at the bi-monthly meeting of the Association of Life Insurance Presidents, at New York, June 9, 1911, by Mr. Hiram J. Messenger, actuary of the Travelers Insurance Company. As the result of a trip undertaken for the purpose of studying the sanitary condition of southern cities he has arrived at the following conclusions: There was evidence found practically everywhere that there had been a most wonderful improvement in the general sanitary conditions during the past ten or twenty years, and there was the possibility of still further progress in the next ten years. The cities of the South in proportion to their means are spending, as a rule, as much money in public health work as the cities of the North. Cities in the same section of the country and in close proximity present a great variation in the degree of public sanitation. There is a generally prevailing impression even in cities with poor sanitary conditions, that their own sanitation compares favorably with that of other cities, and it is this ignorance of what is being done in other cities that stands in the way of further progress. Most of the cities have a fairly good water supply, but not a single city which was visited had any systematic method of examining the water in its wells. The water system is always more extensive than the sewer system, large sections of the city in almost every case not being sewered. From a quarter to more than half of the inhabitants live in houses that have no sewer connections. Most of the cities visited had unsatisfactory methods of garbage disposal. There is an activity greater than formerly in the enforcement of ordinances for inspection of milk and other foods, but in this direction there is still room for much improvement. Bacteriology in connection with city sanitary work is comparatively new.

In bringing the results of these investigations before the Association of Life Insurance Presidents, the speaker alluded to the fact that the success or failure of a life insurance company, assuming honest and intelligent management, depends upon three things—the expense rate, the interest rate, and the mortality rate. These factors are of approximately equal importance. But adequate efforts have not yet been made to lower the mortality rate; past efforts in this direction have been practically confined to the careful initial selection of risks. The regular life insurance companies in the United States, not including the industrial business, are paying about $150,000,000 a year for death claims, or about $12 per thousand dollars of insurance in force. If the rate of loss was reduced from $12 to $11 per thousand of insurance, the companies would gain in reduced claims about $12,000,000 every year. To secure a favorable mortality these companies are paying about $6,000 a year for medical examinations and inspection reports before the risk is accepted, and practically nothing for this purpose after the policy is issued. The average policy is for about $2,500 and the average premium about $100. If a company postpones the death of one of its policyholders for one year it means, besides the inestimable advantage to the life prolonged, that other policyholders receive one more premium ($100) and have another year's use of the amount of the claim ($100)—making a total of $200 additional receipts as the result of postponing the insured's death for one year.

In order that the insurance companies may wield a powerful influence in improving sanitary conditions throughout the country, Mr. Messenger suggests that there be established in each city an organization of influential men interested in the sanitary welfare of the city. "In every city of fifty thousand inhabitants in this country it is possible to find among the managers, the leading agents, the medical examiners, and the legal and financial representatives of the insurance companies fifteen to twenty men of standing, of influence, and of a high average standard of intelligence. From these men, together with two or three of the leading health officials and a few other men of prominence interested in such questions, could be formed an organization, which if directed and given to understand that it would be thoroughly supported by the organized life insurance companies of the country, could exert an influence in bringing about better sanitary conditions—which would mean the saving of millions of dollars to the life insurance policyholders of the country."

The feasibility of this plan is unquestioned. Its main requirement is united action on the part of all life insurance companies, which, in sinking their individual company interests in an effort to improve the public health, are at the same time contributing in no small measure to their own financial advantage.

THE ATTACK ON DR. WILEY.

The enemies of Dr. Wiley, some though by no means all of whom might be called by the great denunciator "undesirable citizens," have seized upon what they allege to be an illegality in his employment of an expert analyst of drugs as a ground for demanding his dismissal. To the ordinary and unprejudiced observer the action for which he is denounced would seem to be rather a commendable cutting of red tape than a crime, but, as the Attorney-General says he has "merited condign punishment," it may be technically more serious than it appears to be. We cannot believe, however, that the President will dismiss an efficient public servant because of a slight irregularity in winning over to the service of the country an expert of the high standing of Dr. Rusby. Rather should he be commended for securing the employment of so good a man on such favorable terms for the Government. A mild reprimand would be a sufficiently "condign punishment" for such a breaking of the rules. If, however, as has been asserted, he has also been insubordinate, having disobeyed the orders of Secretary Wilson, the case may assume another aspect.

The reason for Dr. Wiley's unpopularity is evident. He belongs unfortunately to a class of men, of whom there are many in more or less public life to-day, who are honest and earnest in their fight for what they believe to be the right, but whose utility as reformers is impaired by their temperaments. They are opinionated, convinced of their own infallibility, uncompromising to the last degree, and unable to see that those who differ from them may also be honest in their convictions and possibly right. Dr. Wiley has done invaluable service in his fight for pure food, but was mistaken in the benzoate of soda controversy. As a result of a series of crude experiments he fortified himself in his preconceived opinion that small quantities of this drug used in the preservation of food were prejudicial to health, and this conclusion was not shaken by the results of careful experiments by a board of experts, composed of men his equals in honesty and, without disparagement it may be said, his superiors as physiological chemists. The opinions of men such as the late Christian Herter, Chittenden, Long, and Remsen are not to be lightly brushed aside simply because they are at variance with the belief of Wiley or because they support the contention of certain food manufacturers. The question is not whether these manufacturers can use refuse material in the making of their products —the pure food and drug law can or ought to prevent that—but whether the addition of a minute quantity of benzoate of soda to good material to prevent its spoiling is harmful. If Dr. Wiley had had the courage to admit his error and had made his fight on the main question of the purity of material used in the manufacture of food products, the opposition against him to-day would be confined to a handful of dishonest men and the country would be on his side in his brave fight for pure food. As it is, many of his opponents are men at one with him in the effort to preserve the health of the consumer of condiments, but convinced that his uncompromising attitude is an injury to the cause.

We hope the President will not yield to the importunities of those who seek Dr. Wiley's dismissal, for in spite of his faults of temperament he has done and is doing a good work, and we also hope, almost against hope, that this trial will show him the necessity of compromise—not with evil doers, but with honest men who are striving for the same end as he, but who recognize the fact that obstinacy is not firmness and that reform is not to be effected through insubordination and stubborn adherence to error.

EXPERIMENTAL MEASLES IN THE MONKEY.

In 1898 Josias reported certain positive results in the experimental inoculation of monkeys with measles, while seven years later Hektoen produced measles in two human beings by means of inoculations of blood drawn from a measles case at an early stage of the disease. Grünbaum in the *British Medical Journal*, April 9, 1904, reported various attempts at infecting two chimpanzees with the result in the opinion of the experimenter that these attempts were not only without effect but that they "may even have conferred immunity rather than conveyed infection." John F. Anderson, Director of the Hygienic Laboratory, Washington, D. C., and Passed Assistant Surgeon Joseph Goldberger have recently been experimenting with monkeys to put the question of their receptivity to the infection of measles to further test.

Describing their results in *Public Health Reports*, June 9 and 16, 1911, these observers state that their first experiment was performed on June 8, 1910, with some blood obtained from a case of measles at the Willard Parker Hospital, New York. Two monkeys were inoculated; in each a slight rise in temperature was noted on the eleventh day, the significance of which was not appreciated at the time. A second attempt was made with similar results. On April 28 of this year a third attempt was made, three rhesus monkeys being inoculated. Once more, as regards temperature reaction, results were obtained essentially like those of former experiments. In the case of one monkey an eruption and other symptoms resembling those of measles occurred. On May 16 last a fourth attempt was made; two monkeys were inoculated and at the same time the monkey which had exhibited symptoms on the former occasion was reinoculated with a view to testing his immunity and obtaining light on the previous reaction. Ten days after inoculation one monkey showed distinct symptoms but was accidentally killed before further observations could be made. The second

monkey developed a well marked febrile reaction eight days after inoculation. The temperature remained elevated for four days, then dropped abruptly to its normal range. Ten days after inoculation this animal developed a well-marked maculopapular eruption which in two days became generalized. In seven days this had died out. Desquamation was noticed only on the scalp and temple. The monkey which had been reinoculated showed no reaction whatever. Blood aspired from the heart of the two animals which showed reaction was used for the inoculation of four fresh rhesus monkeys. All showed reaction to a greater or less extent. Anderson and Goldberger believe that they are justified in concluding that they have demonstrated the susceptibility of the rhesus monkey to inoculation with the blood of human measles drawn from the general circulation early in the eruptive stage.

Continuing their investigations, these observers report in the *Journal of the American Medical Association*, July 8, 1911, that there is a period of infectivity of the blood beginning at least just before and continuing for about twenty-four hours after the first appearance of the exanthem. At the end of this period the infectivity of the blood appears very greatly reduced, and diminishes progressively. This definitely limited period of infectivity for monkeys apparently accounts for the opinion generally held that the monkey is not susceptible to measles.

Pregnancy After Nephrectomy.

In accordance with the modern conception of the toxemia of pregnancy, the deprivation of a woman's kidney might, in theory at least, favor the development of the graver accidents of this autotoxic state. For while the latter is no longer held to be due at all to renal insufficiency, it is, doubtless, able to set up the so called pregnancy kidney with a resulting vicious circle in which the amount of parenchyma in the remaining kidney, even with compensatory hypertrophy, might hardly be sufficient for compensatory activity. Hence all cases of pregnancy following nephrectomy possess an unusual degree of interest and by their very nature should be able, with a sufficient amount of material, to furnish some documents of value, not less important if negative. Haberern reports a case of negative significance in the *Deutsche medizinsche Wochenschrift* of June 1. He also refers to four previous recorded cases in which the nephrectomized parturients did not suffer in the least during or after gestation. This is the more remarkable because the hypertrophic remaining kidney undoubtedly possesses an increased tendency to stasis, nephritis, and uremia. That such a result is far from inevitable, however, appears from a recorded series of fifty-nine patients controlled for six years after nephrectomy in whom no untoward effects had developed. Much must depend upon the conditions before operation and for which operation was performed. Surgeons who have performed nephrectomy in similar cases have doubtless always warned against further pregnancies. Should a nephrectomized pregnant woman develop suspicious renal symptoms Haberern insists that the pregnancy should, of course, be terminated forthwith.

Are There Special Trophic Nerves?

Verworn laid down the principle that every nerve is a trophic nerve to the tissues in which it is distributed. This may be understood to refer only to central impulses propagated along efferent fibers, or may be extended to include impulses which begin at the periphery and are propagated along the reflex arc as centrifugal impulses. The theory that impulses may be propagated in either direction along sensory nerve fibers is, to say the least, superfluous for the explanation of special trophic impulses. At a recent meeting of the Gesellschaft für Natur und Heilkunde zu Dresden (*Münchener medizinische Wochenschrift*, June 13) Haenel considers the problem of the existence or nonexistence of special trophic nerve fibers. Concerning the coincidence of intact sensibility and trophic disturbances following injury he states that absence of sensory disturbance by no means implies fully intact sensory nerves. The pathological alterations may be of so intimate a nature that mere sense perception is not interfered with, yet these minimal alterations may modify the nutrition of the tissues over which the nerve presides through disturbance of the spinal ganglionic reflex, as manifested by vasomotor disorders in the affected tissues. The assumption of special trophic nerves is so far superfluous in that purely local processes in the tissues together with vasomotor disorganization of reflex mechanism are sufficient to account for so called trophic disturbances. Until we know more about the functions of the sympathetic it will be well to refrain from theorizing as to trophic nerves.

Nitrogen Retention in Nephritis and Uremia.

As is of course well known, retention of nitrogenous substances in nephritis with resulting autointoxication, is not the simple mechanical problem which at first suggests itself. At the recent meeting of the German Congress for Internal Medicine, Hohlweg covered this subject and his paper provoked an extensive discussion (*Münchener medizinische Wochenschrift*, May 9). In healthy subjects the residual nitrogen varies roughly from 40 to 60 milligrams daily, in nephritis from 60 to 100 mg. The percentage of individual constituents is unaltered, urea being virtually constant at 60 per cent. If uremic poisoning is superadded to nephritis the residual nitrogen is not increased in such cases as recover. But in incurable cases the retention increases until before death it may reach between 300 and 400 milligrams. Nitrogen retention, aside from these cases, bears no definite relationship to uremia. In discussion Volhard stated that he would distinguish between uremic symptoms and uremia. Thus eclampsia is not accompanied by abnormal nitrogen retention, while in true uremia the retention may vary from 100 to 400 mg. Reiss was also an adherent of this dualistic view. Gerhardt isolated from uremia the syndrome due to edema of the brain. He and others also called attention to the beneficent effects of venesection and lumbar puncture on this syndrome. Lüthje would not restrict the term uremia to conditions in which focal cerebral symptoms are in evidence. He referred to cases of so-called chronic uremia, characterized by persistent headache and motor and psychic inquietude, and implied that such cases were often wrongly diagnosed as cerebral sclerosis. Brugsch has studied nitrogen retention in uremia and nephritis, and has found that urea constitutes 80 per cent. of the retained nitrogenous substances.

News of the Week.

Typhoid Epidemic.—Following an appeal for aid from the officials of Little Rock, Ark., Dr. W. H. Frost of the Public Health and Marine-Hospital Service has left Washington for that city. One hundred and twenty-one cases of typhoid fever were reported up to July 15. It is said that the regular city water supply is not contaminated.

Plague in China.—During the first two weeks of July, twenty-five deaths from bubonic plague were reported in Amoy. There were also eight deaths from smallpox and three from cholera.

Plague in Morocco.—Bubonic plague has been reported in several parts of Morocco.

Infant Deaths in New York.—In spite of the intense heat during the first part of July, there was a notable decrease in the number of deaths of infants under one year of age, the number being only 706 from July 1 to 15, or 300 less than during the same period of 1910. Of these, 148 deaths were ascribed to diarrheal diseases, as compared to 363 in 1910. During the first six months of 1910 there was a total of 8,043 deaths from all causes among infants under one year of age.

The Cholera Situation.—Eight deaths in or about New York from cholera have been reported. The first two were those of an immigrant man and woman who had been released from Quarantine, and another was that of an employee on Hoffman Island, who is supposed to have contracted the disease from a cholera carrier. The cholera patients were sent to Swinburne Island from the steamship *Perugia,* which arrived from Naples on July 14, while the *Moltke,* which arrived on July 5 from the same port, brought eight cases of the disease. Of these passengers, three have since died. It is reported that 2,300 deaths from cholera have occurred in Palermo alone since last May, and cases are also said to have been found in Tuscany and in Marseilles and Toulon.

A Medical Special to Los Angeles.—A very enjoyable feature for many of the Eastern physicians attending the meeting of the American Medical Association was the excursion to the Coast and back on a special train organized, under the direction of Dr. Wisner R. Townsend of New York City, by the McCann's Tours Agency. The train was composed of six compartment sleepers, with observation, dining, café, and baggage cars. It left New York on the evening of June 19 and returned the morning of July 15, having in the meantime visited the Grand Canyon of Arizona, Redlands, Riverside, Los Angeles, the Yosemite, San Francisco, the big tree grove of Santa Cruz, Del Monte, Paso Robles, Santa Barbara, Salt Lake City, and Colorado Springs. The distance traveled in the train was 8,049 miles, and that covered by automobiles, stages, and carriages nearly 100 more. There were over one hundred persons, physicians and their families, in the party. Unlike some conducted tours, this one was acknowledged by all to be a perfect success. It was well arranged and scrupulously carried out without a hitch or disagreeable incident from start to finish.

Milk Inspection.—The New York City Department of Health has detailed, during the present summer, some of its milk inspectors to examine the temperature of the milk as it is received at night at the thirteen points where milk comes into the city. The results are reported as very satisfactory, the average temperature of eighty-eight specimens examined being 49° F. On two of the hottest days during the recent tropical weather, 618 specimens of milk were examined, and of these only seventy-eight were found to be above 50° F. In addition to this work, inspectors are also detailed to inspect the milk as it is being delivered from wagons to retail stores, and it has been found that the milkmen are exercising much greater care in handling the milk and in using ice to cool it while in transit. A similar investigation of the small stores where milk is sold has showed the same improvement.

Vital Statistics.—During the month of May there was a grand total of 12,384 deaths in New York State, according to the bulletin of the State Department of Health. Of this number, 955 deaths were due to epidemic diseases, 1,272 to tuberculosis, and 1,272 to other diseases of the respiratory organs, including pneumonia.

Hookworm in North Carolina.—The campaign against hookworm in North Carolina is progressing steadily. During the last twelve months the number of cases of the disease reported as undergoing treatment increased from 3,250 to 21,000, and the number of persons examined for the disease at the State Laboratory of Hygiene from 500 to 23,312. Of these 7,276, or about 31 per cent., showed infection with the hookworm, while 2,543 showed infection with other intestinal parasites.

Saccharin in Food.—The United States Department of Agriculture has recently modified paragraph 3 of Food Inspection Decision No. 135, to read as follows: "The Secretary of Agriculture, therefore, will regard as adulterated under the food and drugs act foods containing saccharin which, on and after January 1, 1912, are manufactured or offered for sale in the District of Columbia or the Territories, or shipped in interstate or foreign commerce, or offered for importation into the United States."

Summer Babies' Hospital for Philadelphia.—On the initiative of a number of physicians, in conjunction with the Director of Public Health, a hospital has been opened on the outskirts of Philadelphia for the care of infants of less than two years of age, especially suffering from gastro-intestinal diseases of the summer season. A sufficient sum of money has been raised for the purpose and a competent medical staff has been appointed. The new institution will occupy, rent free, the country branch of the Children's Hospital.

Chair of Eugenics.—Dr. Carl Pearson has been appointed the first professor of eugenics in the London University, filling the chair recently endowed by Sir Francis Galton.

Board of Inebriety.—As required by law, Mayor Gaynor of New York recently announced the selection of two physicians to serve on the Board of Inebriety created by an act of the Legislature last spring. Dr. William Browning of Brooklyn and Dr. John Dorning of New York have received the appointments. The board in addition consists of two clergymen and a business man. It has authority to establish a hospital and an industrial colony to which persons suffering from habitual drunkenness may be committed.

Gifts to Charities.—By the will of the late Mr. Abraham Abrahams of Brooklyn the Jewish Hospital of that city receives a bequest of $50,000, the income of which is to be applied to the maintenance and support of the institution.

The Presbyterian Hospital of New York re-

ceives a bequest of $100,000 under the will of the late Adele A. Dortic, the money to be used to build and maintain a home for convalescents. The New York Infirmary for Women and Children also receives a bequest of $3,000.

The International Congress on Tuberculosis.—A press despatch from Rome announces that this congress, which was to have been held in that city in September, has been postponed on account of the presence of cholera in Italy.

Safeguarding Hospitals.—The New York City Board of Aldermen recently, at the request of the Commissioner of Charities, ordered an issue of special revenue bonds in the amount of $200,133, to provide funds for a suitable fire protection system in the city hospitals and buildings under the jurisdiction of the Department of Charities.

American Laryngological, Rhinological, and Otological Society.—At the seventeenth annual meeting of this Society, held in Atlantic City, June 1-3, the following officers were elected for the ensuing year: *President,* G. Hudson-Makuen, Philadelphia; *Vice-Presidents, Chairman of the Eastern Section,* Theodore Corwin, Newark, N. J.; *Chairman of the Middle Section,* John A. Thompson, Cincinnati; *Chairman of the Western Section,* Thomas J. Gallagher, Denver; *Chairman of the Southern Section,* Otto Joachim, New Orleans; *Secretary,* Thomas J. Harris, New York; *Treasurer,* Ewing W. Day, Pittsburg.

Wisconsin State Medical Society.—At the annual meeting of the society, held in Waukesha recently, the following officers were elected for the ensuing year: *Prsident,* Dr. J. M. Dodd of Ashland; *Vice-Presidents,* Dr. T. J. Redelings of Marinette, Dr. C. A. Armstrong of Boscobel, and Dr. Hoyt E. Dearholt of Milwaukee; *Secretary,* Dr. Charles S. Sheldon of Madison; *Assistant Secretary,* Dr. L. Rock Sleyster of Waupun; *Treasurer,* Dr. Sidney S. Hall of Ripon. The next meeting of the society will be held in Wausau.

Northern Tri-State Medical Association.—This society, whose members are scattered over Ohio, Indiana, and Michigan, held a meeting at Toledo, Ohio, on June 6. The election of officers resulted as follows: *President,* Dr. C. N. Smith of Toledo; *Vice-President,* Dr. Victor C. Vaughan of Ann Arbor; *Secretary,* Dr. George W. Spohn of Elkhart; *Treasurer,* Dr. J. A. Weitz of Montpelier.

Des Moines Valley Medical Society.—At the fortieth annual meeting of the society held in Ottumwa on June 15 the following officers were elected for the ensuing year: *President,* Dr. A. O. Williams of Ottumwa; *Vice-presidents,* Dr. W. W. Eastburn of Sigourney and Dr. S. K. Davis of Libertyville;; *Secretary-Treasurer,* Dr. P. W. Bowles of Ottumwa.

Public Cups Barred.—Under an act passed recently by the New Jersey State Legislature, the State Board of Health announces that after July 4 public drinking cups are prohibited in the following places throughout the State: All parks, streets, highways, hotels, schools, halls, theaters, and other entertainment resorts, public libraries, all penal, philanthropic, and other State and municipal institutions, railroad and trolley cars and stations, boats and waiting rooms, all vehicles used for carrying passengers for a consideration, all places to which the public have the right of access with or without compensation, whether maintained by private or public authority.

Death of Centenarian.—After celebrating her 108th birthday on last New Year's Day, Mrs. Lachia Williams of Lansing, Mich., died suddenly at her home on June 27.

For Cancer Hospital.—At the commencement exercises of Harvard University held on June 28 announcement was made that during the past year $150,000 had been collected for the Cancer Hospital.

Charitable Bequests.—By the will of the late Mr. Isaac Stern of New York, Mount Sinai Hospital receives a bequest of $1,000.

Dr. Sarah Tew Mayo of New Orleans has been given the loving cup awarded each year by the New Orleans *Daily Picayune* to the citizen who has rendered the most signal public service of the year, as decided by a commission of disinterested persons. This is the first time that the cup has been awarded to a member of the medical profession. Dr. Mayo is a graduate of the Woman's Medical College of Philadelphia, and has been active in work among the sick poor of New Orleans.

Dr. John Shrady, formerly of New York, announces his removal to 38 Pleasant street, Stamford, Connecticut.

Obituary Notes.—Dr. Sewell Matheson of Brooklyn, N. Y., a graduate of the Long Island College Hospital in 1895, a member of the New York State and Kings County Medical Societies, the Brooklyn Gynecological Society, the Brooklyn Pathological Society, and the Alumni of the Norwegian and Lying-In Hospitals, assistant gynecologist to Williamsburg Hospital, and visiting surgeon to the Methodist Episcopal Hospital, died at his home of typhoid fever on July 9, aged 41 years.

Dr. Edwin A. Lewis, 64 years old, a retired surgeon, died July 18 at his home in Englewood, N. J., of paralysis after a long illness. He was born at Naugatuck, Conn., and was graduated at Yale University in 1870 and at the Bellevue Hospital Medical School in 1873. Dr. Lewis practised in Brooklyn for twenty years, retiring in 1895. At the time of the building of the Brooklyn Bridge and for several years afterward he was bridge surgeon, and he had served two years in Brooklyn as a police surgeon and two years as a surgeon for the Fire Department. He was for years a visiting surgeon at the Brooklyn, Long Island, St. Catherine's, and Flatbush hospitals, and Professor of Anatomy at the Long Island College Hospital medical school. He was for ten years surgeon of the Twenty-third Regiment.

Dr. William J. Walsh, Coroner of San Francisco, Cal., a graduate of the Medical Department of the University of California in 1902, and a member of the California State and San Francisco County Medical Societies, died at his home on June 23, at the age of 32 years, from injuries sustained in an automobile accident two weeks before.

Dr. J. Elvin Courtney of Denver, Col., a graduate of the Medical College of Virginia, Richmond, in 1883, and a member of the American Medical Association and of the Colorado State and Denver County Medical Societies, formerly assistant physician at the Matteawan, N. Y., State Hospital for the Insane, died at his home of pleurisy, on June 23, aged 51 years.

Dr. J. H. Aleshire of Plainfield, Ill., a graduate of the College of Physicians and Surgeons of Keokuk, Ill., in 1877, died at his home on June 25, aged 61 years.

Dr. John Quincy Adams McCollester of Waltham, Mass., a graduate of Jefferson Medical

College, Philadelphia, in 1856, a member of the Massachusetts State and Middlesex County Medical Societies, a veteran of the Civil War, and a member of the Board of Trustees of Norwich University, died at his home, on June 23, aged 80 years.

Dr. Charles A. Trexler of Knoxville, Pa., a graduate of Jefferson Medical College, Philadelphia, in 1887, died at his home on June 30 from injuries received in an automobile accident.

Dr. Crown Torrence of Charleston, S. C., a graduate of the Medical Department of the University of Nashville, Tenn., in 1898, and a member of the State and County Medical Societies, died at his home on July 1, aged 35 years.

Dr. David Franklin Buck of New York, a graduate of the Medical Department of New York University in 1891, died at his home on July 12.

Dr. Ralph E. Gallinger of Concord, N. H., a graduate of the Dartmouth Medical School, Hanover, in 1896, and a member of the American Medical Association and the New Hampshire State and Merrimack County Medical Societies, and physician to the New Hampshire State Prison, was killed in an automobile accident on July 12, aged 39 years.

Dr. Henry Rock Connor of New York, a graduate of the Bellevue Hospital Medical College in 1894, a member of the Alumni of the French Hospital, and assistant visiting physician to the French Hospital, died at his home on July 7, aged 54 years.

Dr. John F. Sprink of Council Bluffs, Iowa, a graduate of the John A. Creighton Medical College, Omaha, Neb., assistant of histology in the same, and president of the staff of the Mercy Hospital, Council Bluffs, and a member of the Iowa State, Missouri Valley, Pottawattamie County, and Council Bluffs Medical Societies, died suddenly at his home on July 2, aged 33 years.

Dr. George W. Taylor of Nolan, W. Va., a graduate of the Barnes Medical College of St. Louis in 1901, died at his home on July 1.

Dr. Weston H. Rice of Oakland, Cal., a graduate of the Medical Department of the University of Vermont in 1905, and local surgeon for the Southern Pacific Railroad, was killed in an automobile accident on June 27.

Dr. Robert Foster Andrews of Gardner, Mass., a graduate of the Dartmouth Medical School, Hanover, N. H., in 1857, and a member of the Massachusetts State and Worcester County Medical Societies, died after a short illness, on July 10, aged 75 years.

Correspondence.

WHAT IS REST FOR THE PROFESSIONAL MAN?

To the Editor of the Medical Record:

Sir:—In the issue of the Medical Record for May 27 Dr. Francis of Montclair, N. J., very ably advocates the value of rest as a preventive of premature age and break-down of the busy professional man. It is fitting that this subject is offered for discussion, when it is generally observed and often commented upon that the successful doctor, scientist, lawyer, and corporation magnate are so frequently cut off in a career which should in natural expectation have extended ten to twenty years longer, and, still more significant, that those in the profession who should know best how to conserve their natural forces furnish the more numerous victims of premature decay. In the Medical Record of April 15 editorial comment is made upon the untimely death of Kroenlein, and the premature mortality generally among Continental medical men of high attainment. To have gained pre-eminence in Continental universities, where the competition of minds is keen, implies a high order of mental endowment, the genius for intense application and industry, and prolonged years of constant struggle and effort. What is true of the Continent is true of America, and what is true of medical men is likewise true in all other fields of effort, where to come to the front requires years of strife and application—and more than ever is this true since the enormous expansion of every branch of learning in the later decades.

The usual method of such men, as they become more and more absorbed in their work, more driven by the duties and care their work engenders, more wearied and jaded, is to regard ideal rest as the periodical withdrawal from their labor, or the substitution of a new and diverting line of intellectual employment, and in this way soothe tired nerves and sharpen their faculties for renewed effort in the chosen field. But is this rest? While it does recuperate the fagged nervous system, what of those parts of the organism which carry on the functions of physical life—the respiratory, vascular, muscular, and excretory? During many years of intense mental application these have been totally ignored and allowed to carry on their work with the least possible cost of time and effort, and at length, when our subject should yet be in the very flower of manly strength and vigor, he has become distasteful of physical exertion, languid of movement, easily wearied, and tempted to indulge further inaction by the plea of needed rest.

The needed rest, which should have been from early manhood, is best expressed by *hard work*—or at least what the woodchopper or digger would call hard work. No man engaged in absorbing intellectual pursuits should be satisfied with less than two hours daily of vigorous exercise in the fresh open air—the equivalent of a seven-mile walk. This is the toll he must pay if he may have the right to expect his career to extend to the commonly accepted scriptural limit. The price of old age is the regular and vigorous use throughout life of those organs whose functions are essential to its continuance. Whenever doctors learn to prescribe and practise the doctrine of hard work as the professional man's rest, for at least two hours of every twenty-four, beginning in early manhood and continuing through 365 days of every year, ceasing only when the decrepitude of age compels, then will there not be found among medical and other professional men that deadly blight of career at 50 or 60 years by arteriosclerosis, fatty heart, apoplexy and paralysis, degenerate kidney, and tuberculosis. Acute disease also will get fewer victims. Sanguine youth may treat with contempt so simple a remedy for far-distant ills, but the time is pretty sure to come to him who acts upon this contempt when his heart will falter at the demands he shall make upon it, or his radial artery roll hard under his touch, his breath come short on quickening his pace or climbing a declivity, and he will then know it is too late to hope for benefit from any remedy, and how the best fifteen or twenty years to convey to posterity the rich harvest of his mental industry are beyond his grasp.

It is a pleasing fiction in which doctors indulge as to the exhausting toil their profession demands—and yet what degree of physical exertion does the average busy medical man get? He receives his pa-

tients during his morning office hours, rides to those he must visit, again receives in his office, and again rides to other calls, to return to his home for what reading or social intercourse he can get before retiring. Many men live this life in which the real physical exertion of an entire day could easily be condensed within a half-hour's active exercise; never an opportunity to make the cheek glow with quickened circulation, or the chest heave in deep inspiration—instead only sluggish indolence, lethargy of muscle, heart, and lungs. Before the entrance upon the last quarter of the race of life, is it any wonder unused organs falter or fail entirely to do their work? No claim to originality or even novelty is made for these observations. The principles involved are well understood, but how sadly ignored by our best medical talent!

J. Harvey Hill, M.D.

Hotel Altamont, Baltimore, Md.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

MEDICAL INSPECTION OF SCHOOLS—NATIONAL INSURANCE BILL, MEDICAL OPPOSITION, DEPUTATIONS, DEMANDS FOR DELAY, THREAT OF GAG IN PARLIAMENT—MEDICAL RESEARCHES AUTHORIZED BY LOCAL GOVERNMENT BOARD—OBITUARY.

London, June 30, 1911.

Dr. Addison, M. P., on Tuesday introduced to the Education Board a deputation on the medical inspection of schools. He said the method of the County Council was defective and inadequate. Sir V. Horsley said this deputation asked the Board to compel the London County Council to carry out the inspection according to the code of the department and the act of 1907. He declared the maladministration of the Council was a scandal and he regretted the Board had sanctioned its continuance instead of the school clinic system. The hospital scheme should be put an end to.

The president of the Board (Mr. Runciman) replied that they had not given an approval to the L. C. C.'s scheme during the last two years. He quite understood the fear of the finance committee when the deputation said 100 clinics were needed, but he saw no reason why medical treatment should be shirked as an extra burden on the ratepayers. They pressed on the Council the need of inspection. Consequently the inspectors were raised from 52 to 70 and more recently to 100 doctors. Improvement had begun and he hoped it would continue.

The passage of the national insurance bill is not so smooth as was anticipatel. Mr. Lloyd George is receiving deputations almost daily from different interests affected by it and people are amazed to see how his plausibility overcomes their objections at the time, though they afterwards feel dissatisfied. The interests of the medical profession and the friendly societies are, however, so completely opposed that he has not yet effected a compromise. The county councils and the municipal corporations at an interview on Tuesday received certain explanations which were supposed to meet their difficulties respecting the proposed "health committees" and amendments were promised restricting the activities of these new bodies. But on reflection the objections have been merely explained away in words —not removed in fact.

Some of the Chambers of Commerce, Chambers of Agriculture and other bodies are pressing amendments on the attention of the Chancellor but the medical aspects of the scheme claim precedence. The British Medical Association has worked the question astutely enough and carried out a canvass of the profession, making a special appeal to non-members to join as well as to sign the undertaking to refuse to take part in the work except on the terms I have already mentioned. The appeal has been successful, hundreds of new members being enclosed in the net. If all who have supported the declaration remain firm we shall see something like a strike against Mr. Lloyd George's terms and he will be obliged to increase the rate of payment or submit to complete failure; for it is obvious that he cannot create qualified practitioners in a hurry. Something of this kind, I hear, took place in Germany and the government had to submit. Our Chancellor received a second deputation of doctors on Wednesday, when the wage limit was the chief point discussed. The bill proposes £160 a year, which is obviously absurd. To pretend that a man earning more than £3 a week is a fit candidate for the benefit of club practice is contrary to the whole history of this semi-charitable provision. If this system, which the working classes have carried out for themselves with unquestioned success and ability, is to be displaced by a compulsory state insurance to which employers as well as workmen are required to contribute the premiums, surely the medical men are entitled to be paid a remunerative price for their services.

Yesterday Mr. Lloyd George had another interview with the medical men who met him the previous day for the B. M. A. The discussion was less cordial and it seems doubtful what good may come of it. The Chancellor would not agree to reduce the wage limit but laid the opposition to such a concession on the House of Commons. He seemed to think the clerk class might not like it also but was not much concerned for them. Not many of them are voters. Some other points he said he would leave to the unfettered judgment of the House of Commons.

That House was taken by surprise, the reporters say, when last night Mr. Lloyd George announced in his quiet manner that the government proposes to move a resolution on Wednesday to allocate time for the various stages of the bill. Thus debate is to be crushed if possible. The opposition is, of course, indignant and a number of the government's supporters condemn the proposal. A radical group, in fact, at once held a meeting which resolved that the guillotine ought not to be applied to a measure which was allowed a second reading without a division but has not yet got into committee. It is said that the cabinet was rushed by the Chancellor and would not object to discovering some way of reconsidering this matter, as it is obvious the bill is not so vote-catching as was expected. To-day's *Lancet* says that the profession will be exposed under the insurance bill to even greater risk than is indicated by the apparent intention to underpay practitioners who may cooperate in the scheme. The risk is that the status of the profession may be hopelessly lowered and the supply of candidates for qualification decline. It would be a disaster if this should occur. "Medical opposition to the bill is unanimous and the many and various grounds for the professional attitude require time for their exposition."

A meeting of medical graduates of the London University has been called for Wednesday next to consider the bill.

The Society of Apothecaries has added its voice to that of the other corporations and demands delay, fearing that injustice will be done to its licentiates if the bill be pushed through Parliament this session.

Many meetings, medical and non-medical, as well as journals, support the demand for delay and Mr. Lloyd George has himself said that he spent three years in preparing the measure with all the aid the Treasury and the Board of Trade could give him, and yet he wants to rush it through Parliament in as many months!

The following researches to be paid for by the annual Parliamentary grant have been arranged for by the Local Government Board: 1. Causes of premature arterial degeneration, by Dr. Andrewes. 2. Causes of death in measles, Dr. Thursfield. 3. Number and kind of fleas found on rats, Professor Quick, F. R. S. 4. Prevalence and characteristics of microorganisms known as non-lactose fermenters in alimentary canal of infants, by Dr. C. J. Lewis in continuation of his former investigation into this subject. 5. A similar research into this subject, by Dr. D. M. Alexander. 6. Non-lactose fermenters in flies in normal surroundings and in those associated with epidemic diarrhea, Dr. Graham Smith. 7. Anaërobic bacteria in the alimentary canal of infants, Dr. Bainbridge. 8. The possibility of pathogenic organisms being taken up by the larva and subsequently distributed by the fly, Dr. Graham Smith.

Sir George Plunkett O'Farrell died on the 22nd, aged 66. He took M.B., T. C. D. in 1869 and proceeded to the M.D. in 1875. He had held various appointments in Ireland, as inspector of reformatory and industrial schools, inspector in lunacy, commissioner of control, inspector of the Local Government Board and medical commissioner of prisons.

Surgeon W. Forrest Archibald, M.B., Ed. R. N. died suddenly on the 22nd, aged 29. He joined the service in 1905.

Dr. Ashby G. Osborn of Dover died on the 23rd, in his eighty-third year.

Dr. Alex. M. Smith of Glasgow died on the 20th, aged 77. He was superintendent of medical missions in the Bridgton and Cowcaddens districts.

THE CANADIAN MEDICAL ASSOCIATION.

(From Our Special Correspondent.)

MONTREAL, June 28, 1911.

IN the section on medicine there was held a symposium on acute poliomyelitis. Dr. C. A. Hodgetts, medical adviser to the Commission of Conservation of Canada, contributed a paper dealing with the statistics of the disease in that country. In order to find out all the facts possible concerning the mortality and morbidity statistics of the disease in Canada, the Commission of Conservation sent out in November last a circular letter of inquiry with blank return forms to each Canadian physician. Eight thousand letters were sent out and replies were received from 316 medical practitioners and thus the histories of 656 cases were reported which occurred between November 1, 1909, and October 31, 1910. These 656 cases were divided by provinces in the following manner: Ontario, 354; Quebec, 157; British Columbia, 48; Alberta, 27; Manitoba, 17; New Brunswick, 12; Saskatchewan, 6; Nova Scotia, 6, and Prince Edward Island, 1. As to sex incidence, of 528 cases 293 were males and 235 females. Of the total number where age was stated, 554, only 23 were under one year of age. Of the remaining 531, 341 or 64 per cent. were between the ages of one and five years. A comparison of the age incidence in three epidemics of the disease in Canada, Boston, and New York is somewhat remarkable. Under the age of twelve months the disease occurred in from 7 to 8 per cent. of the cases in the Boston and New York epidemics, as against only 4 per cent. in the Canadian epidemic. In the New York epidemic 90 per cent. of the cases were under five years of age; while in Boston 71 per cent. and in Canada only 65 per cent. were of this age. Of those over twenty years of age, there were 43 cases in Canada as against 31 in Boston and but 3 in New York. It was noted that in the New York outbreak over 99 per cent. of the cases were under twenty years of age. As to the seasonal occurrences in Canada, while the speaker stated that it was quite evident that the disease was always present, the month of maximum frequency was August; 76 per cent. of the cases occurred in the months of August, September, and October. Two towns in Canada, Hamilton, Ont., and North Haltey, Que., reported an unusually large number of cases in which the disease assumed epidemic form. With regard to the mortality from the disease, there were 46 deaths among the 658 reported, or 7 per cent. The speaker announced that it was the intention of the Commission of Conservation of Canada to publish in the form of a bulletin a collection of the interesting information sent in by the members of the Canadian medical profession together with the latest information to be obtained from the several leading Canadian authorities. The etiology and pathology were discussed by Dr. D. A. Shirres of Montreal and the symptomatology and diagnosis by Dr. C. K. Russel, Montreal. Concerning the surgical treatment of the after effects of acute poliomyelitis Dr. A. MacKenzie Forbes, Montreal, said that in the months of degeneration and regeneration after an attack of the disease surgical treatment must go hand in hand with neurological treatment, and this surgical treatment must aim at the prevention of pseudoparalyses due to stretching and deformities due to contraction. At this period rest from weight bearing was indicated. It seemed to him, however, that mechanical appliances had a distinct but limited place in the treatment of the after effects of acute poliomyelitis. Having referred to the limited usefulness of braces and supporting appliances the spreaker thought it wise to mention that in the fashioning of a brace one must always bear in mind that its chief use was to preserve muscles and that it might, if carelessly prescribed, by constricting the limb and preventing free circulation and function condemn to greater deformity an already affected part. Thus braces should always be light, simple, and readily removable, non-constricting, and often removed. The speaker pointed out that tendon lengthening had taken the place of tenotomy but that the most interesting operative procedure which might be called for after acute poliomyelitis was tendon transplantation. In the discussion Dr. W. G. Turner urged the employment of massage after an attack of acute poliomyelitis, stating that in his opinion massage done skilfully was better by far in the treatment of such cases than was electricity. Dr. C. J. Edgar said that he had had an experience of an epidemic of poliomyelitis in which the majority of the cases

were of an abortive type. He had found urotropin of considerable value in treatment, in which opinion most of those present concurred. The consensus of opinion was that the employment of serum in combination with the administration of urotropin would be the treatment indicated. Some present advocated isolation of those affected and it was suggested that the common housefly may, in certain instances, be the means of communicating poliomyelitis. Dr. Russel in his paper stated that he did not believe the nose to be the chief seat of infection and was of the opinion that infection might be conveyed by insects, probably by mosquitos.

Of other papers read in the medical section that of Dr. A. E. Vipond of Montreal was especially interesting. It was a preliminary note as to the specific organism of scarlet fever. The conclusions which the speaker arrived at were as follows: (1) The bacillus had been obtained from seven cases of scarlet fever which came under his notice. (2) The bacilli would grow on all ordinary media, the growth occurring in three and a half hours. (3) The bacilli were to be found in the lymphnodes, where they multiplied and formed toxins which entered the circulation. (4) The bacilli had been inoculated into five monkeys and two rabbits. Typical scarlet fever developed in all, including rash, enlarged lymphnodes, and desquamation. No suppuration in any one instance took place at the point of inoculation. Streptococci would have been likely to produce this effect.

The Section on Preventive Medicine was one of the most important of the meeting. On the first day, the afternoon of June 7, the meeting was mainly devoted to a consideration of the milk question. The first paper read was by Dr. J. J. McCarrey, Inspector of Food in Montreal. He advised that steps be taken to effect improvements at the source of milk production by insisting on the rigid inspection of all milk-producing herds as a preventive of pollution. Sooner or later impure milk caused the deaths of the infants who drank the product. In those instances in which a man was wilfully negligent of the fact he became criminally responsible for the deaths wrought and should be severely punished. Where he was ignorant of the results of his carelessness steps should be taken to enlighten him for the benefit of the city or section of the country in which he lived. Tuberculosis might be readily detected by clinical examination in the case of human beings, but veterinary surgeons would often fail to diagnose bovine tuberculosis. He accordingly emphasized the need of employing the tuberculin test. Dr. T. P. Shaw of Montreal dealt with the use of milk as a food for convalescents, infants, and children, and stated that, while the improved conditions of modern living tended to decrease mortality, the same did not apply to the infant population under one year of age. In the opinion of Shaw all cities should establish bacterial standards for milk as well as standards for the food value of milk, all of which should be sold in sealed bottles. Pasteurized milk was to be preferred to the dirty unpasteurized product but it should be labeled as such and bear the date of pasteurization. Dr. J. E. Laberge of the Montreal Board of Health referred to the financial loss to the Dominion resulting from the employment of poor milk in the manufacture of its milk products.

Dr. F. H. Whitelaw of Edmonton and Lieutenant-Colonel Jones and Major Lorne Drum of Ottawa also read papers on the question of milk products and the supply of the products in their respective cities.

On June 8 Lieutenant-Colonel Jones of Ottawa read a paper on military sanitation. He said in part that military sanitation is in time of peace very different from military sanitation in time of war. The first was preparation, the second was realization. War means only one thing, the defeat of the enemy, and every effort must be exerted and every point strained to accomplish this end. The military sanitarian has a mighty force as his coadjutor, military discipline. Their success as military sanitarians in the mobilized Canadian militia would depend on the success obtained in discipline. An undisciplined army is an unsanitary army. Dr. C. A. Hodgetts of Ottawa contributed an article on infantile mortality. In this paper the very large mortality of infants under one year of age was discussed and it was pointed out that while in Quebec the mortality rate of infants under one year of age to 1,000 births was 128; in Ontario, 124; in Victoria, Australia, it was only 86 and in western Australia, 85. The speaker drew attention to the large death rate among infants from epidemic diarrhea. Poverty, he said, was not so great a factor in the causation of death of infants in Canada as in Great Britain. The death rate of infants in Ottawa was bad enough but the mortality of infants in Montreal was simply appalling.

On June 9 a symposium on typhoid fever and water supplies was held by the combined sections on medicine, preventive medicine, and laboratory workers under the chairmanship of Dr. T. A. Starkey, professor of hygiene at McGill University and chairman of the section of preventive medicine. This symposium was an unqualified success, the papers read were of a high quality, and several facts of much moment were elicited with regard to typhoid fever. Major Lorne Drum read a paper on the character of the recent epidemic of enteric fever in Ottawa, in which it was clearly shown that polluted water was responsible for its spread. Dr. John A. Hutchinson, medical officer of health, Westmont, read a paper on the character of the recent epidemic at Westmont, which was also shown to be waterborne. Dr. Starkey, in the absence of Dr. Brehm, medical officer of health, St. John's, Newfoundland, cited an instance of a lake in Newfoundland four miles long into a corner of which the drainage of one farmhouse and premises emptied, and one only. As a result the whole community which derived its water supply from that lake was infected with enteric fever. Dr. C. H. Douglas of Montreal described in a paper a large epidemic of enteric fever at Fort William, which was clearly demonstrated to be wholly waterborne. The clinical aspects of typhoid fever and typhoid-like infections were described in a paper by Dr. F. G. Finley, Montreal. Bacteriology of the same was discussed in a paper by Dr. Rhea, Montreal.

By the bacteriological means of diagnosis now at hand it was pointed out that a case of enteric fever could be diagnosed in twelve hours and vaccines used at once. The chief scientific interest of enteric fever from a bacteriological standpoint was centered in the paratyphoid group. The need now was for the bacteriologist to differentiate between the various members of the group. Lieutenant-Colonel Jones of Ottawa read a paper on water supplies as the chief channel of infection. He made a scathing indictment of the water supply of eastern Canada and he emphasized the fact that the treat-

ment of polluted water by hypochlorite of lime was but a stop-gap and must not be regarded as taking the place of filtration, the only effective means at present known for purifying a water supply. Professor Starkey said that there was little pure natural drinking water left in Canada and that all drinking water must be filtered if a recurrence of typhoid epidemics was to be avoided. A paper on typhoid carriers was read by Dr. J. C. Meakins, Montreal. The gist of the meeting was that epidemics of typhoid fever were generally waterborne and that the water supply of Canada was generally polluted.

Prof. Starkey also brought forward a most important point. It was to the effect that in most, if not all, epidemics of typhoid fever in Canada the paratyphoid, or typhoid-like, infections were numerous and sometimes preponderated. By typhoid-like infections was meant those which did not react to the Widal test. This view was concurred in by all present and Dr. J. G. Adami said that for the safety of the public all the paratyphoid infections should be considered under the head of enteric fever. Dr. Starkey for some years has insisted on the large number of typhoid-like infections which accompanied epidemics of enteric fever and has urged that greater attention should be paid by medical men to these infections.

Progress of Medical Science.

Boston Medical and Surgical Journal.

July 6, 1911.

The Use of Coley Toxins in the Treatment of Sarcoma. R. M. Green.
Does Appendectomy Always Relieve Symptoms? An Analysis of Results Years After Operation in 640 Cases of Appendectomy. C. L. Scudder and H. W. Goodall.
Interpretation of Laboratory Findings. J. W. Fisher.
Spina Bifida. B. B. Cates.
Consideration of Two Cases of Infantile Scurvy with Special Reference to Differential Diagnosis from Infantile Paralysis. F. P. Webster.
Malignant Lymphocytoma of the Mediastinum. The Report of a Case. O. S. Waugh.

Coley Toxins in Sarcoma.—R. M. Green states that the use of Coley toxins alone in the treatment of sarcoma is warrantable only in obviously inoperable cases and then as a last resort. The use of Coley toxins as an adjunct to surgery in the treatment of sarcoma, or as a prophylactic against recurrence, is advisable, though by no means of definitely established value. The preparation of the mixed toxins of *Bacillus prodigiosus* and *Streptococcus pyogenes* as a bacterial vaccine by the method devised by the author is quicker, simpler, and more accurate than their preparation by Coley's method, and the product obtained is equally efficient.

Appendectomy and Relief of Symptoms.—C. L. Scudder and H. W. Goodall find that the statement sometimes made that appendectomy is associated with distressing sequelæ is unfounded in their series of cases. Likewise the statement that appendectomy is often followed by no relief to symptoms is not borne out by these cases, 94 per cent. having been completely relieved.

Interpretation of Laboratory Findings.—J. W. Fisher states that many times the improper interpretation of laboratory results by clinicians is responsible for much unjust criticism of pathologists and needless groping in the dark by those who decline to avail themselves of these valuable adjuncts to successful practice. On the other hand, the pathologist would be more helpful to the physician or surgeon if he would study the clinical as well as the pathological side of the case. In conclusion, the author makes a plea for the more frequent use of laboratory tests, but with a proper correlation of all of the clinical findings, thus eliminating much that is haphazard in diagnosis.

Spina Bifida.—B. B. Cates, in reporting a case of this condition, calls attention to a step in the technique of the operation which concerns the closure of the spinal defect with osteoplastic grafts. In not one of his cases was there enough bone at hand to cover the opening, so he used the deep fascia by dissecting enough from without inward to cover over the defect when turned toward the middle line. This fascia is strong enough and dense enough to form a firm bridge. It is not necessary to overlap the flaps, simply stitching the edges together with fine catgut being all that is necessary. Indeed, he believes that he caused necrosis in one of his cases by imbricating the flaps, thus cutting off the blood supply.

Infantile Scurvy and Poliomyelitis.—F. P. Webster concludes that, although a careful history, a painstaking examination, and the therapeutic test will procure a positive diagnosis, the discrimination between infantile paralysis and pseudo-paralysis of scurvy is not so simple and definite as described by authorities, and that, in particular, the changed and protean character of recent infantile paralysis has introduced difficulties into the immediate differential diagnosis.

Malignant Lymphocytoma of the Mediastinum.—O. S. Waugh reports a case showing congenital absence of one kidney, ureter, and adrenal, and a tumor which had completely filled the mediastinum, infiltrated the heart and surrounding tissues, and by pressure had constricted the lumen of some of the large blood-vessels in this locality. Histologically the tumor was a lymphocytoma.

New York Medical Journal.

July 8, 1911.

Recent Developments in the Physiology and Pathology of the Thyroid Gland. S. P. Beebe.
A Simple Method of Viewing Röntgenograms in Three Dimensions. M. Girsdansky.
A Simplified Technique for Retrodisplacement of the Uterus in Performing the Baldy-Webster Operation. A. L. Soresi.
Improved Technique for the Intravenous Administration of Salvarsan by Means of a Vacuum Burette. A. A. Uhle and W. H. Mackinney.
In What Treatment May the Tuberculous Have Confidence? P. Paquin.
The Effect of Artificially Induced Fever upon Some Chronic Inflammatory and Ulcerative Lesions. H. Neuhof.
Some Remarks Concerning Diagnosis by Inspection. J. G. Wilson.
A New Diluting Fluid for Counting Leucocytes. R. L. Pitfield.

Physiology and Pathology of the Thyroid Gland.—S. P. Beebe states that there is considerable evidence to indicate that iodine is combined in the thyroid as a diiodotyrosin, but the administration of this substance will in no way replace the action of thyroid extract.

Röntgenograms in Three Dimensions.—M. Girsdansky describes a simple method of preparing and viewing röntgenograms in three dimensions.

Simplified Technique for Baldy-Webster Operation.—A. L. Soresi suggests the use of a hairpin instead of thumb and artery forceps as a means of perforating the broad ligament on each side of the round ligament, of pulling out the round ligament, and of approximating it with its mate on the other side.

Intravenous Administration of Salvarsan.—A. A. Uhle and W. H. Mackinney describe their improved technique for this procedure by means of a vacuum burette.

Treatment of the Tuberculous.—P. Paquin reports good results following the use of *tuberculinum purum*. He does not employ products with strong reactive properties save for diagnostic purposes, and in no event does he depend wholly on tuberculin as a remedy. He applies every suitable remedial measure, basing all first on nutrition, and then on specific treatment, resting on Nature's self-creative antidotes.

Artificially Induced Fever and Inflammatory Lesions.—H. Neuhof states that the study of the effects of artificially induced febrile reaction upon chronic inflammatory and ulcerative lesions is far from complete, but it appears that enough has been observed by him to warrant the

statement that the administration of mixed toxins has had a readily observable and a beneficial effect in several instances. For his first studies, diseases have been chosen in which changes following injections could be readily seen and felt. As a means of artificially inducing fever, Coley's fluid was used. What influence Coley's fluid will have upon the many other forms of inflammatory and ulcerative disease remains to be determined. To the author's mind there is no reason to believe in a specificity of the effect of Coley's fluid in these cases; it has been employed merely because it is a ready means of inducing pyrexia.

Diagnosis by Inspection.—J. G. Wilson states that one should cultivate to the fullest extent the faculty of rapid and accurate observation. By constant exercise of this power of attention one can, in all probability, attain a greater degree of perfection in the art of diagnosis than at first thought possible.

New Diluting Fluid for Counting Leucocytes.—R. L. Pitfield recommends the following diluting fluid: Acacia gum, 20 grams; distilled water, 50 c.c.; mix, dissolve, and add glacial acetic acid, 50 c.c.; gentian violet, one decigram; mix, warm, and filter while warm through a wet filter. This makes a superior diluting fluid in counting leucocytes because it is viscid and for this reason does not flow out of pipettes easily, and these can be filled more accurately because the fluid flows much more slowly. Neater drops and of definite size may be slowly put up on the counting chamber.

Journal of the American Medical Association.

July 8, 1911.

Retrospection and Introspection: Our Opportunities and Obligations. H. G. Wetherill.
The Therapeutic Application of Tuberculin in the Treatment of Ambulatory Pulmonary Tuberculosis. Its Indications and Contraindications. J. Ritter.
Treatment of Purulent Ophthalmia and Simple Means for Its Prevention in Infants. M. D. Stevenson.
The Significance of Retinal Hemorrhage Based on a Study of the Subsequent History of One Hundred and Eighty-seven Cases. F. T. Rogers.
Cultivation of Pathogenic *Treponema Pallidum*. H. Noguchi.
Experimental Study of Anaphylaxis in Carcinoma. Preliminary Report. J. L. Ransohoff.
The Healing of Iridectomy Wounds and Its Influence on Glaucoma. A. Alt.
Two Cases of Congenital Hydronephrosis. D. M. Eisendrath.
An Instrument for Rectal Operations, Especially the Whitehead. W. J. Woolston.
Fracture of Anatomic Neck of Humerus with Subcoracoid Displacement of Lower Fragment. J. W. White.
The Period of Infectivity of the Blood in Measles. J. F. Anderson and J. Goldberger.
A New Sphygmomanometer. P. Nicholson.

Retrospection and Introspection.—By H. C. Wetherill. See MEDICAL RECORD, July 8, page 103.

Tuberculin in Treatment of Tuberculosis.—J. Ritter states that tuberculin is a valuable remedy when the lesions are limited and the progress of the disease slow without much fever or systemic disturbance. It may also be useful in advanced febrile tuberculosis with fair appetite and digestion and little or no systemic disturbance. It must be used with caution in young patients with actively incipient cases and one should keep in mind that in recent infection and in exacerbations of old lesions the reaction may be severe. In inactive advanced cases where few bacilli are still demonstrable in the sputum it may be of use.

Treatment of Purulent Ophthalmia.—M. D. Stevenson states that in this condition the policy of treatment should be guided by four considerations: The careful, thorough use of proper antiseptics, efficient but not too irritating; watchful care over corneal and general nutrition; free drainage; and especially avoidance of even the slightest injuries to the delicate corneal epithelium. A bacteriological examination of the discharge should be made as soon as possible, and, while the author uses generally a 1 per cent. nitrate of silver solution in virulent gonorrheal infections, a 2 per cent. or even stronger solution for a few treatments may be better. In certain mild non-gonorrheal infections 0.5 per cent. is usually sufficient.

Retinal Hemorrhage.—F. T. Rogers concludes that three-quarters of all cases of hemorrhagic retinitis either terminate fatally within a few years or the patients suffer marked impairment of health. The existence of any form of hemorrhagic retinitis is suggestive of present or future disease of either the nervous or circulatory system. The duration of life in albuminuric retinitis increases with the age of the patient, and the younger the patient the worse the prognosis in point of time.

Cultivation of Treponema Pallidum.—H. Noguchi announces his success in cultivating this organism, employing the spirochete-containing testicular tissue of the rabbit.

Anaphylaxis in Carcinoma.—J. L. Ransohoff describes experiments in which pigs were sensitized with serum taken from patients suffering from carcinoma. He concludes that these experiments may develop into an aid to early diagnosis of carcinoma. There seems, too, a possibility of work of this nature opening up a channel which may eventually lead to true cancer immunity and treatment by serum.

Healing of Iridectomy Wounds.—A. Alt takes up in a general way the theories of glaucoma and of the beneficial effect of iridectomy in this condition, and comes to the conclusion that it is probable that the excision of a piece of the iris is the essential part of the glaucoma operation.

Congenital Hydronephrosis.—D. M. Eisendrath reports two cases of this condition. The special points noted are the diagnosis before operation, the congenital stenosis of the ureter as a cause of the obstruction to the escape of urine, and the fact that a large hydronephrotic kidney could exist practically without symptoms except abdominal enlargement and emaciation since birth.

Instrument for Rectal Operations.—W. J. Woolston describes a new instrument that he has devised, which is especially adapted for the Whitehead operation. It consists of a conical rubber plug upon which the operation is performed, occluding the bowel in such a manner that no contamination of operation or field of operation takes place.

Fracture of Humerus.—J. W. White reports a case of fracture of the anatomical neck of the humerus, with subcoracoid displacement of the lower fragment.

Infectivity of the Blood in Measles.—By J. F. Anderson and J. Goldberger. (See page 182.)

A New Sphygmomanometer.—P. Nicholson has devised a simple compact blood pressure apparatus.

The Lancet.

July 1, 1911.

Temperaments: Is There a Neurotic One? R. Jones.
Outlines of Medical Hydrology. R. F. Fox.
A Short Chemical Study of a Case of Cyclic Vomiting, with Some Remarks on Creatinuria and Acidosis. E. Mellanby.
The Physiological Ideal in the Artificial Feeding of Infants. J. Snowman.
Success or Failure in Electrotherapy: A Consideration of Some of the Causes. S. Sloan.
A Case of Trophoneurotic Anemia; A Sequel. T. W. Parry.

The Neurotic Temperament.—R. Jones states that genius may often prove to be a golden idol with feet of clay. Man is firstly a vertebrate mammal with the instincts of the animal, but he has the power of inhibition and of autocriticism, and through the influence of his environment he has attained a veneer of civilization, and it is interesting to note that in insanity these acquisitions of his progress are gradually dissociated and shed in the inverse order of their acquirement, until at last man is left a wreck barely above the level of the animal. The cause of this reduction in insanity is probably some physical process in the cortical cells, or, in other words, some chemical change has occurred in the neurones, either directly through the influence of some poison generated from

within or introduced from without the body, or indirectly by means of the environment, favored, of course, by some inherited predisposition; and it is the study of man biologically—that is to say, the observation of his general activity or his total reaction under the influences of physical and psychological impressions—that enables us to infer the kind of temperament a man possesses. The predisposition to states of instability of control may be associated with distinguished mental superiority, and it is the degree of sensitiveness to pleasure and pain, the degree of motor restlessness, and the degree of emotional tone exhibited by the individual which justify us in concluding that there is or is not present a temperament which one is entitled to describe as the neurotic, and it is by foreseeing this temperament that one can promote happiness and harmony where otherwise there would be intolerance, strife, and discordance.

Medical Hydrology.—R. F. Fox defines medical hydrology as the science of waters, vapors, and mineral or organic deposits in connection with waters, as used in medicine, both by internal administration, and in the form of baths and applications.

A Case of Cyclic Vomiting.—E. Mellanby reports the case of a boy six years of age who had had attacks of vomiting and great prostration almost every month since birth. There was an extremely rapid loss of weight during the attacks. The child was never normal because he always excreted creatin. The cause of the attacks was always at work. The creatin excretion rose considerably several days before the attack, so that by the estimation of this substance it was possible to predict the onset of symptoms. Acidosis had nothing whatever to do with the attack, but was only an episode like any other symptom. And this for the following reasons: (*a*) the child's power to metabolize fats was quite normal; (*b*) acidosis started after the onset of symptoms and cleared up, on giving glucose, before their abatement; and (*c*) a condition of acidosis for four days in a quiescent period was accompanied by no trace of ill-effect. It is thought that the condition of recurrent vomiting is due to some intestinal intoxication which may or may not depend on bacteria. It is suggested that such a condition might depend upon an accumulation or excessive formation of β-iminazol-ethylamine in the intestinal wall.

Artificial Infant Feeding.—J. Snowman states that on chemical, physiological, and clinical grounds lactalbumin demands a permanent position in all cow's-milk mixtures intended for infant use.

Electrotherapy.—S. Sloan states that the employment of electricity as a sole remedy eliminates all other sources of possible success or possible failure, and makes for education in correct electrotherapy. This is of value in the early practice of the art, but, without doubt, once sufficient experience has been gained, the best results will be obtained by utilizing to the full all the resources of the healing art—electrical, medicinal, dietetic, physical, psychic: and he is the most successful physician who has his quiver full of such weapons and who, in cases of difficulty, is fertile in resource.

Trophoneurotic Anemia.—T. W. Parry reports a case of profound anemia in a female patient in which the apparent cause at the outset was nervous shock. The condition was temporarily relieved by intramuscular injections of an arylarsonate.

British Medical Journal.

July 1, 1911.

Remarks on a Case of Sporotrichosis. N. Walker and J. Ritchie.
Carcinoma of the Larynx: Extirpation of Primary and Secondary Growths: Glandular Recurrence: Treatment with Thyroid Extract: Disappearance of Growths. R. H. Woods.
Some Cases of Chronic Jaundice in Which Opening the Duodenum Was Required. H. B. Robinson.
On Two Cases of Removal of Part of the Pericardium and Its Repair by Means of the Pectoral Muscle. A. W. Mayo Robson.
The Sulphur Miners of Sicily: Their Work, Diseases, and Accident Insurance. Sir Thomas Oliver.
Experiments on the Restoration of Paralyzed Muscles by Means of Nerve Anastomosis. R. Kennedy.
A Subtemporal Decompression Operation for Intracranial Pressure. J. Stewart.
Blue Sclerotics and Brittle Bones. H. Burrows.

Sporotrichosis.—N. Walker and J. Ritchie state that cases of sporotrichosis can easily be overlooked. To ensure that the primary cultures shall be pure, material from unbroken lesions must be obtained and the difficulty of microscopically demonstrating the fungus in the lesions, the necessity in many cases for the use of media containing sugar, the special thermal relationships of the organism, the non-appearance of visible growth till several days after inoculation, the peculiar miscroscopic appearances which often suggest the presence of yeasts, the relative insusceptibility of the guinea-pig to inoculation, all open up paths for the organism being missed. Further, the marked therapeutic effect of potassium iodide may suggest a diagnosis of syphilis and obscure the recognition of the true condition present. It is obvious, however, that in all granulomata, especially of the skin, which cannot be clearly attributed to the ordinary causes of such lesions, the possibility of sporotrichosis should be kept in view. Usually, if such precautions as those detailed be observed, little difficulty will be experienced in the fungus being isolated, if it be present

Carcinoma of the Larynx.—R. H. Woods reports a case of extirpation of the larynx for carcinoma, in which cancerous recurrences in the lymphatic glands of the neck were caused to disappear by the administration of thyroid extract.

Chronic Jaundice.—H. B. Robinson reports observations made upon ten cases in which it was found necessary to explore the duodenal end of the bile duct to unravel the cause of a more or less persistent jaundice.

Removal of Part of Pericardium.—A. W. Mayo Robson reports two cases: one of columnar-celled carcinoma involving the pericardium; the other a chondrosarcoma involving the pericardium. In both of these a considerable portion of the pericardial walls was removed, and the gap efficiently covered in by a flap taken from the pectoral muscle.

Diseases and Accident Insurance Among the Sulphur Miners of Sicily.—Sir Thomas Oliver describes his investigation of the conditions surrounding the work of the 40,000 sulphur miners of Sicily. The principal accidents are fracture of arms and legs due to falls of stone from the roof, fractures of the bones of the feet, and injuries to the head by falls of stone. Beyond conjunctivitis due to irritation of the eyelids by sulphurous acid and sulphuretted hydrogen, eye affections are not common. Trachoma is sometimes met with. The men are occasionally asphyxiated through unexpectedly inhaling sulphuretted hydrogen and carbon dioxide gases given off from the bituminous clay and the naked lights used in the mine by the men and boys. Of the 5,000 accidents which occur annually 1,200 happen to the boys who carry the ore from the depths of the mines up a long and treacherous flight of stairs to the surface. Fifty per cent. of the accidents happen to the diggers. An invalid fund has been or is about to be opened for the sulphur miners. It will be managed by the state, and to it the owners and leaseholders will contribute 1½ francs per ton of sulphur. The workmen will not contribute to this fund. An efficient system of accident insurance has been in force for some time. The Sulphur Miners' Insurance Society is not a state-managed fund, although it is obligatory upon employers and leaseholders to contribute to it. The workmen do not contribute to the fund. The tariff is 2 francs per ton of melted sulphur. The amount of money raised from employers is 800,000 francs per annum. Of this, 250,000 francs are spent upon medical

and surgical requisites, including payments to doctors and their assistants. The Red Cross Society receives a special allowance of 100,000 francs a year. There are in Sicily 112 medical men connected with the insurance society, but all doctors must, according to law, render first aid, if called upon to do so, and for this service they receive 7 francs. In Caltanissetta there is a consulting staff of three medical men, each of whom receives 3,000 francs a year. It is the duty of these medical men to visit the injured and to furnish a report to the director of the insurance fund. In 1909 over 2,000 medical visits were made. The benefits of the insurance fund are only extended to men and boys who have been injured in or in connection with the sulphur mines, and to relatives of persons who have succumbed to injuries. If death supervenes after an accident, five years' wages are paid to the relatives of the deceased miner; the average amount paid is 3,000 francs, but this sum is regulated by the wages which had been received by the workman. Every injured miner is entitled to 2.40 francs per day. For ordinary sickness little provision has as yet been made; but in the event of an acute illness, such as pneumonia, employers will frequently render financial assistance to a sick miner, in the hope that, when he returns to work, deductions can be made from his weekly wages. To the estblishment of the insurance fund there was considerable opposition on the part of the employers on account of expense; but a more beneficent scheme could hardly be conceived. It is now regarded by all as an excellent institution. The syndicate has appointed three experienced inspectors to visit the mines and to offer suggestions to the owners as to the means whereby accidents may be prevented. These appointments have been productive of good. After every accident a report is sent to the state mining office, the police, and the insurance fund. It is sufficient if the announcement is sent by telegram. In addition to the above there are also fourteen under-inspectors, who are paid by the fund to assist in a general way. These men frequently assist the surgeons in dressing wounds, etc. In the event of an accident proving fatal a post-mortem examination is always made; this is attended by two medical men, one of whom is an official of the insurance fund, while the other is appointed by the magistrate of the district. Since the establishment of the insurance fund lawsuits, which used to number 200 a year, have fallen to 60. In 1905 the accidents numbered 9,000; in 1909 they had fallen to 5,000, owing to greater care, improvement of methods, and mine inspection. The period of temporary invalidity after accident used to be twenty-five days; the year before last it was sixteen and a half days. Injured miners receive pay from the first day of the accident. In consequence of the frequent visits of the official surgeons, whose report is final, malingering has been reduced to a minimum. An injured miner has one alternative, and that is to apply to a judge, who, if he deems it necessary, can send a doctor to examine the patient, and, if the medical report is contrary to that of previous examiners, the judge may reopen the case and settle it. The cost of the administration comes to 140,000 francs a year. The sum paid to injured workmen in 1905 was 700,000 francs; in 1909 it was 300,000 francs. Colojanni maintains that the terms arranged for the injured sulphuric miners of Sicily are better than those for the ordinary miner in Germany.

Nerve Anastomosis.—R. Kennedy states that on failure of spontaneous recovery from facial paralysis anastomosis with the spinal accessory or hypoglossal holds out the most favorable prospects of recovery.

Subtemporal Decompression Operation.—J. Stewart reports a case of fracture of the vault of the skull with extradural hemorrhage, in which a successful decompression operation was performed.

Blue Sclerotics.—H. Burrows presents a genealogical history showing a definite connection between fragility of the bones and blue sclerotics.

Berliner klinische Wochenschrift.

June 19 and 26, 1911

Action of the Tropical Sun on Mankind and Animals.—Aron of the Philippines has subjected this problem to experimental research. To what extent is the great morbidity of white men in the tropics due to the light rays and to what extent may this morbidity be cut down by exclusion of these rays? Aside from the latter one has to contend with dampness, heat, precipitation, winds, and air pressure. Again, aside from the quality of the invisible chemical rays, the visible heat rays as well must pass almost vertically through the atmosphere, which is thereby prevented from that absorption of light which occurs even in the warmest temperate climate. At Manila the intensity of the light rays is from five to twenty times that of Chicago in the month of June. On the other hand the actinic spectrum in the Philippines has been found to be not more extensive than that further north. To make of the chemical rays an essential factor in tropical morbidity seems unwarrantable *a priori*, and experiments as to a hostile action of these rays on soldiers appear to have ended with negative finds. The unfavorable action of moist heat, as compared with that of chemical rays, is thoroughly comprehended and has never been in dispute. To study the effects of heat rays alone the chief available resource is surface thermometry. The surface temperature in tropical shade is normally about 33° C. When the skin is exposed to the heat rays the temperature tends to rise to blood heat, but with continued exposure the skin perspires freely and the temperature falls. The dark skin of the native absorbs heat more rapidly and perspires more markedly. It probably does not on this account reach the high mark of the white skin. Sensible perspiration dehydrates the surface without cooling it, the cooling action being due to the non-apparent evaporation. In an atmosphere saturated with humidity evaporation is necessarily interfered with. The white man's clothing also antagonizes evaporation; yet if he go naked the local action of the chemical rays is at once apparent. Muscular exertion tends to raise the temperature and heat stroke most commonly follows the combination of direct exposure and muscular labor. The author's experiments on apes tend to show that when exposed to direct solar radiation these animals exhibit no more immunity to the latter than do unacclimated white men. They are able to live and flourish in the tropics only because they live in the shade.

Psychical Disturbances After Lightning Stroke.—König gives this subject brief monographic consideration and reports one case in great detail. Aside from the burns the condition after the stroke, which may persist for months, is essentially neurasthenic. There are weakness of the legs, instability of the heart, tremor of the hands—in short evidences of traumatic neurosis. The author's female patient developed five years after the injury a severe hysteria. Such a sequence is so far from unique that it has been reported as very common after electric injuries other than lightning strokes. Hence for a variable period after injury the patients should be in a condition of latent hysteria. In the author's patient, however, the hysteria was preceded by dyspeptic symptoms and malnutrition. The hysteria was severe in type and notably polymorphous. Patient may not have been an intact individual from the psychopathic viewpoint, but this could not readily be shown. However, analogous mental phenomena have been noted in intact subjects. The psychical disturbances were largely such as pertain to severe hysteria, but the alteration could not entirely be accounted for on that hypothesis. Various hallucinations appeared to give rise to imperative concepts with suicidal tendencies. The pa-

tient made a good recovery from the entire morbid state and resumed her original position in the world.

Suprarenal Hemorrhages in the Newly Born.—Magnus points to the frequent occurrence of suprarenal hemorrhage in autopsy cases of the newly born, including the stillborn. He himself has notes of eight cases in a total material of 124 children in which the hemorrhage was plainly evident to the naked eye. Apparently a routine microscopical study of these cases is impracticable, yet evidence enough exists to show that this lesion should be present in a very large percentage of all dead newly born. The lesion is very frequently present in the dead fetus, while conversely it tends to become more and more infrequent with age, until in dead adults it is found to the extent of but 1 per cent., While the significance of the find doubtless varies, it undoubtedly stands in close relationship with asphyxia during labor and following different postpartum accidents. It is believed that a material predisposition to this accident may exist, for we have no reason to believe that it occurs so often in children who survive.

Irregular Course of Nerve Syphilis.—Benario, representing his chief Ehrlich, retorts to those who allege the existence of serious nervous lesions due to salvarsan that the natural march of nerve syphilis is characterized by great irregularity of evolution; so that whatever method is used for treating this affection may seem at times to stand in causal relationship to certain symptoms. Cerebral syphilis may supervene with greatly varying frequency and precocity and may appear in many clinical forms. We know a great deal concerning the central and peripheral lesions of syphilis which affect the eye, and we have also definite information of the character of eye affections due to arsenic; and a comparison of the two shows that accidents in the course of salvarsan treatment have thus far been essentially syphilitic. This is the conclusion of so eminent an ophthalmologist as Deutschmann. Such relapses occurring in a subject presumably under the influence of salvarsan, so far from furnishing a contraindication to further use, constitute an earnest indication for a renewal of the injections.

Combinations of Arsenic and Mercury in Syphilitic and Metasyphilitic Lesions of Nerve Substance.—Frey believes that a double salt of mercury, the salicylate and arsenite, is not only a superior remedy for actual nerve syphilis, but one able to modify favorably the beginning of tabes dorsalis. He is practically silent in regard to paresis. Of a considerable number of patients treated, notes of forty-six cases are sufficiently complete for analysis. There were sixteen cases of ophthalmoplegia considered as of tabetic origin, with eleven complete cures of this symptom. The lightning pains disappear in a large proportion of cases, and this is true of the gastric crises. The ataxic gait was not favorably influenced. As the rigid and unequal pupils also responded to treatment to a notable extent, it may be claimed that a majority of the classic symptoms of early tabes show a marked tendency to yield to the remedy. The Wassermann reaction also disappears in these cases. The technique is that commonly in use for mercurial injections, and there were neither local nor general by-effects.

Behavior of Inflammatory Formations in the Skin toward Tuberculin.—Sternberg begins by calling attention to the negative results of von Pirquet's skin reaction in tuberculous children with measles. Following up this phenomenon he has tested the diagnostic resources in as many inflammatory skin affections as were available in tuberculous subjects. The latter furnished their own controls, for the uninflamed integument chiefly gave a positive reaction. A typical case is given: Age seventeen. General condition good, afebrile. Possible apical involvement. Syphilitic periostitis of tibia. On right forearm an extensive lesion suggesting the query "syphilis or tubercle?" Von Pirquet reaction in the healthy integument positive. Wassermann positive. A piece of skin excised for microscopic study gave indecisive results. The von Pirquet was then tested in the cutaneous lesion, and the positive results appeared to show decisively that the lesion was tuberculous. For according to the author's studies a nontuberculous lesion should have given a negative result. The chief value of the test to the practitioner is summed up in the preceding.

Anus Vestibularis.—Pfeifer states that this is one of the rarest of malformations, only thirty-four cases being on record. His own case was the first in 4,500 women to be examined. Even this proportion is larger than that which usually obtains. Of the thirty-four women, eleven gave birth to children, while the others represented the unmarried and sterile married females. The author's case occurred in a girl aged nineteen who was of healthy stock and free from other malformations. However, of ten children in her generation only one was raised beside herself, all others dying in early childhood. Patient has been married three years and never menstruated until after marriage and then only at six to eight weeks intervals. She came to the clinic for dysuria and fluor albus. Examination readily revealed the malformation. The uterus was anteflected and hypoplastic. Patent ductus Botalli was found by following up a systolic murmur. The malformation was not a physical handicap to the patient, since the sphincter muscle was present and there was no fecal incontinence.

Münchener medizinische Wochenschrift.

June 20, 1911.

Demonstration of the Kidney Pelvis and Ureter by Röntgenography.—Von Lichtenberg and Dietlen refer to the collargol method of pyelography, first described in 1906, as the earliest phase of Röntgen demonstration of this part of the body. Up to that time we had only the shadows of calculi when the latter were present to give us any information as to the kidney pelvis and ureter. Distention of cavities with air with a view of rendering them visible is almost as old as röntgenography itself and inflation of the ascending colon to produce an illuminated background for calculus shadows goes back many years. The urinary bladder has been inflated both with atmospheric air and oxygen with a view of rendering vesical calculi apparent. The same resource had been suggested for the kidney pelvis, but the present writers are evidently the first to carry out the idea. Three patients were tested, two of them on both sides. Only one suspect had stone, the information in the two others having a negative value. The oxygen in the tank was under low pressure and was conveyed into the ureter through an ordinary ureteral catheter of 5 to 6 caliber. The authors have made, all told, about 200 pyelographs and regard the oxygen method as a decided addition both to positive and negative diagnosis, and as a safe procedure, despite some theoretic objections.

Significance of Urochromogen for the Prognosis and Therapy of Pulmonary Tuberculosis.—According to Weisz excretion of urochromogen in pulmonary phthisis, as well as in other infectious diseases, is the expression of a toxic disturbance of the cellular metabolism, which appears as soon as the toxin enters the circulation. This does not happen in phthisis as promptly as in typhoid fever, measles, sepsis, etc., which are toxinemias from the outset. The renal excretion of urochromogen in tuberculosis should occur parallel with the development of fever. As has been known since the first application of the diazo reaction in tuberculosis, the more constant and the more marked the excretion of urochromogen the graver the prognosis. The same is true of the other affections. As always happens, however, ironclad laws cannot be laid

down under these circumstances, for cases do end favorably after pronounced diazo reaction. The unfavorable character of the prognosis is bound up largely in the extension of the disease, and even severe local destruction is not necessarily conterminous with a fatal ending. The reaction may be conceived as illustrating a progressive weakness of resistance on the part of the cells of the body to the disease, which is further shown in the lessened demand of the tissues for oxygen. But in a case of this sort the grave prognosis may be offset by our therapeutic resources, as in a case cited by the author of recovery in a desperate case due to establishing an artificial pneumothorax.

The Rumpel-Leede Scarlatina Phenomenon.—Mayr has examined 100 patients with diseases other than scarlatina for the presence or absence of this phenomenon, which consists in the appearance of minute subcutaneous hemorrhages below the area at which a rubber bandage is applied not too tightly for ten minutes upon the upper arm. Twenty patients gave a positive result, innumerable minute hemorrhages appearing just below the level of the bandage. Five patients, all women, had tuberculosis (lupus vulgaris), ten had lues, two eczema, two psoriasis, and one gonorrhea. More women reacted than men, yet by far the greater number examined were males. The reaction simply means that the capillaries are very friable, a state of affairs undoubtedly common in scarlet fever and due largely, perhaps, to the toxins of the disease. In such affections as lues, lupus, etc., in which the phenomenon has been noted there are also circulating toxins. The presence of the hemorrhages in conditions like eczema and psoriasis may indicate a capillary friability of a different and unknown nature.

Deutsche medizinische Wochenschrift.

June 22 and 29, 1911.

Specificity of the Plaut-Vincent Angina Microrganisms.—Blühdorn concludes from his studies in the Rudolf Virchow Hospital that fusiform bacilli and spirilla are to be found, now sparsely, now in abundance, simply or in combination, in a great number of throat smears from the healthy. About the teeth and gums they are found almost constantly. They are also present in the most varied anginose affections, as diphtheria, scarlatina, syphilis, in varying association with known saphrophytes. When these bacilli and spirilla can be obtained in pure or nearly pure cultures, so that all other diseases can be excluded, they can set up a specific condition, the so-called Plaut-Vincent angina. They are then responsible not only for anginous processes but also, at least in part, for ulcerous lesions. Because of the notable parallelism between the pathogenic activity of the Klebs-Loeffler bacillus and the Plaut-Vincent microorganisms the latter should be amendable to serotherapy.

A Pathogenic Factor in Cholecystitis without Stone.—Solieri emphasizes the fact that biliary calculi are by no means essential for the production of biliary colic. In 1905 at least thirty-seven cases had been documented in which no stone was present. In the majority the pain had been caused by simple distention of a gall-bladder the seat of acute cholecystitis. The pain, whatever the cause, is due to expulsive efforts of the bladder. Another occasional obstructive cause is a blood clot and the author relates a personal case of this type occurring subsequently to typhoid fever. Blood clots sometimes complicate obstruction by calculi, and more or less blood may be present in simple distention to the presence of which it has naturally contributed. If much blood is present there is a presumption of an ulcer in the mucosa, and if ulcerative cholecystitis were not a very rare condition biliary colii would doubtless be much more common.

Clinical Researches with Ovarian Substance.—Offergeld states that the ovary appears to preside in some way over the metabolism of morganic matter, and hence aids in maintaining the composition of the blood. Thus when young bitches are castrated there is an initial reduction of the number of erythrocytes and amount of hemoglobin. Several eminent authorities regard chlorosis as a condition wholly secondary to ovarian disease or disturbed action. It has therefore been proposed to use ovarian extract, with or without organic iron, for this affection and also for simple anemia. In these conditions the ovary and uterus may seem free from disease, but are often hypoplastic, while functional menstrual affections are commonly present. In cases of infantilism of the genitals it is asserted that the use of ovarian extract has been followed by pregnancy. The efficacy of the remedy for climacteric disorders is well known. The author is at present testing the substance in the toxemia of pregnancy.

Guinea-Pig Paralysis and Acute Anterior Poliomyelitis in Mankind.—Römer of von Behring's staff announces that a form of paralysis occurs spontaneously in the guinea-pig which bears some resemblance to infantile paralysis in man. This occurs sporadically and the paretic factor is an end phenomenon of a prior involvement of the nerve centers. The same affection may be propagated artificially by intracerebral inoculation, a latent or incubation period of from nine to twenty-three days preceding the systemic reaction. The latter comprises a temperature rise, loss of weight, and an increasing muscular hypotonia. Vesical paralysis may or may not supervene. The muscular weakness is much more pronounced in the posterior extremities. The disease is propagated by inoculating emulsions of brain and cord and the bacterial cause has not yet been isolated. This affection has not been assumed to be identical with the Heine-Medin disease in man, for, with the exception of the ape, all lower animals tested, including, of course, the guinea-pig, have proved refractory to inoculation with the virus of the human disease. The two affections may, however, belong to a common group disease.

Purulent Labyrinthic Meningitis and Its Operative Management.—Stacke states that there are cases of acute purulent meningitis which are propagated from the labyrinth and which are curable by operation, provided that intervention is sufficiently prompt. We must always have in mind the classic symptoms of labyrinth involvement—vomiting, vertigo, fever, severe headache. Of these, vomiting is the most serious. But this syndrome may be present in menigitis alone, *i. e.* in monotogenic meningitis. Lumbal puncture should therefore be practised as soon as there is suspicion of labyrinthitis. If the spinal fluid is still clear and uncontaminated and if there are a history and evidences of a chronic middle ear inflammation the radical operation for the latter may be undertaken without opening the labyrinth. If the severe symptoms do not yield we must now be prepared to attack the labyrinth, provided that it can be shown beyond doubt that pus is present in the latter. We learn of this through repeated lumbal puncture which reveals the presence in the fluid of leucocytes from the subarachnoid space. The very first signs of purulent meningitis furnish us with the cue to operate. It is not always to be expected that the meningitis will be aborted, but widely attacking the labyrinth in these cases must be regarded as a decided step forward in aural and cranial surgery.

Physiological Action of Light in the Kellogg Light Bath.—Brustein sums this up as follows: The electric light bath acts doubtless upon the association motor reflex of man by altering the degree of its constancy and excitability. This action differs with the color of the light. Colorless and blue glass strengthen the constancy and augment the excitability of the association motor reflexes. Red glass exerts the opposite action. Hence the action of the bath depends upon the spectrum and it is not a matter of indifference how the light is applied.

Insurance Medicine.

ANNUITY INSURANCE FOR PHYSICIANS.

To the Editor of the Medical Record:

Sir:—I have read with much interest your editorial in the issue of July 8, on Annuity Insurance for Physicians. I think that form of insurance is ideal for physicians and for professional men in general, but the annuity should be such as to cover the wife as well as the husband. I have two such policies, both of them issued on the limited payment plan, so that my payments continue only during the years of greatest activity; then, after the lapse of a certain length of time, the annuity becomes payable, and I receive the annuity as long as I live. In case of my death, however, the annuity at once becomes payable to my widow as long as she lives, and if we both die before ten payments have been made the rest of those payments are made to my estate.

Investigation has shown that very few women can successfully manage any considerable sum of money suddenly turned over to them on the death of a husband, and, as a rule, within a year or two the money is all gone. If, however, the widow is a better manager, the money is a matter of court record, and the tax inquisitor is on hand to see that she pays taxes on the full amount. If, however, instead of a lump sum, payments are made to her in the way of annuity, the amount which she will annually receive will be much larger, she is relieved from all vexations as to taxes, and the principal cannot possibly be dissipated.

J. F. Baldwin, M.D.

Columbus, O., July 12, 1911.

The Undeveloped Field in Life Insurance.—(See page 181.)

Accident Insurance Among the Sulphur Miners of Sicily.—(See page 192.)

Auscultation in Life Insurance Examinations.—*The Lancet* presents the substance of a paper recently read before the Life Assurance Medical Officers' Association by R. A. Young, and entitled "Some Auscultatory Problems in Insurance Examinations." The author reviewed the difficulties of interpretation of auscultatory physical signs encountered by the medical officer during the course of the routine medical examination prescribed by most insurance companies. He pointed out that the newer methods of diagnosis applicable in ordinary medical practice are for the most part not available for the use of the insurance examiner owing to the expense and delay involved, and that the history given by many proposers is scanty and often misleading. The examiner is, therefore, left to establish the absence of disease armed chiefly with a tape measure, a weighing machine, a stethoscope, a few testing reagents, and his otherwise unaided senses, unless he is assiduous and well equipped, when a microscope may be pressed into service occasionally. The stethoscope is, therefore, of great importance, and the information it yields requires careful consideration, since it is not sufficiently emphasized that departures from the generally accepted normal standards of auscultatory sounds are not uncommon and are yet compatible with perfect health. The differentiation of these conditions from those which are the index of commencing disease or the stigmata of past attacks is obviously of great importance from an insurance standpoint. In connection with auscultation of the heart the author discussed the significance of variations in the rate, rhythm, intensity, and quality of the heart sounds and the differentiation of murmurs indicative of serious organic derangement of the valves or muscle of the heart from those of functional or exocardial character. In connection with the rhythm of the heart sounds, the question of irregularity or arrhythmia was discussed at some length. The general conclusions arrived at were that a single irregularity in a young subject in association with respiration is of no serious importance, even though there may be a history of occasional slight syncopal attacks and even if an exocardial murmur be present. Cases with irregularities due to smoking and to overindulgence in tea and coffee may be accepted after postponement on trial. Extra systoles in young and middle-aged people are not necessarily of serious character in the absence of arteriosclerotic changes and of signs of cardiac enlargement, but should be regarded with suspicion and probably declined. Irregularities due to heart-block, to weakened muscular power, and those associated with valvular or myocardial lesions cannot be considered as insurable on any terms. In connection with organic murmurs, the difficulties met with in some cases of mitral stenosis and of aortic regurgitation were discussed, and the importance of auscultating in both the erect and recumbent positions was emphasized. The various functional and exocardial or spurious murmurs were categorically considered and the features by which they could be recognized were outlined. The problems afforded by auscultation of the respiratory system were described as no less difficult than those in connection with the circulatory mechanism. The physiological differences in breath sounds and in voice sounds occurring at the right apex and over the right upper lobe were carefully worked out, and the distinction from the signs of early tuberculous disease was discussed. The nature of cog-wheel breathing and of the cardiorespiratory murmur so commonly heard in normal chests was considered, and it was stated that true jerky or cog-wheel breath sounds heard constantly at one apex and at a distance from the heart, so that a cardiac systolic origin of the cogging can be excluded, are very suggestive of early tuberculous deposit and must lead to careful search for other physical signs. In connection with the breath sounds, the occurrence of muscular sounds heard in shivering or in emphysema was also referred to as requiring care in some cases. Various spurious râles, creaks, and clicks due to fascial movements, to deglutition of saliva, and to movements of the head were described, and also the atelectatic rales heard in the infraaxillary regions of many normal persons. Probably most practitioners, both in ordinary practice and in insurance work, have been faced with problems such as those referred to, but their collection in this paper serves a useful purpose and should be of value, especially to the occasional examiner for insurance purposes.—*The Lancet*, April 15, 1911.

Subnormal Risks.—Zahnbrecher says that these may be defined as such applicants as offer more than the usual risk in insurance and therefore must be either refused insurance altogether or insured at increased premium. This definition is an empirical one developed from insurance experience and having nothing to do with medical science. There is always something positive about such applicants which makes them subnormal, while normal applicants, on the other hand, are marked by the negativeness of their characteristics: the latter are not ill, their family history is negative, they have had no previous illnesses, their occupation, habits, dwelling place are not of significance so far as their health is concerned. However, only in theory are there many such normal people. Almost everybody has some element of weakness and the question is how much of such weakness may coexist with the term "normal" for insurance purposes. Insurance experience answers thus: such applicants are normal so long as the group of insured persons possessing like defects show no larger mortality than the average mortality of the corresponding class of society. The degree of subnormality may then be measured by the increase in mortality in any group of applicants. The meaning of subnormality is accordingly a vari-

able one for the time and the class of society and depends as well upon the differences in the mortality statistics of different societies. Life insurance companies, however, cannot wait for the perfection of social statistics but must act every day with reference to this problem, as they must and do insure "subnormal" individuals constantly. The sentence "reject all you must and accept all you can" directed by English life insurance societies to its examiners has long ago become the guiding rule of international insurance practice. Medical science simply points out the signs of subnormal physical condition; only statistical study can make these medical facts of use for insurance purposes. Both German and foreign insurance companies have studied the question of subnormal applicants from this point of view and lately the Dutch insurance interests have even founded a special organization for the study of this problem of insurance. Medical selection among the applicants is the work of the medical director of each insurance company. He reports his views of the expectation of life of applicants, noting whether the individual applicant may be expected to enjoy the average normal years of life for his class and condition or whether he belongs to the subnormal class. His difficulty is not in deciding medically the existence of this or that abnormality, but the amount of extra risk assumed by the company in insuring such an applicant, a difficulty in which mere medical science is of little help. There are no uniformly accepted rules of conduct in such cases because the statistical studies mentioned above have not yielded uniform conclusions, and this explains the different attitudes assumed by the different life insurance companies toward the insurance of "subnormal" applicants. *Blätter für Vertrauensärzte der Lebensversicherung,* January and February, 1910.

Diabetes and Life Insurance.—Brodtmann states that many insurance companies have substituted Nylander's for Trommer's test for sugar. Nylander's test is more sensitive and is less frequently positive in cases of other reducing substances in urine. The most important thing remains in establishing rules for distinguishing glycosuria from diabetes, which is possible in most cases. Non-diabetic glycosuria includes alimentary glycosuria, also called physiological or glycosuria e saccharo; certain organic glycosurias are likewise non-diabetic. In alimentary glycosuria the percentage of sugar is small, usually below 0.05 per cent., but it may reach 0.1 or even 0.2 per cent. The latter cases have probably been insured in the past, when Trommer's test alone was used, and in most cases no diabetes developed later. Alimentary glycosuria depends upon the temporary appearance of sugar in the urine after the ingestion of large quantities of sugar or sweets. Most persons show such glycosuria after being given 100 grams of sugar in the morning, on an empty stomach; this is named pure glycosuria e saccharo, while if the sugar is given after or with a meal and glycosuria results, it is called alimentary glycosuria e saccharo.

Organic glycosuria depends upon disease of some organ resulting in the appearance of sugar in the urine. Such cases must usually be included among diabetics; among the diseased organs may be named the liver, pancreas, thyroid gland (Graves' disease), brain (apoplexy, cerebral syphilis, tabes dorsalis, paralysis agitans, trauma, traumatic neuroses, etc.). Frequently the disease of the organ alone excludes the applicant

Functional neuroses and neurasthenia form the only practical difficulties. Many neurasthenics show glycosuria, which disappears with improvement of the underlying condition; such applicants should not be excluded. Every applicant with glycosuria must be examined many times and at fairly long intervals. Careful inquiry into the family history must be made, especially in reference to gout, obesity, and diabetes; Naunyn says that 30 per cent. of diabetics give a positive family history. Of course, diagnoses cannot be expected of applicants, but they must be helped to remember any symptoms in their relatives that may give the right clue to the examiner. Reexaminations of the urine must be made after the usual diet and after 100 grams of sugar have been given in the morning. If the quantity of sugar remains small, if it does not rise above 0.1 per cent., for instance, or remains the same after the administration of sugar, the case is probably one of physiological or alimentary glycosuria. Six months should be enough in which to make several urinary examinations and finally decide whether the applicant should or should not be insured. The cost of such examination should be completely covered by the protection of the insurance companies against insuring diabetics and by non-exclusion of applicants with glycosuria that are otherwise acceptable. —*Zeitschrift für Versicherungsmedizin,* January, 1911.

Some Observations on Build.—Oscar H. Rogers records on a single table the heights and weights at different age groups of 104,000 insured women. The Shepherd table was based on about 75,000 men brought together for the association by Dr. George R. Shepherd's committee. In 1900 the American Fraternal Congress brought together about 135,000 men and the table published by that society corresponded so closely with the results obtained from the Shepherd table as to give very good grounds for the belief that there are now reliable data for both men and women. In the New York Life Insurance Company efforts have been going on for many years to determine the exact influence of build on longevity and Rogers thinks that these efforts are nearer the solution of the problem than ever before. A sketch is given which presents in perspective the mortality to be expected by reason of build alone irrespective of any other factor. It is suggested from a consideration of the sketch that a mistake has been made in assuming that the average build at any age is the most favorable build at that age or the build from which it may be expected the most favorable mortality will be sustained. For instance, the sketch shows that at the age of twenty all risks from 24 per cent. overweight to 10 per cent. underweight are better than average risks. Does it not then seem probable that the point of most favorable build is about half way from 24 per cent. overweight to 10 per cent. underweight or in the neighborhood of 7 per cent. overweight? If this inference is correct the tables now used are too favorable to underweights by about 7 per cent. At age sixty, on the other hand, the super-standard risks begin at about 8 per cent. overweight and extend to about 22 per cent. underweight. The mean point between these extremes lies at about 7 per cent. underweight and the conclusion appears evident that the present table based on average weights is too high by about 7 per cent. At the intermediate ages, thirty to fifty, the mean point lies not at the zero, but on the heavy-weight side of the zero at the age of 30 and at the light-weight side of the zero at the age of 50, and only at the age of 40 is the table apparently correct. Attention is also drawn to the probable inaccuracy of the table as regards the relative weights at the same height in age group 35-39 of men and women.—*Twenty-first Annual Meeting of the Association of Life Insurance Directors.*

Wisconsin to Undertake Business of Life Insurance.—A law has recently been enacted in Wisconsin authorizing the State to engage in the annuity and life insurance business after next year. The business is to be carried on under the management of the State insurance commissioner and is to be conducted on the same lines as a mutual insurance corporation, but at an expense not to exceed $2 per $1,000 insurance. Premiums are to be calculated according to the American mortality table. Annuities are to range from $100 to $300 and life insurance policies from $500 to $3,000.

Book Reviews.

Hand Book of Electrotherapeutics. By William James Dugan, M.D., Lecturer on Electrotherapeutics at Jefferson Medical College, Philadelphia; Physician-in-Charge at the Electrotherapeutic Department and Assistant in the Out-Patient Neurological Department of Jefferson Hospital; Fellow of the American Electrotherapeutic Association. With 91 illustrations. Price, $2.00. Philadelphia: F. A. Davis Company, 1910.

This is a compact little volume that is intended for students and practitioners who know little or nothing about electricity and electrical apparatus. It tells one how to select electrical apparatus, how to use the apparatus after it has been purchased, when to use electricity in medicine and when not to use it. There is an omission of a great part of the theoretical detail that makes most books on this subject quite cumbersome. It is strikingly clear and concise and may be recommended as a practical working manual. There are in addition to the excellent chapters on the various modalities of electricity, chapters on electrolysis, cataphoresis, electricity in surgery, high-frequency currents, the therapeutic uses of magnetism, vibratory massage, light and heat theraphy, and an appendix on death by electricity and on resuscitation of persons shocked by electricity.

Principles of Therapeutics. By A. Manquat, National Correspondent to the Académie de Médecine. Translated by M. Simbad Gabriel, M.D. Price, $3.00. New York and London: D. Appleton & Company, 1910.

The study of the fundamental principles of therapeutics is one which has been strangely neglected by both medical teachers and authors. The subject has been encumbered with a mass of heterogeneous facts and theories, so that scientific truth, empiricism, and fancy have been woven into a most peculiar fabric. It is for this reason that the therapeutic art has practically fallen into an undeserved disrepute. The time has come when this important branch of medicine should be rehabilitated to its important rank. The aim of this book is to assist in bringing about this renaissance in therapeutics. It makes a plea for a more intensive study of the subject and for a greater precision in its practice. It is directed primarily to young physicians, yet it is hardly likely that these will appreciate as fully as those who have had considerable experience the great philosophic truths that permeate the pages of this book. The author emphasizes the important fact that therapeutic actions are to be distinguished from so-called physiologic actions, which are often toxic. In classifying therapeutic measures the author refers to four different objects that these may attain: (1) Nosocratic therapeutics, which designates the medicaments which attack the cause of disease; (2) organic and functional therapeutics; (3) symptomatic therapeutics, and (4) reparative therapeutics. In the chapter on the action of medicines the author analyzes closely the subjects of toxic, physiological and therapeutic actions. The latter two are not synonymous terms: therapeutic action is often independent of physiological action. Therapeutic action may profit by a toxic action, as in the case of anesthesia. The question of pharmacotoxinic action is alluded to, namely, the action of medicines on intoxicated organs. Thus pharmacotoxinic synergy is exemplified in the administration of strychnine to a tetanic person, or chloral in uremic coma. The author emphasizes the possibility of doing harm through the addition of medicinal to morbid toxicity. In the chapter on medicinal opportunity it is noted that except in the case of specific medicines which, as a rule require fairly large doses, there is in the majority of cases advantage only in prescribing small doses; that is, doses considerably smaller than those usually recommended by formularies and treatises on therapeutics. The duration of medicinal prescriptions, the alternation of medicines, polypharmacy, and oligopharmacy, are all lucidly discussed. The chapter entitled *Primum non nocere* deserves careful reading. In the chapter on therapeutic individualization there are discussed the bearing upon therapeutics of sex, age, temperament, constitution, diatheses, and cachectic conditions; the patient, his organs, and functions; the disease; and the different modes of reaction of patients in regard to medicines. There is an excellent chapter on the influence of environment in therapeutic results; the influence of temperature, light, and color, climate and season, ventilation, furniture, the *entourage*, the nurse, the physician, consultations and change of physician, the pharmacist, and the priest. In the chapter on the variations of therapeutic activity inherent in medicines, and their mode of administration, there are discussed the causes of variations, physical properties and ionic dissociation, chemical structure, active principles, specialties, subcutaneous and intravenous injection, and fractional dosage and alternation. The succeeding chapters deal with nonmedicinal therapeutic actions, method in therapeutics, and the division of therapeutic agents. It is impossible within this brief survey to adequately convey the deep insight into his subject matter which the author manifests, and one can readily agree with him in the statement contained in the preface that "this book represents a far more considerable amount of labor than its size would suggest." The importance of the principles dwelt upon requires slow and careful reading, which cannot fail to benefit both student and experienced practitioner.

Primer of Hygiene. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia, and Joseph S. Caldwell, Professor of Biology, George Peabody College for Teachers, Tennessee. Illustrated by Karl Hassmann and Hermann Heyer. Price, 40 cents. Yonkers-on-Hudson, New York: World Book Company, 1910.

The writers of this hygiene primer have evidently spared no pains to make the text interesting and practical. The object in view is the education of school children along the lines of health preservation. The subject of foods is treated from several standpoints, including the cooking of foods. The digestive, nervous, and respiratory systems are discussed, one chapter being devoted to adenoids and enlarged tonsils. Information concerning the effects of alcohol and tobacco on the body; accidents, disease germs, simple exercises for use in schools, the skin, the eyes, and the ear, is presented in a form that must appeal to the mind of the child. The book is fully illustrated.

Pellagra. By Dr. A. Marie, Physician to the Asylums, Department of the Seine, Editor in Chief, Archives de Neurologie, and Director of the Laboratory of Pathological Psychology, École des Hautes Études, Paris, France. With Introductory Notes by Prof. Lombroso. Authorized translation from the French, by C. H. Lavinder, M.D., Passed Assistant Surgeon, U. S. Public Health and Marine Hospital Service; and J. W. Babcock, M.D., Physician and Superintendent, State Hospital for the Insane, Columbia, S. C. With additions, illustrations, bibliography, and appendices. Price, $2.50. Columbia, S. C.: The State Co., 1910.

This work is timely, for pellagra presents a problem which is of pressing interest to the physician, the scientist, the sanitarian, the political economist, and the legislator. Much interest has already been aroused in this subject, and the present volume is the first to discuss the matter in anything like a complete way. As will be seen from the title page, the book is practically a translation of Marie's work on the subject; but the translators have done more than give a rendering of the great Frenchman's book; they have added numerous notes, and a whole chapter, besides incorporating a bibliography so complete that the present volume will be necessary to future writers and investigators. The translation is well done, and where important features were omitted in the original, the translators have made the necessary additions. The bibliography alone occupies thirty pages, and there is a complete index, both of authors and of subjects. To all who are interested in pellagra this valuable monograph is commended.

Practical Bacteriology, Blood Work, and Animal Parasitology. Including Bacteriological Keys, Zoological Tables, and Explanatory Clinical Notes. By E. R. Stitt, A.B., Ph.G., M.D., Surgeon U. S. Navy, Graduate London School of Tropical Medicine, Associate Professor of Medical Zoology Philippine Medical School, formerly Instructor in Bacteriology and Tropical Medicine, U. S. Naval Medical School, and Lecturer in Tropical Medicine, Jefferson Medical College. Second Edition, revised and enlarged; with 91 illustrations. Price, $1.50. Philadelphia: P. Blakiston's Son & Co., 1910.

The merit of this volume lies chiefly in its compactness and the inclusion of all the data essential in a working manual. In this respect it has a certain advantage over accuracy and the saving of time. The section on clinical diagnosis, although these have their distinct sphere of usefulness as works of reference. In spite of its small size it contains all of the recent methods of laboratory investigation, including the determination of the Wassermann reaction, and the opsonic index, and the preparation of vaccines. There is given a method of making differential counts in the same preparation as that for making the leucocyte count, a method which has the advantage of accuracy and the saving of time. The section on clinical bacteriology and animal parasitology of the various body fluids and organs gives a concise practical statement as to how to proceed in the examination of various secretions and excretions.

Society Reports

CONNECTICUT STATE MEDICAL SOCIETY.

One Hundred and Nineteenth Annual Meeting, Held in Hartford, May 24 and 25, 1911.

(*Concluded from page 56.*)

DR. FRANK K. HALLOCK OF CROMWELL, PRESIDENT, IN THE CHAIR.

Some Aspects of the Early Months of Pregnancy.—Dr. JOHN B. M'COOK of Hartford said that these "poor registers," as they might be termed, might be divided into five groups, although many cases showed the imperfections of the nomenclature by belonging to several groups. The examinations should be rigid and thorough; but whatever was done in the way of examination must not be such as to frighten the patients or to set up in them a train of thought that might end in a pathological mental state. The obstetrician should not create trouble, yet it would be found that one of a lively imagination was a safer guide than an unimaginative man.

Dr. THOMAS W. CHESTER of Hartford said that the examination should be made in rather an off-hand way; or, at least, the patient should think it off-hand, because such women were easily frightened. He did not, however, think that a very rigid examination was often required. If a young woman appeared normal, felt well, and had a good family history, he thought that the doctor might rest satisfied, if the examination revealed normal heart, lungs, kidneys, bowels, and pelvis, simply instructing the patient to report once in two weeks or oftener if anything went wrong. Other cases, however, required a more thorough examination. He dreaded particularly two types, the short, thick-set women, with perhaps perfectly normal measurements of the pelvis, and the young, athletic girls.

Some Problems Connected with the Inspection of Schools.—Dr. EDWARD W. GOODENOUGH of Waterbury stated that the most important work of medical men at the present time was connected with the growth and development of the child. Medical inspection of schools was primarily for the benefit of the growing child. Physicians should not be appointed as medical inspectors simply because of their political affiliations, and the town or the State should be willing to pay members of the medical profession a reasonable amount in order to give the children in the schools protection against disease. This was not a charity; it simply gave an added force to the development of democracy. A school nurse the author also considered a necessity, as she could help the physician in many ways. He thought, however, that until the position of medical inspector of schools was fixed on a firm basis in this State physicians appointed to that office should be willing to give the town more than a full equivalent for the money invested in this work.

Dr. CHARLES P. BOTSFORD stated that, in attending the hearings of the Legislative Committee on bills concerning the medical inspection of schools, he had been struck with the amount of opposition that had seemed to develop, not so much against the particular bill under discussion at the time, but against the whole subject. He considered it a duty that physicians owed to the rising generation to try to influence the fathers and mothers in favor of medical inspection, and to convince them that this was not necessarily very expensive. A properly devised medical inspection, suited to the town and the school in which it was used, would, he said, pay for itself in the more regular attendance and better work on the part of the children. Each town, and perhaps each school district, must develop the work along different lines. He mentioned a number of questions that would have to be settled before medical inspection could be brought to a definite, uniform basis. One was in regard to the frequency of the examinations and the amount of time that it was justifiable to take for this purpose from the already crowded curriculum. Another was that of getting the recommendations made by the medical inspector carried out. He thought that the logical thing would be for the State to give the school authorities the power to demand the correction of defects that interfered with the child's progress in school, but said that it was a question whether public opinion would support such a proceeding.

Dr. FRANK H. BARNES of Stamford stated that a member of the Legislative Committee of Public Health and Safety who was a physician had told him that he was in favor of the medical inspection of schools, but that there was such a drift of public opinion against it that he was afraid such a bill could not be passed. Dr. Barnes thought that the members of the State Medical Society should get together, introduce one bill, and try to get it passed, as there were more feeble-minded children, idiots, and imbeciles in the schools than one would think. He believed that it would be better not to include the small country towns, and said that the question whether the school committee or the public health boards should take charge of the inspection should be decided.

Dr. THOMAS S. SLOAN of Manchester referred to a serious and long-lasting epidemic of diphtheria and scarlet fever that had occurred during the past year, and stated that throughout this time every child's throat had been examined twice a week. Cultures were made from such throats as were found inflamed. In this way, some children with diphtheria were discovered and sent home. When necessary the school-room was fumigated. Medical inspection had been in operation for two years in Manchester, and the people were well satisfied with its results.

Dr. EDWARD K. ROOT of Hartford remarked that the general public, knowingly or unknowingly, made a sharp distinction between contagious diseases, in which their children's lives might be endangered through coming into contact with children that were ill, and conditions of malnutrition and degeneracy, which they regarded as no one's business but their own. In Hartford, where medical inspection had been in existence ten years, the treatment of any sick children discovered was always turned over to their parents. If they were not taken care of at home, then the town had to attend to the matter. It should be remembered, however, that everything that the State did for the child lessened the responsibility of the parents to just that extent.

Dr. HENRY F. STOLL of Hartford had been impressed with the fact that the teachers were not capable of picking out delicate children. He had tried at first to get them to send to him cases suitable for the out-of-doors school. Finally, he adopted the plan of standing at the foot of the stairs when the children were dismissed, so that he could see them in a good light when walking. He could then select the children that he wished sent to him for a more thorough examination. He thought that there was no doubt that the physicians could educate the public, but said that most of them had not realized their duty in that respect.

Dr. KATE C. MEADE of Middletown asked whether the teachers in Waterbury examined the children's eyes, and whether there was a dental clinic at which the children's teeth might be examined.

Dr. WILLIAM H. DONALDSON of Fairfield asked Dr. Barnes why he would not include the smaller towns.

Dr. BARNES answered that it was because many of the smaller towns do not have a physician at all, and would have to get a doctor from the outside to examine the children. This would put them to great expense.

Dr. SAMUEL M. GARLICK of Bridgeport believed that

referring the matter back to the parent would educate the parent and the child itself. It was much more desirable, he thought, to educate the individual than to educate the public. To dismiss the matter without reference to the family physician tended to reduce the confidence in the latter that the family should have.

Dr. George H. Wright of New Milford remarked that in almost every case the parents could be perfectly educated, not only to submit to the inspection, but to carry out the recommendations made by the inspector. The news of the good results obtained would be spread among all classes of society. He thought that the educational effect of simply making good was wonderful, and that this was a better way to make progress than simply by compulsion.

Dr. Sloan said that if the school physician and the school nurse, with some operator, could attend to the matter, they would be likely to lose the cooperation of the family physician. For that reason, he thought that it was better to refer the patients to the family physician.

Dr. Goodrich said that in some of the schools the teachers examined the children's eyes, and that in others they did not. There was no free clinic for dental work in Waterbury. In some ways he considered that town pretty healthy; yet the more he went among children the more he felt the need of medical inspection, not simply to discover cases of contagious disease, but also to find other cases of extreme conditions, such as mouth-breathing. He believed that if school inspection was to be secured work must be done that would impress the parents.

Bronzed Diabetes; Report of a Case and Review of the Literature.—Dr. George Blumer of New Haven said that the case showed the triad of symptoms and signs that characterized typical examples of bronzed diabetes. The form of diabetes associated with this condition was usually acute. The skin pigmentation, which was entirely lacking in about one-sixth of the cases, varied greatly in both color and situation. In many of the reported cases disease of the liver was present years before the appearance of the other manifestations. Some patients entered the hospital with gastrointestinal disturbances. The occasional occurrence of the clinical evidences of blood destruction might be noted. This disease was confined almost exclusively to males, generally between the ages of thirty and sixty years. He said that alcohol played an important part in the etiology of many of these cases. A large amount of iron was present in some of the organs, as well as in the skin lesions. The blood destruction which took place within the portal zone might lead to the deposit of pigment. The maximum deposit was in the abdominal organs, and was much like that which occurred in hemochromatosis. He considered that the differential diagnosis might be simplified by pointing out that a combination of pigment with an enlarged, hard liver and glycosuria was not liable to occur in any other condition. He admitted that the possibility of the occurrence of diabetes or of an enlarged liver as a complication of various diseases associated with pigmentation of the skin could not be denied, but said that it was unlikely that this triad of symptoms and signs would occur outside of bronzed diabetes.

Dr. Wilder Tileston of New Haven said that the name hemochromatosis was preferable to bronzed diabetes, because it covered cases of pigmentation of the skin without any signs of diabetes. In 1889 he had seen such a case in Boston. The patient looked like a mulatto, though his skin had been fair before his illness. He showed no enlargement of the liver and no sugar in the urine. Microscopic inspection showed the presence of iron pigment, which did not occur in any other condition than hemochromatosis; although its absence did not exclude that diagnosis. He though that the coloring matter was probably brought to the cells by the blood, and not manufactured locally by the skin. Pigmentation of the skin had usually been considered as indicative of Addison's disease, but he had found only the minority of the cases to be due to affection of the adrenals. He stated that the pigmentation of arsenic, though rather uncommon, should be borne in mind in this connection. It was possible to have a pigmentation of the mucous membrane of the mouth in people otherwise healthy.

Parotitis.—Dr. Fritz C. Hyde of Greenwich said that secondary parotiditis was usually an infection of the parotid gland via Stenson's duct. Sympathetic or reflex influence from the generative and other organs was a factor in its production only as it caused, in common with other similar processes, vasoconstriction of the parotid blood-vessels and inhibition of secretion. Dehydration of the body from any cause was a predisposing factor. Secondary parotiditis was usually a condition of adult life, and most commonly occurred as a sequel to infectious fevers; following various operations, particularly of the genital organs; and in various conditions such as uremia, lead-poisoning, etc. It was of wide distribution in diseased states. The salient points in the production of the contagion were the ever-present potential infection from the mouth and those phenomena that induced a decreased or abolished flow of saliva into the efferent duct. In its prevention, the nearest approach to a clean mouth was important, the essential point being to secure free discharge of the saliva at all times. In operations, dehydration of the body must be lessened by reducing to a minimum hemorrhage, shock, cathartics, vomiting, sweating, starvation, and the use of morphine and atropine. In the differential diagnosis, the difficulty lay in eliminating epidemic parotiditis, or mumps. The latter was usually bilateral, and the flow of saliva but slightly affected, while in secondary parotiditis it was greatly lessened or abolished. The latter was usually readily traceable to the initiative condition. Suppuration was common in secondary parotiditis, but did not occur in mumps.

Dr. Rush W. Kinball of Norwich stated that different authorities held different views as to the cause of the condition and the means of infection. He considered the best working hypothesis to be that in the majority of cases it was through Stenson's duct. His own personal experience with secondary parotiditis was limited to four private cases. In the treatment, he emphasized the importance of regular oral hygiene and, in suppurative cases, of making an early incision and drainage. As the abscesses were deep-seated in the fascia, fluctuation was seldom obtained.

Dr. George Blumer of New Haven pointed out the tremendous reduction in the prevalence of secondary parotiditis in such a disease as typhoid fever since trained nurses had been in use. He considered this favorable to the view that it was an ascending infection through Steno's duct. He said that with very sick patients there was a decrease in the general resistance to bacteria. Inhibition of the flow of saliva was not always a factor, because in the disease called dry mouth there was no parotiditis whatever.

Dr. Hyde stated that there was on record a case of dry mouth with suppurative parotitis that required incision.

President's Address: Law, Medicine, and the State; Some Points of Contact.—Dr. Frank K. Hallock of Cromwell said that the members of the professions were, in the main, the recognized exponents of the best thought and the most worthy ideals; and that, as such, the great mass of the people who were less favored in education had a right to look to them as the natural leaders in the solution of civic problems, moral and physical. Independent effort could not be so successful as the effort that had back of it an organized body or class. Such organizations in the professions should have at least two ob-

jects: to raise the standard of their own efficiency, and to discharge their duty to the State by accomplishing results calculated to benefit the general public. The County and State Bar Association had lamentably failed to arouse themselves to active work in these directions, but it must also be admitted that the shortcomings of the medical profession were legion. The two professions should get together for the benefit of the State on such points of contact as expert testimony and boards of health; and the State Medical Society should request the State Bar Association to appoint a permanent committee on medical legislation, to meet in joint conference with the Medical Society's Committee on Public Policy and Legislation and formulate plans for concerted action on all matters of mutual interest to the legal and medical professions. The State Medical Society should also invite representatives of all organizations of allied interests to meet with them and consider some concerted action on matters pertaining to the life, health, and sanitary condition of the citizens of the State.

The Importance of Early Operation for Tumors of the Breast.—Dr. George N. Bell of Hartford stated that the situation in regard to breast tumors had not changed much in the past century. If their benignancy was absolutely assured, they should be let alone; but if malignant, they should be removed. The treatment depended altogether upon the ability to decide which was which. Eighty per cent. of all breast tumors being malignant, the need of early diagnosis, and operation in cases of malignancy, was apparent. As the operative mortality was less than 1 per cent., it was a wonder that the postponement of an operation in these cases was still considered. Multiple tumors of the breast were usually benign, but the one positive means of diagnosis was the microscope. One could not, however, be sure that a benign tumor would remain benign. Therefore, it was best to remove a mass in the breast as soon as attention was called to it, submit it to the pathologist for diagnosis, and then, if necessary, operate radically. Next to the extent of the growth, the chief factor in the prognosis was the glandular involvement. The more radical methods of operating, consisting in the removal of both muscles and axillary contents, together with greater rapidity in operating, had given much better results that those formerly obtained. Another recent advance had been in the use of frozen sections in doubtful cases.

Dr. Oliver C. Smith of Hartford remarked that the cancer problem had not yet been solved, although the limits of improved technique had probably been almost reached. He thought, however, that surgeons were not sufficiently mindful of the fact that cancer tissue could be disseminated. More care should be used to prevent this in operating, and the position of the patient was also very important. If a means of early diagnosis could be discovered, the technique could be used at a time when it would be more beneficial. Since the frozen sections had come into use it was easier to get patients to submit to operation with the promise that the breast would not be removed if the tumor were found to be nonmalignant. One could not, however, always tell at operation whether one was dealing with benignancy or malignancy. Physicians should try to educate the public to realize that a tumor of the breast was a dangerous thing, and should be investigated at once by a competent person.

Dr. Carmalt remarked that though in former times they judged by empirical rules, while physicians now speak from a pathological standpoint, the practice had not changed. One could never tell a benignant tumor from a malignant one; and a benignant tumor was likely at any time to become malignant. A cyst with a lining of epithelium was liable to become a cancerous growth from the capsule, rather than from the cyst itself. He thought that more harm had been done in attempting to treat cancer of the breast by means of the *x*-rays than all the good that had ever been done by them, and he was not very enthusiastic in regard to diagnosis by means of the microscope. The little snip of the growth usually submitted to the pathologist might have nothing malignant in it, yet the tumor might be cancerous in other places. He considered the three years' limit too small to enable one to be sure that the case was cured. In operating for cancer of the breast, he thought it best to begin in the axilla. If this could not be thoroughly cleaned out, it was not worth while to go further.

Dr. Charles E. Taft of Hartford emphasized the importance of examining all the organs of the body liable to metastasis before deciding to operate upon a cancer of the breast. It was his custom, after the muscles had been dissected away, to tie with a needle and thread all the small blood-vessels in the chest, in order to prevent secondary hemorrhage. Unless a physician was himself prepared to urge a patient to submit to operation, he should immediately refer all tumors of the breast to a surgeon.

Dr. Seldom B. Overlock of Pomfret said that in a young woman with a loose tumor of the breast one could often merely take out a triangular section, without destroying the contour of the breast. If further involvement afterward occurred, the purely radical operation should be done.

Dr. Clarence E. Skinner of New Haven admitted that early and thorough ablation was the first and most important step to be taken in the great majority of cases of tumors of the breast, but thought that, in order to prevent recurrence, röntgenization should be employed immediately after every ablative procedure for cancer. He stated that the *x*-ray exhibited a powerfully curative influence over malignant processes in many cases, and believed that in a disease with such a gloomy prognosis it was not justifiable to omit the application of any means of control that had demonstrated that it possessed value. It was impossible to tell at the time of operation in which cases recurrence would take place, and recurrence was frequently more resistant to the *x*-ray than the original lesion. Early recurrences also were frequently internal, giving no sign until it was useless to do anything.

Dr. Bell thought that if the tumor of the breast felt malignant when operating one should go on with the operation, even though a report of benignancy were obtained from the pathologist; because the latter might have received a piece with no malignancy in it, even though the remainder of the tumor was malignant. When, however, the growth was almost unquestionably benign, there was no necessity of removing the entire breast. Personally, he did not believe the *x*-ray to be of value either before or after the operation; but he saw no reason for denying its use to a patient who wanted to try it.

Intestinal Obstruction with Reference to Intussusception in Infants.—Dr. Owen O'Neil of Willimantic, from a consideration of three cases that might be taken as fairly representative of those encountered by him, deduced the necessity of early recognition, to which the palpation of a sausage-shaped tumor through the abdominal wall was by no means an unfailing guide; that vomiting, though fairly constant in acute intussusception, might not be present; the value of prompt operation, limited to the relief of the actual acute condition; the uselessness and even danger of palliative measures, which might ameliorate the active symptoms of the disorder and even simulate true reduction, thereby causing serious delay in the institution of radical treatment; the unfavorable results of attempting to return these children to the maternal breast, the nervous strain of the mother being almost certain to disturb lactation; and that mechanical obstruction by a foreign body in the intestines might present all the general symptoms of an intussusception.

Dr. Joseph M. Flint of New Haven said that in both the cases of true intussusception mentioned by Dr. O'Neil there had been an absence of the clinical symptoms of abdominal tumor. Acute abdominal symptoms, mucohemorrhagic stools, and a palpable tumor in the rectum were the most common signs of intussuception in young children. He thought that palliative treatment deserved a wider recognition in a group of cases in which the intussusception might not be reducible, and in which an extensive gangrenous process might be present, with relatively little symptoms on the part of the infant, and no general reaction indicated by signs. However, the operative method should be applied as early as possible, because no one could tell when palliative measures would lead to serious results.

Dr. John W. Wright of Bridgeport said that some years ago he had been called into consultation on two cases that were undoubtedly intestinal intussusception, but that he then mistook for cases of mild enterocolitis. The diagnosis not being complete enough to warrant operation, both children died. He had found intussusceptions at post-mortem examinations—in one case, as many as twelve. Within the last few years he had seen no cases of enterocolitis in children resulting in intussusception. Therefore, he had not operated on that sort of case. He warned those present to be more observant of the symptoms exhibited in infancy, so as to avoid the error that he had confessed to, of not being sufficiently accurate in the diagnosis.

Dr. James H. Kingman of Middletown spoke of a case of intussusception showing that one should not do too much at once in this work. He had found five inches of black, gangrenous gut, which, as the child's condition was very bad, it was deemed unwise to resect. The gut was therefore stitched around, and an artificial anus made. After this, the child did very well, and most of the gangrenous part of the bowel finally sloughed off, leaving the double ends projecting out of the abdomen. These were clamped, and motions were obtained through the regular route. A few months later, a resection was done, with a perfect result. He believed that the child's life had been saved by doing no more at the first operation than to make an artificial anus.

Dr. Taft thought that one statement in the paper should be challenged. This was that all cases should be operated on without resorting to palliative measures. He considered it first essential to make a diagnosis of the location of the intussusception. In one case of very recent occurrence he had been able to replace the intussusception inside the rectum. Then, by inverting the child and employing hydrostatic pressure and careful manipulation of the abdomen, immediate relief was secured. He thought that the fact that the intussusception might subsequently return was no argument against making use of such palliative measures in cases of that kind.

Dr. John B. Boucher of Hartford stated that some years ago he had had the accident of reinvagination happen in one of these cases. In order to prevent this in a subsequent case, he had dissected off the mesentery, bringing the cecum down to the abdominal wall at the point where it should have been, and had drawn the appendix through the tendon, putting a piece of adhesive plaster over the appendix and leaving it there for twenty-four hours. He then cut it off, obtaining primary union.

Dr. Harmon G. Howe of Hartford said that one should not be too energetic in one's work with the hydrostatic method, nor trust to the apparent recentness of the attack; because some of these cases had been partially invaginated for some time before presenting symptoms. Even if one did by this means succeed in reducing the intussusception, death would sometimes take place from gangrene.

Dr. Edward W. Smith of Meriden stated that in a case of intussusception of the ileocolic variety in a child of eleven months, two or three inches of the cecum had been drawn in. The patient was operated on, and made a good recovery. Six months later it had another invagination, probably due to having eaten a large amount of peanut candy. This time he employed Dr. Taft's method of inverting the child and manipulating the bowel. The tumor disappeared, and the infant dropped into a quiet sleep.

Dr. O. C. Smith thought that he would be inclined first to try palliative measures, because in a child this was a serious operation. The use of warm sweet-oil might carry the intussusception up, even though it was not quite undone. This would show the region the intussusception started from and give an idea where to operate.

Dr. Overlock said that, while good results were exceptionally produced by palliative measures, the fact remained that a high percentage of these patients would have died if not operated upon.

Dr. O'Neil said that to attempt palliative measures under anesthesia seemed to him to be subjecting the infants to too much medicine. He thought that once was enough to give a baby an anesthetic, because this was very depressing. One should attempt any palliative measures employed under anesthesia, and be ready, in case of failure, to go ahead with an operation.

Peritoneal Tuberculosis.—Dr. Daniel Sullivan of New London said that tuberculous peritonitis would mimic every other abdominal disease or condition. It was secondary to tuberculosis in some other organ in 90 per cent. of the cases, the lungs being the primary seat more frequently than all the other organs taken together. He had had two cases in which jaundice was a pronounced symptom. While peritoneal tuberculosis was sometimes a surgical disease, it was always a medical one. The medical man should treat these patients with rest, fresh air, nutritious food, medicine (if necessary to help the emunctories), and all that goes with good nursing. If, after five or six days, there was no improvement, and the case was one of the ascitic form; or when the Fallopian tubes or the appendix appeared to be the location of the mass—a laparotomy should be advised. Simple incision and the evacuation of the fluid, with removal of the primary seat of infection, if possible was the best procedure, the wound being closed without drainage. Then one should again begin with the hygienic treatment.

Dr. John B. Boucher of Hartford said he believed that, like septic peritonitis, tuberculous peritonitis was due to a local infection in every case. This surgeons were finding to be so. It was three or four times more common in women than in men, the Fallopian tube, next to the tonsil and the lung, being the most susceptible organ to tuberculous infection. Abdominal drainage should not be used, because mixed infection should be avoided in such cases. If this was prevented, tuberculosis was a comparatively harmless disease.

Dr. Overlock thought that most of the statistics showing this condition to be found more often in females than in males were due to the existence of avenues of infection in the former not found in the latter. Tuberculous peritonitis was frequently found at operation in cases in which some other lesion had been suspected. The diagnosis, while very important, was difficult, on account of the fact that this condition simulated so many other things. One was not justified in jumping at the conclusion that a patient's peritonitis was tuberculous because there was tuberculosis present in some other organ; for, even in such a case, the process in the peritoneum might be an acute one. The medical treat-

ment in these cases consisted in putting the patient into the most favorable condition to resist the disease. The surgical treatment could be of service in eliminating the foci of infection and covering them up; as much tuberculous material as possible could thus be gotten rid of, leaving nature to pour out an effusion and help bury what was left.

Dr. David R. Lyman of Wallingford said that he had usually referred these patients to the surgeon because of acute appendicitis; but that back of this there had been the tuberculous peritonitis. In several cases he had seen bad effects from ether anesthesia, and he was inclined to be very cautious in its use in patients with tuberculous peritonitis. He believed the medical part of the treatment of such cases to be a great factor in conjunction with the surgical.

Dr. Edward R. Lampson of Hartford said that his brother-in-law, who had had tuberculosis of the lung for fifteen years, was operated upon for appendicitis under stovaine, in the Presbyterian Hospital, by Dr. Blake. The operation was entirely successful, and the patient regained the weight that he had lost as the result of the appendicitis. Dr. Lampson thought that when the involvement was not great chloroform or gas should be used; but that when any general anesthetic was contraindicated, as in this case, stovaine might be employed as the last resort.

Dr. James J. Boucher had seen a large series of cases of the ascitic variety of tuberculous peritonitis. He explained that in women the hydrostatic pressure of the fluid in the abdominal cavity kept the Fallopian tubes open, allowing the entrance of tuberculous material. Withdrawing the fluid caused the condition to become merely a localized salpingitis; and the peritoneum was then able to overwhelm the bacilli remaining in it. In tuberculous peritonitis without involvement of the lungs he considered ether to be a safe anesthetic, but said that it was dangerous when the lungs were involved. In cases in which chloroform had been used more or less destruction of all the internal organs had been found; while with ether there had been practically no change.

Dr. Sullivan stated that the tonsils and the ears were frequently the avenues of entrance of the tubercle bacilli into the system; and that when the lung was involved there was a change in the lymphatic glands. Though both the glands and the lung might have healed, the bacteria might still be lying dormant in the body, only to wake up and infect the peritoneum later. This was the explanation of many cases of primary tuberculous peritonitis. Dr. Sullivan said that a good many cases of this were sent to the surgeon in the belief that they would be surely relieved. He thought that the surgeon should protect himself by making certain that the lungs were not involved.

The Two-Stage Operation for Intestinal Obstruction.—Dr. Edward R. Whittemore of New Haven said that the mortality of operations for acute intestinal obstruction was so high that there was great need of improvement. The condition of these patients was usually toxic, and there was danger of increasing this toxemia by removing the obstruction without instituting drainage of the bowel, especially in the upper intestine. He had, therefore, found it advisable to do a simple enterostomy at first, leaving the removal of the obstruction until later. The operation should be done as early as possible, with the usual preparation of the patient, especially remembering to wash out the stomach before giving the ether. Only the briefest examination should be made at the time of operation to discover the site and cause of the obstruction, the search being abandoned if not soon successful. A simple enterostomy should then be done on the most distant loop, preferably not in the median line. If any gangrenous gut was seen, it should be drawn into the wound, secured there, and opened. All other procedures should be left until the second stage, a week or so later, when the patient would be better able to stand operation. The object of this procedure was, first, rapid and efficient drainage of the bowel, the relief of the obstruction being a secondary matter, to be taken up later.

Dr. Everett J. McKnight of Hartford considered it important to realize that above the point of obstruction there was a large amount of toxic material, which, if allowed to go down through the gut, might be absorbed and cause trouble. In intestinal obstruction one should not, as a rule, close up the bowel in the abdomen without having taken due precaution against this source of intoxication. He called attention to the advisability of doing an enterostomy also in many cases of postoperative distention, when this could not be relieved by any other means.

Dr. Whittemore stated that in one of his cases the operation had been followed by a rise of temperature for a few hours, and that this might be attributed to the passage of the toxins on below the point of obstruction.

Election of Officers.—The officers elected for the ensuing years were as follows: *President*, Dr. John G. Stanton of New London; *Vice-Presidents*, Drs. D. Chester Brown of Danbury and Robert C. Paine of Thompson; *Secretary*, Dr. Walter R. Steiner of Hartford; *Treasurer*, Dr. Joseph H. Townsend of New Haven.

The Society will hold its next annual meeting at New Haven on the fourth Wednesday and Thursday of May, 1912.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held May 22, 1911.

The President, Dr. James F. McKernon, in the Chair.

The Fatalities of Delay in the Diagnosis and Treatment of Rectal Diseases.—Dr. James P. Tuttle read this paper. Unlike constitutional diseases, those of the rectum had no tendency to spontaneous healing; they were nearly all infectious, and the infection was always present. If the profession and laiety could be brought to attach due weight and importance to the minor rectal symptoms and to seek and receive the proper examination and treatment early in these conditions there would be very few serious cases and rarely a fatal one; very few of them would require anything more than a slight operation. Dr. Tuttle proposed to cite some parallel cases showing on the one hand the fatalities of delayed diagnosis and neglected treatment and, on the other, the happy results in similar cases recognized early and treated properly before any serious symptoms developed. Thrombotic hemorrhoids was a condition often ignored, and yet capable of producing the most disastrous results if not properly treated. Dr. Tuttle cited the case of a man who neglected this condition for only a few days, when the clot became infected, an abscess formed, extending halfway around the anal opening, and a condition of general sepsis followed, with a temperature of 104° F. It was a clear case of infection of the clot through one of the skin or sebaceous glands. It took five weeks for the infection to disappear and for the tract to heal. This was not an exceptional case. In apposition to this case Dr. Tuttle cited another in which the first symptoms were followed by the evacuation of clots. This gave immediate relief from pain and enabled the patient to attend to her usual duties. This was a daily experience and was what should occur in almost every case of thrombotic hemorrhoids if properly diagnosed and properly treated. Anal fissure in its earliest symptoms gave little or no pain and slight inconvenience, and was the most amenable of rectal diseases to treat, yet

if left unattended and allowed to become chronic it was capable of the most distressing results. It was now believed to be the initial lesion of all true fistulas, whether simple, compound, or complicated. If left until the wound became infected and the tract burrowed underneath the skin and mucous membrane, or until cicatricial deposits and perineuritis occurred, there was no condition that would give more distress or bring on more serious results. Fissues were the most nerve wrecking, irritating, and depressing of rectal diseases, and produced suffering out of all proportion to their duration and extent. They were all curable by local application or minor operation in the beginning. The majority of cases of simple hemorrhoids if taken early and treated properly could be aborted. Dr. Tuttle related a number of cases in which a foreign body had become imbedded in the rectum that showed the advisability of making a rectal examination when patients complained of rectal trouble. He also cited a case where an impacted fecal mass was neglected, or rather overlooked, and the results were most disastrous. The misleading point in such cases was the fact that the patient might complain of diarrhea This was caused by tenesmus and the increase in the fluids of the bowel which passed around the mass. The attending physician was likely to give a laxative and to suppose that he had obtained a free movement of the bowels. Examination with the finger would reveal the trouble and avoid serious consequences. Fistulas, Dr. Tuttle thought, could be averted if seen early enough. A large part of them originated in a small abrasion. The failure to discover the initial lesion was largely due to patients who belittled the minor symptoms, and a physician was not called until an abscess formed. The physician too often prescribed a poultice or salve and adopted a waiting course until the abscess reached the surface and broke of itself. A diagnosis should have been made and the abscess opened in the beginning. If such a course was pursued they would see few chronic fistulas. Perirectal abscesses or infections in the deep perirectal spaces were usually not due to rectal disease at all, but to prostatic, urethral, and uterine conditions; they not infrequently broke into the rectum or had been opened by surgeons into this organ, a most unsurgical and dangerous procedure. Early diagnosis and treatment of such conditions was most important, for they were really dangerous to life. The author had known deaths to occur from delayed surgical intervention Carcinoma was, the author assumed, a local disease in the beginning, and it was curable in the rectum by only one method—that of complete extirpation. When it had existed long enough to involve the perirectal organs, such as the sacrum, the prostate, the vagina, or the lymphatics, extirpation was almost impossible. If it was seen before such invasion had occurred the patient would have a fair chance of permanent recovery, or at least long freedom from the disease. Since his report of 100 cases of cancer of the rectum in 1908 Dr. Tuttle had seen 81 cases of this condition in private practice. Of this number 44 had been operated upon, and of the 37 remaining operation was refused in 4 cases on account of bad prognosis and 33 had been turned down as inoperable. Of these 37 cases the average time at which they first noticed symptoms before consulting the writer had been 14.6 months; most of them had been observed for from six to twelve months by their family physicians and treated for ulcerations, diarrhea, hemorrhoids, etc.; five had been operated on within six months for hemorrhoids, the carcinoma no doubt being present at the time. There was every evidence that had proper examination been made early enough the disease could have been discovered in nearly every case in time to have afforded the patient a reasonable chance by surgical intervention. In how many cases the delay was the fault of the patient and in how many the fault of the doctor the writer was unable to say, but the histories showed that most of them had been under treatment for from two to ten months before Dr. Tuttle saw them. In the forty-four cases operated upon only one case was lost among those who came to operation under ten months after the first symptoms appeared. Rectal and sigmoidal examination ought to be made a part in the routine practice of examination in stomachic and digestive disturbances The only way these conditions could be diagnosed was through digital and ocular examination. All constipations, every diarrhea, or tendency to diarrhea that lasted after a proper cathartic and irrigation of the rectum; all passages of mucus, especially of the glairy type; all loss of blood from the rectum; all persistent and increasing indigestion; all autointoxication demanded a careful proctoscopic examination. Where blood and glairy mucus seemed to come down from above the part at which the tube could be introduced an exploratory operation should not be hesitated upon. Dr. Tuttle exhibited a specimen which he said was a villous papilloma and related the history of the case from which the specimen was taken.

The Operation of Choice in Carcinoma of the Rectum.—Dr. Joseph A. Blake presented this paper. He stated that there were two methods of attacking malignant neoplasms of the rectum; the perineal, by which the growth was removed from below, and the abdominal, or the combined operation, by which both incisions were used. The later perineal operations had been much simplified by the discovery that the bowel could be readily loosened from below so that the end, after resection, could be easily brought down to the level of the anus, thereby eliminating the necessity of resecting the sacrum and coccyx. The necessity remained, however, of making a large wound in order to gain free access to the abdominal cavity from below. The abdominal method had been correspondingly improved. In discussing which one of these was the method of choice it was extremely difficult not to be biased in favor of one or the other. Eventually he thought they would reach the conclusion that both operations were good, and that the operation of choice was the one best fitted for the case in hand. The foremost thing to be accomplished in a given case was the complete eradication of the growth; a secondary but important consideration was the preservation of a normal functionating natural anus; lastly, but most vitally important, was the conservation of the patient's life. In regard to the first of these it was obvious that a radical operation should not be undertaken unless this could be accomplished. The chief objection to the perineal, and one of the chief arguments in favor of the abdominal, method was that in many instances this question could not be determined until the perineal operation was all but completed, while in the abdominal operation it was decided at the expense alone of the abdominal incision. Dr. Blake had in two cases found secondary neoplasms in the gut several inches above the main growth which would have been missed by the perineal operation. The abdominal method on the whole better fulfilled the condition of complete eradication, and the higher the growth the greater the indications for this method. In all growths necessitating the destruction of the sphincter it was preferable to institute a permanent inguinal anus and to extirpate the remainder of the rectum. Dr. Blake had done this in fourteen consecutive cases without mortality. This would be the operation of choice were it not for the artificial anus. It had a low mortality because there was no secondary infection, the fecal current being deflected from the site of operation. If the lower limit of growth was three inches or more from the anus, the gut could be divided below the growth through the abdominal incision and the operation completed without a perineal incision other than a stab drainage opening. In regard to the comparative mortality of the two methods.

of operation the perineal as a routine measure was the safer. The mortality of both was, however, high, and there was not as much difference as was generally supposed From his own experience the writer believed that the abdominal operation was cleaner and that there was not so much danger of sepsis as with the perineal operation. The combined operation was the most severe of all. It was not dangerous, however, if an inguinal anus was instituted at or before the operation. For low growths involving the anal canal so that the sphincter had to be sacrificed the combined abdomino-perineal operation with the formation of an inguinal anus was the operation of choice. For the ordinary low ampullary growths, when small, the perineal operation was indicated for both sexes; in the case of larger growths in women and in some men the combined method should be chosen. For growths lying about three inches from the anus or for those cases in which the bowel could be divided below the growth Dr Blake preferred the abdominal incision and the invagination of the upper segment through the lower with suture within the abdomen or without the anus by a modification of the method used by Maunsell and Wier. Dr. Blake described the ingenious method devised by Dr. Hugh Auchineloss for the anastomosis of the oral with the aboral segment in this operation. Thus far this method had not been used on the living subject, but it had been shown to be practicable upon the cadaver.

Dr. Samuel G. Gant said there were a few simple rules which doctors might follow in the diagnosis of rectal diseases; many mistakes were made by the internist in diagnosing rectal diseases. It was not necesary to make an apology to every peron who came to the doctor because it was necessary to make a rectal examination when the symptoms pointed to a diseased condition there. He did not advise the use of a finger eot. Every disease of the rectum could and should be diagnosed if the patient appeared early, but with the use of the proctoscope or sigmoidoscope. The most serious diseases of the rectum were not those that always caused pain. Ninety per cent. of all rectal dieases occurred within one inch of the anus; therefore, in making a rectal examination one should begin at the anal margin and work up carefully. The presence of pain was very indicative of some diseases; if this existed after a bowel action it was apt to be due to a fissure. The severer diseases, however, were indicated by diarrhea. Dr. Gant emphasized the importance of making a careful examination about the anus in making a diagnosis. About 50 per cent. of the cancer cases were inoperable when he saw them; this certainly was inexcusable The symptoms of carcinoma in the early stages were so slight as to make the diagnosis difficult; in the intermittent stage the diagnosis was easy; in the later stage the condition was practically self-diagnosed. There was a general impression that the odor, the pain and hemorrhage were the diagnostic symptoms of cancer; at the time these symptoms appeared the condition was probably an inoperable one. Odor, pain, and hemorrhage which occurred in the later stages of the disease indicated that the growth was inoperable. With regard to the Kraske operation, operators were getting away from it and employing other and better methods.

Dr. Samuel Lloyd said that the drift of the papers was early diagnosis and treatment; that was a principle needed in all surgery, not only in rectal diseases but in all other surgical diseases. The earlier one made the diagnosis, the less would there be for the surgeon to do. The human ostriches, those who had swallowed glass, pins, needles, nails, shot, and other foreign bodies were the ones that suffered from the injuries referred to. The question of carcinoma, of course, interested all. Dr. Lloyd did not agree with the point that odor, pain and hemorrhage indicated that it was too late for operation; many cases he had operated upon had done well. One case he had operated upon with these symptoms had lived sixteen years; a number of cases he had operated upon had lived from twelve to sixteen years. In every one of these cases there was pain, odor, and hemorrhage. There were constitutional symptoms showing an extension into the glands, signs of general cachexia resulting from absorption of the toxines.

Dr. Jerome M. Lynch said he could not agree with Dr. Lloyd that pain was one of the prominent symptoms of carcinoma of the rectum. He had seen two hundred cases with Dr Tuttle and about fifty of his own, 250 altogether about, and rarely was pain a prominent symptom in the operable stage. There was no question regarding the hemorrhage; this he believed to be one of the most important of the symptoms of rectal cancer; it was present in the vast majority of the cases. Patients with carcinoma of the rectum usually gave a history of having some irregularity of the bowels which was followed by either diarrhea or constipation.

Dr. William C. Lusk said that the importance of impressing upon the profession at large the necessity for making a diagnosis of disease conditions affecting the rectum could not be too strongly emphasized. This was borne out by the single fact that physicians so frequently diagnosed cancer of the rectum as hemorrhoids. Dr. Tuttle had mentioned sight and touch as requisite in making the diagnosis. Dr. Lusk said he would urge, in addition, that the man who undertook to make the diagnosis should take the trouble to employ his sight and touch to aid him in coming to a conclusion. The choice of the operation for removal of cancer of the rectum, Dr. Lusk thought would depend largely upon the condition of the patient. A patient with an old heart would not stand a prolonged operation. In a very fat patient it would be desirable to avoid if possible the abdominal route. The younger class of patients who were not too fat were best suited for the radical operation. Dr. Lusk said that he regarded one of the strongest arguments in favor of the abdominal approach to be, that through this route alone the anatomy of the sigmoid flexure could be determined at the very start, consequent upon which the operative procedure could be planned with accuracy and any liberation of the sigmoid and upper rectum could be done in plain view. The attempt to perform high division of the bowel with sigmoid liberation through a posterior approach was attended with many difficulties and much uncertainty. Dr. Lusk said he had made observations of the sigmoids in 25 cadavers, in one of which there was no free sigmoid loop at all, in another the sigmoid took an anomalous course having been bound down by the left leaf of the mesentery of the ileum and having entered the pelvic cavity on the right side, and in a third case the meso-sigmoid was short and so rigid with fat as practically to immobilize the attached bowel. In seven others of the 25 cases the loop of free sigmoid was but from four to seven inches in length, which was of interest in connection with resection of the rectum with high division of the bowel, in which, in order to have enough bowel to reach the anus, the edge of the freed mesosigmoid must be of sufficient length to reach from 5½ to 6 inches below the level of the left common iliac artery. A mesosigmoid attachment up in the iliac fossa could not be liberated through a posterior approach. Another reason for primary approach through the abdominal route was for the ligation of the internal iliae and sacra media arteries, the particular advantage of which was that it greatly diminished the hemorrhage associated with the work done by the lower route. Regarding Dr. Blake's proposition for resection Dr. Lusk said that in Dr. Weir's early cases done by the Maunsell method, bad strictures had resulted, necessitating the use of bougies. He asked Dr. Blake what information he could give on this point.

Specimen of Villous Papilloma.—Dr. James P. Tuttle presented this specimen as illustrative of the point he raised in his paper, the danger of delay. Three years ago a doctor tied off the papilloma at the anus; soon after there appeared a large mass that under ether anæsthesia was reduced. This was two and a half years ago. Villous papilloma was almost always carcinomatous in the early stages; if allowed to go on it, as a rule, would result in carcinoma. This patient was jeopardized for three years because the original operator did not recognize the dangerous condition present in the bowel. Dr. Tuttle said that he was leaning more and more toward the abdominal operation in these cases and he was not so much in favor of the combined operation. There was too much traumatism and too much danger of infection. The growth should be attacked by the abdominal route and an artificial anus should be produced in these cases.

The Dilatation Test for Chronic Appendicitis.—Dr. Walter A. Bastedo read this paper. He described the test by which a latent appendix involvement could generally be recognized. Since the report made in March, 1909, they had applied this test in a great many abdominal cases and had been able, in a number of instances, to establish the diagnosis of appendicitis when all other methods of examination known to them failed completely or left the examiner in a state of reasonable doubt. They had received verbal reports from surgeons in whose experience their test, as checked by findings at operation, had proved reliable, failure being reported in only two per cent. of the cases. To make the test a colon tube was passed ten or twelve inches into the rectum and air injected by means of an atomizer bulb. If, as the colon distended, pain and tenderness to finger-point pressure became apparent at McBurney's point, there was appendicitis. They had compared the test with the Roosing test and found the latter much less certain; but at times, after moderate dilatation by the test just described, the Roosing method of forcing the air back into the cecum might be used with advantage. If most of the air was not allowed to escape before the withdrawal of the tube colicky pains might ensue. The test was not needed in acute cases or in undoubted chronic ones, but it was indicated where there was a suspicion of a chronic or latent appendicitis, or any persistent digestive or abdominal disturbance in which no cause could be found for the trouble. In cases where there were other tender points that gave rise to a doubt as to diagnosis the test often caused all the other tender points to disappear except that at McBurney's point. In persistent cases of hyperchlorhydria or gastrosuccorrhea the test should be performed. Just as in the case of a latent cholelithiasis, so a latent appendicitis might have its chief manifestation in stomach derangement, even so marked at times as to simulate an ulcer. They had met with a number of these cases in which removal of the appendix had caused the gastric symptoms to disappear. A further application of the test might be to distinguish between an inflamed appendix and a right-sided pelvic trouble. Pain and tenderness in a right-sided chronic salpingitis or cystic ovary sometimes resulted from the colon dilatation, but the tenderness was regularly less acute, was low down in the abdomen and extended towards the middle line. In three instances they had been able to diagnose pelvic inflammation without appendix involvement in young women in whom appendicitis was suspected and vaginal examination was impossible. They had employed the test in not a few other gynecological cases and in some had been able to corroborate the findings of a vaginal examination, while in others they had demonstrated appendicitis in addition to the pelvic lesion. Dr. Bastedo cited a number of cases which illustrated the positive findings of the dilatation test. In the use of the test during the past four years they had no case in which the test was positive and the operation findings negative. In two out of all their cases there was a history of an appendix attack and the negative finding of the test was followed within six months by another typical attack of appendicitis; the test was, therefore, presumably at fault as an interval test.

College of Physicians of Philadelphia.

At a stated meeting held May 3 Dr. George G. Ross presented a communication entitled "Perforated Gastric and Duodenal Ulcer," relating a small group of cases illustrating some phases in the symtomatology, diagnosis, and treatment of the disorders named, and analyzing the present status of the subject. Drs. E. H. Goodman and A. Alexander Howell presented a communication entitled "Further Clinical Studies in the Auscultatory Method of Determining Blood-Pressure." This was a second communication on the same subject, and the results of this further study confirmed the conclusions arrived at tentatively in the earlier paper. By this means of investigation much aid is afforded in the differentiation of functional from organic disease of the heart, and also information can be obtained to serve as a guide in the selection of the proper remedial agents. Dr. Joseph R. Tunis presented a communication entitled "Description of a Series of Transverse and Sagittal Sections of Adult Heads." Sawed sections were made of the thoroughly frozen head and the surfaces obtained were carefully polished. The sections were then mounted in an appropriate preserving medium, and they served to exhibit the structure of the cranial contents in an admirable manner. Reproductions of the surfaces were shown in photographs and lantern slides. Dr. T. H. Weisenburg made a demonstration of "Moving-Picture Illustrations of Gait, Station, Tremors, and General Symptoms of Various Forms of Nervous Disease." By means of screen and lantern a series of admirable reproductions were shown of cases of Huntingdon's chorea, tic of the tongue, posterolateral sclerosis, tabes dorsalis, peripheral neuritis, generalized tic, hemiplegia, progressive muscular dystrophy. In this way it is possible to demonstrate certain peculiar motor phenomena and also the methods of obtaining knee-jerk, ankle-clonus, Babinski, and other reflexes.

Pathological Society of Philadelphia.

At the annual conversational meeting held April 27 Dr. Jacques Loeb, of the Rockefeller Institute for Medical Research, delivered an address entitled "Fertilizing Effects of the Extracts of Tissues, Blood, and Sperm." He pointed out that the spermatozoon exhibits two forms of activity with respect to the germ cell. The one is fertilization, the other the preservation of the life of the ovum. The first is dependent upon changes in the cortical portion of the cell, as manifested in a kind of membrane formation, and upon stimulation of oxidation; the second consists in shielding the ovum from the deleterious effects of the oxidation processes that accompany fertilization. Eggs of sea-urchin can be fertilized artificially by exposure to the action of certain fatty acids (resulting in the formation of a membrane) and subsequently to the action of hypertonic solutions of sea water or of certain chemical substances in solution (affording protection against the results of oxidation). While the unfertilized egg may survive for several hours, or days, eggs subjected to membrane formation die in a much shorter time, unless protected through agencies directed toward the prevention of the evil effects of oxidation. Further, of eggs exposed to the action of spermatozoa some die early, while others survive for a longer period. In the former it will be found that only membrane formation takes place by reason of the partial entrance of spermatozoa into the germ cell. In the latter sperm nuclei also gain entrance and afford the necessary protection from the effects of oxidation. It was not possi-

ble to fertilize ova of sea-urchins with dried extracts of sea-urchin spermatozoa, but this could be accomplished with similar extracts prepared from the spermatozoa, as well as with extracts of the tissues and the blood of other animals. The difference is probably due to the fact that in the first instance in the failure of diffusion penetration is necessary, while in the latter cytolytic effects are produced by the extracts of alien tissue.

At a stated meeting held May 25, Dr. J. E. Ashe presented a specimen of "Dissecting Aneurysm of the Aorta." The patient had been a sufferer from senile dementia, 72 years old, and death occurred in consequence of an attack of pneumonia. Autopsy disclosed a dissecting aneurysm of the aorta arising from the descending arch and extending to the iliac bifurcation. At the lower extremity there was an orifice of communication with the lumen of the blood vessel. Just above the diaphragm the formation assumed the proportions of a tangerine orange filled with laminated clot. The aneurysm was in part canalized, and in many places attached to the walls of the blood vessel by bands and strands of connective tissue. No symptoms of the disorder had been noted during life. Dr. Eisenbrey presented for Dr. J. Cooke a specimen of "Adhesion of the Appendix to the Wall of the Ileum, with Opening of the Appendix into the Ileum." Dr. H. B. Allyn and Dr. H. T. Karsner presented a specimen of "Metastatic Carcinoma of the Heart." The patient was a woman from whose abdominal wall a soft mole had been removed, and who later presented symptoms of neoplastic proliferation in the abdomen and chest. Death resulting in the course of a few months sarcomatous deposits were found in most of the abdominal viscera and in the lungs and heart. Dr. Kasner exhibited on behalf of himself and Dr. Ernest Laplace a second specimen of "Metastatic Carcinoma of the Heart." The primary growth had been situated on the femur and was a subperiosteal osteosarcoma. Dr. R. C. Rosenberger reported "A Case of Multiple Parasitism." The patient was a Russian who had passed through an attack of croupous pneumonia and in whose stools there were found the roundworm, the whipworm and ova of balantidium coli and of distoma hepaticum. There had been no symptoms referable to the intestinal tract. Dr. J. H. Musser, Jr., presented a communication entitled "Cysts of the Spleen," reporting the case of a woman from whose left upper abdominal quadrant was removed a large cyst apparently consisting of the remains of an extravasation of blood beneath the capsule of the organ, which itself was somewhat enlarged. Dr. B. A. Thomas and Dr. Margaretta McPhail presented a communication entitled "A Study of Active Immunization with Respect to the Micrococcus Aureus in Animals Completely Pancreatectomized." It was shown that the activity of the immunity processes was greatly lowered in animals from whom the pancreas had been previously removed.

Treatment of Essential Incontinence of Urine in Children.—René Cruchet and Firmin Carles report their results in the treatment of six children with epidural injections of artificial serum into the sacral region. Three cases of nocturnal incontinence were cured and remain so after four and five months. The other cases were favorably affected by the treatment. The child is placed on the left side with one knee drawn up and the injection is made in the sacral region. If more than 10 c.c. of the solution are injected there will be transient changes of sensibility, such as prickling of the skin. No bad effects have been observed from the treatment and the injections are very easy to make.—*Le Progrès Médical.*

Medicolegal Notes.

Due Care in Discovering and Treating Dislocation of Shoulder Joint.—In an action for damages against a physician and surgeon for malpractice in the treatment of an injury to the plaintiff's shoulder joint which she alleged had become dislocated by a fall, the particular allegation was that the defendant failed, upon examination, to discover the dislocation and to apply such remedies as were necessary to restore her injured shoulder to its normal condition, which could have been done by the exercise of ordinary care and skill. In giving judgment for the plaintiff the court said that the mere use of approved tests, or those which have been found to be the best for the discovery of a dislocation or fracture or any other abnormal condition of the human body is not all that is required of a surgeon or physician in the care and treatment of his patient. He must exercise that reasonable skill, care, and proficiency in making the tests and in ascertaining from them the presence of any injury and generally in the treatment of his patient which a member of his profession of ordinary care and prudence should use under the circumstances. He is not bound or confined to any special treatment, but to an ordinarily careful and skillful one. In this case it was for the jury to decide whether the defendant applied the test properly and if he did whether he possessed the requisite knowledge and skill to understand the symptoms which it disclosed, or to apply the proper remedy. A physician entitled to practise his profession, possessing the requisite qualifications, and applying his skill and judgment with due care is not ordinarily liable for damages consequent upon an honest mistake or an error of judgment in making a diagnosis, in prescribing treatment, or in determining upon an operation where there is reasonable doubt as to the nature of the physical conditions involved, or as to what should have been done in accordance with recognized authority and current practice. But the law does not excuse an error of judgment if it occurs by reason of the surgeon's lack of that knowledge which he should possess in order to qualify him for the practice of his profession, or the failure to exercise the requisite skill and diligence.—Long v. Austin, North Carolina Supreme Court, 69 S. E. 500.

Employment of Physician for Injured Employee of Corporation by Its Superintendent—Liability of Company to Physician.—An employee in the mining plant of a corporation was injured by machinery in the plant, and a superintendent of the mine telephoned the plaintiff to come to the injured man and bring another doctor with him. This the plaintiff did, and the superintendent requested the physicians to take charge of the man. In an action by them against the corporation for compensation for their services the evidence showed that the superintendent had no authority to employ physicians at the expense of the company to attend injured employees, and that the custom of the company was not to allow such a libility to be incurred by its agents or superintendents. It was held that the law does not imply an authority in such superintendents to request such services for, and at the expense of, the corporation. The liability of the corporation for the negligence of its agents and servants which proximately injures an employee may extend to medical services to the injured employee, but this liability does not give rise to a contract liability for such services.—Atlantic Refining Co. v. Leffingwell & Berry, Supreme Court of Florida, 54 So., 266.

Construction of Act Incorporating County Medical Societies—Validity of Society's By-Laws.—New York Laws, 1806, c. 138, authorized the incorporation of medical societies in the various counties for the purpose of regulating the practice of physic and surgery. The statue made a diploma from one of these societies a condition of the right to practise. The societies were empowered to pass by-laws as to the admission and expulsion of members. The right to alter or repeal the act was expressly reserved to the Legislature. Various decisions of the courts much limited the right of these societies to refuse to admit to membership and to expel, and the act of 1866, c. 445, was enacted obviously for the purpose of enlarging the powers of the societies as defined by these decisions. By this act any county medical society was authorized to establish such rules and regulations for the government of its members as it might deem fit, and to enforce discipline among its members and obedience to its rules and regulations, with power to otherwise discipline, as might be deemed advisable for the best interest of the society. In passing upon the validity of the latter statute the New York court holds that one who became a member

of a medical society in 1904 could not object that the act of 1866 was an impairment of the contract between the State and the society made by the act of 1866 if the society raised no such objection. The member's contract is to be construed according to the law in force when it was made. Charges were filed against a member of a medical society for misconduct, but he was not served with a copy of them at the time, as he was under suspension on another ground. Subsequently his suspension was remitted and he was restored to good standing. He then tendered his resignation. Three days later a copy of the charges was served upon him. A by-law of the society provided that no resignation should be accepted from a member under charges. The member brought a suit against the society to restrain it from trying him on the charges. It was held that he was under charges when he attempted to resign, within the meaning of the by-law, and thus his suit was premature. The by-law, it was held, was authorized by the act of 1806, even without the authority of the act of 1866.—Ewald v. Medical Society of New York County, New York Appellate Division, 128 N. Y. Supp. 886.

Definition of "Practising Medicine or Surgery."—In an appeal from a conviction for practising medicine without a license it appeared that the appellant practised what he called the "science of chiropractic." The "chiropractor" makes no physical examination of the patient outside of the spinal column. He does not feel the pulse, take the temperature, prescribe any diet, or use any instruments. He simply examines the spinal column, determines whether or not a "subluxation," as he calls it, exists, and, if he finds it "adjusts" it. It was held that this system of practice was within Missouri Acts 1901, p. 207, prohibiting any person from practising medicine or surgery or from attempting to treat the sick without first obtaining a license. The words "attempting to treat the sick" in the act are not limited to attempts to treat by medicine or surgery. Discussing the question what constitutes practising medicine or surgery the court said: "The practice of medicine is not confined to the administration of drugs; nor is surgery limited to the knife. When a physician advises his patient to travel for his health he is practising medicine Broadly speaking, one is practising medicine when he visits his patient, examines him, determines the nature of the disease, and prescribes the remedies he deems appropriate." To say that one does not "treat" but "adjusts," and that he deals not with the "disease" but with the "cause" is merely juggling with words. Changing the name does not change the thing. The practical test to determine whether a practice or treatment is included in the terms "medicine" or "surgery" is often held to be whether a diagnosis is made. A doctor who advises his patient to sleep in the open air is treating him. Such advice, however, is based upon a knowledge of the patient's condition, obtained by diagnosis. The method or extent of the examination is not the controlling feature. When the practitioner makes such an examination of the patient as he regards as sufficient to indicate to him the cause of the trouble and to indicate its proper treatment he has diagnosed the case. Passing upon the validity of the statute the court held that it was valid as an exercise by the Legislature of its police power in the protection of the public health.—State v. Smith, Missouri Supreme Court, 135 S. W. 465.

Definition of "Practising Medicine or Surgery."—In an accident benefit certificate it appeared that the assured died from, in the opinion of the attending physician, acute dilatation of the heart caused by chloroform administered to him preparatory to a surgical operation The certificate stipulated that the insurance company should not be liable for death resulting from surgical operation. It was held that the company was liable; that "surgical treatment" did not include the administration of chloroform under the circumstances of the case. "Surgical treatment" was defined by the court as treating a disease or a patient by means of surgery, which in turn means applying manual operations or instrumental appliances to the affected part for the purpose of curing or relieving the ailment."—Beile v. Travelers' Protective Assn. of America (Missouri), 135 S. W. 497.

Evidence of Medical Examination Made Through Interpreter Admissible.—In an action for injuries caused by an automobile the plaintiff's condition and the history of the case were proved as matters of fact by her testimony. The evidence of a physician who examined her through a companion who acted as interpreter for the physician, in so far as subjective symptoms and the history of the case were concerned, was therefore held not to be objectionable as hearsay but admissible as showing the basis for the physician's diagnosis.—Salminen v. Ross, Circuit Court, Massachusetts, 185 Fed. 997.

Medical Items.

Ocular Troubles in the Course of Albuminuria of Pregnancy.—M. R. Burnier describes three forms of ocular affections occurring in pregnant albuminuria. They are amaurosis, which comes on without any lesion that can be discovered by the ophthalmoscope, and which often comes on suddenly and is transitory; retinitis, which comes from edematous infiltration of the retina, accompanied often by detachment; and neuritis. Amaurosis is the lightest form of trouble, and is generally found in primiparæ, near the end of pregnancy. The diagnosis is easy and the prognosis good. It is caused by a lesion outside the ocular structures, to be found in the cerebrum, but the nature of which is not known. Theory ascribes it to retention of chlorides, with cerebral hypertension, or to mechanical compression due to arterial spasm. Retinitis occurs with or without previous kidney disease. It shows a severe form of poisoning, and the prognosis for the child is bad. Recovery of sight occurs entirely in some cases; about 25 per cent. remain permanently blind; and 40 per cent. recover partially. Neuritis may also occur. The treatment of these conditions when severe demands a resort to the induction of premature labor in order to save the sight.—*Gazette des Hôpitaux.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended July 14, 1911:

Places	Date	Cases	Deaths
CHOLERA.			
Ceylon: Colombo	May 21–27	1	..
Greece: Laurium	July 8	..	Present
India: Calcutta	May 12–20	..	49
Moulmine	May 14–20	..	1
Indo-China: Saigon	May 22–28	8	4
Italy		..	..
Total for continental Italy outside of Naples June 8 to July 6: Cases 374, deaths 116.			
Provinces—Caserta	June 18–21	4	..
Naples	June 11–July 6	216	68
☞ Including cases previously reported.			
Sicily		..	..
Outside Palermo to July 6, 27 cases, 11 deaths.			
Palermo	June 15–July 6	282	75
Monreale	June 18–21	3	1
Salerno	June 17–22	17	3
Straits Settlements: Penang	May 7–13	..	1
Singapore	May 14–20	6	7
Turkey: Constantinople	June 12–18	..	1
Turkey in Asia: Kamaran	May 28–June 4	[1]2	1
[1]*Bulletin Quarantenaire d'Egypte*, June 15, 1911. Among troops.			
Smyrna	May 29–June 4	11	5
YELLOW FEVER.			
Brazil: Manaos	June 4–10	..	1
Ecuador: Guayaquil	June 1–15	8	5
Milagro	June 1–15	4	3
PLAGUE.			
British East Africa: Port Florence	Apr. 26	1	1
Chile: Arica	June 12	..	Present
Iquique	May 28–June 10	4	3
China: Amoy	May 21–27	31	10
Hongkong	May 21–27	21	20
Among Chinese.			
Swatow	June 3	..	..
Still present Epidemic in Chao-chow-fu, Hweilai, Kit-yang, and in Chao-Yang Jan. 1–May 23, 2,000 deaths.			
Ecuador: Guayaquil	June 1–15	2	..
Egypt: Alexandria	May 31–June 9	13	5
Cairo	Feb. 12–May 31	1	1
Port Said	May 27–June 13	1	..
On s. s. *Yeddo*, bound for Calcutta from New York, via Naples and Torrevieja, Spain.			
Provinces—Assiout	May 31–June 14	4	2
Dakahlieh	May 29–June 11	2	..
Fayoum	May 28–June 11	2	..
Girgeh	Apr. 19–June 14	1	..
Kena	May 30–June 12	5	5
Minieh	June 1–14	14	4
India: Bombay	May 21–June 3	245	218
Calcutta	May 14–20	..	65
Kurrachee	May 28–June 3	80	81
Indo-China: Saigon	May 22–28	37	12
Japan: Formosa	May 28–June 3	41	36
In Kagi province from Jan. 1–June 15; Cases 355, including report p. 1047, vol. 1.			
Java: Surabaya	May 1–3	3	1
Persia: Lingah	May 18	3	..
From the opposite Arabian coast.			
Peru: Departments—Ancachs	Apr. 30–May 20	2	1
Arequipa	Apr. 30–May 20	8	2
Mollendo, June 1–13: Cases 4, deaths 1.			
Callao	Apr. 30–May 20	1	..
Chiclayo	Apr. 30–May 20	11	3
Lambayeque	Apr. 30–May 20	1	1
Libertad	Apr. 30–May 20	6	3
Lima	Apr. 30–May 20	12	3
Pacasmayo	Apr. 30–May 20	2	2
Venezuela: Caracas	May 29–June 10	1	..
SMALLPOX.			
Argentina: Buenos Aires	Apr. 1–30	..	21
Brazil: Rio de Janeiro	May 28–June 3	..	1
Ceylon: Colombo	May 21–27	1	..
China: Hongkong	May 21–27	5	2
Nanking	May 28–June 10	..	Present
Shanghai	May 24–June 4	..	4
Swatow	May 28–June 3	..	.
Present in the district.			

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Original Articles.

A CASE OF PELLAGRA WHICH HAD ITS ORIGIN IN PENNSYLVANIA, PROBABLY IN PHILADELPHIA, WITH BRIEF NOTES OF THE DISEASE AS RECENTLY OBSERVED IN NORTHERN ITALY.*

BY M. B. HARTZELL, M.D.,

PHILADELPHIA, PA.

PROFESSOR OF DERMATOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

A NOTABLE feature of pellagra in the United States is the very wide range of its distribution, cases having been observed in New England, in the South, in the States of the Middle West, and on the Pacific Coast; indeed, although the largest number of cases has been reported from the South, few if any sections of the United States seem to be entirely exempt. So far as I know, however, no case definitely known to have had its origin in Pennsylvania has yet been reported, and for this reason, and because it was observed in a private family and not in an institution, I have thought it worth while to put on record the following case, especially since it presented in a most striking and typical manner the characteristics of the disease.

Grace R., nine years old, born in Philadelphia, where, with the exception of two or three years spent in central Pennsylvania, she had lived all her short life, was referred to the Skin Dispensary of the University Hospital by Dr. Weisenberg because of an unusual eruption which had appeared somewhat suddenly upon the uncovered parts of the skin, viz., the hands, wrists, and face. At her first visit, April 6, 1910, the skin of the forehead, nose, cheeks, backs of the hands and wrists, both flexor and extensor surfaces of the last, were abundantly exfoliating, the skin being a violaceous-brown in color, presenting an appearance much like the dermatitis which not infrequently follows the application of tincture of iodine to delicate skins. A notable feature of the eruption on the hands and wrists was that it ceased abruptly at the beginning of the sleeves, like a pair of gloves. The mucous membrane of the cheeks, pharynx, and tongue was a very bright red and the tongue was remarkably smooth. The child was much emaciated and showed marked hebetude, sitting silent and motionless, with an air of extreme dejection, scarcely answering when spoken to. In addition to the skin affection it was stated that she had suffered much during the past two months from a moderately severe diarrhea, which no treatment controlled.

*Read before the Philadelphia County Medical Society, February 8, 1911.

The history as obtained from the aunt with whom the child lived and who had brought her to the dispensary, was that in August, 1909, the patient began to lose flesh, she became dull and listless, "sitting all day long without moving, always crying"; she continued to lose weight, and eight weeks before her first visit to the dispensary she began to vomit her food; when the vomiting ceased, after some two weeks intractable diarrhea set in, there being three or four watery stools daily. The cutaneous symptoms made their first appearance ten days previous to her visit to the University Hospital. The face and hands became red "like sunburn" over night, and this erythema was followed several days later by vesicles and blebs, "water-blisters," and these in turn were replaced by the exfoliation which was present when she first came under our observation. The aunt regarded this dermatitis as an ordinary sunburn, the child having been out in the sun for some time the day preceding its appearance.

In order that she might be more carefully studied and treated the child was admitted to the University Hospital a few days after her visit to the dispensary. A careful physical examination made at this time by Dr. Van Valzah, the resident physician, failed to disclose any sign of visceral disease. The urine contained neither albumin, sugar, nor any other abnormal constituent. The blood examination revealed a marked anemia and nothing more; the blood-count showing 2,100,000 red cells, 7,300 leucocytes, and 20 per cent. hemoglobin. The differential count gave 35 per cent. polynuclears, 55 per cent. lymphocytes, 6 per cent. mononuclears, 3 per cent. transitionals, and 1 per cent. eosinophiles; a second count made some days later gave practically the same results. An ophthalmoscopic examination showed no changes in the fundus oculi. During the first three weeks of her stay in the hospital there was fever of an exceedingly irregular type: two or three days of normal temperature would be followed by a rise to 101-2° for a day or two, after which the temperature would again become normal. In order to determine the presence or absence of a possible latent tuberculosis a von Pirquet inoculation was made, but the result was entirely negative. Immediately upon her admission to the hospital the patient was put upon a carefully regulated diet, liquid for the most part, and was given moderate doses of quinine and small doses of opium and bismuth for the diarrhea. Under this treatment she soon began to improve; one of the earliest signs of this improvement being a returning interest in the things going on about her, in the visits of her aunt, and in the toys brought her. The diarrhea was much less, there being only one or two loose movements a day, and the skin of the hands and face had about ceased desquamating, although it was still noticeably browner than normal.

As her strength returned she began to spend several hours every day in the sun parlor adjoining the ward, and it was then noticed that, although not directly exposed to the sun's rays, the hands began to show again a slight but noticeable brownish-red erythema. On May 16, when she was discharged from the hospital, she was gaining slowly in weight, the diarrhea had practically ceased, and her mental condition seemed normal; there was still, however, a slight but easily recognized pigmentation of the skin of the hands and wrists. During the next month she made visits every four or five days to the Skin Dispensary, and after a week or two it became quite evident that she was losing ground; her appetite again became poor, she again began to lose weight, and as in the earliest stages of her illness she became dull and listless. In the latter part of June, yielding to the importunity of the aunt, she was permitted to visit friends in central Pennsylvania and nothing was heard of the further progress of the case until in the autumn it was learned that she gradually grew worse after going to the country and finally died October 12; as to the immediate cause of death nothing could be learned.

The clinical symptoms of the case were of so typical a kind that there seems to be but little room for doubt as to the correctness of the diagnosis; the peculiar brown-red dermatitis occurring upon

those parts of the skin exposed to the light, the gastrointestinal symptoms with the bright-red, smooth tongue, and the mental condition were all quite characteristic of pellagra. Of course one of the most interesting as well as important questions connected with the disease is its origin; and it is of much interest to note that it seems to be definitely established that this patient had never eaten corn. The aunt, who seemed a fairly intelligent person, was quite positive in her statements that the family never used cornmeal as an article of food. Of course, I am quite well aware how difficult it oftentimes is to obtain accurate histories as to patients' habits of life, but I think we may accept it as pretty well established that spoiled corn was not an etiological factor in this case.

During the past summer I spent some part of my vacation in northern Italy, in Milan, where, until a comparatively recent period pellagra was extremely prevalent, perhaps more prevalent than anywhere else in the world; indeed, as is well known, one of the names for the malady is Lombardy leprosy. In 1880 there were no less than 10,000 cases of pellagra in the province of Milan alone, chiefly in the rural population, where there were 32.20 cases in every thousand. Through the very great kindness of Dr. Tancredi Pizzini, assistant to Prof. Bertarelli, I had the opportunity to see some twenty-one cases of pellagra. In the Ospedale Maggiore of Milan we found fourteen patients, all men, most of them over fifty years old, in whom a diagnosis of pellagra had been made, but it is only proper to say that this diagnosis was regarded as somewhat doubtful in some of them; they had been sent in from the country as suspects and were being kept under observation until a definite diagnosis could be made. About one-half of them presented a brownish-red erythema of the backs of the hands, ankles, and tops of the feet, accompanied by more or less scaling, while a considerable proportion of the remainder showed only a moderate pigmentation without desquamation. We were told that fully 80 per cent. of these patients had more or less marked gastrointestinal symptoms of some kind, usually diarrhea, but, as a rule, their general health seemed to be fairly good. The majority of them seemed to be rather dull mentally, but whether this was the mental slowness of the overworked and underfed peasant or evidence of disease I was unable to determine, partly because of lack of time to go into details, but chiefly because of my ignorance of the Italian language. These cases represented the milder forms of the disease, the only forms of the malady seen in the general hospital as a rule since the severe and more marked cases are taken care of elsewhere, in special hospitals for the care of pellagrins and in asylums for the insane. Through the kind offices of Dr. Pizzini I obtained permission from the municipal authorities of Milan to visit the pellagrosarium situated at Inzago, about ten miles from Milan, where the cases of pellagra in the province of Milan are taken care of. This is under the care of Dr. Fritz, to whom I am much indebted for valuable and interesting information concerning the cases seen in the small hospital in the town of Inzago, and in the special hospital or pellagrosarium. In the small general hospital in Inzago we found five cases, four women and one man. One of these women presented the usual cutaneous symptoms of pellagra—an erythematosquamous condition of the backs of the hands—and diarrhea; two suffered from a pronounced pellagrous melancholia and had also had an erythema of the hands in the spring, which had disappeared after a little while; the fourth case, one of long duration, suffered from paresis accompanied by marked wasting of the interosseous muscles of the hands. The man observed in this hospital presented nothing but a moderate erythema of the hands and legs accompanied by scaling. The very small number of cases found in the pellagrosarium emphasized in a very striking way the great diminution of the disease in Italy during the last quarter of a century; we saw but two cases here, both young men about twenty years old. This small number of cases did not represent, however, the entire number being taken care of here since there were a number of ambulant cases at work in the fields whom we did not see, as they could not have been brought in without great delay. Both of the young men whom we had the opportunity to examine exhibited a marked, bright-red erythema of the hands, neck, and upper chest, one of them telling with expressive gestures how greatly his hands had been swollen a few months previously: one of them had diarrhea, the other had not. During our examination of the patients in the hospital and pellagrosarium Dr. Fritz called attention to a symptom of which I do not remember to have seen any

mention, viz., a marked loss of sensibility in the pharynx, and he was able to demonstrate its presence in four or five cases. He regarded this as a very common symptom, more or less characteristic of pellagra. In addition to the two well-marked cases referred to, the pellagrosarium contained some thirty boys from eight to twelve years of age, the children of pellagrous parents, who were being kept under observation. I learned that, while it is not believed that pellagra may be inherited, it is thought that the children of pellagrous parents show a greater disposition to it than the children of non-pellagrous parents. None of these children, who had been under observation for six months, had as yet shown any definite signs of pellagra, although one or two of them had gastrointestinal symptoms of a somewhat suspicious character.

It was quite evident that those in authority still regard the eating of improperly cured maize as a potent factor, if not the principal one, in the cause of the malady, for I noticed with interest upon the walls of the schoolroom where the children are taught while in the pellagrosarium two pictures, almost lifesize, one representing a robust laborer with a rake over his shoulder, apparently in florid health, underneath which was the legend, "This man eats good maize," while the other was the picture of a greatly emaciated man with a face lined by suffering, and underneath this one was the inscription, "This man eats spoiled maize and has pellagra."

The observations made in these twenty-one cases, hurried and necessarily imperfect as they were, impressed me much with the difficulties which might surround the diagnosis and the ease with which mistakes might be made by those with limited experience in mild and poorly developed cases. I was more than ever convinced of the danger of attributing too much importance to any one symptom, especially to pigmentation of uncovered parts of the skin when unaccompanied by signs of mental disease or some one of the gastrointestinal symptoms, usually diarrhea, which occur in at least four-fifths of all cases.

ELEPHANTIASIS NON-PARASITICA.*

By W. GILMAN THOMPSON, M. D.,

NEW YORK.

The following cases of elephantiasis nostras are of interest on account of their obscure origin, long duration, and extensive development, as well as on account of the comparative rarity of the disease in this country:

Case I.—The patient was a woman, aged twenty-six years, who was for two years under my observation in Bellevue Hospital, having had marked enlargement of the left leg for two and one-half years previously. When first seen the patient's general health was good and the physical examination, apart from the elephantiasis, was normal. Frequent blood examinations made both by day and night revealed no filaria. A typical blood count gave the following proportions: Red cells, 4,376,000; leukocytes, 16,000; polynuclear cells, 56 per cent.; large mononuclears, 13 per cent.; transitionals, 14 per cent.; lymphocytes, 15 per cent.; eosinophiles, 2 per cent.

When first examined, the entire left lower limb was about one-third greater in circumference than the right. The skin was edematous, rough, harsh, hairless, and here and there raised into irregular folds. While in hospital many attacks of acute lymphangitis occurred, consisting of moderate fever (100° to 101° F.), pains and burning sensations in the leg, increase in swelling, the formation of blebs and the discharge of considerable limpid opaque alkaline serum, containing many leucocytes. Such attacks lasted from a few days to several weeks. The hypertrophy of the skin finally extended over the pubes, the left lower quadrant of the abdomen and the vulva. Nothing in the early history of the patient threw any light upon the original cause of the disease. She had always lived in this country. In early life she had had malarial fever, and during the final six months in hospital she acquired pulmonary tuberculosis, which advanced very rapidly and caused her death.

Case II.—A laboring man, aged forty-three years, who for eight years had elephantiasis of the left leg. He could assign no cause for the onset of the disease; he had always lived in the United States, and he entered Bellevue Hospital for some minor ailment, not connected with the local disease. The left lower limb was enlarged to considerably more than double the size of the right one, and the skin was very tough and leathery, hairless, and from the knee to the dorsum of the foot it was coarsely corrugated, showing numerous blebs and some small patches of pigmentation. Urine and blood examinations were normal. The patient was seen before the discovery of the *x*-rays, but there was no evidence of periosteal involvement. No pain was complained of, and the man could walk in a clumsy manner. His general health was unimpaired. The hyperplasia of the skin extended to that of the penis and scrotum, and for some distance above the left thigh enlarged lymphatic vessels could be made out. From time to time there was considerable lymphorrhea, especially from the leg below the knee.

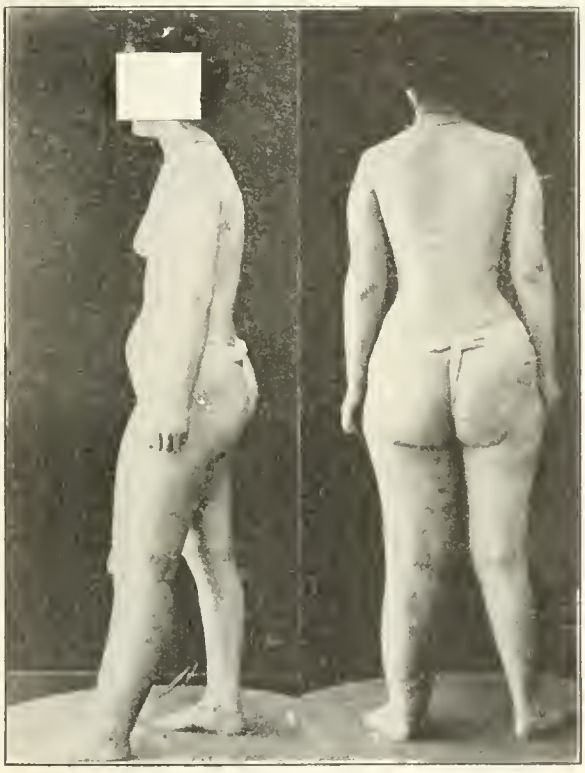

Fig. 1.—Case I, showing elephantiasis of the left leg.

Case III.—A man, aged thirty-three years, who

*Read at the meeting of the Association of American Physicians, held in Atlantic City, May 9.

had always lived in New York. His employment was that of a bookkeeper. No definite etiology of any kind was discoverable in explanation of the swelling of the right leg of which he complained,

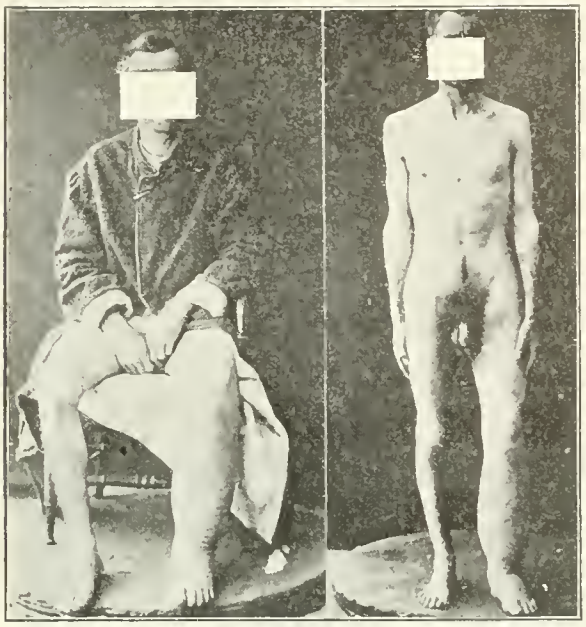

Fig. 2.—Case II, showing elephantiasis of the left leg.

which began in childhood and had lasted continuously for twenty-three years. In connection with its appearance he had repeated attacks of some sort of intermittent fever, lasting sometimes for a fortnight. In each successive attack the leg would become inflamed and more and more swollen. About eighteen

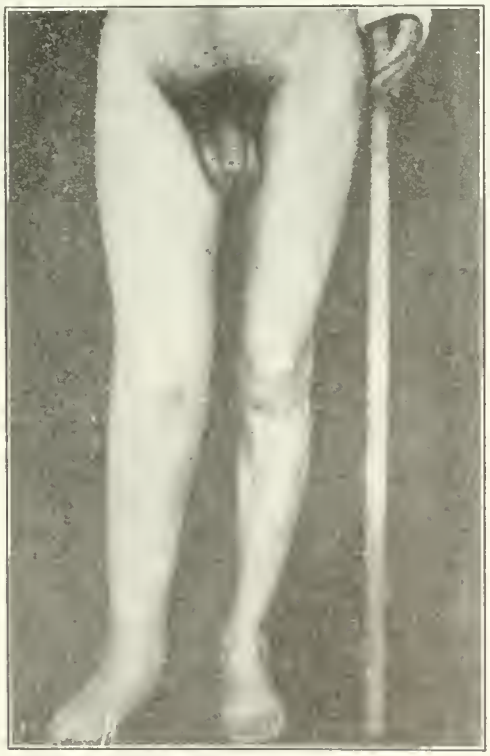

Fig. 3.—Case III, showing elephantiasis of the right leg.

months before he was admitted to Bellevue Hospital he had another attack of acute lymphangitis, with chills, fever (104° F.), and much pain in the leg, which became so swollen that for a time he was unable to walk. The general physical examination of the patient revealed nothing abnormal. Blood examinations were repeatedly made both by day and night, but no evidence of malaria or filariasis was

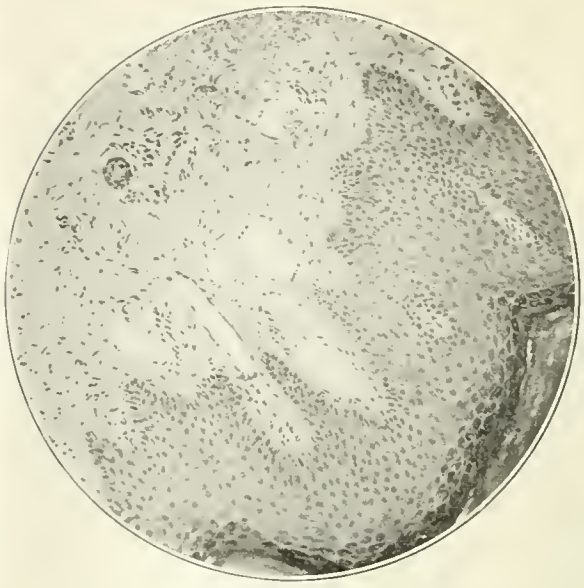

Fig. 4.—Case III, section of skin of foot. (Ewing.)

found. There was slight secondary anemia, and the differential count was normal, excepting a rather high eosinophile ratio—5 per cent. The urine was normal. The entire left lower limb was greatly enlarged, the skin was harsh, leathery, and relatively hairless. Over the ankle and foot, it presented rough folds. The skin of the penis and scrotum became markedly hypertrophic and hairless a year before the patient was first seen. A piece of skin was excised from one of the toes and examined by Prof. James Ewing, whose report on the microscopic findings follows:

"The Malpighian layer is rather thick but practically normal in structure. There is a somewhat excessive layer of cuticle. The derma shows a diffuse

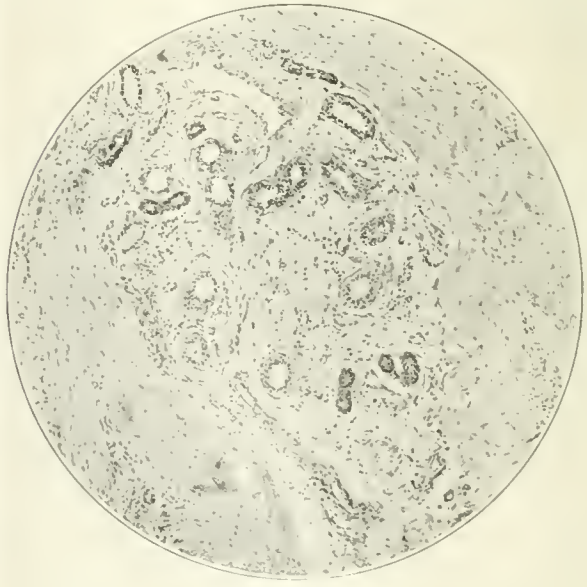

Fig. 5.—Case III, section of skin of foot. (Ewing.)

increase in white fibrous tissue which is further evidenced by extensive chronic edema. There is moderate increase in the small bloodvessels of the derma, and all of these are sheathed by edematous

tissue, containing many lymphocytes. The lymph spaces accompanying the bloodvessels are uniformly rather widely dilated and empty. Many venules are widely dilated and walled by fibrous or fibromuscular tissue. The hair follicles are scanty and the connective tissue is much sclerosed with atrophy of the follicles. The sweat glands show a marked grade of hypertrophy and hyperplasia. Many of the new alveoli are dilated and contain inspissated excretion. The cells lining many of the alveoli are higher than normal. The glands lie in areas of fat tissue showing chronic edema and some mucous degeneration. In these areas there are some new capillaries and round cells. All of these changes, except the alterations in the sweat glands, may be referred to the initial chronic venous and lymphatic congestion, leading to chronic productive inflammation. The changes in the sweat glands might be referred to functional overactivity and chronic inflammation. Summary: hyperkeratosis; thickening of Malpighian layer, dilution of lymphatic vessels and blood vessels; hypertrophy of sweat glands; increase of connective tissue; mucinous degeneration of fat tissue; atrophy of hair follicles."

Fig. 6.—Case IV, showing elephantiasis of left hand and arm.

A radiograph showed normal bones in the leg. The wound made by excision of the skin was very slow in healing and discharged considerable lymph. From time to time herpetic vesicles appeared on the penis, and foreskin, and between the toes. There was no acute exacerbation while the patient was under observation.

Case IV.—This patient was brought to me for diagnosis from the Presbyterian Hospital Dispensary by Dr. Howard C. Williams, Chief of the Surgical Staff, to whom I am indebted for permission to include it with the others.

The patient, a married woman, aged thirty-eight years, presented marked enlargement of the entire left hand and arm to the shoulder. The skin was pale, coarse, slightly roughened and leathery to the touch; the edema did not pit upon pressure. There was no pain and no impairment of motion except that naturally arising from clumsiness. Apart from the swelling of the limb, the condition and health of the patient appeared in all respects normal. Although a native of Germany, she had lived for twenty years in the United States and had never been in the tropics. Her habits were good, and there was no evidence of lues. The woman had had one child and one miscarriage. No diseases of childhood were recalled and the only illness was a single attack of "rheumatism," occurring three years prior to examination. There was no history of trauma or infection of the hand in which the disease began as a painless subacute swelling in December, 1909, about a year before the patient was first seen. The swelling progressed for six weeks, extending up the arm to the shoulder, and has since remained stationary despite varied treatments. The average increase in size of the left arm and forearm above the right was 2 cm. A radiograph showed the bones of the arm to be normal. The patient complained only of clumsiness in the arm, with fatigue on using it in housework. I requested Dr. Walter L. Niles to make blood examinations both by day and night. No filaria were found, and the detailed blood count follows: Red cells, 5,200,000; leukocytes, 7,800; polynuclears, 59 per cent.; lymphocytes, 28 per cent.; large mononuclears, 7 per cent.; transitionals, 3 per cent.; eosinophiles, 3 per cent.

The four cases above reported possessed no history of any disease, injury, or condition which might conceivably have given origin to the lymphangitis. Moreover, in the three cases in which definite history was obtained of recurrent acute exacerbations with fever, advance in the swelling of the limbs, etc., there was no discoverable exciting cause for such recurrences. While it is true that the embryonic filaria is not often to be demonstrated in the blood of patients having elephantiasis Arabum (Manson), none of the four patients had ever left the United States, repeated careful search in each one failed to afford any evidence of a parasitic origin of the disease, the urine was never milky, and eosinophilia was absent. The other various causative factors to which elephantiasis so often has been referred were all also lacking in these cases, such as polyneuritis, phlebitis, repeated erysipelas attacks, anemia, cachexia, chronic cellulitis, trophoneurosis, and mechanical obstruction.

Far from being anemic or cachectic, the patients were well and as active as the clumsiness of the limb affected permitted. Vascular supply appeared normal; there was no evidence of vasomotor disturbance or of abnormal nerve irritation. I have had under observation many cases of post typhoidal or other types of chronic thrombophlebitis, in which, for a dozen or more years there has been edema of one or both legs, but I have never seen elephantiasis develop in such cases, which, of course, are very common. In these cases the edema, unlike that of elephantiasis, remains soft, it varies in intensity (depending much upon position), the skin remains practically normal, and shows none of the histologic changes of elephantiasis, and the recurrent inflammatory febrile exacerbations which characterize elephantiasis, are not present. It therefore may be affirmed that chronic serous edema of blood-vascular origin, rarely, if ever, causes the manifold cutaneous changes of elephantiasis. Moreover, Cohnheim long ago showed that obstructive or experimental lymph stasis does not alone produce

edema, if the lymph is normal and the venous return is unimpaired, and Unna denied that lymph stasis may be a cause of lymphangiectasis. If not an antecedent, however, it certainly clinically appears very early in the disease, as pointed out by George C. Shattuck in a careful review of the "Etiology of Elephantiasis" (*Boston Med. and Surg. Jour.*, 1910, No. 19). The earlier writers upon this topic, such as Busey, argued that lymphatic obstruction, lymphangiectasis and edema of lymphatic origin have multiple causes, such as defects (congenital or acquired) in the lymph vessels, small thrombosis, overdistention, with loss of elasticity of their walls, etc. While this may be true, it is a curious fact that the lymphatic hyperplasia of elephantiasis is so rare an occurrence where the factors above mentioned are present. Moreover, if due to any general conditions, it is difficult to explain why the most advanced cases of elephantiasis nostras, as met with in this country, are usually confined to one limb. The filarial elephantiasis, on the contrary, is occasionally bilateral. Even when venous stasis and general bilateral serous edema is present, due to chronic endocarditis, elephantiasis may remain unilateral, as in a remarkably interesting case pictured by T. W. Hastings (*Amer. Jour. Med. Sci.*, September, 1906), in which the right leg from knee to ankle showed enormous elephantiasis and a cuff-like folding of the skin over the ankle, while the left leg presented merely the soft edema of a general anasarca. The skin in this case became one and one-half inches thick, and there was marked lymphorrhea.

It is thus a very puzzling problem, whether a primary lymph stasis or lymph edema gives rise, through irritation, to hyperplasia, or whether an inflammatory process results in formation of thrombi and lymphangiectasis, with subsequent and not primary edema. Many arguments have been advanced in favor of either theory. In many of the cases of elephantiasis nostras the onset has been gradual, and the disease may have lasted so many years that the patient has forgotten, or perhaps altogether overlooked some primary inflammatory process which failed to give rise to much original pain or swelling in the limb, yet which was the foundation of a progressive hyperplasia of slow, but constant development. On the other hand, it appears certain that marked lymphangiectasis may occur without elephantiasis. In any case the assumption, which has often been made, of the existence of some congenital defect in the lymphatic system seems reasonable, especially in view of the well-known types of elephantiasis growths of subcutaneous connective tissue, associated with edema and observed as congenital deformities (elephantiasis lymphangiectodes).

In Case III, the examination of the skin made by Dr. Ewing showed in addition to the usual chronic inflammatory changes decided hypertrophy of the sweat glands—a unique feature.

None of the patients were materially benefited by treatment. Bandaging, rest, inunctions, hydrotherapy and massage were tried from time to time without avail in staying the progress of the disease.

Familial Pernicious Anemia.—Gilbert and Weil report two cases of pernicious anemia occurring in brothers 44 and 45 years old respectively. They believe that these cases represent a type of progressive pernicious anemia of hereditary origin.—*Tribune Médicale.*

A CASE OF PAGET'S DISEASE.*

By KARL M. VOGEL, M.D.,
NEW YORK.
ASSISTANT ATTENDING PHYSICIAN ST. LUKE'S HOSPITAL, ASSISTANT PROFESSOR OF CLINICAL PATHOLOGY, COLUMBIA UNIVERSITY.

In spite of the fact that ostitis deformans or Paget's disease, as it is generally called, is not a remarkably rare condition, at least in its minor grades, the diagnosis is not very often made, and it is only comparatively recently that cases have begun to be reported with any degree of frequency.

Paget in 1877 first isolated this type of deformity from the general hodge-podge of chronic bone diseases, and in the Medico-Chirurgical Transactions for that year outlined a clinical picture to which subsequent observers have made few additions of moment. As he described it, the disease is one beginning in middle life or later, progressing very slowly during many years, and causing no disturbances other than those due to mechanical changes in the diseased bones. Those most often involved are the long bones of the lower extremities,

Fig. 1.—Photograph of patient at the age of 34 years.

the cranium, spine, and clavicles. The bones enlarge and soften and owing to the pressure of the body weight become curved and misshapen, so that finally with the shortening thus produced, as well as through curvature of the spine, the stature steadily decreases. The pain is variable in severity and is most common in the earlier stages of the disease, though it may persist indefinitely.

In a later communication, Paget[1] summed up the most prominent symptoms, as follows:

"It usually affects many bones, most frequently the long bones of the lower extremities, the clavicles, and the vault of the skull. The affected bones become large and heavy, but with such weakening of their structure that those which have to carry weight or to bear much muscular traction become unnaturally curved and misshapen. The disease is very slowly progressive and is felt only in pain, like that of rheumatism or neuralgia, in the affected limbs and in increased heat at the tibiæ. But neither the pain nor the heat are constant, nor do

*Read at a meeting of the Section on Medicine of the New York Academy of Medicine, May 16, 1911.

they continue during the whole progress of the disease; and pain has not been observed in the head even in the cases in which the skull was very thickened. There is not any clear evidence of general disturbance of health. In all the cases traced to the end of life death has ensued through some coincident, not evidently associating, disease, which has been aggravated by the condition of the bones only in so far as they may have diminished the range of breathing and the general muscular activity.

"In all of the cases I have seen the general appearance, postures, and the movements of the patients have been so alike that these alone might often suffice for the diagnosis of the disease. The most characteristic are the loss of height, indicated by the low position of the hands when the arms are hanging down; the low stooping with very round shoulders and the head far forward, and with the chin raised as if to clear the upper edge of the sternum; the chest sunken toward the pelvis, the abdomen pendulous; the curved lower limbs, held apart and usually with one advanced in front of the other, and both with knees slightly bent; the ankles overhung by the legs, and the toes turned out. The enlarged cranium, square looking or bossed, may add distinctiveness to these characters, and they are completed in the slow and awkward gait of the patients and in the shallow costal breathing, compensated by wide movements of the diaphragm and abdominal wall, and in deep breathing by the uplifted shoulders."

In regard to the order of involvement of the bones it may be stated that Packard, Steel, and Kirkbride[2] from an analysis of a very large number of cases found that this was as follows: Skull, tibiæ, femur, spine, pelvis, clavicles, ribs, radii, ulnæ. The fibulæ seem to be but rarely affected, but Maier

Fig. 2.—Photograph of patient at the age of 44 years.

has reported a case in which the disease began in one fibula and in the small bones of the foot.

Paget correctly interpreted the condition as being a chronic inflammatory process, and accordingly suggested that it be known as ostitis deformans. Recklinghausen termed it ostitis fibrosa. The changes in the bone structure may be regarded as the result of two opposing processes, resorption and hyperplasia; that is, a rarefying and a condensing ostitis. Both the spongy and the compact portions of the bone are involved, the destruction of the lamellæ being accompanied by replacement with fatty, gelatinous, or fibrous tissue which frequently

Fig. 3.—Present appearance of the patient.

shows localized areas of softening and liquefaction, so that cyst-like cavities filled with fluid develop. In addition, calcification occurs and irregular deposits of new bone are formed throughout the entire substance of the bone, resulting in an increase in its size and density. The marrow becomes converted into a more or less fibrous or gelatinous mass containing giant cells, fat cells, and leucocytes.

Various authors differ somewhat in their views as to whether the process begins subperiosteally or in the marrow, and as to the precise sequence of events; but the essential features are the combination of softening and curvature of the bone, together with an increase in size and density, so that the picture presented by the individual bones may be very variable, and the processes of halisteresis, absorption, and calcification of newly formed osteoid tissue may be going on simultaneously. The surface of the bone may be smooth or rough; the cortex compact or spongy; the cancellous portion dense or porous; the central canal almost obliterated or widely dilated.

In regard to the etiology little more is known than in Paget's time. General arteriosclerosis is constantly present and it has been suggested that the bone lesions are due to sclerosis of the nutrient vessels of the bone. French observers have considered that the disease is a manifestation of hereditary syphilis or a paraluetic condition, and have reported improvement as the result of mixed treatment. Nerve lesions and gout have also been mentioned as possible etiological factors, but without very satisfactory confirmatory evidence. Joint changes occur but are not very common, although Richard and Ziegler hold that the disease is allied to arthritis deformans. Prince[3], who regarded the disease as a trophic disorder, has laid stress on the possibility of there being changes in the central nervous system, but as yet nothing significant has been dis-

covered. An interesting fact noted by Paget himself as well as by later writers is the comparative frequency with which new growths of various sorts, including osteosarcoma, occur in the subjects of the disease. A possible hereditary predisposition has been alleged, since in a number of instances mem-

Fig. 4.—Present appearance of the patient. Note especially the low position of the ear.

bers of the same family have been victims of the disorder. Bockenheimer[4] holds that a congenital anomaly of bone metabolism is an underlying factor.

The direct prognosis, as far as life in concerned, is good, though a subject of the disease through arteriosclerosis and through local conditions dependent upon the deformity may be more susceptible to the disorders of old age than an individual not so affected.

The treatment is largely symptomatic and consists chiefly in controlling the pain, when present, though some writers have reported encouraging results from the administration of thyroid extract. Attempts at surgical correction of the deformity of the long bones are contraindicated. In one case of Sonnenberg's[5] in which an osteotomy was performed there was no evidence of callus formation thirteen months later.

The question of diagnosis is a more complex one, for while it is not very difficult to recognize the disease when well advanced so that the curvature and enlargement of the bones are apparent, the head is misshapen, the stature shortened, and the patient presents the typical ape-like aspect, in its earlier stages or in mild cases, when, perhaps, only a single bone is involved and the patient complains solely of fleeting pains, it is no doubt often mistaken for sciatica, rheumatism, neuralgia, arteriosclerosis, etc., and many cases are accordingly overlooked. Among the bone diseases that might be confounded with it are osteomalacia, spondylitis deformans, hypertrophic pulmonary osteoarthropathy, and possibly acromegaly, but these all differ in more or less striking particulars from Paget's disease when well developed. One form of disease, however, requires especial mention in this connection, and that is the diffuse enlargement of the skull described by Malpighi in 1697, and to which Virchow gave the name of leontiasis ossea, because, as he said, in looking at representations of such skulls one is reminded of the appearance of the plaster cast of a case of leprous leontiasis. Later authors, however, prefer the designation "diffuse cranial hyperostosis." Most of the writers on bone disease have apparently taken it for granted that this condition and Paget's disease are independent affections, and have given various differential points by the aid of which the two might be distinguished. These relate chiefly to the age at which the disease first appears, and to minor distinctions in regard to the nature of the bony changes, extent of involvement of the fissures and foramina of the skull, the occurrence of nervous disturbances, etc. Recent authors, however, notably Bockenheimer, Prince, and Fitz[6], have suggested that the two conditions are certainly closely allied and probably identical. But the question has remained a somewhat open one because until rather recently information as to the leontiasis skulls was largely derived from more or less ancient museum specimens generally provided only with inadequate

Fig. 5.—Radiograph of the pelvis and femur.

clinical histories so that the possible coexistence of slight changes in other bones could not be altogether excluded. Latterly more definite data have been available, for the microscopic examination of tissue removed at operation on leontiasis patients for the purpose of relieving pressure symp-

toms has revealed changes precisely similar to those found in the long bones in Paget's disease. An important contribution to the matter was made not long ago by Max Koch[7], who presented before the German Pathological Society the skull of a carefully observed patient clinically suffering from leontiasis, which showed on section the usual appearances of Paget's disease; so that it now seems rational to regard leontiasis ossea as a local occurrence of lesions which when more widely distributed produce the picture of Paget's disease.

The history of Koch's case is briefly as follows: The patient was a woman of 65 years, who was observed during a year's stay in the hospital. The symptoms began twenty years previously, when she noticed an increase in the size of the head and at the same time tinnitus, vertigo, headache, and impairment of vision developed. Her hearing became impaired only a few months before her entry

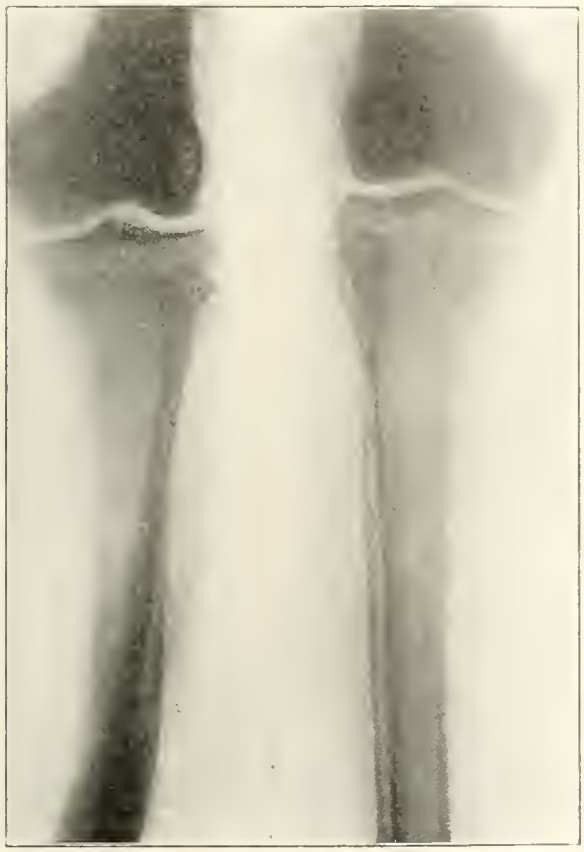

Fig. 6.—Radiograph of the tibiæ.

into the hospital. The circumference of the head was 72 cm., or about 29 inches. There was pronounced enlargement of the temporal arteries, and the ears stood out prominently from the head. Ophthalmoscopic examination was negative, and the visual fields were not restricted. Myopia of —5 D S. There were hyperostoses of both external auditory meatuses and hypertrophy of the inferior turbinates and nasal septum. The hard palate was so much thickened that the laryngoscope could not be used. The lower jaw was not thickened. The Wassermann reaction was negative. During her stay in the hospital she suffered chiefly from headache, pain in the legs, vertigo, and general weakness. Five days before death she suffered from an apoplectiform attack with unconsciousness, but no paralysis. Death appeared to be due to a general loss of strength. At the autopsy it was found that there was a synostosis between the axis and third cervical vertebra. There was a moderate kyphosis in the thoracic region, but no abnormality of the other bones. The blood-vessels were markedly sclerotic. On sawing through the skull it was found that the differences in structure between the external and internal tables and the diploe had disappeared, and the bone was very friable. The thickness of the frontal bone was from 4 to 6 cm., that of the temporal from 3 to 3.5 cm., and of the occiput, 2.5 to 3 cm. There was an abscess cavity in the situation of the frontal sinus on one side, but on the other the sinus had been entirely obliterated. The cut surface was made up of spongy bone with grayish red dense fibrous tissue with here and there areas of gelatinous marrow or cavities filled with fluid. All the foramina and fissures of the base were much narrowed except the foramen ovale. The meninges were normal, but the brain appeared flattened and diminished in size through pressure. The pituitary body was flattened, but in section showed no abnormalities.

Microscopical examination of the bone showed the changes described by Paget as ostitis deformans, and by von Recklinghausen as ostitis fibrosa. Koch accordingly believes that this case definitely proves the identity of leontiasis ossea with Paget's disease.

The history of the case forming the subject of the present report is as follows.

The patient was a woman aged 68, born in England, a seamstress. Admitted to St. Luke's Hospital on December 5, 1910, to the service of Dr. Janeway.

Family history negative, except that one sister is said to have died of cardiac trouble and various members of the family have had "weak hearts." There is no history of bone changes similar to those of the patient, and all members of the family are well formed, active individuals.

Previous history: When about two years old her head was caught between a clothes mangle and a door. She says that her head has always been large and ill-formed, and believes that this is due to this accident. She has no remembrance of the diseases of childhood. At eleven years of age, after a fright, she had "fits" during which she would become unconscious, but she does not remember falling or hurting herself during these attacks. A short time later she awoke one morning and found that her right side was paralyzed. For a time she had to be fed and helped in walking, but the paralysis gradually disappeared and she had no more of the fits after her sixteenth year. About twenty-five years ago she had several abscesses in the left external auditory canal, and at the same time that side of her head became swollen and bumpy. She believes that the present swelling above her ear is due to this cause.

Present illness: Dates back about fifteen years. Previous to this time she had always been a good walker, but she then began to notice a feeling of weakness in her legs which gradually increased until about ten years ago, when she was obliged to give up her work as it took her so long to do anything and she could not think quickly. If she wished to do anything across the room it would take her half an hour in thinking about it and in getting up and crossing the room. She had some dull pains in her legs at this time and also began to grow deaf. During the last five years the pains in her legs have become more severe. Her gait

has become very slow and shuffling and she cannot lift her feet. Two years ago she noticed that the legs were becoming crooked. She has suffered from headache most of her life, and lately her head has felt heavy, so that it drops forward and it is hard for her to lift it. She is afraid to lift her head too high in looking at things for fear she will fall over backward. She believes that she has become two inches shorter during the past five years. She is of a hysterical nature and has always cried easily, but she has found that lately she cannot shed a tear, and has also found that the bridge of her nose has grown too large for her glasses. For four or five years her legs have been more or less swollen and recently her arms also have become edematous. For about a year she has been short of breath and the veins in her neck and on her forehead have become prominent.

The patient is depressed, realizing fully her slow mental processes and her inability to move or act quickly.

Chief complaint: Shortness of breath and swelling of arms and legs.

Physical examination: General condition: patient is a rather poorly nourished woman of small frame, past middle age, showing moderate dyspnea but only slight cyanosis. Her appearance is very striking on account of the marked disproportion between the size of the head and that of the body. The head is very markedly enlarged especially in the upper part; it is rather square in shape, with pronounced bony protuberances above each ear. Circumference about the forehead is 65 cm. or 26 inches. In the temporal region and in the neck are numerous markedly distended pulsating veins. The skin of the face appears rather pale and pasty, with numerous brownish pigmented areas. Eyes: pupils equal and react to light and accommodation. Tongue, clean. Throat normal. Upper teeth artificial; lower in fair condition. Chest poorly developed; slight protuberance of upper part of sternum. Heart: rather diffuse pulsation over the lower precordium. The apex impulse is fairly well marked in the fifth space, four inches to the left of the median line. The right border is one inch from the mid-line; the left border merges with the dullness of the left chest. At the apex there is a loud blowing systolic murmur transmitted to the axilla and heard over the entire lower left chest. The second sounds are not accentuated; the action is rapid and irregular. The pulse is rapid, irregular, of poor force, and moderate tension. The vessel wall is thickened. Lungs: clear anteriorly; posteriorly there is dulness beginning just above the angle of the scapula on both sides and becoming flat on approaching the base. Over this area there is diminished breathing, becoming absent at the base, where numerous subcrepitant râles are heard. The abdomen is somewhat distended. The liver percusses three inches below the free border, where its edge can be felt indistinctly. It is markedly tender and pulsates. Extremities: both legs are markedly edematous and show moderate curving of the tibiæ.

The patient's height at present is 4 feet 10⅞ inches, whereas she says that previously it was 5 feet 1½ inches, a shortening of a little over 2½ inches. She is very deaf, but examination of the ears shows no occlusion or deformity of the external meatus. The drums show several patches of fibrous thickening.

In conclusion it may be said that a survey of the literature seems to support the contention that the separation of diffuse cranial hyperostosis as an independent disease is not justified and that it is to be regarded as a manifestation of the same process which is responsible for the symptom complex of Paget's disease. Further evidence in favor of this view is furnished by a case recently reported by Bartlett,[9] in which, as in that described by Koch, during life there was no sign of the involvement of any bones except those of the skull. At the autopsy, however, examination of the femur showed beginning foci of disease.

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680 Madison Avenue.

SCROFULA.

By SAMUEL EHRENREICH, M.D.,
NEW YORK.
ASSISTANT HOUSE PHYSICIAN MONTEFIORE HOME AND HOSPITAL.

Scrofula, or scrophula, is a condition characterized by a chronic enlargement of the lymphatic glands, particularly those in the neck, under the chin, and behind the ears, and by a general cachectic state usually due to tuberculous infection. This condition is so called because of the marked resemblance of scrofulous patients to the pig, the peculiar shape of the neck with thickening of the nose and upper lip giving this appearance (*Scrofa*—sow).

About fifty years ago any chronic state of ill-health under the age of fourteen was accredited to scrofula. As Henle well remarked, "Scrofula is the receptacle into which one vaguely casts all the ailments which affect children, and of which we do not know the cause." Before the discovery of the tubercle bacillus by Koch in 1882, the relation of scrofula to tuberculosis of the lymphatic glands was obviously a very vague and indefinite one. Later, tubercle formation was found in many but not in all cases of scrofula, and the distinction was made by the fact that those glands which showed distinct tubercles were tuberculous and those that presented only the immature structure, scrofulous. Rindfleisch considered scrofula as the starting point of the tubercle-producing process. He believed that the tubercle is usually derived by a process of infection from some near or distant seat of scrofulous disease. As far as we know about the causative factor of scrofula to-day, we can only say that the tubercle bacillus is usually responsible for the affection, but that this is always the case has not been proved; furthermore, that scrofula is due to a diminution in virulence (Arloing, Lingard), or in quantity of bacilli (Nocard), or that in this state vaccination with tubercle takes place has also not been shown in every case. Scrofula formerly included many lesions, *e.g.* lupus, white swelling, deep affections of the skin, mucous membranes, bones, and joints, and others, but with all these removed there still remains a special morbid temperament which is fairly characteristic, as the case I report

will show, and to which alone the term scrofula should be applied.

Etiology: Age. Although met with at all ages, scrofula is essentially a disease of early life, especially between the ages of five and fourteen. Heredity. Phthisis in parents is a common predisposing factor of scrofula in children; a fair number of cases is found in patients whose parents were simply in a deteriorated state of health. There are undoubted cases where syphilis in the parents has produced scrofula in the offspring. Marriage of near kin, advanced age of parents, disproportion in their respective ages and especially advanced years in father, are said to be responsible for the predisposition. Sex. The disease is about equally as common in both sexes. Locality and climate. Cold and damp climates are predisposing factors; the disease is also more commonly seen in temperate zones than in extreme north or in the tropics. Unhygienic surroundings, overcrowding, absence of sunlight, insufficient or unsuitable food, cold and damp, all favor the development of the affection. Richard Carmichael considered digestive disorders as an important exciting cause in the development of scrofula. Measles, whooping-cough, typhoid, and other disease also favor its onset. It is measles especially which hastens the evolution of scrofula, and it is as a sequel of this disease that we note the persistence of a scrofulous ophthalmia, otitis, coryza, or eczema. While in many cases the portal of entry of the tubercle bacillus, or other exciting agent, is not evident, the importance of the tonsils as an infection atrium must not be forgotten, and this has of late been urged. In concluding the etiology I wish to state that scrofula surely is on the decrease; cases of true scrofula are comparatively rare, and are occasionally mistaken for some other disease.

Pathology: The earliest manifestations of the disease consist in an enlargement of the lymphatic glands, usually the cervical which cannot be distinguished at first, either clinically or pathologically, from a simple chronic hyperplasia. The gland may enlarge to a varying size and on section looks pinkish in color and is of a firm consistence. All that is noticed on microscopical examination is a great increase in the lymphatic corpuscles, in addition to some overgrowth and thickening of the fibrous capsule and trabeculæ. In most of the glands typical tubercle development soon appears, although in some cases this is only evident to a slight extent or not at all. The tubercle bacilli, while sometimes absent, are often present and virulent. Caseation, although usually occurring in tuberculous inflammation of the glands, may or may not appear in scrofula, for the progress is very slow and usually of a very mild character. If caseation does supervene, the nodes may soften and break down, and by the establishment of purulent and necrotic inflammation about them abscesses may form, which may open externally; these abscesses may heal but usually the healing process is very difficult and slow. Instead of softening, the cheesy material in the nodes may become dry and hard and may undergo calcification. A certain amount of periadenitis is almost always present, though not to any great extent in the early stages; if suppuration occurs the glands become adherent not only to the neighboring glands, but also to the surrounding structures. In many of the more chronic cases the fibro-cicatricial tissue may be so extensive as to fix the mass firmly to the deeper parts. The scrofulous affections of the mucous membranes are of a catarrhal nature, furnishing mostly a profuse, comparatively thick secretion, which readily dries and shows great capacity for irritating the skin at all points of contact, especially at the organs of special sense, easily causing erythema and eczema.

Symptomatology: Scrofula is a term employed to express a general condition and not to describe the actual lesions in the lymph glands; in this respect it differs from simple tuberculous adenitis. In addition to the gland involvement there are signs, subjective and objective, showing that the entire body is more or less affected, the changes probably being due to the toxins generated by the tubercle bacilli absorbed in some way into the body. Soltman suggests their absorption from the placental blood in intrauterine life; but this can hardly hold good in the acquired cases of scrofula. Formerly, when the term scrofula was applied to a varying number of different conditions, the physiognomy of a scrofulous individual was naturally said to have no characteristic appearance. The patients were divided into two types: the sanguine, in which the individual was tall, graceful, with a fine, clear skin, fair complexion, oval face, small lower jaw, delicate and regular features, thin lips, and mentally very bright and intelligent; the phlegmatic, in which he was short and burly, coarse limbs, large hands and feet, broad face, large lower jaw, prominent malar bones, dull, heavy aspect, thick, coarse skin; persons of this class appear flabby and heavy-looking; they are apathetic, have little muscular power, and are soon tired. A typical case of scrofula (as in the case I report) presents a general appearance more or less resembling that of a pig; features are coarse, patient looks weak and pale, lips are thick (especially so the upper); eyes are bleared, nostrils excoriated, glands of the neck enlarged, so that facies have a fairly characteristic appearance (see photograph). Multiple scrofulous manifestations in the skin, mucuous membranes, and special sense organs may also be present. Among cutaneous lesions we have to note eczema, localized by preference around the natural orifices of the head, nose, the lips, ears, and eyes. The soft tissues have very little resisting power and may suffer from the effects of the most insignificant traumatism. When the rhinitis, which is usually present, is accompanied by a persistent discharge, the upper lip, and occasionally the lower, which is thus constantly irritated, becomes enlarged and the seat of a diffuse lymphoma, the large lip of the scrofulous. Hypertrophy of the tonsils, chronic pharyngitis, hypertrophy of the lymph follicles and adenoid vegetations are commonly observed in these cases. Scrofulous localizations are especially frequent in the eyes, and the scrofulous ophthalmia may be primary or provoked by some acute disease, such as measles. Its usual form is a ciliary blepharitis, a sort of eczema of the free border of the eyelids, resulting finally in a falling of the lashes. A conjunctivitis often follows and a slight discharge thus causes agglutination of the lids.

The character of involvement of the lymphatic glands differs in different cases. The glands in the neck, behind the ears, under the chin, and in the axilla are most commonly affected, although the inguinals, bronchial and mesenteric, may become similarly involved. A simple hyperplastic process causes usually a painless, gradually increasing swelling, which is capable of simple resolution. The more voluminous, harder tumefaction, in which the glands coalesce into larger bunches, corresponds to cheesy degeneration; in this stage inflammation

of the surrounding structures may follow, causing the glands to become painful, the skin over them losing its mobility to a great extent, becoming reddened; abscesses may form, which may break on the surface. If, on the contrary, the breaking results from the softening of cheesy material of the gland, a scrofulous ulcer is formed, which is characterized by a foul, lardaceous bottom, and livid, mostly flaccid, more rarely infiltrated, margin. It is a striking fact that the general health may be very good even when these multiple glandular tumors exist for a long time. In other cases no ulcer forms; the glands diminish somewhat in size, yet remain for a long time stationary in the form of bulbous tumors of still considerable volume. In such cases we may often see a gradual extension of the disease to other glands.

Diagnosis: If scrofula be limited to those cases of which I have given a typical description above and shall describe below, the diagnosis will not be difficult; the typical facies in combination with the enlarged cervical and other glands makes a fairly characteristic picture, and the diagnosis a comparatively simple one; when a case is once seen a mistake will never be made.

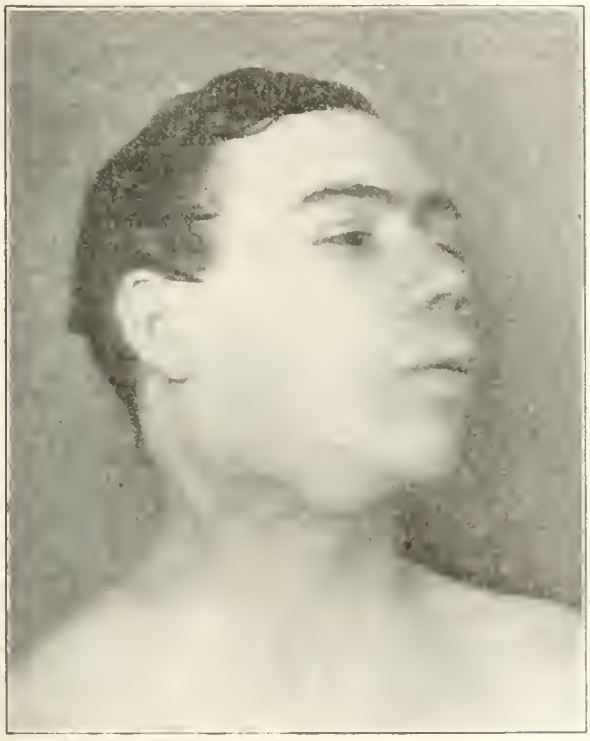
The prognosis varies according to the extent and seat of the lesions; a weak and delicate constitution and a bad hereditary history make the prognosis worse. The scrofulous lesions are very slow in their development, are obstinate, and prone to relapse, the latter occurring four times in my case. The disease becomes extinct oftener at the time of sexual development than at any other period; individuals who have suffered during childhood from severe and obstinate forms of scrofulosis attain the best of health about this time and show no weakness resulting from their previous disorders. In other cases, however, phthisis may develop, this being the most frequent cause of death in scrofulous patients.

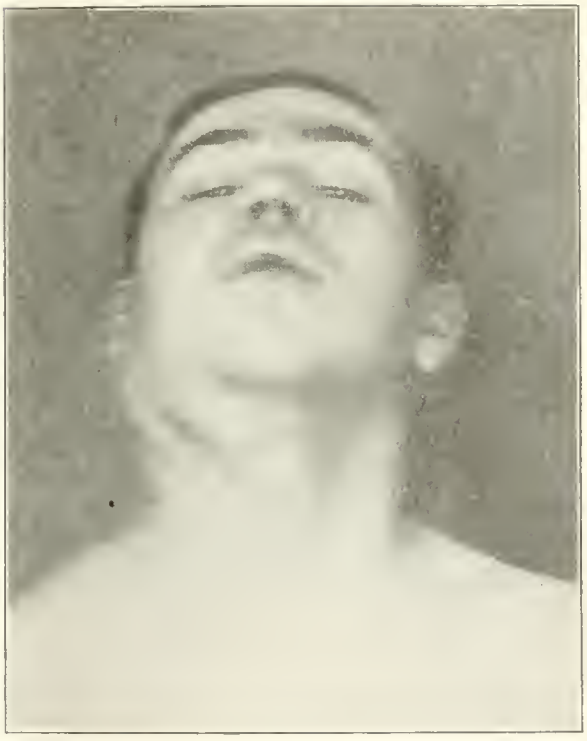
Treatment: This is mainly of a prophylactic nature; so far as scrofulosis is caused by hereditary predisposition, we are almost powerless as to prophylactic measures. A prophylaxis beginning *ab ovo* would be very desirable by preventing all marriages of individuals from whom a scrofulous progeny might be expected with probability; such a proposition is, however, impossible of execution. There are many measures of universal application which, if thoroughly carried out, aid a great deal in preventing the onset of scrofula. Of these I shall only mention the most essential. Children of tuberculous or previously scrofulous mothers must not be allowed to be nursed at the maternal breast. The best substitute is a healthy, strong wet-nurse; when this cannot be had, artificial feeding must be resorted to. Another harmful factor is the feeding of children in the first years of life on the diet of adults; this favors the development of scrofulosis. Even in later years all articles of food which irritate the alimentary canal, and contain too small a quantity of nutritive materials in proportion to their bulk and weight, ought to be avoided, *e.g.* potatoes. The proper regulation of the number and quantity of meals is of no less importance than the selection of their quality. Of even greater importance is the inhalation of pure air. Frequent exercise in the open air, and well ventilated sitting and bedrooms are absolutely necessary; also the proper ventilation of schoolrooms. As to the hygienic treatment of children in other respects, special attention should be drawn to proper muscular training and culture of the skin. Proper instruction in gymnastics, which is compulsory in our public schools, is certainly a great factor in reducing the number of scrofula cases. For general treatment almost every tonic in the pharmacopeia has been recommended, especially so cod liver oil, iron, and strychnin. Iodin has been used internally (as the syrup of the iodid of iron or potassium iodid) and externally, applied locally to the enlarged glands. A very good form of internal medication is the combination of Fowler's solution and potassium iodid, starting with small doses and increasing the dosage gradually. When a large number of glands remain enlarged, or the glands increase in size, or even when one gland continues to grow or by its size promises to do harm, excision should be practised. When there is a tendency to suppuration the gland should be opened as soon as possible to prevent the formation of the horribly deforming cicatrices; if suppuration continues, the gland should be curetted. Of course, general treatment is absolutely necessary, *e.g.* sufficient and wholesome food, fresh air, regular habits, no excesses, etc.

The case I wish to report is a very typical one, but an interesting feature is the fact that the disease began when the patient was 12 years of age. He first came under my observation January 6, 1911, when the following data were obtained: B. B., 18 years of age, was born in Austria. His family history is of absolutely no importance, with the exception that his father is suffering from rheumatic fever and chronic endocarditis. The patient is the oldest of six children; he had measles at 2 and whooping-cough at 6; otherwise he enjoyed good health until the onset of the present trouble. He has always been very moderate in his habits, and positively denies any sexual indulgence. He was a newsdealer, has never worked very hard, but has always lived under very poor hygienic conditions and surroundings. His present illness dates back six years, when the patient first noticed a small papule behind and below the right ear; he consulted a physician, who treated the condition with a black ointment, probably ichthyol; in spite of this the pimple gradually increased in size, the enlargement extending in a downward direction, and at the same time other similar nodules appeared on the right side of the neck. He had no pain, redness, local heat, nor was there ever any tenderness or fever. A year after the onset the mass was about the size of the patient's fist, and the growth commenced to interfere with the normal respiratory functions, especially during the night, causing insomnia. The patient asserts that at this time there were about five or six masses united in one clump, and a number of smaller nodules surrounding this; no softening or abscess formation ever occurred, but owing to the pressure symptoms the patient was operated upon at this time and all diseased tissue removed; wound healed nicely in a month, and the patient was free from any symptoms for four months, after which time a recurrence was noticed on the right side of the neck and a simultaneous enlargement of the scapular group of lymphatic glands, and within seven months there were nodes under the chin, in the neck, behind the ear, and over the shoulder, the entire mass being of greater size than before operation; there was neither softening of the affected area, nor pain, etc. He was operated upon again, improved for one year, and has undergone two operations since, the last one in April, 1909. Since then the glands again increased in size, for the first six months only, for during the last year their size has remained about stationary; six months

ago the left side of the neck was involved, as was also the right axilla. During the past year the patient has been suffering from a more or less constant discharge from the nose, which has been very irritating to the upper lip, causing a hypertrophy of the latter. At the same time the patient noticed a purulent discharge from the eyes, which showed a reddening, especially at the outer canthus; the eyelids agglutinated every morning. He has had no interference with hearing. About four months ago the patient had a general rash, of a reddish macular character, which disappeared after three weeks' treatment with sulphur ointment. The patient has coughed slightly for many years, has never had any fever nor respiratory symptoms, but has lost weight and strength since the onset of illness. There were no gastrointestinal or urinary disturbances or edema at any time.

Status Præsens: As one obtains a first glance of the patient one cannot help but be reminded of a sow; the enlarged cervical glands, in combination





with the great size of the upper lip and nose, strikingly create this resemblance. The patient is anemic, of poor general nutrition, and of medium height and build. There are no skeletal deformities. Station and gait are normal. The head is brachycephalic in type and constantly kept bent toward the left side at an angle of 65°. The right side of the face is greatly enlarged and misshapen owing to the enlarged glands; the upper lip is about three times the size of the lower and protrudes over the latter; the nose is short and flattened, with ala nasi dilated and thickened, and having a slight excoriation, eczematous in type, due to the irritating nasal discharge; the skin over the nose is very glossy, but there is no tenderness. The eyes are comparatively small in size, owing to thickening and consequent ptosis of both upper lids, more so the left. There is an eczematous affection of the free border of the lids, and most of the eyelashes are gone. At the outer canthus of both eyes a redness and fissured skin are evident; these are also more marked on the left side. Pupils are regular, react normally to light and accommodation; there are no ocular palsies or nystagmus present. The entire skin is normal with the exception of the presence of a few scars in the neck, due to previous operations. The mouth cannot be opened more than one inch, and slightly deviates toward the left side; the tonsils are moderately enlarged; teeth and gums are in fair condition; the tongue is flat, broad, and coated. Lungs: There is some impairment of the percussion note, with the presence of a few subcrepitant râles (after cough) over the left apex anteriorly and posteriorly. Otherwise findings are normal. The heart is apparently negative, as is true of the abdomen and extremities. Glands: The postauricular, cervical, submaxillary, and scapular glands are enlarged on the left side, forming a continuous chain, which is quite firm in consistence, not painful and not tender; there are no evidences of softening anywhere; the size of the entire mass is 4 inches by 4 inches; the cervical glands on the left side enlarged only to the size of 1 inch by 1 inch. The axillary nodes on the right side are also affected; the epitrochlears are palpable on both sides. There was no redness or other signs of inflammation present anywhere, and no fever. The sputum examinations for tubercle bacilli have always been negative. Tuberculin test: After an initial dose of ½ mmg. of Koch's old tuberculin there was no reaction, the latter appearing, however, after the injection of one mmg. The Wassermann reaction was negative. The urine was normal. The blood presented a true picture of a secondary anemia.

I am greatly indebted to Dr. S. Wachsmann for his assistance and for his kind permission in allowing me to publish this case.

3390 Broadway.

Cardiospasm in Infancy.—C. Beck reports two cases of this condition that recovered. The treatment is either systematic gavage or exclusive rectal feeding.—*Monatsschrift für Kinderheilkunde*

FLAT-FOOT IN WOMEN AND CHILDREN.*

By SIGMUND EPSTEIN, M.D.,

NEW YORK.

CLINICAL ASSISTANT, ORTHOPEDIC DIVISION, VANDERBILT CLINIC.

Some of the orthopedic surgeon's optimism is inborn, some is acquired in the course of his daily routine. One hears flat-foot patients report prompt improvement in locomotive ability after their first visit so often that eulogies become as customary as passing of the time of day; a series of patients will thus tend to increase the size of one's hatband. Flat-foot in its simplicity being a deformity, that permits a defective distribution of the stress and strain on the structures of the ankle and sole, its correction is usually a simple matter—just the antithesis of the general run of complaints, organic diseases, and disabilities that make up the average work of the general practitioner. Medicaton is unnecessary, no sacrifice on the organism is called for. This cheerful preface to my remarks, gentlemen, is made with a thorough knowledge

Right Congenital Flat-foot in an Infant.

that physicians are skeptical, and require demonstration of the actual curability of weak foot. This I shall attempt to furnish. The orthopedic path is occasionally strewn with thistles; the orthopedist must needs combat other evils than patent medicine and Christian Science—he must contend against the magic shoeman, the purveyor of foot-props, and the osteopaths. The ethics of our profession demand our doing good to the greatest number, and then saying nothing about it for newspaper dissemination.

Our youngest patients are those with congenital flat feet; the best period to begin treatment here is, as Dr. Sayre said, "as soon as the baby is washed." A little baby was cured by a few applications of plaster of paris by the attending physician in a nearby town. The first-born of the same family had been ushered into the world with a similar deformity. I put on one plaster that cured in about four weeks, and furnished instruction which the accoucheur put to good service at the next visit of the stork. Both children are perfectly straight now.

*Read at the January Meeting of the Yorkville Medical Society, Jan. 5, 1911.

The common variety of clubfoot, or equinovarus, contrasts with this in being strongly resistant to correction, in the general run of cases. In congenital splay-foot the heel is well formed, easily brought around to a position of inversion, and thus easily corrected. In a series of about 30 cases Stern of Cleveland reported the average duration of treatment to be about two months.

The general practitioner sees a great deal of rickets, rendering a description of the rachitic flat-foot therefore superfluous in a communication of this sort. A word as to treatment, however, may not be amiss: A shoe built up one-eighth inch on inner side should be used. It might be wise in passing the subject of rachitic flat-foot to lay down several well recognized facts: (1) That knock-knee and flat-foot usually are coexistent and that coxa vara should be suspected and receive appropriate manipulation. (2) That the "corset shoes" are harmful as well as useless, restricting by their stiffness and weight the normal motions of the ankle. The frequency with which rachitic deformities are brought to us decorated with this stiff, function-retarding footwear is the only excuse for this attempt at sermonizing.

Children brought for delayed walking, among other delayed functions, can be often noticed to have a well marked outward turning of the foot. Characterized by a more or less general weakness of muscular tone, these children can do little more than sit or crawl on their haunches; when put on their feet, the knees give way from weakness. Knee-jerks and mental examination are negative. The proper treatment in a case of this sort is an ankle support (brace) with leather padding over the scaphoid bone, serving to push the foot inward, or adducting it. Prognosis is always good unless some mental or spinal defect coexists.

How often is a doting mother, in watching her offspring take its daily bath, worried by its so-called "lack of arch"! A few words of sensible explanation describing the fatty pad supporting every infant's plantar arch-tissues, which persists until the sixth or seventh year, will go far toward avoidance of useless apparatus.

Another popular fallacy is seen in the grandmother's admonition for her young hopefuls to toe-out. If Nature gives us feet that turn in or act best when held parallel to the direction traveled, why make your children walk with their toes turned out, in a position of weakness and awkwardness, impairing the walking function, and inducing flat-foot and round shoulders?

The paralytic flat foot of infantile paralysis has probably attracted the attention of all family physicians in the past few years. The recent epidemics in New York and its environs, the marvelous work of Flexner, and the taking up of the subject by the daily press have helped us to make the diagnosis at an earlier period of the disease. Most of us present will suspect it, where twenty years ago well-trained clinicians gave iron for "anemia" to children palsied by this affliction. The diagnosis in cases after the febrile stage is easily made by the history, by the loss or diminution of knee jerks, by the isolated muscle groups affected, and by the deformities. A "stitch in time saves nine"; yea, but a little splint applied here at the proper stage saves years of crippling invalidism. I believe in the early application of apparatus, especially plaster of paris, to correct contractures, to

put patients on their feet at an early period, and in the administration of ascending doses of strychnine. The further treatment of such weak drop-feet involves a discussion which can be reduced to lowest terms in three words—mechanotherapy, massage, and braces. My electric battery is rusty from age and disuse.

The Flat-Foot of Adolescence.—When a boy or girl reaches the age of 12, the nervous, muscular, and osseous systems are one and all sensitive to the slightest defects of environment, development, or strain. The weak ankle or weak foot is especially prone to occur at this time. The boy grows fast, his ligaments and tendons are succulent—easily stretched. His activity leads to an occasional sprain; his shoe may be short. Girls often are made to wear heels that are not broad enough, they are easily tipped over, and they turn on these unstable props. The muscles and ligaments (especially the annular ligament) on the inner side will stretch, the foot unconsciously assumes the abducted or everted, turned out position, and over and over again the tibials are stretched. Then the mischief commences; if one foot hurts when bearing weight, its fellow takes extra work upon itself, instinctively. More weight is borne, and this second foot becomes unduly strained. The more rapidly weakened arches seem, in my experience, to occur in young boys or girls sent out to work at tender ages, about 14 or 16. The long hours in grocery or drug stores or markets, where boys work long hours, standing on their feet, help to predispose the foot to vicious strained attitudes. In females, the errand girls and salesgirls in the larger stores seem to form the bulk of our applicants for relief from pain in the feet, heels, and calves. These aches are relieved by resting, are least in the morning, and worst during the busy shopping hours. They are made worse by walking over cobblestones, wearing low ties or pumps. I have seen a consecutive series of cases of this kind during the past summer that could be directly traced to the fashion of wearing the dainty high-heeled or suède slippers that then prevailed, when the poorest factory worker seemed to be able to afford this type of footwear. A recent report by the supervisor of a girls' department of Cornell University traces the cause of a goodly portion of the ailments that were seen in the college infirmary, to various conditions. Among the most easily remedied she classed in her summary those due to "overplay" instead of overwork. About a score like this are seen by me every month in young women who walk when unduly tired—who take up physical education when not fitted for it. Others that I put down to overplay are students of various "folk-dances" that have lately come into vogue. Several hours in an afternoon spent in tip-toe gyrations in "gym," on a foot that has been previously weakened by a sprain or a tenosynovitis, go far toward weakening the weight-bearing structures of a delicate girl's foot. It is curious to note here the effect of widespread advertising on the lay mind in private practice—over and over again the history will begin thus: "My feet hurt dreadfully. I have tried all sorts of arch props, I have worn So-and-So's magic shoes, and am getting worse."

Excessive sweating is not an uncommon complication in this type of case. Corns and calluses help to make the patient miserable—varices occasionally are seen in the older unmarried type of women who are self-supporting—frequently seen in this advanced stage of civilized city life. Rheumatism and synovitis can be merely glanced over, not being within the scope of this communication. The general practitioner, seeing these cases first, is frequently to blame for not assuming the direct responsibility of effective treatment at this time. He often sends the patient to a shoe store or boot-maker with a note mentioning the diagnosis and signing his name thereto. The shoemaker does what he believes lies in his province—makes a shoe that looks well, has a stiff inner counter reaching to the ball of the foot, and the patient goes on her way rejoicing, until the counter flattens out from pressure or moisture; the conditions of stress and strain at the ankle still persist and stiffness ensues. At first a peculiar spasmodic rigidity prevents straightening of the foot—an adaptive muscular tightening in the abductors such as the peroneus longus and brevis, or the tendo achilles. Later adhesion of the subastragaloid joints complicate the deformity and make its correction more difficult.

The prognosis is good. Treatment consists in a careful consideration of each case, its signs, and symptoms; as a rule, a foot that can be over corrected without any difficulty is strapped, the shoe is built up, and exercises are ordered. Tip-toe standing a hundred times a day in the pigeon-toed position is a good exercise. The weakened tibials receive particular attention. A physical instructor helps us a great deal in clinic practice by instructing each patient to sharply invert feet and spread the knees, in coming down on the heels from the tip-toe position. The pendulum machines have been a useful adjunct in my experience during the past year. To patients out of town I advise a portable foot exerciser, which has the advantage of being cheap. As soon as the patient's sensitiveness in the plantar region or heel difficulty has cleared up somewhat, a Whitman flat-foot plate is invariably applied, and uniform success has met with my efforts. The critics or improvers of this form of plate have done little more than to show their inability to properly prepare the cast for the mechanic.

Occasionally an adolescent flat-foot will have become so rigid before coming under observation that a *brisement forcé* under an anesthetic is indicated. A carefully applied plaster of paris bandage is then put on the inverted and adducted foot as far up as the knee, and the patient is instructed to walk on it as soon as he is able. This is worn for six weeks, a period in which the former painful condition is replaced by entire relief from pain. After removal a cast is taken and a plate is made and worn for a long period. A certain cure can be invariably predicted, if treatment and after treatment are conscientiously carried out.

A few words as to mechanotherapy will now be in order. As a supplementary method of treatment it takes first rank. Indicated in moderately rigid, but not entirely ankylosed, tarsal joints, daily systematic exercise in the flat-foot machines has given greatest aid to my female and adolescent patients. The principle involved is in the main a methodical, repeated resisted movement performed in such a manner as to exercise the weakened invertors of the inner side of the leg and foot. Any machine or exercise if properly carried out will bring about this result. Pendulum machines are most popular in Europe, where institutes and sanatoria are elaborately equipped. Pivot machines are cheaper and are easily sent by express.

Dr. Bradford of Boston has devised an arrangement of pulleys and weights to furnish the resistance required for active motion of the adductors of the foot.

With the child-bearing woman, modes of life and new activities bring on a new variety of pathological conditions of the feet. Varices and phlebitis show themselves more frequently and call for prompt relief; not a few women arise from their childbed in a much weakened or anemic state; their muscles and ligaments perhaps flabby and inelastic as a consequence. Carrying their children may be a hardship, extra household duties are entailed, and the overburdened, weakened foot turns outward, abducts with its attendant symptoms of pain. Weight bearing in abducted position means ligament strain. Caring little for her own symptoms, the feet are neglected, bunions and corns complicate the situation. The properly managed case is supervised with detailed instructions as to amount of rest, the performance of regular exercises, a properly constructed and built-up shoe, and a pair of flat-foot plates. For temporary treatment, most satisfactory results are obtained by plaster strapping of the foot. This is applied directly to the skin of the sole, ankle, and leg by means of several strips of zinc oxide plaster. Two-inch-wide strips extend from the external malleolus of the strongly inverted foot, under the sole over the inner side of the ankle, and up the leg to just below the knee. Retaining transverse straps around the calf and ankle are placed at a level of the fibular head and over the malleoli. A narrower tape is wound in a figure of eight around the ankle and sole in such a manner as to keep the foot adducted. This holds the foot strongly in its overcorrected attitude, gives great support to the stretched tarsal and annular ligaments, to the great relief of the sufferer. To insure proper adhesion a gauze bandage may be applied over this, but if intelligently put on the dressing is good for a week or ten days without it. If complicating varices are detected, I use either a flannel or crêpe bandage, with happy results. During the time the straps are worn it is not wise to bathe the feet often in hot water on account of the tendency to loosen. In clinics where patients are given plates of the ordinary (shoe-store) type at the first visit, my observations have led me to use the strapping constantly in flat-foot cases. The benefit derived is brought about by a support not of the arch alone, as is commonly supposed, but by a gripping of the malleoli, sustaining the annular ligament admirably. It has recently been shown by Dr. Rugh, of Philadelphia, that this strong fibrous band acts somewhat like a ring, giving circular firmness to the tendons of the leg muscles at the ankle. The "snatch-block," employed for holding ropes, that riggers use a good deal, furnishes an analogy. These details are mentioned, for when once the principles of strapping for flat-foot are appreciated, it makes no difference how the strips are put on. As soon as one effectually supports the strained anatomical elements the relief sought is given.

As to the period through which the treatment is carried out it might be said to average two weeks. As soon as most of the symptoms of pain and tire disappear we make a plaster model of the foot, which, when properly trimmed, is ready for the brace maker. As the shoemaker sticks to his last, so does the orthopedist stick to his part of the mechanics of the treatment of flat-foot. A paper pattern is then made to get the approximate size of the finished plate, and the pattern pasted on a sheet of steel, about 19 gauge; this guides the mechanic's drill or scissors in cutting out the plate on the flat. After suitable heating, the plate is hammered and carefully approximated to the cast and is finished when plated. We have found that tinning makes the best wearing finish. Rubber vulcanizing breaks, nickel rusts too easily, while chamois covering is usually uncomfortably moist.

Just as a properly adjusted plate gives comfort, even so can one improperly adjusted cause the greatest distress when the body weight is borne. Experience teaches that most often the cause of failure is an improperly selected patient for the treatment, or an improper diagnosis. I have seen well made instruments cause the distress in tabes, Raynaud's disease, and incipient perforating ulcers of the foot.

It is an ordinary experience to find arch props doing harm in cases injudiciously diagnosed as flat-foot; for example, plantar neuritis or tuberculous tarsal disease. Here time is lost by improper treatment, but, as a rule, no injury is done. In selecting a case for a plate as described it is manifestly useless to apply a tightly fitting appliance that corrects and adducts, upon a rigid, or inflamed, or swollen ankle, upon one complicated by a periostitis as in gonorrhœa, or in cases accompanied by bursal enlargement. A little care and study will usually guide the surgeon to the easiest horn of the dilemma. Prescribing a flat-foot plate is just like sending the apothecary a note to give bearer or patient calomel—leaving the dosage to him. Of course, my hearers would not think of such a thing; yet ordering an instrument whose size, shape, and thickness are decided by the mechanic is quite as serious a shirking of the responsibilities of the attendant.

Corns and bunions are efficiently treated by a proper shoe in the average case. For the metatarsalgia one can apply a felt pad about an inch wide and two inches long to the ball of the foot, strapped with adhesive plaster.

The complications of flat-foot that may be troublesome are the various forms of arthritis. A writer, a few years ago, made the assertion that "rheumatism of the feet is as scarce as snakes in Ireland." He seems to have overshot the mark in attempting to draw attention to the frequency of flat-foot as a cause of the tired aching pains of the heel, inner side of ankle, and calf. My observations lead me to believe that many acute articular rheumatisms get well of every joint symptom except a tender swollen deltoid ligament—a condition rather frequent in unacclimatized young servants. Prompt results have followed the treatment outlined.

The arthritides of infectious origin need be only mentioned in passing; the importance of careful examination of their portals of entry cannot be overestimated. A swollen, tender, non-tuberculous tarsus, especially if toes and heels share in the process, should lead to a scrutiny of the gums, tonsils, and teeth. The bowels and genital tract often furnish the key to an ankylosed foot.

At the menopause women seem to be more prone to arthritis deformans as a complication of flat-foot, than any other joint change. It has recently been shown that vascular changes so common between 40 and 60—obliteration, calcification, and thickening of smaller arteries—have much to do with the inciting of these changes.

591 Lexington Avenue.

GASTRIC ULCER PERFORATING INTO THE COLON.

By M. GROSS, M.D.,

NEW YORK,

ATTENDING GASTROENTEROLOGIST TO THE MOUNT M[illegible] HOSPITAL.

Perforation of a gastric ulcer into the colon being a rare occurrence, a description of the clinical symptoms in the following case may be of interest.

L. R., male, forty-six years, married, skirt operator. Family history, negative. Personal history: Had typhoid fever at the age of eight; otherwise always felt well; of moderate habits.

Present ailment. Nine months ago he suddenly fell ill, becoming unconscious about two hours after an ordinary meal. On regaining consciousness he vomited blood, aside from a large quantity of food. The blood was partly mixed with the stomach contents; there was also freed fluid blood and large coagulated clots. Hardly two hours after the hematemesis there were a few soft evacuations, although previously he had rather been constipated than otherwise. Black, coagulated blood was mixed with these evacuations, which continued for several days longer.

Fig. 1.—Showing the outlines of the stomach and duodenum, and the beginning hourglass construction in the fundus portion of the stomach.

A few days before the attack the patient had painful sensations in the left hypochrondrium, with radiations to the left and upward.

The presence of macroscopically visible blood in the stools at a comparatively early time after the hematemesis is particularly noteworthy here. (Oozing of blood after the perfected perforation?) About two months later the patient had a similar attack, which, however, took a somewhat milder course than the first.

Up to a week prior to his admission into the hospital, which took place January 24, 1911, he felt pretty well, although he had not quite recovered from the second attack. What brought him to us were "premonitions" of a new attack; the pain in the left hypochondrium reappeared, solid food caused pain, localized at a definite point, radiating toward the cardiac region.

Physical Examination — Patient is somewhat anemic, result of general examination negative, with exception of a slight albuminuria. No traces of tuberculosis or syphilis. Temperature was always approximately normal.

Blood Findings—Hemoglobin, 44 per cent.; red blood corpuscles, 3,500,000; white blood corpuscles, 15,000; polymorphonuclear cells, 83 per cent.; lymphocytes, 17 per cent.

Abdomen—Soft, not tympanitic. Under the left costal arch we found on inspection and palpation a "fulness" which was slightly susceptible to pressure. It may here at once be mentioned that, when patient was discharged from the hospital about three weeks later, this "fulness" could no longer be detected, not even in a hot bath. (Induration of ulcer and infiltration around it?)

Stomach Contents—No contents obtainable on an empty stomach. The lavage water, introduced immediately afterward, had, when withdrawn, a distinctly fecal odor, contained little mucus, red blood cells, and no food remnants. One hour after ingestion of Ewald's test breakfast no more than 4 c.c. of the contents could be recovered, which were bloody tinged and of fecal odor. Congo negative, blood (aloin) positive, a few food remnants and a large number of Boas-Oppler bacilli.

A second examination, made within half an hour after the ingestion of Ewald's test breakfast, yielded scarcely 30 c.c. of stomach contents of the same character as on the previous occasion. Lactic acid (Strauss) was distinctly present.

On the third day after admission, at about 6:30

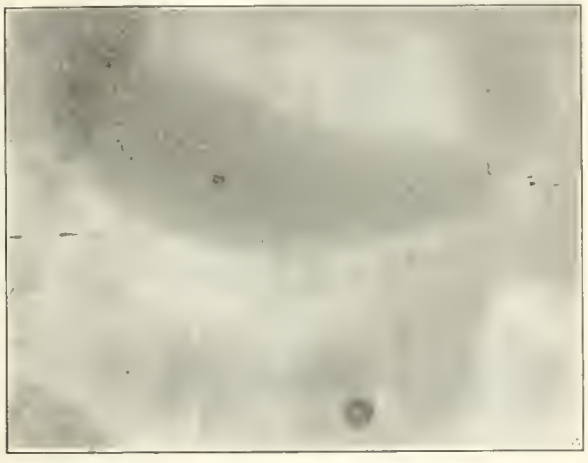


Fig. 2.—Showing the outlines of the stomach, part of the duodenum and colon transversum, and a loop of the splenic flexure in close proximity to the construction in the stomach and covering it.

p. m., patient, who had apparently been quite well, suddenly became unconscious and collapsed. On regaining consciousness he complained of great sensitiveness in the gastric region.

Stomach Region—Distended, rigid, and sensitive. Liver dullness not obliterated. About fifteen minutes later the patient vomited a pint of light red fluid blood. Macroscopically visible blood with the feces did not occur this time, which may possible be due to medication.

Epicrisis—We had from the first entertained a suspicion of a subsisting gastric ulcer, probably located at the fundus and the posterior wall of the stomach. The fecal odor which escaped through the stomach tube and furthermore the distinctly fecal odor of the stomach contents, rendered it from the first very probable that the ulcer was a perforating one and that the perforation had taken the rare direction toward the colon. Communication with higher intestinal ansae would not give rise to the fecal odor.

In serpiginous ulcers and scar formations, with impeded peristalsis and the consequent distension of the stomach, there may be putrid gases, even in the absence of a perforation. In the present case,

however, the conditions had not advanced to that extent, as was confirmed by subsequent examinations. On the other hand, there is no doubt that the decomposition of the blood coagula and the products of disintegration may also have produced the putrid odor of the contents of the stomach, but there was besides on all occasions the unmistakable fecal odor.

The examination of the stomach contents points to the possibility of carcinoma having grafted itself upon an ulcer, but that the latter had existed first was shown by the active course of the disease and the comparatively rapid recovery of the patient even after an abundant loss of blood. Nor would the findings of the stomach examination point conclusively to secondary carcinoma, at least not at this period, because patient begins to show prompt recovery even after this last attack, and the course of the disease in this class of cases should always be taken into consideration, but the mere increase in weight would not speak against carcinoma.

Up to this point, however, there was no *direct* proof of the presence of an ulcer perforating into the colon, and in order to clear up the matter, if possible, the following experiments were made. Patient was given a high enema of carmin red solu-

Fig. 3.—Showing the outline of the stomach and duodenum.

tion. After ingestion of a glass of milk the stomach tube was introduced, and from time to time the stomach contents were withdrawn on the assumption that the milk in the stomach would be colored red if there were the slightest free communication between stomach and colon.

The stomach contents thus withdrawn again had their distinctly fecal odor and they also had a reddish tint, but as at the same time blood coagula were macroscopically visible in the milk, we could not come to definite and unmistakable conclusions. A second experiment was made about two weeks later for the same purpose. Patient ingested a glass of aqueous iodine solution (1:5,000) and immediately afterward received a high starch enema, the colon having been thoroughly cleansed. From time to time intestinal contents were withdrawn and examined for blue discoloration, but with a negative result. A chloroform test for the presence of iodine in the intestinal contents was likewise negative.

We are nevertheless justified in interpreting the *clinical* symptoms as pointing to a communication between stomach and colon not only on account of the fecal odor of the stomach *air* and the stomach contents, but also on account of the fact that hematemesis was followed in a relatively short time by bloody stools in the first attack. Furthermore, I am rather inclined to regard the carmin test as positive. However, if our assumption is correct that there is a communication between these two organs, the probability is that the perforation is so minute or so hidden that a free exchange of *contents* could not have taken place (there never was lienteria), although intestinal *gases* could find free access to the cavity of the stomach.

As patient objected to operative interference, a number of radiographic pictures were taken, for which I am indebted to Dr. L. G. Cole.

Successive pictures were taken of the stomach alone and of the stomach and colon, filled with bismuth mixture.

The very first picture showed a distinct indentation at the fundus, corresponding to the splenic flexure. In order, however, to exclude accidental errors, such as might be caused by peristaltic movements, etc., a number of successive pictures were again taken on two different days, all the photographs showing the same result as illustrated by Fig. 1.

From Figs. 2 and 3, showing the posterior aspect, the colon filled with bismuth, it will further be seen that the left flexure of the colon lies closely to the indentation, in fact seems to be drawn into the constriction at the fundus of the stomach. In this illustration, however, the indentation itself is hidden by the filled colon. These radiographic pictures, therefore, reveal a beginning constriction of the stomach caused by an ulcerous scar, and a beginning development of an hourglass stomach, with adhesions to the colon at the place where the perforation had probably taken place.

It may be assumed with tolerable certainty that the perforation took the following course: The ulcer penetrated down to the serosa and the resulting inflammation—perigastritis—spread to the neighboring colon, resulting in close connection between the two organs, the adhesions preventing perforation into the free abdominal cavity. The perforation seems to have occurred suddenly in this case, certainly without giving rise to distinct prodromal symptoms.

I wish to take this opportunity to express my thankful appreciation of the assistance rendered me by the house staff of the Mt. Moriah Hospital.

315 Second Avenue.

HABIT, THE JAW, AND CHARACTER.

By JAMES J. WALSH, M.D., PH.D., LITT.D.,

NEW YORK.

DEAN AND PROFESSOR OF NERVOUS DISEASES AND PHYSIOLOGICAL PSYCHOLOGY AT FORDHAM UNIVERSITY SCHOOL OF MEDICINE.

When your committee asked me to address your society at its annual meeting I felt that their only reason for doing so must be that I should say something of the influence of habits of various kinds in producing deformities of the jaws and teeth. I accepted the invitation because I believe that there is nothing that physicians and surgeons and dentists need to understand better than the rôle of habit in the production of many ailments and even many changes in tissues that might seem to be due to much more serious pathological conditions at work. Pains and aches of all kinds and especially those grouped under the term rheumatism come under this head. Hence my readiness to try to help to

*Read before the American Society for Orthodontia at the New York Academy of Medicine May 26, 1911.

the understanding of the mental elements in many of your cases.

Long before physiognomy advanced to any pretensions to be that classified knowledge with deduction of principles that we call a science men had noted that certain shapes of faces and certain types of heads went with particular characters in humanity. Toward the end of the eighteenth and beginning of the nineteenth century Lavater, by his studies in physiognomy, and Gall by his investigations into brain anatomy and the relations of the brain to the skull and the head generally, called emphatic attention to how much the intellect and with it that other power that we call the will were coordinate to certain shapes and sizes and types of the bony conformation of the head. Their work did much to call more particular attention to what had been a subject of general observation for almost as long as the history of mankind runs. For men have always recognized that large foreheads, broad skulls, and especially broad jaws, provided they were not the result of deformity, meant for the power to rule self and others.

I have here a portrait of Cheops, whose name in his own language was Khufu and who is known now to have been the builder of the great Pyramid at Gizeh in Egypt. May I recall in the words of an Egyptian historian that this pyramid is the greatest mass of masonry that has ever been put together by the hands of man, rising from a base covering thirteen acres to a height of 450 feet. According to Herodotus 100,000 men were employed for twenty years in its erection. Until we got to know something about the man this looked like a stupendous work, accomplished merely by a great slave-driving monarch. He was, however, the greatest of the kings of the Fourth Dynasty who reigned at Memphis, and the more we have learned about him the more we have come to appreciate the fact that he was a great warrior, a great administrator, a great ruler of men, and that this immense monument to him, which has come down to us, represents only another phase of his power to do things magnificently. Fortunately for us a portrait statue of him has been recently discovered, that is within the last ten years, and we may now look upon the features of the man who ruled the men of his time with an iron hand and did things that are even the wonder of a modern world with mechanical contrivances that make such accomplishments easy.

Flinders Petrie, the great English Egyptologist commenting on his picture, says, "The first thing that strikes us is the enormous driving power of the man, the ruling nature which he seems impossible to resist, the determination which is above all constraint and all opposition. As far as force of will goes the strongest characters in history would look pliable in his presence. There is no face quite parallel to this in all the portraits that we know—Egyptian, Greek, Roman, or modern." As I pass this round you can see for yourselves the breadth of jaw, the firm, full and yet not over full lips, the breadth at the cheek bones, indicating how wide is the skull at this point and the suggestion of the fulness of the bosses of the forehead, concealed even though they are by the cap that he wears. I think that any of us would agree that Prof. Flinders Petrie's expressions are not exaggerated and that one can see at once that you have here the portrait of a strong-willed man who will not brook opposition and who will not only set things going, but see that they are kept going.

If you turn over the next page of that history you will find another portrait statue. It is said to be one of the masterpieces of Egyptian sculpture and represents one of the overseers of the work on the Great Pyramid. Like his master, King Khufu, he looks as though he would be able to drive men.

It would not be difficult to illustrate the opposite state of affairs, that of the men with narrow-pointed chins who have worked harm in the world's history. They are not rare among the portraits of Egyptian kings that we have and they are frequent among the Roman emperors, especially of the earlier and the later years. It is no wonder then that mankind is agreed on the jaw as representing character. There are, of course, certain patent peculiarities in association with this. We talk of thick lips as representing sensuality and, of course, our reason for doing so is that we have come to know by observation and experience that usually the sensualist has these features. When there is a combination of a narrow chin and thick lips then we very often find not only a tendency to sensual indulgence of some kind or other, or perhaps of several kinds, but also, as a rule, a lack of control that leads or may lead to excesses. We must not forget that sometimes there may be behind these outward appearances a power of will that completely vitiates the conclusions that we might draw from them. When Socrates was told by a Greek physiognomist in the presence of his pupils that he had many vices, the pupils were so impatient that they would have hurt the poor physiognomist in their vexation at his accusations of their beloved master. Socrates himself, however, insisted that the man should be let alone, because he was telling the truth as to what he, Socrates, would have been without training and control of himself. Similar stories are told of such men as Ignatius Loyola, founder of the Jesuits, and others of the really strong characters of history in spite of the physiognomonica peculiarities that seemed to condemn them to criminality.

We used to think that these conditions of physiognomy, especially the narrow jaw and the full, thick lips, were congenital, due to the nature of the individual and that, therefore, it was simply a matter of making the best of them. In recent years, however, we have come to realize that while there are congenital elements in some of these cases, most of them represent conditions acquired from the functioning of the mouth and the jaws. The rolling full lips occur particularly in mouth breathers. The process of breathing through the nose is easy and natural and develops that organ so as not to leave it narrow and thin and incompetent to fulfill the function of drawing in all the air that is needed. Mouth breathing, on the other hand, requires effort and leads to overgrowth of the lips and their turning outward. With the discovery by Meyer, the great Danish physician, of the rôle that adenoid growths in the pharynx and occlusions of the posterior nares play in the causation of mouth breathing, or rather in the prevention of nasal breathing, a great light was thrown on the whole question of changes in the face consequent upon the function of breathing. This action of respiration repeated from fifteen to twenty-five times a minute all during life can, of course, produce, as will readily be understood, rather striking effects upon the organs connected with it.

We are learning more and more to appreciate, especially in medicine, that while we used to blame nature for a great many things and consider hered-

ity as a very baneful factor and proclaim it as the source of many disadvantages to humanity our opinions in what seemed often the plainest cases, were founded on insufficient information. Josh Billings used to say "It is not so much the ignorance of mankind that makes them ridiculous as the knowing so many things that ain't so." We certainly thought we knew a heap of things with regard to heredity that were not so. As the French say, "we have changed all that." We know now that tuberculosis is not hereditary but contagious. We know that many difficulties in the respiratory passages are due to the irritative overgrowth of tissues that are meant to protect us and not to any inheritance or natural acquirement of a defect. We know that the conformation of the mouth and the nose depends to a great exent on the conditions during early extrauterine life rather than on the state at birth. We have learned the lesson that nurture is more important than nature. By nature we mean what comes to us from our parents, while by nurture we mean the modifications produced in the organism by the conditions surrounding it from the moment of conception until it reaches its full development, say at the age of 21 or 22. Nature we cannot modify, but nurture we can often alter to the decided advantage of the individual.

We have learned by observation that character is expressed by a broad jaw. We have learned, however, also, that a broad jaw depends on certain physical factors in a great many cases. Bony development depends on muscular use to a great extent and then on the action and reaction of exercise. When, for instance, a child has a lame leg the side of the pelvis above it does not develop properly. Growth is not merely a matter of provision of nutrition, but is the result of reaction to stimuli. Members of families that do not work much or take much exercise gradually acquire the delicate bony frame of the aristocrat, which leaves him at the mercy of the muscular force of the workers. A physician is always anxious about the shape of the pelvis of a woman, one of whose legs is seriously deformed because it is almost sure to be undeveloped, and this will be serious where parturition comes. What is thus true of the heavy bones of the trunk, and particularly of the pelvis, seems to be true of the skull generally as well as of the jaw bone. Unless the mouth is held firmly closed by muscles in constant activity the jaw does not develop properly, hence the mouth breathers' lack of breadth of chin as a rule. If the jaw does not develop well the skull itself seems to lose some of its development because it is not pulled upon and stimulated by the muscles that move the jaw.

These serve to develop particularly the anterior portion of the skull and its base. It is in these portions of the skull that the most important parts of the brain so far as character and intellect are concerned are situated. It always seems to me particularly important that the base of the skull should be well developed, as if somehow this permitted a better development of the connections between the higher cerebral centers and the lower centers as well as the peripheral nerves. Of course I understand how theoretic are such considerations. I am trying, however, to connect our every-day observations in human physiognomy with what we know about tissue development and the place of the brain as the ruler of the body. Narrow-chinned people are usually lacking in character Is it not probably so because the jaw has not properly exercised a stimulus upon the skull to bring about sufficient development of it in order to permit of adequate brain development? We are apt to think of persons who go round with mouths open as not having much sense. The hanging over-full lips are considered to represent the animal side of man, and the typical intellectual man has a firm, well-shut mouth. Must we not take all of these things, anatomy and function, together in order to try to understand them?

While, then, we have been rather accustomed to think of improvements in the mouth, what you have grouped under the word orthodontia, as only of cosmetic value, or to put that Greek word into Latin of ornamental purpose, it is evident that especially in the younger years they may have a magnificent hygienic and even intellectual purpose. Children must not be allowed to be mouth breathers, and anything that interferes with free nasal breathing must be seen to. This is not the place to dwell on phases of this, but I may mention that irregularities of the septum in the nose, the presence of tumefied turbinate bones and of adenoid growths in the naso-pharynx must be corrected. Anything that interferes in any way with the proper growth of the jaw must also be carefully attended to. We all know very well what serious effects can be produced by so simple a habit as thumb sucking. The ugliest kind of protruding jaws, with teeth at the animal angle and with the creation of a condition that almost makes it impossible to keep the mouth shut, may develop. It is sometimes suggested that the thumb suckers must not be considered as having injured their development by their habit, but that their habit was rather the result of a lack of mental development. I have known some cases, however, and I am sure that they are familiar to many others, in which this was not true. Two persons particularly I recall in whom it was extremely difficult to break the habit of thumb sucking, yet it was accomplished and they are among the brightest people that I know with plenty of character and will-power.

Human nature is prone to be the victim of habits. Habit, according to the old phrase, easily becomes second nature. We must not forget that there are many habits not nearly so noticeable as thumb sucking that may produce deformities of the mouth and especially of the teeth and may as a consequence make it difficult to shut the mouth. If mouth breathing then develops there may be loss of development in the jaw and consequently also in the skull. Children have been known to keep constantly pushing their tongue against their teeth whenever they were abstracted. Of course to the ordinary person unfamiliar with the extent to which habit may go it would seem impossible that this could produce any serious results. The tongue is composed of rather vigorous muscles however, and if these are strengthened by vigorous pushing exercises as the consequence of a habit serious results may be produced on the front teeth and such results have actually been noted.

It is only when one has seen what havoc such a habit, for instance, as the biting of the nails can play with the appearance of the ends of the fingers in inveterate cases that one is able to realize how much of detriment can be worked in spite almost of the patient. Everyone has seen tics, winking, frowning, grimacing, nodding, twisting movement of the hands and the like, but few realize that these are merely habits, and though they make the patient so uncomfortable and so noticeable

and make him want so much to correct them they can continue in spite of him. We are likely to think of tics or habit spasms as mainly external, but within the oral cavity particularly there are a number of curious habits that may be formed. Some people cannot keep from biting the cheek, some cannot restrain sucking in their lips in curious ways. Some execute movements of the soft palate and some of the swallowing muscles that become veritable tics. I have seen two cases in which somehow patients had acquired control of a muscle in relation to the Eustachian canal so that a distinct clicking noise was repeated several times a minute during all their waking hours. Any of the movements of muscles associated with the mouth, whether internal or external, are likely to have an effect upon the jaw if they are formed during the plastic developmental period. They are interesting to dentists then because on the development of the jaw depends the proper development of the teeth.

The various tongue movements and sucking movements are particularly important. Children sometimes acquire the habit of shutting their mouth tight and drawing in their cheeks. When they do this a dozen or even two or three dozen times a day it may not make very much difference; if it once becomes a tic however, and is repeated once every minute or two during all the time when they are not actually eating or talking it is easy to understand what an effect it may have upon the jaw. Sucking inward movements of the anterior lips are likely to produce the same effect and they have been noted as occurring in children who exhibited certain curious malformations. In the days when we used to think that the teeth grew as they would in spite of anything that we could do, it would have been hard to persuade men that such apparently trivial movements could affect bony structures. Now that we know that the teeth can be moved asunder or closer together by a little piece of rubber and that this will readily bring about many changes in their relations to one another, it is quite easy to understand how habits of the tongue, the cheek, or the lips frequently repeated will produce even serious deformities in the growing child whose bones are not yet thoroughly hardened and the growth of which renders them particularly susceptible to such influences.

Then comes the question as to what is to be done in such cases to prevent the habit from doing harm. You who study orthodontia have seen the effects and are learning to correct them. Like every other branch of the medical profession, however, you would much prefer to be able to prevent them. I may say at once, from the standpoint of the psychologist and physician who has often tried to bring about the breaking of the habitual movements we call tics, that it is sometimes an extremely difficult matter. It would seem simple enough to keep a woman, and above all a young woman, from biting her nails, seeing that hands may be objects of beauty and may thus become very ugly. There are a great many young women, however, who simply insist that they cannot break themselves of the habit. What they mean is that it is performed unconsciously and that in certain moods their fingers go to their mouths, they chew at their nails, and the sensation is so habitual that they do not notice it until some damage is done. What is necessary as an aid to them is to bring the action above the threshold of consciousness. This can be done by keeping on the ends of the fingers some harmless bitter preparation, aloes or the like, that warns the patient that the fingers are in the mouth. As a rule, if they are determined to break the habit and are thus reminded they are able to do so. Often it is of great help to have someone near them who reminds them gently and helps them to break themselves of the habit.

With regard to habits in the mouth it is not so easy, though here, too, anything that will remind patients of what they are doing is of help. For children the direction of someone else is almost necessary. As they get a little older the fact that they are doing the habitual actions may be brought into their consciousness by the insertion of a piece of rubber between the teeth at the point of offense or by various expedients that dentists would be able to invent and suggest. The important thing is to have the habit produce some unusual sensation. This unusual sensation brings the action above the threshold of consciousness and helps to break the habit. Often the formation of a contrary habit of some kind is an excellent remedy. Children who have the habit of sucking in the breath should be taught to blow outward and repeat this action frequently. This of itself might produce undesirable results if repeated too often, but what is done consciously does not become habitual. The practice can be of use in helping to break a habit. Sometimes it helps patients to require them deliberately to repeat actions consciously which they have been doing unconsciously; this disturbs the unconscious habit and helps to bring it above the threshold of consciousness and so leads to its gradual amelioration. No hard and fast rule can be laid down and each individual case must be treated on its merits.

Bloodletting in Pneumonia.—Beverley Robinson states what we should insist upon far more than we do, and especially in private practice when we see pneumonia in the beginning, is bloodletting in the initial stage with leeches, and particularly when there are much local pain, pulse of high tension, and rapidly increasing temperature. —*New York State Journal of Medicine.*

Biological and Therapeutic Action of the Röntgen Rays.—Vittorio Maragliano says that the *x*-rays are essentially a source of disturbance and destruction of the tissue cells, healthy and diseased. The inflammatory action caused by these rays is not primary, but secondary to the products of cellular necrosis. The rays produce cellular alterations which generally do not show themselves quickly, but only in process of time. Their effects are cumulative. They last for a long time and are generally irreparable, or repaired with difficulty. There is a great difference in radiosensibility among the cells of the various tissues, healthy and diseased. The rays act at a distance and by the production of destruction of cells, through secondary rays produced in the tissues. They diminish the defensive powers of the healthy organism against infections. The rays have had therapeutic results in lymphatic leucemia, myeloid leucemia, pseudoleucemia, Hodgkin's disease, Mikulicz' disease, anemia with splenomegaly, pernicious anemia, Banti's disease, diseases of the respiratory system, bronchial asthma, syringomyelia, Graves' disease, and acromegaly. The good effects are due to the projection of minute emanations from the anticathode, which fix themselves on the cells and cause nuclei of decomposition in them. These rays will be useful when they can exert their destructive action on tissues that are injurious to the organism and yet are sensible to the destructive action of the rays, while the normal tissue cells are not injured.—*Giornale di Electtricita Medica.*

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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CANCER IMMUNITY.

WHENEVER there is concerted action on the part of the medical profession and its natural allies in the study and suppression of the great disease plagues, a multiplication of knowledge is certain to accrue, although the present fruition may not at once be in evidence. Practical advance must necessarily be chiefly along preventive lines, for there is always abundant opportunity for dealing with individual components of a causal nexus. For example the removal of outlived or otherwise useless structures in which cancer develops could hardly fail to diminish greatly the incidence of that malady. But science will always persist in a research for actual curative agencies, with the full conviction that for every morbific agency there must of necessity be antidotes which either destroy the cause, render it inoperative, or neutralize its effects.

Cancer research continues to bring to light new and interesting facts which are often in marked variance with *a priori* deductions. At the very recent session of the German Central Committee for the Investigation and Suppression of Cancer, at Berlin (*Deutsche medizinische Wochenschrift*, June 15), Apolani read a paper on cancer immunity. Figures show that spontaneous mouse cancer occurs in the female almost exclusively, but may be inoculated with equal facility in members of either sex. Spontaneous cancer occurs in elderly mice but inoculation occurs most successfully in young animals. Cancer is much more readily inoculated among animals of the same species. Rats, for example, cannot be successfully inoculated with the most virulent mouse cancers. From the abortive growths which result in the rat, however, mice can be successfully inoculated. This susceptibility and insusceptibility are believed by Ehrlich to rest upon difference in metalbolism. But not only is there a species susceptibility: different breeds and strains of mice show notable differences in this respect, and thus we are brought naturally to individual disposition. Mouse "families" also show different degrees of familial susceptibility.

Acquired immunity is a more elusive subject and the numerous individual observations cannot be so readily elaborated into generalizations. Immunity to inoculated cancer is sometimes attained without in any way illuminating the possibility of immunizing against spontaneous cancer.

A notable parallelism has been alleged to exist between the behavior of mouse cancer cells and that of trypanosomes. When an animal that has once suffered from trypanosomiasis undergoes a relapse, the parasite is seen to have undergone some modifications due to the nutritive processes of the host. We can thereby understand why a cancer cell becomes domesticated, so to speak, in the tissues of a particular species of animal so that it flourishes more readily therein.

There is room for discussion in regard to the parallelism between cancer cells and trypanosomes. While some investigators see a fundamental biological difference between the two, others appear to regard the resemblance as close enough to suggest a relative identity in pathogenesis.

PHOSPHATURIA.

THE uroscopist of a generation ago had at his behest a number of delicate tests for fluctuations in the normal constituents of the urine, as well as for the presence or absence of many abnormal constituents. He was, however, ridiculously conservative, not to say timid, about assigning any significance to his findings. To state that an excess of a given substance or the presence of a foreign ingredient indicated or suggested some visceral or blood or metabolic affection was to declare one's self a charlatan—on a level with the medieval uroscopist who predicated the most absurd things after "casting the urine." The uroscopist in the '70's and '80's recognized the presence of many abnormalities, such as cystinuria, alcaptonuria, oxaluria, phosphaturia, indicanuria, urobilinuria, etc., etc., and entered such terms into his reports. Yet he regarded the entire subject of the meaning of these phenomena as up to his patron, the clinician. The latter used to complain that mere findings without interpretation were practically worthless to him. This state of affairs has been steadily ameliorated, and to-day it is commonly realized that all pathological urine has a definite significance. The uroscopist at least owes it to the practitioner to inform him briefly as to what a certain abnormality has usually signified, without in any way making a definite diagnosis.

An excess of phosphates in the urine, when found a generation ago, was believed—largely on theoretical grounds—to represent increased catabolism of nervous tissue. So far as we know it had no further significance. In order to comprehend what it means to-day, we quote from a paper read by Schlagintweit before the Aerztlicher Verein of Munich (*Berliner klinische Wochenschrift*, May 1). Phosphaturia may be latent or manifest, in the latter case representing a sediment which favors calculus formation. In latent phosphaturia the precipitate appears only when the urine is boiled, and means simply that the lime and magnesium phosphates are thrown out by an alkaline urine in manifest phosphaturia; while in latent phosphaturia boiling causes a decomposition of the soluble phosphates with formation of the same insoluble salts.

In alimentary phosphaturia, which represents a simple, physiological type, the alkaline reaction which makes this condition possible is due to a vege-

tarian diet. A gastric type is due to wasting of gastric juice, such as occurs in hyperchlorhydria, also in hyperemesis. A metabolic phosphaturia is now, as formerly, believed to result from abnormal nerve waste, but to-day is held to be of significance chiefly in neurasthenia. It is by no means constant or pathognomonic. A curious phenomenon is reflex phosphaturia, which is often set up by phimosis, gonorrhea, the passage of a ureteral catheter, etc. Alimentary phosphaturia yields readily to diet, and when the cause of the disorder is waste of gastric juice, the condition disappears with removal of such causes. The same is true for reflex phosphaturia. Metabolic or constitutional phosphaturia, on the contrary, may be rebellious to treatment, although in many neurasthenics the condition is readily controllable. Obstinate cases sometimes yield to mineral acids, but in general the condition is intractable, as if it were part and parcel of a neuropathic constitution. Generally speaking phosphaturia is akin to carbonaturia, and the two are often found side by side. The precipitate of triple or ammoniomagnesian phosphates in an infected alkaline urine is a universal phenomenon, having nothing in common with phosphaturia.

THE PREVENTION OF SOME INFECTIOUS DISEASES OCCURRING IN ARMIES.

Lieut.-Col. C. H. Melville, Professor of Hygiene at the British Royal Medical College, recently delivered a course of lectures on army sanitation, published in the "Journal of the Royal Sanitary Institute," April, 1911. The lecture on the prevention of certain affections, such as typhoid fever and intestinal diseases, is especially interesting. Melville states that the diseases which occur in the field are comparatively few in number, and by far the most important belong to one class, the intestinal. Of these, typhoid fever and dysentery are the most frequent, cholera being a rare army disease in civilized countries and in temperate climes. As a type of the intestinal diseases typhoid fever may be taken as the most serious. Moreover, the preventive measures which are applicable to it are equally applicable to the other members of the class.

The man in hospital with typhoid fever need not be considered to any extent as a probable source of infection, as all the most efficient precautions to prevent the disease from spreading are naturally taken there. Melville points out that it should be rendered impossible for any infection to pass from the feces or urine of a man in hospital, to the air, water, or food of his comrades in barracks or camp. Measures can be more or less easily taken which will effectively destroy the disease germs in feces or in urine. But while the man in hospital is little or no menace to the health of others, the infected man outside is the source of considerable danger. He belongs to one of two classes, viz., those who have the disease, and those who have not the disease. The first class may be again divided into those who are in the early stages of a bad attack, and those who are in the middle of a mild attack, the so-called ambulatory cases. The second class, including those who have not the disease, may also be divided into those who have had the disease, and those who have not had the disease but have been in attendance on patients—for instance, medical men and nurses. Those who can be proved to have had the disease should be isolated from their comrades until it has been demonstrated beyond doubt that they are not carriers. Those men should be the particular care of the medical officer, who should see personally that the excreta are not only covered with earth, but that the trenches are scorched with a little kerosene oil or straw ignited in them every day. Three examinations of the feces and urine, carried out at intervals of one week, with negative results, should be required ere the men are permitted to rejoin their comrades. Further, it is a safe rule to make that no man who is known to have had typhoid fever within the past twelve months, whether he is a proved carrier or not, should be allowed to take any share in the preparation or cooking of food. When a man has been proved to be a carrier there is nothing for it, but to discharge him as unfit for service.

The man who has been in attendance on or living under the same roof as those suffering from typhoid fever, as a rule is little of a menace. The attendants almost invariably belong to the Army Medical Corps, while the number of men who have been living in a house in which typhoid fever has been present is so small that although they should be looked upon with suspicion, they cannot be important factors in the spread of the disease.

With regard, however, to the other two classes mentioned, those who are sickening for a severe attack, or are actually undergoing a mild attack, the case is different. The first of these classes is the less dangerous. The disease will probably be detected in a short time and the victim relegated to the hospital. The management of the other class is one of the gravest problems confronting the army medical officer. The individual may show few signs of the disease and in consequence is most difficult to identify as an infected person. Therefore, it is against this man that conservancy must be aimed. By careful burial of all excreta without exception and safe disposal of urine the danger may be kept within bounds, but, as Melville shows, any carelessness in that respect will mean fresh cases of the disease originating from this one man, each of which in turn during the period of incubation, which may be as long as three weeks, and is usually ten days, will act as a reservoir and focus of the disease. The disease germs lie in the excreta of the infected man, and the most dangerous to the health of others is that infected man who is able to keep on his feet and in whom the disease is unrecognized. As such cases cannot be recognized, Melville is of the opinion that the right thing to do is to look on every man as potentially infected, and to treat his excreta as potentially containing

the microorganisms of entric fever. The only preventive measure which is really effective is the immediate burial of the excreta. This is the one essential of sanitation in camp. The author does not discuss the question of preventive inoculation, the utility of which has been so amply demonstrated in the camps at San Antonio, but considers only the public health measures to prevent the spread of typhoid fever.

The prevention of dysentery is practically the same as that of typhoid fever. An essential point, of course, in the prevention of infectious disease is early diagnosis. In standing army camps of any size there should be small laboratories in which modern scientific methods of blood and serum examination can be carried out. As regards troops on the march this procedure is not feasible and therefore detection of infectious disease is extremely difficult or well-nigh impossible. Every man who is sick with diarrhea, and the malady in camp is very frequent, cannot be sent to the hospital for observation, as he should be sent, as a potential case of typhoid fever or dysentery, for if this were done the army would soon be reduced to the footing of a hospital guard. Experience is the only guide, but this is a fallacious one. The means of prevention of typhoid fever among troops on the march is almost as far from settlement as ever. Strict hygiene, so far as this can be carried out, and as pure drinking water as possible, will go a long way toward keeping the disease at bay; but when it has once gained a foothold in an army on active service, to check its spread will employ the brains and energy of the best sanitarians of the world.

ARTERIOSCLEROSIS PRÆCOX.

It is becoming more and more apparent that precocious arteriosclerosis has no necessary connection with senile arteriosclerosis. To state that a young subject with this affection is prematurely old is unjustifiable, even as a figure of speech. Many discrepant statements about hardening of the arteries may be due in part to the dualism of this affection. In the presenile form of the latter the heart and kidneys may be intact, and there are, as a rule, no fibroses of the viscera. Presenile arteriosclerosis appears to result especially from a combination of elevated blood pressure and toxinemia, as shown by a study of individual cases. Such an affection may promptly result fatally if the circulation of the extremities is arrested, or if hemorrhagic infarcts occur in vital organs. On the other hand, this type of disease should be amenable to treatment.

At a recent meeting of the Berlin Medical Society (*Münchener medizinische Wochenschrift*, June 20), Klemperer and Benda reported a case of arteriosclerosis præcox in a man aged 30 who was suffering with rectal cancer. The vascular affection was believed to be due to the toxins of the malignant growth. An atheromatous patch developed in the popliteal artery, and the resulting thrombosis led to fatal gangrene. There was no increased pressure component in the case and the heart was normal. Benda cited another case in a boy in whom a cicatricial stricture of the descending aorta resulted in arteriosclerosis above the constriction. A number of cases were cited to show that toxinemia was pathogenic to the arteries without increase in blood pressure. On the other hand, increased blood pressure is able to induce the lesion without toxinemia, as shown by cases in mankind and animals attributable to overexertion alone. Toxins which augment the blood pressure are more dangerous than others; while arteriosclerosis from muscular exertion alone may be due incidentally to fatigue poisons.

The problem involved in this subject is not entirely solved by a division into early or accidental and late or senile arteriosclerosis. Much may depend on the arterial tunic and segment first attacked, as well as the precise nature of the morbid process.

Nature and Treatment of Chorea.

Carey F. Combs of Bristol writes in the *Medical Press and Circular*, June 7, with regard to the nature and treatment of chorea. According to his views chorea is an organic disease implicating the cells of the cortex cerebri, and those of the midbrain and pontomedullary nuclei to a less severe degree. It is due to the action of rheumatic toxins upon these cells. All parts of the cortex suffer equally, and, therefore, the disease should not be regarded as one of motion only. In spite of its extraordinary persistence, due to repetition of active phases, the general tendency is toward recovery. Combs is of the opinion that treatment should consist in the removal of the cause, active rheumatic infection, by rest in bed with administration of salicylates during the active stages; prolonged mental and bodily rest during convalescence; improvement of general health by fresh air, full diet, and tonics; quieting of excessive movement by sedative drugs or packs; and cure of paresis by massage.

Sodium Salts and Body Weight.

As is well known, Javal and Widal showed that the edema of nephritic and cardiac patients could be reduced by withdrawal of sodium chloride from the diet, and increased by increasing the dietetic content of sodium chloride. As the edema increased there was naturally an increase in body weight. While "salt starvation," so called, is rationally indicated in edema, it is also true that the administration of increased quantities of sodium chloride will increase water retention and weight in a healthy subject. To what extent this is due to increased ingestion of water from the augmented thirst does not appear. At the recent session of the German Congress for Internal Medicine Pfeiffer announced that sodium carbonate also causes increased water retention and increased body weight in both the well and ill (*Berliner klinische Wochenschrift*, May 29) while with suspension of the salt the original weight is regained. Other bases like potassium do not affect the weight, nor does HCl. In treating edema, then, it is sodium starvation which is the desideratum and not mere "salt starvation." An explanation of this behavior of sodium in the body is found in the action of the sodium ion upon the taking up of water by the tissues.

News of the Week.

The Cholera Situation.—The first case of cholera in the Borough of Manhattan appeared on July 23, when the patient applied for treatment at Bellevue Hospital. When the nature of the disease was determined he was at once removed to Swinburne Hospital. The man was a fireman on a tramp steamship which sailed from Liverpool on March 15, and, after touching at the Azores and South American ports, entered New York. Since the outbreak of the epidemic there have been ten deaths from the disease on Swinburne Island, and a number of patients are still detained there, all of them having come from Mediterranean ports. The Treasury Department on July 20 issued a formal order to all national, State, and local quarantine officers requiring a bacteriological examination of every steerage passenger arriving at an American port from a cholera-infected port. This will exclude all cholera "carriers." As a further step to increase the efficiency of the New York quarantine Governor Dix has ordered for the present a discontinuance of the fresh water investigation of quarantine affairs which has been in progress for some weeks. The Italian authorities still endeavor to disguise the seriousness of the situation, but advices from Rome state that during the five days ending July 16 there were in the city of Naples 64 new cases and 21 deaths, while in the province of Naples there were 48 cases and 19 deaths, and in Palermo 62 cases and 19 deaths. Several cases have also been reported in small towns in the neighborhood of Montpellier, France; and the Russian newspapers tell of scattered cases throughout the Empire. One fatal case of cholera has been reported in Boston.

Criticism of the New York City Health Department.—The committee for the reduction of infant mortality of the New York Milk Commission has issued a statement criticising the Health Department inspection of milk. An analysis of the Board of Health's records of milk inspection, the statement says, "shows a marked irregularity in the time and character of inspections and a general ineffectiveness of inspection by reason of failure to follow to a conclusion the delinquencies noted. . . . . The whole process of handling loose milk is at best a filthy procedure, and especially under the dirty conditions found in the ordinary milk shops." The committee refrains from placing the responsibility, but says that "the facts remain that proper supervision has not been maintained nor sanitary conditions observed."

Reduction in Infant Mortality.—During the week ending July 22 there were in New York 344 deaths from all causes among children less than one year old, as compared with 523 deaths in the corresponding week of last year. From intestinal disease there were 157 deaths against 323 from the same cause in 1910. So far this year the number of deaths of infants is 716 less than it was at this time in 1910. As there has been a considerable increase in the infant population of the city the decline in the death rate is even more marked.

City Baths.—It is reported that the new municipal bathhouse at Coney Island, New York, will be open to the public on August 1. The building is one of the finest baths in the world, and will have accommodations for over 6,000 persons at one time, or about 35,000 a day. The roof of the building will probably be utilized as a resting place for invalid mothers and children.

Prize Essay on Alcohol.—Dr. L. D. Mason of Brooklyn, vice-president of the American Society for the Study of Alcohol and Other Narcotics, offers a prize of $150 for the best essay on "The Biological and Physiological Relations of Alcohol to Life." The essay must be the result of original research which shall confirm or disprove the present theories of the inherited effects of alcoholic degeneration and indicate how far the defects of parents are transmitted to the children. The essay must be typewritten and sent to Dr. T. D. Crothers, Hartford, Conn., Secretary, before July 1, 1913. This offer is open to students in all countries, and each essay should be accompanied by a motto and a sealed envelope containing the same, with the author's name and address.

Fire in Insane Hospital.—The State Hospital at Morris Plains, N. J., took fire on July 21, fortunately at about noon, so that it was possible to hurry the 1,200 inmates into the dining hall and keep them there until the danger was over. The fire, which at one time threatened to destroy the main building completely, was finally extinguished with only about $8,000 damage done. It was thought that the cupola of the building had probably been struck by lightning during the early morning storm, and that the fire thus kindled had smoldered until noon.

Chinese Medical School.—The establishment of a medical school in China, for the purpose of teaching to the Orientals the Western methods of hygiene and medical treatment, has at length been accomplished, and the institution, which will be situated in Shanghai, will open its doors in February, 1912, under the auspices of the Harvard University Medical School. Dr. Martin R. Edwards will be the head of the new school, and he will have a corps of fifteen assistants, most of them Harvard graduates.

Child Workers.—The National Child Labor Committee has recently opened in New York an exhibit showing by means of photographs, statistics, and graphic illustrations the prevalence of child labor in factories, and the effect of such labor upon the development of the minds and bodies of the children. The committee is endeavoring to effect the passage by the State Legislature of bills prohibiting the employment of such labor.

Dr. G. W. Crile of Cleveland, Ohio, spoke to the physicians of San José, Cal., in the San José high school on July 7 on the subject of "Surgical Shock."

Gifts to Charities.—By the will of the late John Dobson of Philadelphia the sum of $10,000 is bequeathed to the Episcopal Hospital of that city.

The city of Poughkeepsie, N. Y., has received a gift of $50,000 from Mrs. Samuel W. Bowne of New York, to be used for the erection of a tuberculosis hospital to be known as the Samuel W. Bowne Memorial Hospital. The city had already started the erection of a hospital designed to cost $40,000, and the addition of Mrs. Bowne's gift will render it possible to make the institution one of the most complete in the country.

By the will of the late Nathaniel Thayer of Boston the Massachusetts General Hospital of that city receives a bequest of $50,000. The Boston Lying-In Hospital also receives a bequest of $10,000, and the Clinton Hospital one of $5,000.

The Auburn City Hospital of Auburn, N. Y., receives $5,000 under the will of the late Mrs. Eliza Wright Osborne of that city.

Mount Sinai Hospital of New York receives $2,000, the Montefiore Home, $2,000, and the Beth Israel Hospital, $1,000, under the will of the late Alfred Krower of New York.

Lectures on Tuberculosis.—In cooperation with the Committee on the Prevention of Tuberculosis, the New York City Department of Health has begun the fifth season of free stereopticon lectures on the causes and prevention of tuberculosis. The lectures are given in the parks and on the recreation piers during the summer, beginning on July 21.

Mr. Nathan Straus has been appointed a delegate to the third international congress for the protection of infants, to be held in Berlin on September 11 to 15. This body was formed in Paris as the Congress of the Gouttes de Lait, but at the meeting, in Brussels in 1908, the name was changed and the scope of the organization was broadened.

University of Arkansas.—The Faculty of the Medical Department of the University of Arkansas recently elected Dr. J. H. Lenow of Little Rock to the office of Dean of the Consolidated Medical College. Dr. J. P. Runyon was elected Vice-Dean.

Austin Flint Medical Society.—At the annual meeting held in Mason City, Iowa, on July 11 and 12, the following officers were elected for the ensuing year: *President,* Dr. J. C. Power of Hampton; *Vice-President,* Dr. E. E. Denkleburg of Waterloo: *Secretary,* Dr. C. F. Starr of Mason City; *Treasurer,* Dr. W. L. Hearst of Cedar Falls. The next meeting will be held at Waverly.

Loudoun County (Virginia) Medical Society.—At a meeting held in Leesburg on July 14 the Loudoun County Medical Society was formed with the following officers: *President,* Dr. N. G. West of Leesburg; *Vice-Presidents,* Dr. E. H. Heaton and Dr. T. F. Keene.

Rutland County (Vermont) Medical Society.—At the annual meeting held at Lake Bomoseen on July 11 the following officers were elected: *President,* Dr. C. F. Ball of Rutland; *Vice-President,* Dr. H. R. Ryan of Rutland; *Secretary,* Dr. William Stickney of Rutland.

Dr. Charles Nélaton, Vice-President of the French Surgical Society, died at his home in Paris on July 23.

The North Carolina State Medical Society.—At the annual meeting of the association held in Charlotte on June 20 and 21, the following officers were selected for the ensuing year: *President,* Dr. A. A. Hunt of Lenoir; *Vic-presidents,* Dr. J. P. Munroe of Charlotte, Dr. W. P. Horton of North Wilkesboro, and Dr. J. G. Murphy of Wilmington; *Secretary,* Dr. A. A. Stanton of High Point; *Treasurer,* Dr. H. D. Walker of Elizabeth City. Hendersonville was chosen as the place of meeting in 1912.

The North Carolina Public Health Association was organized in Charlottee at the time of the meeting of the State society, with the election of the following officers: *President,* Dr. L. B. McBrayer of Asheville; *Vice-president,* Dr. L. N. Glenn of Gastonia; *Secretary-Treasurer,* Dr. W. S. Rankin.

Chicago Medical Society.—At the annual meeting held on June 20 the following officers were elected: *President,* Dr. Joseph M. Patton; *Secretary,* Dr. George F. Suker.

South Dakota Medical Society.—The annual meeting of this association was held in Pierre on June 15 and 16, the following officers being selected for the coming year: *President,* Dr. W. G. Smith of Sidney; *Vice-presidents,* Dr. C. E. McCauley of Aberdeen, and Dr. F. A. Spofford of Flandreau; *Secretary-Treasurer,* Dr. R. D. Alway, Aberdeen. The next annual meeting will be held in Mitchell.

Southwest Virginia Medical Society.—At the annual meeting in Roanoke on June 20 and 21 the following officers were elected for the ensuing year: *President,* Dr. W. W. Chaffin of Pulaski; *Vice-presidents,* Dr. E. C. Watson of Roanoke, and Dr. W. H. Ribble, Jr., of Wytheville; *Secretary-Treasurer,* Dr. A. B. Greiner of Rural Retreat.

National Association for the Study and Prevention of Tuberculosis.—At the annual meeting of the association held in Denver the election of officers on June 21 resulted as follows: *President,* Dr. M. P. Ravenel of the University of Wisconsin, Madison; *Vice-presidents,* Dr. John M. Glenn of New York, and Dr. G. W. Holden of Denver; *Secretary,* Dr. Henry Barton Jacobs of Baltimore; *Treasurer,* Dr. George M. Sternberg, U. S. A.

American Surgical Association.—The annual meeting of the association was held in Denver on June 20 and 21, the following officers being elected: *President,* Dr. Arpad G. Gerster, professor of clinical surgery in the College of Physicians and Surgeons, New York; *Vice-presidents,* Dr. George W. Crile of Cleveland, and Dr. Joseph Ransohoff of Cincinnati; *Secretary,* Dr. Robert G. LeConte of Philadelphia; *Treasurer,* Dr. Charles A. Powers of Denver; *Recorder,* Dr. Archibald McLaren of St. Paul.

Edgar County (Illinois) Medical Society.—At the annual meeting held in Paris on June 20 the following officers were elected: *President,* Dr. B. G. R. Williams of Paris; *Vice-president,* Dr. J. W. Evinger of Elbridge; *Secretary-Treasurer,* Dr. George H. Hunt of Paris.

Jones County (Ia.) Medical Society.—At the annual meeting at Anamosa, on June 6, the following officers were elected: *President,* Dr. Hejinian; *Vice-President,* Dr. Aileen Corbit; *Secretary-Treasurer,* Dr. Thomas Redmond.

Obituary Notes.—Dr. Henry F. Horstman of Philadelphia, a graduate of the Medical Department of the University of Pennsylvania in 1873, died at his home, on July 6, aged 65 years.

Dr. James E. Keating of Natick, Mass., a graduate of the Harvard University Medical School in 1879, died at his home on July 4.

Dr. W. Thomas Jones of Natchez, Miss., a graduate of the Jefferson Medical College, Philadelphia, in 1904, died of septicemia, on July 8, aged 36 years.

Dr. Michael F. Foley, formerly of Hoboken, N. J., and more recently of New York, a graduate of the Bellevue Hospital Medical College in 1891, a member of the New Jersey State and Hudson County Medical Societies, and formerly visiting surgeon to St. Mary's Hospital, Hoboken, died suddenly at his home in New York, on July 24, aged 43 years.

Dr. Hugh Pitcairn, formerly of Harrisburg, Pa., and for eleven years American Consul-General at Hamburg, Germany, a graduate of the Hahnemann Medical College of Philadelphia in 1880, died at Hamburg, on July 19, aged 66 years.

Dr. George L. Andrew, Chief Inspector on the Sanitary Commission for the Army of the Potomac during the Civil War, a graduate of the Cincinnati Medical College, and house physician at Bellevue Hospital, New York, before the outbreak of the war, died at his home in Laporte, Ind., on July 19, aged 89 years.

Correspondence.

THE PRELIMINARY PLACING OF THE PERINEAL STITCH.

To the Editor of the Medical Record:

Sir:—I have received so many requests from family doctors for the technique of my very simple method of placing the perineal sutures before the lacerations take place that I am unable to answer them all individually, and would therefore crave from you space in your journal for this letter to which I may refer them.

At the Boston meeting of the American Gynecological Society in 1904 I had the honor of presenting a paper on "The Immediate Repair of the Perineum with Special Reference to the Placing of the Sutures in Position Before the Laceration Takes Place." Since then about 1 or 2 per cent. of the doctors of North America have adopted it and another 2 or 3 per cent. want to know more about it. In the paper which will be found in full in the transactions of the Society I pointed out the two great reasons for the immediate repair of every laceration of the perineum; first to close up the avenues of infection which are the cause of the mildest as well as of some of the most severe cases of puerperal fever; and second to reunite the separated levator ani and transversus perinei muscles. During the last twenty years I have made it my invariable custom to put in a stitch or two in every case in which even half an inch of the fourchette had been torn. The result has been that my obstetric cases have been almost entirely free from the slight rise of temperature on the second or third day, formerly called milk fever. I am certain that patients who have had these small lacerations of the perineum repaired have made better convalescence than those on whom this was not done. Moreover, in a part so abundantly supplied with nerves, it is important to obtain repair by primary union rather than by contracting scar tissue, which breaks down the nervous system. Besides, when the sphincter is torn through, the patient loses control of her bowels and must retire from social intercourse. I admit that the difficulties of the immediate repair of the perineum are very great, if done in the ordinary way, and especially with poor assistance and poor light in a poor house, and it would be better to send for an expert in plastic work who, with the help of a nurse and the family doctor, could quickly sew up all tears. But in cases where such a man is not available even the least expert family doctor could not only close up all tears but actually accomplish that most difficult feat of securing the divided and retracted ends of the levator ani muscles, if he will but use the method which I have devised.

Method.—Just before the child's head comes down on the perineum the patient is anesthetized and brought across the edge of the bed with the feet held by a twisted sheet or leg holder. The perineum is sterilized with a soap and brush and mercuric bichloride, and then with the large curved perineum needle on a handle, furnished by Chapman of Montreal, held firmly in the right hand, and with the thumb of the left hand in the anus and the left forefinger in the vagina the needle is entered at the base of the lesser lip on the patient's left, taking in the levator ani muscles and passed rapidly under the vagina and about two and one-half inches above the fourchette, coming out at the corresponding point on the woman's right side. A silkworm gut suture is threaded into it and the needle is withdrawn, followed by the silkworm gut, the two ends of which are caught up with two Péan forceps. A second one is passed in the same way an inch lower down, but taking in the muscles of the perineum. We can generally tell beforehand, by the rigidity of the perineum, whether the tear is going to be a bad one or not. In the former case we can put in a third stitch, which would take in the sphincter ani on each side of the middle line. Delivery can now go on naturally or artificially, but as soon as the placenta has been delivered the perineum is inspected under a good light and a stream of water, all clots being rubbed off with the finger; the stitches are tied from above downward, when we will find that there is absolutely accurate coaptation of the separated parts.

Speaking of the light in the confinement room, especially of the poor, we should always take steps before delivery to provide a good light for two reasons: that we may see how dirty the place is and second to see what we are doing. As a rule, a darkened room means a dirty and badly ventilated one. In the daytime arrange the patient so that the perineum will be facing a bright window; and if the confinement is likely to take place at night provide beforehand for a good light easily available for examining the perineum. When we hear physicians say that they have never seen a tear of the perineum they may be telling the truth, because they have attended all their patients in a dark room. The presence of the silkworm gut stitches, placed as stated before the head comes through the perineum and hanging loosely attached by their ends to a Péan forceps, does not interfere with the termination of the labor in any way, not even when the forceps is required. If by keeping the pain under control and the head well towards the symphysis, there has happily been no laceration of the perineum, no harm is done by their having been introduced, you simply take off the forceps and draw them out, while if the perineum has been lacerated more or less, it is a great advantage to save time by having them already in, but still more by having them exactly in the right place to bring the lacerated surfaces together, just as they were before the delivery. The placing of the perineal sutures before the tear occurs is an instance in which "an ounce of prevention is worth a pound of cure."

A. Lapthorn Smith, M.D.
238 Bishop Street, Montreal.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE INSURANCE BILL, MORE OBJECTIONS—HEALTH CONGRESS AND FÊTE—OPEN-AIR SCHOOLS—SURGEON WRENCH, M.V.O.—ROYAL COLLEGE OF SURGEONS—ITEMS—OBITUARY.

London, July 7, 1911.

Dissatisfaction with the details of the Insurance Bill marks its progress. Continually some interest which is affected is representing its apprehensions of injury. The announcement of a determination to apply the guillotine caused such protests from the labor party that the government was glad to climb down. The finance committee of the London County Council objected among other things to be liable for expenses incurred by health committees, and in certain eventualities in respect of excessive sickness, as well as to the powers given to

local authorities in reference to the establishment of sanatoria. It seems that the local health committees are to have the right to draw upon the rates for the expenditure as to medical benefits, subject only to the provision that such expenditure has been reasonable. Is not that a point to furnish lawyers with increase of employment?

A conference of representatives of the dispensaries in London and the provinces has been held at which it was shown that in some towns about a third of the people were in provident or free dispensaries, and it was the general opinion that these institutions would all be injured and many of them destroyed. A resolution was passed that they ought to be utilized under the scheme, as they had existed many years for the benefit of hundreds of thousands of the working classes.

The Council of the Charity Organization Society urges that the measure ought not to be pushed forward until ample time has been given for discussion and that cannot possibly be secured in the present session of Parliament.

In Ireland the scheme is rousing so much opposition, not only of medical but other interests, that a demand is being strongly urged that the bill shall not extend to that island. The Roman Catholic authorities are joining in the opposition of the university and the colleges. The Irish Medical Association has sent a circular to every practitioner in the country asking whether they will refuse to contract under the bill unless its demands are met. Some Irish M.P.'s have promised to seek amendments, but the majority of them vote as Mr. John Redmond dictates, and the government must await his pleasure or he will remove them from office.

A White Paper has been issued giving the text of a number of letters sent by Mr. Lloyd George to correspondents respecting the probable effects of the measure. In one of them he tries to show the bill will benefit the profession, that the payments are not fixed and will probably be raised, and that the free choice of the doctor is not unreasonably restricted, but a man ought not to change every month or two! He thinks cottage hospitals will not be interfered with.

The Imperial Health Congress has been sitting for the last two days. In connection with it the Duke of Argyll, in the absence of Princess Louise from indisposition, opened a fête in the Royal Botanic Gardens, which proved a brilliant success, the weather being all that could be desired. There were all sorts of exhibits, such as the model workroom of the girls' clubs, laces, embroideries, and ladies' work of various nations.

The "Florence Nightingale Caravan" was composed of an underguard of Crimean veterans. The Duke spoke in commendation of the aims and work and then followed musical and dramatic entertainments and interesting displays of the ambulance association and the Women's Sick and Wounded Convoy Corps.

The formal opening of the Congress itself yesterday was presided over by Lord Ilkeston and a paper was read on "Tropical Diseases as They Affect Women and Children," by Dr. C. W. Daniels of our School of Tropical Medicine. A discussion on the "Care of the Teeth" was opened by Dr. Sim Wallace. In the afternoon Sir W. Bennett presided and such subjects as Open-Air Life in Canada, Dancing in Connection with Open-air Life, Morris Dancing, and the Training of Oriental Children were discussed. To-day the Tuberculosis Problem and the Endowment of Maternity in Relation to Eugenics are to be considered, and Dr. Sandwith is to speak on the "Prevention of Plague."

Yesterday an open-air school for tuberculous children was opened by the Duke of Argyll. It was organized by the Kensington and Paddington Dispensary with the cooperation of the London County Council, which has supplied the educational staff, filled up the building, and agreed to maintain it for three years as an experiment. The chairman of the L. C. C. was present and hoped parents would help in promoting hygienic conditions at home. The Duke, in declaring the school open, said he thought it a good thing to occupy the minds of invalid children with their education rather than let them brood on their state and they might be told how many great poets and others had been great sufferers.

Dr. Dudfield hoped the school would be a pattern for many others to be started. He thought, too, open-air schools would be best for healthy children and should not be reserved for the sick.

Surg.-Lt.-Col. Edward Mason Wrench, M.V.O., F.R.C.S., who distinguished himself in the Crimea, is now in good health at the age of 78 and acts as a J. P. for Derbyshire. He was at both assaults on the Redan and served to the end of the war. Afterwards he was sent to India in charge of troops and served throughout the Mutiny. He was awarded medals and clasps and since leaving the army has held various appointments and contributed to the journals—one article being "Lessons of the Crimean War." Mr. and Mrs. Wrench lately celebrated their golden wedding and among their presents was a golden casket from the Duke of Devonshire's mother. He had attended three Dukes. Other presents were from nine brothers and sisters and forty-nine nephews and nieces. King Edward consulted Mr. Wrench and personally decorated him.

The specimens added to the Hunterian Museum during the last twelve months include an important collection illustrating cancer in mice, presented by the Imperial Research Fund. Sir Henry Butlin has given his drawings showing the appearances of this disease and conditions which may be mistaken for it. The tuberculosis commission has given a series of specimens showing the experimental production of that disease. Great additions have also been made to the pathological and gynecological collections. Numerous donations to the ethnolgical series are interesting in various respects. The exhibition closes to-morrow.

Yesterday Mr. Makins and Mr. Dent were reelected to fill the two seats on the Council of the College vacant by their retirement in rotation. Mr. Lyttelton, M. P., distributed the prizes at Guy's Hospital on Tuesday. He commended to the students a remark of the late Dr. Jowett, "Don't quarrel, don't explain, don't drudge." They must be practical as well as scientific to succeed, must keep the human side open or would fail. The garden party, after the ceremony, was as pleasant as usual and as largely attended.

Mr. R. C. Forster, who gave £4,500 to secure the purchase of the site for the new chemical laboratories of University College, has offered a further gift of £30,000 in the hope that the building may be speedily proceeded with and so the coronation year commemorated.

On Wednesday H.R.H. the Duchess of Albany laid the foundation of the new building of the Cen-

tral London Ophthalmic Hospital, which was opened in 1843. Last year 12,000 out and 400 in-patients were attended to.

Dr. Thomas Edwin Burton Brown, I.M.S., C.I.E., has died at the age of 78. He was a Guy's student and took M.D., London, in 1857, having obtained gold medals in several subjects. Most of his life was spent in India, where he became Professor of Medicine and Principal of the Lahore College. He had previously been Examiner in Chemistry to the Punjab government. Returning to England he was appointed medical tutor to Ayerst Hostel, Cambridge, in 1890, and next year Examiner to the Apothecaries' Society, of which he was chosen master in 1901. He was president of the Therapeutical Society in 1906 and vice-president of the Royal Society of Medicine.

Dr. G. B. Slader, M.O.H. for Gainsborough for sixteen years and surgeon to the Dispensary, died on the 22d ult.

Dr. Thomas Law Webb, late pathologist to the Salop Infirmary and the Shrewsbury Throat and Ear Hospital, has died at the age of 64. He qualified in 1870 and took M.D., Birmingham, in 1903.

Dr. Herbert Thompson, many years surgeon to the Hospital for Hip Disease and the Sevenoaks Cottage Hospital, died suddenly on the 20th ult.

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

ACADEMY OF MEDICINE—RADIOTHERAPY—SURGICAL SOCIETY—A NEW METHOD OF PROSTATECTOMY—PENETRATING WOUNDS OF THE THORAX—MEDICAL SOCIETY OF THE HOSPITALS—GASTRIC RADIOSCOPY.

PARIS, June 15, 1911.

At the Academy of Medicine Haret has advanced the happy idea of introducing radium into the tissues through the intact skin, under the form of ions, by means of the galvanic current and the electrolytic solution of a salt of radium placed on a positive electrode in contact with the diseased region. Béclère presented the following conclusions as the result of experiments: His radium passes into the subcutaneous tissues by ionization, which is necessary to carry the radium without breaking the skin into the subcutaneous tissues; ionization is sufficient, independent of the circulation of the blood, to carry radium into the depths of the subcutaneous tissues; radium penetrates by ionization in quantities appreciable up to 9 cm. of depth at least. The stay of the radium introduced by ionization into the subcutaneous tissues is sufficiently long to permit the accumulation of doses by successive sittings at intervals of several days, and by this accumulation in sufficient quantity one is able to get therapeutic results. The technique of Dr. Haret is as follows: the application over the diseased area of a positive electrode consisting of a compress soaked in the solution of 10 micrograms of bromide of radium and the passage of a current of 10 milliampères for 30 minutes with three sittings per week. This new method of employment of radium in therapeutics constitutes a true advance. There is a possibility in this way of causing radium to penetrate without any break in the skin to the interior of the cellular elements of the different tissues; one may predict that there will be an advantage in many cases in combining the employment of this new method of radium therapy with that of irradiations of Röntgen rays, and that the domain of both agents will be broadened.

At the Society of Surgery Paul Delbet presented a new method of prostatectomy, perineo-transurethral. According to the author this method includes the advantages of the two other methods usually employed, the subpubic and the perineal, and avoids their inconveniences. The patient being placed upon a table in inverse position, the operator introduces into the urethra a Guyon No. 2 explorer, and makes three incisions; one vertical median, 3 cm. long, following the convexity of the explorer; the two others, 1½ cm. long, start from the beginning of the posterior extremity of the former and surround the half circumference of the anus. After incision of the soft parts the urethra is opened longitudinally, then the membranous and prostatic urethra are divided. The urethra is then dilated by Hegar's bougies to the diameter of about 1 cm. A small tent is then introduced through the dilated urethra as far as the bladder and placed in the neck, which draws it slightly downward. The right index finger is then engaged in the urethra; it tears the mucosa within the limits of the neck of the bladder and urethra, passes into the plane of cleavage, and isolates the prostatic adenoma, which is then extracted in one or more pieces with forceps. The operation is then finished; a large Pezzer sound is put in place. Paul Delbet has operated under these conditions on an old man of 73 years of age; the operation was simple and rapidly done in 15 minutes. For penetrating wounds of the thorax Professor Delorme advocates early operation. He thinks that when there are marked functional signs such as physical signs of much hemorrhage, instead of being absolutely contraindicated, operation should be considered as plainly indicated, safe, and beneficial. In cases in which the symptoms are more grave, agonizing even, there is an indication for hastening surgical action, and by an opening which permits one to see everything to perform the surgical operation necessary under the circumstances. Lejars believes that immediate thoracotomy in certain wounds of the thorax may be an operation of safety. At the same time the formula of indications for operation is far from mathematically established; it is the aggravation of the symptoms after some hours which should determine surgical action. As soon as the first stage of cardiopulmonary shock is past, after the patient is warmed, calmed, and stimulated, if one finds that the pulse becomes weak again, pallor increases, and respiration becomes more and more difficult, direct intervention may cut short threatening symptoms. Rochard thinks that the operation is indicated only when the case is very grave. He believes that operations should be more numerous and there will be more successes. Michaux is disposed to operate in cases of grave hemorrhage and infection, but thinks that these cases are rarer than is generally thought. Demoulin thinks that in penetrating wounds of the thorax it is abundant hemorrhage that should guide the surgeon. One can judge of this abundance according to the quantity of blood which flows from the thoracic wound or from the mouth, or which accumulates within the thorax. When a wounded man bleeds abundantly and his life is in danger one should not hesitate; it is necessary to reach the source of hemorrhage whatever its origin. Souligoux thinks that the unanimous belief of all surgeons is this: in the immense ma-

jority of cases the treatment of choice in wounds of the thorax is immobilization of the patient, whose wound has been previously made aseptic and has been bandaged. But there are circumstances in which the surgeon should interefere by wide thoracotomy and pulmonary suture. Souligoux distinguishes four types: (1) when the hemorrhage is very abundant and the life of the patient is in immediate danger one should not think of operation; (2) when the general condition is serious the surgeon hesitates and asks himself what he ought to do; (3) when the hemorrhage, after remaining stationary, increases slowly and places the life of the patient in danger, one should undertake thoracentesis, and if the blood removed is pure a thoracotomy is necessary; (4) lastly, when the bleeding is not abundant and does not increase, and has no tendency to resorption, one should have recourse to a pleurotomy preceded by a resection of the thoracic wall. Thiery believes that one should operate only in very grave or desperate cases. One should first practise massive intravenous injections of serum, and if the condition of the wounded man still remains alarming one should lose no time and should go straight to the source of hemorrhage. Riche thinks that surgical operation in wounds of the thorax has but rare indications. It is the aggravation of the original conditions or the recurrence of a grave state after a less alarming condition which should arm the surgeon. Operation should not be decided on at a glance: one should not leave the wounded man or should see him at short intervals. Tanton believes that operation in wounds of the thorax should be indicated by physical signs of considerable and very rapid hemorrhage and continued aggravation of the functional symptoms; in particular, progressive weakening of the pulse and increase of dyspnea. Finally, the coexistence of a pneumothorax and the communication of the hemorrhage of the pleura with the exterior should indicate operation.

At the Medical Society of the Hospitals gastric radioscopy was the topic for discussion. The importance of radioscopic exploration for the diagnosis of gastric affections no longer needed demonstration, and Enriquez and Gaston Durand brought before the society an important contribution on the subject. The systematic examination by radioscopy of all subjects of gastric disease had shown the extreme frequency, especially among women, of those radioscopic images in which ptosis was associated with dilatation and atony. It was not the least of the items of progress shown by medical pathology in gastric disease which permitted one by the simple interpretation of a schema to determine not only the organic modifications of the stomach, but also functional disease of the muscular fiber almost at its beginning. One should insist on the facility with which most ptoses of the stomach were relieved by pressure exerted from below upward on the abdominal wall, and Enriquez has recommended a permanent retention of gastric ptoses by means of a pneumatic cushion attached to a belt. This method has given excellent therapeutic results. Gastric radiology rendered daily great services, but one should never forget that that all radioscopic observations had reference solely to a stomach filled with bismuth, and that the clinician might always object that the image, the movements, and evacuation of a bismuth stomach might not be identical with those of a stomach filled with food. One should bring to bear on the results of gastric radiology a certain amount of reserve. Béclère thinks also that the essential factor in the radiological exploration of the stomach was never to be contented with the morphological study of that organ, but always to join with it and associate with it the functional examination.

MEETING OF THE CANADIAN MEDICAL ASSOCIATION IN MONTREAL.

(From Our Canadian Correspondent.)

MONTREAL, July 10, 1911.

IN the Section of Surgery one of the most interesting papers read was that by Drs. J. Halpenny and John A. Gunn of Winnipeg. The subject matter of this paper was a description of the extirpation of the thyroid gland in monkeys. Investigators are not agreed as to the possibility of inducing myxedema in monkeys. Vincent and Jolly, for instance, after careful experiments, concluded that myxedema and cretinism must be due to causes more complex than simple thyroid insufficiency. Horsley, Murray, and Edmunds, on the contrary, declare as the result of experiments that it is possible to induce such conditions in monkeys. The majority of text books, on the authority of these well-known investigators, have taught that myxedema and cretinism are due simply and solely to thyroid insufficiency and that it is possible by removal of the thyroid to reproduce very accurately the clinical pictures furnished by these diseases. Halpenny and Gunn, in order to settle the point, have repeated experiments of simple extirpation of the thyroid in monkeys. All the monkeys used for the purpose of experiment were of *Macacus rhesus* species. The operations were much more serious in the hands of Halpenny and Gunn than in those of Vincent and Jolly. None of the animals operated on was wholly free from symptoms, although such was the case in several of the experiments of Vincent and Jolly. But, on the other hand, none of the animals had the symptoms of myxedema found by Horsley. It was suggested by Halpenny and Gunn that the difference in the species of the monkeys together with the difference of climatic conditions may have contributed to the results arrived at by them differing from those of Horsley and others who have come to the same conclusions as he came to. The entire paper dealing with this matter is is to be published by Drs. Halpenny and Gunn in "The Journal of Physiology," edited by Professor Schäffer.

Francis J. Shepherd, M.D., LL.D., Surgeon to Montreal General Hospital and Dean of the Medical Faculty of McGill University, read a brief paper giving a description of the rare condition of tuberculous osteomyelitis of the symphysis pubis.

Dr. C. E. Preston, Ottawa, reported several cases in which astragalectomy was performed, and from his experience with these formed the following deductions: That the operation is essential in advanced types of deformity of the foot with lateral deviation and that with further procedure and proper position it ensures a stable foot of improved appearance and able to bear the weight of the body.

A notable paper read in the Section of Obstetrics and Gynecology was that by Dr. William Gardner, Professor of Gynecology in the McGill University and Gynecologist to the Royal Victoria Hospital, Montreal. The title of the paper was "Common Mistakes in Gynecological Diagnosis." Dr. Gardner

said in part: "Accuracy in the diagnosis of pelvic conditions depends mainly on education of the sense of touch. This can only be attained by long and patient practice and by much opportunity for making examinations. Fewer mistakes would be made if attention were given to a few simple details. In this as in everything else in medicine, the grand safeguards against mistakes are system and method in case taking and examination. As a rule, a woman's pelvic organs cannot be satisfactorily examined if she lie on a bed or couch. A firm surface is needed as a table. The condition of the adjacent viscera, the bladder, and rectum is all important. With regard to the bladder my own practice, learned by personal experience, is to empty the bladder by catheter after the patient is in position on the table. The advantages of the procedure are: 1. We may note the presence or absence of discharges, such as that of gonorrhea, about the genitals, and their character, a very important kind of evidence which we would lose if we allowed the patient to pass water naturally. 2. There are many women who when asked to pass water immediately before a pelvic examination are unable from nervousness to do so. 3. We get an uncontaminated specimen of urine for examination."

Dr. Gardner warns against the use of the sound in physical examination for pelvic diagnosis. He thinks it a much overrated instrument. He points out that mistakes in the diagnosis of retroversion of the uterus are among the most frequent. Mistakes in overestimating the importance of deviation of the uterine axis from the normal are fairly common. Another mistake not infrequently made is the failure to recognize that in many women a displaced uterus is only one element, although certainly a very important one, in a case of more or less general descent or sagging of abdominal viscera, the condition of enteroptos. The sensations of the patient which suggest to her mind displacement of the uterus and which are apt to be accepted by the inexperienced physician, are often due solely to vaginitis. No more common mistakes are made than in the diagnosos of pregnancy, and this is a fatal mistake for the medical practitioner to make. It is even more difficult in the case of extrauterine pregnancy. Mistakes are made in the diagnosis of cancer of the uterus, and Dr. Gardner draws attention to the fact that the most significant symptom of the early stage of cancer of the uterus, cervix, or body is the appearance of a thin, serous, slightly turbid, sometimes pinkish at first, and for many weeks usually inodorous discharges. Dr. Gardner concluded by mentioning mistakes made which concern and influence the sexual hygiene of women. Girls should be taught sexual hygiene by mothers, and if not by mothers by medical men.

The diversion of those attending the meeting was well looked after. There were garden parties, receptions, and golf matches for those frivolously inclined or who needed relaxation from the sterner duties of the convention. An outing which combined instruction and pleasure was that made by the members of the association on the afternoon of the closing day of the meeting to Macdonald Agricultural College, situated some twenty miles from Montreal. This college, which is incorporated with McGill University, was founded, erected, equipped, and endowed by Sir William C. Macdonald, a prominent citizen of Montreal, whose gifts to McGill University reach a total of about $5,000,000. The objects of Macdonald College are: 1. The advancement of education; the carrying on of research work and investigation and the dissemination of knowledge; all with particular regard to the interests and needs of the population in rural districts. 2. To provide suitable and effective training for teachers and especially for those whose work will directly affect the education in schools in rural districts. The college property comprises nearly 600 acres and numerous magnificent buildings. There are the campus, with lawn, school garden, and recreation fields for students of both sexes. Experimental grounds, with plots for illustration and research in grains, grasses, and flowers. The small culture farm for horticulture and poultry keeping and the live stock and grain farm.

The members of the Association spent a most interesting afternoon inspecting farm dairies, gardens, poultry and buildings, and after partaking of a generous tea, betook themselves to Montreal, greatly impressed and interested by all they had seen. In every respect the meeting of the Canadian Medical Association in Montreal was a great success.

SANITARY MATTERS IN CEYLON.

(From Our Philippine Correspondent.)

June 15, 1911.

It is a pleasant surprise to find that through the persistent efforts of modern sanitation the inhabitants of the Island of Ceylon, in the Indian Ocean, are increasing in numbers, which is in marked contrast to the majority of islands of the Pacific, where the inhabitants are constantly decreasing on account of the diseases which the white man has introduced among them. In the sanitary service administered by the British in Ceylon is probably seen at its best that great nation's dealings with the dark-skinned races.

Colombo is the principal port, as well as the largest city in Ceylon. It has a population of about 140,000, of whom about 4,000 (?) are whites. Colombo is being rapidly transformed into a modern city, and probably shares with Manila the honor of being one of the cleanest in the Orient. The Sanitary Department of the island government is in charge of Sir Allan Perry, who has with him an able corps of European assistants. Hospitals have been established throughout the island. At Colombo a large general hospital is maintained, and also a small hospital of about twenty beds for the study of special cases of tropical disease. The general hospital is now being replaced by a modern two-story structure.

In Colombo the water supply is from a practically uninhabited watershed. The distribution is excellent, the service pipes being found in all parts of the town. Especially noteworthy are the many public hydrants in the poorer districts. Bacteriologically, the water is said to be fair. It contains amœbæ, but these are regarded as of the nonpathogenic variety. Night soil is deposited into pails, which are collected daily and the contents dumped into pits at the outskirts of the city. A modern water carriage sewer system is now under construction and 4,000,000 rupees ($1,333,333) worth of work has already been done.

The city of Colombo has probably better macadamized roadways and streets, and more of them, than any city of similar population anywhere in the world. The method of using asphalt and tar to fill the crevices on a broken-stone roadway is being extensively used, and has proven a satisfactory road

surface for the tropics, where the torrential rains are so destructive to roads built upon principles found satisfactory in the temperate zone. The roads generally throughout Ceylon are excellent. Oil is extensively used to keep down the dust. The railways are government-owned and managed, and the cleanliness of the passenger coaches and their general high state of sanitary maintenance would serve as an excellent example for the majority of the railroads of America.

A small medical school is maintained at Colombo, at which degrees are granted to Singalese. The equipment is fair and the school is probably superior to those of Singapore and Hongkong.

Recently a careful examination was made of many cases that had been diagnosed as pulmonary tuberculosis, and it was found that they were pseudotuberculosis. Cultures made in the laboratory showed the oidium and the absence of the of tubercle bacillus, so that it was possible to demonstrate accurately that the true diagnosis was bronchomycosis. The onset of the disease is almost identical with pulmonary tuberculosis. In a typical case there are an afternoon temperature, night sweats, gradual loss of weight, hacking cough, and frequently hemoptysis. Ascending doses of iodide of potassium to toleration usually produce a cure in from two weeks to several months. *Paragonimus westermani* infection is very rare, being usually found only in new arrivals, especially Japanese. Beriberi is also rare. No reliable data could be secured, but it is generally stated that the local grown rice is not polished and that most of the imported rice comes from Rangoon and is only slightly polished.

A rigid maritime quarantine is maintained against all countries infected with the usual quarantinable diseases. No cholera or plague exists in Ceylon. The effectiveness of the quarantine inspection is well shown by the fact that while Ceylon is only a few days' steaming distance from India, that great reservoir of world scourges, and vessels with cases of cholera and plague frequently arrive, yet so far neither of these diseases has gained a foothold. In this connection it is interesting to note the observations of Prof. Castellani, who states that small outbreaks of ten to thirty cases of a disease resembling cholera frequently occur, in which vibrios are recovered from the stools which are culturally almost identical with the cholera vibrios of Koch. Rigid sanitary measures are at once invoked, and usually no further spread takes place.

In the hospital for the study of special cases of tropical disease there was a case of tinea imbricata, which had been experimentally produced from a culture taken from a case infected in the ordinary way. Another interesting case was one of yaws that had been experimentally caused in a typical tertiary syphilitic. Some of the material from a yaw excresence was injected under the skin of the recipient, much in the same manner as a vaccination against smallpox is done by the hypodermic method. In approximately two months the typical eruption of yaws appeared upon the face and arms. This very positive experimental evidence would seem to settle the controversy which has continued for so many years as to whether or not yaws was a manifestation of syphilis. Dr. Castellani reports that salvarsan (606) has proven very successful in the treatment of yaws, and he is of the opinion that, if anything, it is more of a specific in yaws than in syphilis. He has also tried the drug in leprosy but with negative results.

No great progress has been made in Ceylon as yet in stamping out leprosy. The government is now considering the plan at present in force in the Philippines, of rigid segregation. Nastin has proven a failure in the treatment of leprosy in Ceylon. Chaulmoogra oil is regarded as the best remedy which has been used up to the present.

Progress of Medical Science.

Boston Medical and Surgical Journal.

July 13, 1911.

Some Municipal Hospital Problems. C. A. Drew.
Practical Experience with My "Duodenal Tube." M. Gross.
The Relation of Clean Streets to Tuberculosis. S. H. Stone.
Treatment of Bone Tuberculosis at the Crawford Allen Hospital. R. Hammond.
A Case of Rectal Bilharzia. C. N. Meader.
Clinical Note on Potts' Disease. G. C. Moore.

Municipal Hospital Problems.—C. A. Drew discusses the problem of private rooms for pay patients who do not pay their physicians or surgeons. The rules of the Boston City Hospital permit the visiting and consulting staff to send their own patients to private rooms in the hospital and to charge their usual professional fee providing the hospital bill for board and care has been paid, but do not permit a professional bill to be rendered to patients who apply directly to the hospital for a private room and accept the professional service of such physician or surgeon or assistant surgeon as is on duty at the time. This is essentially the same regulation as is authorized by the rules of Worcester City Hospital.

Duodenal Tube.—M. Gross describes the diagnostic and therapeutic applications of this apparatus.

Clean Streets and Tuberculosis.—S. H. Stone recommends the following methods of street management: The smooth paving and regular cleaning of all streets, not by dry sweeping, but by flushing, or, if this is not possible, by sprinkling before sweeping. Exactly what can be done in winter, when flushing or sprinkling is not feasible, is a problem not yet fully worked out. A minimum height of buildings and a maximum width of streets wherever possible, in order that those unequaled germ-destroyers, the sun's rays and fresh air, may have a chance to do their excellent work. The immediate removal of all rubbish and garbage with the consequent lessening of danger from flies.

Bone Tuberculosis.—R. Hammond states that in addition to the outdoor life and the good food he would emphasize sea bathing, carried out systematically, as an important factor in the treatment of these cases. It is a most valuable tonic, and, as the children improve in health, apparatus can be dispensed with at an earlier date than was formerly supposed.

Rectal Bilharzia.—C. N. Meader reports a case from which the practical lesson to be learned is the great importance of a microscopical examination in all cases of recurring diarrhea or bloody stools occurring in patients who have been in the East or in the tropics, since not uncommonly the diagnosis may be established in this way where the true condition would otherwise remain quite unsuspected.

Potts' Disease.—G. C. Moore reports a case illustrating the value of unchanging fixation and the durability and effectiveness of a well cared for plaster of Paris jacket.

New York Medical Journal.

July 15, 1911.

On the Determination of the Cause of Death and Some Cases of Sudden Death. H. Oertel.
Health Department Control of Venereal Diseases. P. A. Morrow.
Automatism in Insanity. T. H. Kellogg.
Salvarsan ("606") in Syphilis; a Criticism. C. F. Marshall.
A Warning Concerning the Use of Salvarsan. W. C. Slusher and E. B. Burchell.
The Relation of Uterine Fibromyoma to Thyroid Enlargement. J. R. Eastman and H. K. Bonn.

Report of a Bilharziosis Case in Panama. W. Baetz.
Some Medical Notes Taken in Frankfort-on-the-Main. D. W. Montgomery.

Determination of Causes of Death.—H. Oertel states that one should emphasize the necessity of scientifically accurate clinical records for the proper understanding of anatomical findings. No greater mistake can be made than to expect a pathological anatomist to arrive at correct conclusions without full knowledge of the clinical history. It is sometimes thought by those not well informed that the objective anatomical evidence ought to be separated and not biased by the largely subjective clinical data. But it is forgotten that one is not dealing with mathematical problems, but with a mass of evidence that must be grouped not only in what appears to the investigator as essential and unessential, and in logical sequence, but, much like the work of an artist, plastically reconstructed.

Control of Venereal Diseases.—P. A. Morrow states that the department of public health has a legal right to control cases of venereal disease. The most valuable prophylactic is education of the public. The health board should secure a census of venereal morbidity.

Automatism in Insanity.—T. H. Kellogg discusses the rationale of automatism in the different forms of insanity.

Salvarsan.—C. F. Marshall believes that there are few indications for the use of this drug and that its dangers and inconveniences outweigh its benefits.

Warning Concerning Salvarsan.—W. C. Slusher and E. B. Burchell state that the necrosis and infection following the use of salvarsan are the result of carelessness or disregard of asepsis.

Fibromyoma and Thyroid.—J. R. Eastman and H. K. Bonn report a case in which the amelioration of the thyroid enlargement and general symptom-complex, following the operation for the removal of the uterine fibromyoma, indicates that in this one case at least, the fibromyoma had an obscure causal or other relationship with the thyroid enlargement and its symptoms, the removal of the uterus serving a marked general as well as local therapeutic end.

Bilharziosis.—W. Baetz reports a case of dysentery caused by the bilharzia occurring in the Canal Zone.

Frankfort-on-the-Main.—D. W. Montgomery describes his visit to this city and chiefly his impressions of Professor Ehrlich and his work.

Journal of the American Medical Association.

July 15, 1911.

The Present State of Our Knowledge of Acute Renal Infections. With a Report of Some Animal Experiments. G. E. Brewer.
Vacuum Fixation of the Lens and Flap Suture in the Extraction of a Cataract in Its Capsule. V. H. Hulen.
A Clinical and Histopathological Study of Angiokeratoma of the Scrotum. R. L. Sutton.
Intraocular Neoplasms, with a Report of Five Cases of Neoplasm and One of Simulated Neoplasm. F. P. Lewis.
The Immediate Removal of Traumatic Cataract. J. A. Donovan.
The Production and Concentration of a Serum for Rocky Mountain Spotted Fever. Preliminary Note. P. G. Heinemann and J. J. Moore.
The Prophylaxis and Treatment of Summer Diarrhea. A. F. Hess.
Distortions of the Visual Fields in Cases of Brain Tumor: Second Paper. Dyschromatopsia in Relation to Stages of Choked Disk. H. Cushing and G. J. Heuer.
Clinical Deductions in the Study of Tuberculosis. W. Porter.
Fine Silver Wire as Drainage Material. R. M. Harbin.
The Use and Abuse of Digitalis in Disease of the Heart. R. Abrahams.
Pregnant Double Uterus. A. E. Acher.
A Case of Cerebrospinal Meningitis. C. C. Snyder and W. R. Tyndale.

Acute Renal Infections.—G. E. Brewer. See MEDICAL RECORD, July 8, page 99.

Extraction of Lens.—V. H. Hulen describes his method of cataract-extraction by vacuum fixation and extraction of the lens in its capsule.

Angiokeratoma of the Scrotum.—R. L. Sutton states that the evidence is almost conclusive that these little vascular tumors of angiokeratoma are simply the result of increased blood-pressure in the superficial venous capillaries, lacking elasticity, as is generally the case in the scrotum. They are nature's attempt to prevent further dilatation.

Intraocular Neoplasms.—F. P. Lewis states that malignant intraocular growths in children are, as is not the case elsewhere, in their beginnings encapsulated. If they are discovered early enough, therefore, life may be saved by enucleation, but if not discovered until the orbital or extraorbital tissues have become involved a horrible death may be expected.

Traumatic Cataract.—J. A. Donovan advises in case of a traumatic cataract, if the patient is seen immediately or soon after the injury, after recovery from the shock and before the local reaction has made careful work almost impossible, that the lens should be extracted. This can be done under local anesthesia, though a general anesthetic is preferable in many cases. If local reaction is already marked one should wait from four to six days, when it subsides, and then remove the lens before the secondary inflammatory symptoms have become severe. A general anesthetic is then necessary. Breaking up the lens and washing it out may succeed, but extraction, he thinks, is in many cases better.

A Serum for Rocky Mountain Spotted Fever.—P. C. Heinemann and J. J. Moore confirm the results obtained by Ricketts and Gomez, who had shown that the horse is susceptible to inoculation with spotted fever virus and that after recovery its serum has protective properties.

Summer Diarrhea.—A. F. Hess discusses the well-known measures to be taken in the prophylaxis and treatment of this condition.

Dyschromatopsia in Brain Tumor.—H. Cushing and G. J. Heuer state that out of the 123 cases in their tumor series, in which perimetric observations could be made, fifty-three showed simple color-interlacing or inversion with more or less constriction of the field boundaries. In ten of the fifty-three cases the dyschromatopsia either actually preceded any recognizable ophthalmoscopic change in the eye-grounds or accompanied the most incipient stages of choked disk. These distortions of the color boundaries, therefore, promise to be of some service in the making of a more precocious diagnosis of an increase of intracranial tension than is commonly ventured on. Thus, in a number of cases of early tumor extirpation, color inversion and interlacing, in addition to attacks of Jacksonian epilepsy, were the only indications of the lesion.

Pulmonary Tuberculosis.—W. Porter recommends in pulmonary tuberculosis the use of cacodylate of sodium and the inhalation of iodine evaporated in a water bath.

Silver Wire for Drainage.—R. M. Harbin recommends the use of wicks of fine silver wire for abdominal drainage after operations for acute appendicitis.

Digitalis in Heart Disease.—R. Abrahams discusses the indications and contraindications for the use of this drug.

Pregnant Double Uterus.—A. E. Acher reports a case of this anomaly.

Cerebrospinal Meningitis.—C. C. Snyder and W. R. Tyndale report a case of epidemic meningitis successfully treated with the aid of the specific serum.

The Lancet.

July 8, 1911.

A Clinical Study of Cardiovascular Degeneration. J. M. Bruce.
Outlines of Medical Hydrology. R. F. Fox.
Resection of the Posterior Nerve Roots of Spinal Cord. Professor Forster.
On the Division of the Posterior Spinal Nerve Roots: (I) for Pain; (II) for Visceral Crises; (III) for Spasm. E. W. Hey-Groves.
Note on Three Cases of Fibroid Tumor of the Uterus Spontaneously Fatal. A. H. N. Lewers.
The Therapeutic Effects of Carbon Dioxide Snow. Methods of Collecting and Applying It. J. Hall-Edwards.
Three Cases of Tooth-Plate Impacted in the Esophagus and Pharynx; with Special Reference to the Operation of Esophagotomy. L. E. C. Norbury.

Mice Immunized Subcutaneously Are Resistant to the Implantation of Cancer in Internal Organs. W. H. Woglom.

Cardiovascular Degeneration.—J. Mitchell Bruce states that in some individuals the materials of the cardiac and arterial tissues are of inferior quality; these are instances of inherited dystrophies, producing in part the so-called "family heart." But in the larger proportion of cases the degeneration of the cardiovascular tissues is the result of the action of extrinsic causes—lead, alcohol, the products of bacterial activity, and bacteria themselves; the products and other consequences of disordered metabolism and syphilitic and other parasites.

Medical Hydrology.—R. Fortescue Fox notes that, while modern hydrotherapy has taken a prominent place in the medical practice of nearly every civilized country, in England it is still comparatively unknown.

Resection of Posterior Spinal Nerve Roots.—Professor Forster states that the gastric and intestinal crises in tabes are caused by an irritation of the sensory sympathetic fibers of these organs which enter the spinal cord through certain posterior thoracic roots. Supposing this view to be correct, the crises would cease after the resection of these roots. The operation has now been performed altogether 25 times. In 20 cases the operation was successful.

Division of the Posterior Spinal Nerve Roots.—E. W. Hey-Groves states that for the relief of pain this operation is a somewhat uncertain procedure. For the relief of visceral crises it holds out the only prospect of radical cure. In cases of spasm associated with lesions of the pyramidal tract the operation has the largest field of usefulness.

Death from Fibroids of the Uterus.—A. H. N. Lewers reports three cases as follows: A case of fibroid spontaneously fatal from hemorrhage; a case of fibroid spontaneously fatal from pulmonary embolism, and a case of large interstitial fibroid of the uterus, with sudden collapse, heart failure, and death.

Carbon Dioxide Snow.—J. Hall-Edwards describes the apparatus for preparing and the technique of using this substance.

Tooth-Plate in Pharynx and Esophagus.—L. E. C. Norbury states that in adults the commonest form of foreign body to become impacted in the esophagus is a tooth-plate, and since such plates are often irregular in outline, possessing sharp hooks in many cases, for successful removal esophagotomy is usually indicated. These tooth-plates are generally swallowed during sleep or while the patient is having a fit. Before deciding to open the esophagus in such a case some indication as to the shape and size of the plate may be obtained by interrogating the patient. External palpation may disclose its presence, a view of it may be possible by direct esophagoscopy, or esohageal forceps may detect it. Further, the position, size, and shape of the tooth-plate may be ascertained by means of a skiagram. It may be possible to remove small tooth-plates which do not possess sharp hooks through the mouth with the aid of an esophagoscope, either *in toto* or, if necessary, after division with some suitable instrument. If such attempts fail, however, esophagotomy should be promptly undertaken.

Cancer Immunization.—W. H. Woglom concludes from his experiments that the immune state is one of general distribution throughout the organism and not of local occurrence at the site of the immunizing inoculation, without wishing, however, to have this conclusion applied to the zonal immunity described by Sticker.

British Medical Journal.

July 8, 1911.

The Necessary Influence of the Medical Profession in the Home, the School, and the State. C. Dukes.
The Mechanical Control of Pneumothorax During Operations on the Chest, with a Description of a New Apparatus. H. M. Davies.
A Note Concerning the Treatment of Tuberculosis by "Radioactive Iodine and Menthol." L. Robinson.
On Cesarean Section; with Notes of Ten Cases. C. E. Purslow.
On the Treatment of the Excessive Vomiting of Pregnancy. J. H. Martin.
The Treatment of Aortic Aneurysms. A. Abrams.
Hypertrophied Papillæ of Morgagni Causing Rectal Symptoms. A. C. Magarey.

The Influence of the Medical Profession in the Home, School, and State.—C. Dukes believes that the aim of paramount necessity in the efficient rearing of the young for their life work is the sagacious application of the principles of hygiene to school lift. This can only be accomplished when the teacher is as adequately and specially equipped for his service as the soldier, the sailor, the lawyer, and the doctor.

Pneumothorax.—H. M. Davies describes a new apparatus for the mechanical control of this condition during operations on the thorax.

Radioactive Iodine and Menthol.—L. Robinson describes the results obtained by Szendeffy, Kertez-Aba, and Bernheim in the treatment of pulmonary tuberculosis by means of this substance. It is claimed that this new drug, which is said to act by virtue of the volatility of radium and its elimination by the lungs, acts as follows: it destroys the tubercle bacillus; it has a powerful action on streptococci, and it improves the general condition of the patient by increasing vigor and weight. The drug is given in doses of 1 c.c. by intramuscular injection in the gluteal region.

Cesarean Section.—C. E. Purslow presents brief notes of ten cases of this operation.

Hyperemesis Gravidarum.—J. H. Martin recommends the following as the important point in the prophylaxis and treatment: Relax the bowels at least once a day; prevent oral sepsis; good, plain, well-cooked food is to be daintily served at regular hours; kidneys and skin should be kept active; the patient should take gentle exercise in the open air daily if weather is at all suitable. When hyperemesis gravidarum has developed the following measures are to be employed: Wash out the stomach; keep the bowels, kidneys, and skin active; give nutriment at regular hours, and fresh air night and day.

Aortic Aneurysm.—A. Abrams states that by percussion of the seventh cervical spine one can cause contraction of the normal aorta, and this may act as a symptomatic cure of aortic aneurysm.

Hypertrophied Papillæ of Morgagni.—A. C. Magarey discusses the influence of these in the production of irritation, pain, and the sensation of mass in the rectum, and describes the treatment by means of cauterization.

Berliner klinische Wochenschrift.

July 3, 1911.

Indications for the Vaccine Treatment of Disease.—According to Reiter vaccine therapy should never be resorted to in general infections. The best results are obtained in localized suppurations of all kinds and local tuberculosis and local infections in general. An autogenous vaccine gives the best results. In a localized *Bacillus coli* infection an autogenous vaccine is absolutely indicated. If the case is urgent, or if an autovaccine cannot be prepared, a polyvalent vaccine should be used. One should begin with small doses, seeking to avoid a reaction *in situ* at the outset. When a slight reaction does appear the dose should be cautiously increased. The dose should be so measured that the negative phase should not last over 24 hours. If it last longer the dose was too large. At least five days should elapse between injections.

Escape of a Sacral Teratoma Through the Rectum.—Honigmann reports a case of this sort and finds but one similar case in literature. His patient was a woman aged 43. There was no history pointing to a tumor, and the patient sought the clinic for rectal tenesmus. Even with

the finger and proctoscope no evidence was obtained which pointed to a tumor or other serious condition. The diagnosis was proctitis. Finally a body was expelled which before its passage was believed to be impacted feces, but to the woman's great terror resembled an animal. The rectum gave no further trouble. The mass expelled was small to have caused as much disturbance—only 2.3 cm. in length. It was kidney-shaped and covered with what seemed to be integument in which abundant hairs were present of 1 cm. in length; while at one pole of the mass the hairs formed a long tuft 14 cm. in length and felted. The integument also contained abundant sebaceous and sweat glands. The tumor proper showed a cavernous structure, and there were no other teratological tissues. The growth was therefore a dermoid. The duplicate case mentioned occurred in von Bergmann's practice. The tumor was not expelled but required extirpation per rectum. During straining efforts the tuft of hair used to appear at the anus. This tumor was also a dermoid. Danzel reported a case resembling the two preceding in some respects, but it did not originate like a sacral tumor, being in front of the rectum. It contained bone and other embryonal structures. The patient died of peritonitis following extirpation of the mass. The literature of sacral teratomata is very large, so that failure to report cases cannot be held responsible for the very small number of interrectal tumors in literature.

Blood Finds in Röntgenologists.—Von Jazic and two others representing Prof. Van Noorden have studied the blood of ten men who have used *x*-rays continuously for years. No less than three cases are on record in which röntgenologists have died of lymphatic leukemia, and this can hardly be accounted for by coincidence. There is also a similar case of a chemist who worked with radium. The blood counts do not reveal anything startling, but the average leucocyte count is somewhat lower than normal. The number of lymphocytes is considerably above the average, while that of the polymorphous neutrophiles is correspondingly lower. Most striking of all the changes is the small number of acidophiles, which were totally wanting in several cases. Erythrocytes and large mononuclear leucocytes showed no typical changes. The relationship of the blood picture to that of lymphatic leukemia is of course obscure.

Münchener medizinische Wochenschrift.

June 27 and July 4, 1911.

Pancreas Therapy of Diabetes.—Lesche, who has already published one study of this subject, sums up his work to date as follows: Fresh pancreas extract, which increases the excretion of sugar in diabetic men and animals, has also a glycosuric and toxic—indeed lethal—action on normal animals. Unactivated pancreas extract does not exert this action, while partly activated extract shows a weakened action. Hence there can be no experimental foundation for such a plan of therapy. Not only does an active pancreas extract increase the glycosuria, but it causes abscesses and disturbance of the general health. Even when given by the mouth it increases the glycosuria. The theory of an internal pancreas secretion presiding over sugar metabolism has never been substantiated. The entire pancreas may be destroyed without causing diabetes and conversely the latter may exist side by side with a fully intact pancreas. The real source of the essential factor in sugar metabolism should be the nerve centers.

Puncture Glycosuria.—Von Brücke recalls that Blum, who discovered adrenalin glycosuria in 1902, called attention to the resemblance between the latter and puncture glycosuria so called. It was next learned that after extirpation of the suprarenal bodies puncture in the floor of the fourth ventricle no longer caused glycosuria. Then it was asserted that after the puncture of intact animals the blood serum contained adrenalin as shown by the sensitive frog's iris test; but when the tests were repeated with the utmost precautions negative results came in evidence and it became necessary to study the entire phenomenon of puncture anew. The author found that hyperadrenalemia is not a constant symptom after the sugar puncture, but that it does develop in a good sized proportion of cases. Whether the negative results are due to defective laboratory technique or whether there is an individual or group equation connected with the rabbits tested must be determined by future study.

Pharmacological Justification for an Intravenous Adrenalin Therapy.—According to Straub we are approaching a solution of this problem. We know that adrenalin exerts an action on the pupil, the blood-pressure, the sugar metabolism, the intestinal and uterine activity, the cardiac activity, etc., etc. It therefore becomes difficult to confine its action to one or more organs. As a rule the less the collateral activity in proportion to the specific or main activity the greater the utilizability in therapy. Since adrenalin causes vasoconstriction and at the same time stimulates the cardiac accelerator nerves it appears to have a main action on the blood-pressure. But, in addition to its collateral effects, adrenalin, like all alkaloids, tends to produce a cumulative action. When given intravenously, however, we obtain a transitory action, manifested chiefly in a principal direction. Repetition of injections does not appear to favor cumulation, for the action depends much less on the quantity injected than on the concentration of solution used. It has been found that with a certain concentration adrenalin may be almost continuously infused into the veins, with the production of a steady elevation of blood-pressure which does not exhaust the susceptibility of the organism. Given this concentration the adrenalin is somehow rapidly destroyed in the body. Hence the drug may be indicated in permanently low blood-pressure.

Phosphaturia.—Schlagintwelt writes at great length on this subject, and as he conducts a sanatorium for urinary diseases his facilities for such a line of research are unusual. Since more lime is eliminated than phosphoric acid, he prefers the term calcariuria to phosphaturia. Again, the latter condition must be associated with carbonaturia, since it represents in reality elimination of the excess of alkaline earthy salts from the body, and these salts occur both as phosphates and carbonates. phosphaturia can be correctly estimated only at body warmth: that is, in urine freshly voided. Every hour it stands means increasing bacterial alteration of the urine. Quantitative analyses made minutely and at the analyst's leisure are sources of error. One needs only a Bunsen flame, acid, litmus, and the microscope to appreciate the type of phosphaturia. Of these types the author enumerates no less than five. In Type I the urine is voided clear, clouds on boiling, clears with acids. Its reaction when voided may be neutral, or weakly acid or alkaline. We find it late in the day in the healthy who eat freely of proteid, but we also find it in brain workers, neurasthenics, and the insane. This type also represents a degree of mild phosphaturia. In Type II there are more phosphates, the urine is alkaline, and the phosphates and carbonates fall of themselves when they leave the urinary passages. The urine is milky and becomes more so on boiling. Acid clears it. This type of phosphaturia is known as the manifest, because it occurs spontaneously, while Type I, which is evident only after boiling, is known as latent phosphaturia. Type III represents a higher degree, the phosphates being present as a crystalline sediment. The fourth type is that which occurs in inflammatory affections of the urinary passages, the

crystals being mixed with mucus. The fifth type represents the urine of phosphatic calculus. These clinical types naturally throw no light whatever on the intimate nature of phosphaturia. Given an alkaline urine, as from bacterial action, phosphatic precipitation is inevitable. There should be an essential phosphaturia which is independent of the mere accidental reaction of the urine, and which further is independent of the diet, since alkalinity of the urine is conditioned by the diet. The author here states in advance of proofs that essential phosphaturia is in reality a renal neurosis. Given a general neurasthenic state, then the kidney condition is expressed as phosphaturia. A functionally weakened kidney excretes a urine richer than normal in phosphates. The author devotes several thousand words to expanding this idea. Phosphaturia may have a most innocent or a most malignant significance.

The Wheat Flour Treatment of Diabetes.—Blum compares this with the oatmeal diet and similar dietetic plans. These cannot be employed in routine fashion, nor can they be left to the discretion of the patient. The wheat flour diet is naturally very practical because readily carried out. Many dishes may be prepared from it—bread, toast, rolls, pancakes, macaroni, pastry, and what not. Oatmeal can be served up in but few forms. Recent experience with 35 cases of diabetes has taught the writer that wheat flour diet is superior to all other plans for reducing the quantity of sugar in the urine. It is simple, rapid, and safe. In using it we must not go by a fixed schedule, but modify it according to the exigencies of the individual case. The best results are seen in medium and severe cases in which acidosis is threatened. It is best to reserve the diet for cases which can be controlled perfectly all the time, but this holds good for all dietetic plans.

Bone Cysts.—Brade reports in detail three cases of bone cysts. In one (Case III) the formation could be traced to an osteomyelitis, but the origin of the others was obscure. One could exclude parasites (echinococci, cysticerci), arthritis deformans, Barlow's disease, and callus as causes. For one of the obscure cases (Case II) it may be assumed that it resulted originally from softening of a neoplasm, probably an inflammatory neoplasm. The other case (Case I) could not be thus accounted for, and, reasoning from analogy only, the most plausible supposition is that it originated from an ostitis fibrosa, for this is the most common antecedent of bone cysts. Clinically Case I was a cyst of the trochanteric region of the femur, which made a cripple of the patient. Two years ago he had sustained a injury, from a fall, in the opposite thigh. There was no further history save that the trochanteric region in the supposed uninjured leg began to be painful and the muscles to atrophy. In the second patient the upper epiphysis of the right tibia was the seat of a cyst. There was no history of trauma. Most of the symptoms were referred to the knee joint which was swollen, tender, and partly immobilized. The patient was a cachectic woman. There was a suspicion of tuberculosis. The patient withdrew from observation. The third patient had osteomyelitis, which affected several parts of the skeleton. The cyst formation occurred only in the lower part of one tibia. The *x*-ray is, of course, an ideal diagnostic resource.

Deutsche medizinische Wochenscrift.

July 6, 1911.

Function of the Spleen.—Asher holds that the spleen is an organ for iron metabolism, since it retains the iron which becomes set free by tissue changes for further use. This function has been descovered through animal experiment and confirmed in the case of mankind. Through it we comprehend the nature of leucemia, Banti's disease, and other pathological processes. When the spleen is removed from animals a diminution of the number of erythrocytes occurs with certainty, provided the ingesta are poor in iron.

Enuresis Nocturna and Spina Bifida Occulta.—Peritz describes the so-called occult spina bifida, otherwise known as myelodysplasia, and the clinical picture which accompanies it. The latter is not very clean cut, comprising various congenital anomalies in the sacral region and lower extremities with enuresis nocturna and certain paresthesias. When confronted with enuresis of protracted type which cannot be classed as functional we should suspect the presence of myelodysplasia. The author's personal material of enuresis has consisted of adults, soldiers, and others. In 63 per cent. these patients show congenital anomalies in the sacrococcygeal region, including hypertrichosis, lipomata, fistula-like depressions, various asymmetrics. The feet are often affected (syndactylism, flat foot, pes cavus) but naturally not in the soldiers studied. Thermoanalygesia has been noted. However, occult spina bifida can readily be demonstrated by röntgenography. Enuresis of obstinate type doubtless occurs in degenerate stock in which there is no osseous lesion, so that it is difficult or impossible to show that in any given case the spina bifida is the efficient cause of the enuresis; but there can be no doubt that the two are very often associated. Such cases are not amenable to ordinary drug therapeutics, psychotheraphy, or education. Heubner recommends mechanical measures (extension) to antagonize a supposed pressure on the cauda equina. Cathelin injects up to an ounce of saline infusion into the cauda equina, which has the same effect. A plastic operation should naturally effect a radical cure.

Causal Therapy of Glycosuria and Diabetes.—Funck states that the disturbance of carbohydrate metabolism is not a single process, but comprises at least two types, viz., disturbance of immobilization and disturbance of oxidation. Among the causal elements of diabetes should be mentioned gastric and intestinal affections, which are sometimes obscure in character. By treating these affections first the patient may improve or permanently recover, as shown by acquired and maintained carbohydrate tolerance. Cases are cited in which treatment directed to these affections (gastritis, diarrhea, constipation, etc., etc.) caused a disappearance of sugar in the urine. The diabetic regimen was strictly observed.

Study of Simultaneous Bilateral Tubal Pregnancies.—Paul Launay and Seguinot have observed a case of bilateral tubal pregnancy in which one tube contained twins, three fetuses of the same age being found at operation. This is the only undoubted case of this condition published up to date. There are found in the literature fourteen cases of bilateral tubal pregnancy, but none with twins. The histories of these fifteen cases are given. For the existence of such a condition one must have lesions of both tubes so as to prevent the passage of the ovum through the tube, at the same time that the mucous membrane of the tube is capable of lodging a normal ovum. Impregnation must occur in two ova at the same time and one of them must have a double germ. The diagnosis of this condition has never been made until operation was undertaken. In the author's case the diagnosis was appendicitis. Mere recurrence of pregnancy, with fetuses that were not alive at the same time is not included in this category. Most of the patients were primiparæ and had bilateral tubal inflammations. The author's case was a nullipara without any inflammatory pelvic condition and in perfect health. One tube ruptured three weeks before the other, giving rise to the diagnosis of recurrent appendicitis. The only possible treatment of this condition is removal of both tubes.—*Revue de Chirurgie.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE TIME AND PLACE OF EXAMINATION.

The time and place of examination may be discussed from two points as viewed separately by the agent and the examiner.

The agent considers the convenience of the applicant in making the appointment for the examination. If, in his anxiety to close the deal, he may occasionally go so far in trying to please his applicant as to make arrangements prejudicial to the interests of the company, he should not be criticised too severely, for even after he has induced his applicant to sign the application after some very hard work, he understands only too well that the latter may experience a change of heart at any minute through misgivings and lack of conviction, or he may be persuaded by friends to seek insurance elsewhere, or yield to a tempting offer from a rival agent before the transaction is consummated by the payment of the premium. It is therefore most important to him that the arrangement decided on be promptly and efficiently carried out by the examiner or, if any change is thought advisable, that he be notified by the examiner at once. In the event of failure to finally place the policy, the agent is naturally apt to blame the examiner if, perchance, the latter has not strictly observed all details of the appointment, especially in regard to the time agreed upon.

The examiner naturally prefers that the applicant be brought to his office, not solely to make his own work easier, but rather because the conditions there are more favorable for a thorough examination than those found at the residence or place of business of the applicant. It is a good idea for the examiner to suggest this to the agent, and the latter will usually cheerfully agree to do so whenever the circumstances permit. If, however, the agent finds he cannot meet this wish through the unwillingness of the applicant or because he has such a slight hold on him that he does not dare take any chances, the examiner will assist him and facilitate his work by attending promptly to whatever appointment is made.

Promptness is most highly appreciated by both the agent and the company, as a certain amount of business is lost through delays from different causes, the amount being so large, in fact, that the examiner cannot be advised too strongly against failing to meet the applicant exactly at the time arranged for, even if a change as to place has been made in accordance with the exceptions referred to later on.

Occasionally, especially in small places where all are more or less acquainted with each other, the examiner will be on friendly enough terms with the applicant to venture on tactfully suggesting that the necessary requirements can be fulfilled more comfortably and satisfactorily at his office, in case it has been arranged to have the examination at the applicant's residence or place of business. The companies prefer to have examinations made at the examiner's office whenever possible, having in mind the greater privacy, absence of noise, and the creation of a more confidential frame of mind in the applicant. The examiner, however, should never attempt to transfer the field of operation to his office unless he is quite sure of his ground, as the changing of the plans of the agent is a delicate matter. We would particularly advise the examiner not to request the applicant to call at his office and then wait for him to come regardless of the time already set for the engagement, as such a course is almost sure to lead to friction with the agent. If for some good reason the examiner believes that another place should be chosen or if he finds himself unable to keep the appointment, he would better notify the agent to change the arrangement to a more acceptable one rather than to assume the responsibility himself. Furthermore, if the examiner knows that he cannot carry out the plan adopted by the agent, it will lead to a happier relation between them if the former explains this when the application is presented.

It is the earnest wish of the medical directors, generally, to have all examinations made under conditions which are favorable to precise and complete findings. If, then, an examiner learns that the examination is to be made with so much noise and bustle about that it will amount to nothing more than a farce, his action will be upheld if he insists on the selection of a suitable place, free from noise and intrusion. In addition to quiet there should be privacy, and if this is not possible at the appointed place, the examiner should not hesitate to request some other arrangement. He will usually, however, by the exercise of a little tact, succeed in securing the desired privacy at the appointed place. The privacy should be complete, and this means the exclusion of any third person, no matter how closely related, and also the agent. In the event of the applicant being a woman, the husband or a woman friend may be present during the physical examination, but this should never be permitted while asking the questions on the application blank. The examiner will readily understand the importance of privacy in the examinations, as he is aware that some of his questions will be of such a personal nature that they may not be frankly answered in the presence of a third person. He knows still further that he will need the help of privacy to gain the complete confidence of the applicant before he can elicit certain kinds of information which applicants are prone to conceal.

Operations for the Relief of Gallstones and Their Importance in Medical Selection.—Homer Gage says that in the report of the Massachusetts General Hospital, in the list of major surgical operations performed during the year 1909, operations upon the appendix occupy first place, those upon the uterus and its appendages second, closely followed by those upon the gall-bladder and bile ducts. At the Boston City Hospital and the Roosevelt and Presbyterian hospitals in New York a similar proportion obtained. Dr. W. J. Mayo stated that in St. Mary's Hospital, Rochester, Minn., the relative proportion of operations was: appendix, 345; gall-bladder, 143; ovaries and tubes, 98; stomach, 77. In view of these figures it is important to find out something about the effect of these operations on the future life and health of the individual who has undergone them. Statistical evidence from an insurance standpoint is lacking. From this point of view the effect on the patient's probable expectation of life is more important than the immediate effect of the operation.

The most favored theory to account for the formation of gallstones is the histological or mucous-membrane hypothesis, which conceives the cholesterin and calcium of the bile to be formed entirely by the mucous membrane of the gall-bladder and bile ducts, a catarrhal inflammation increasing their production. Cholelithiasis is really the consequence

of bacterial infection and does not belong to the group of diseases of degeneration. In its inception it is a purely local infection and in its progress represents a pathological condition due to mechanical causes. If unrelieved naturally or by operation it will culminate in permanent impairment of neighboring structures or in acute destructive inflammation of the gall-bladder.

If this theory of the formation of gallstones be accepted, and it is universal, then it is fair to assume that if by surgical intervention the infection and its products are removed before the secondary changes such as cholangitis, chronic pancreatitis, and cancer has developed, a permanent restoration to health moy be accomplished. The only risn of a reformoation is when fragments have been left at the time of the operation or suture or iigament material has betn left in the gall-bladder and remains unabsorobed.

As to effect on the health of the individual who has undergone an operation for gallstones, Kehr provides figures which seem to show that between 70 and 75 per cent. of all cases may be fairly considered cured. Mayo Robson and the Mayo brothers supply equally satisfactory statistics. These, of course, are statistics representing the results of the most expert operators. Homer Gage's results representing the average are not so favorable as those of the operators referred to above, but still satisfactory, and he quotes and agrees with Richardson, who says that the operation is as certain to be immediately and permanently successful as any operation in surgery. Further, he suggests that a two-year interval of complete freedom from abdominal or digestive disturbances is sufficient to establish the probability of a permanent immunity. These remarks, however, do not apply to the after effects of operation for gallstones in the common duct. After such operations an interval of not less than five years of perfect health should ensue.—*Proceedings of the Twenty-first Annual Meeting of the Association of Life Insurance Medical Directors.*

Insurance Statistics and the Incidence of Cancer.—Malignant disease has but little practical importance for the medical examiner so far as the selection of applicants for insurance is concerned, because in the first place it is usually a disease of advanced age while most of the applicants are persons of early or middle age; in the second place, the etiology of cancer has not been at all cleared up, so that nothing is known which would determine what persons among applicants, young or old, may become victims of it after procuring insurance. On the other hand, insurance statistics add their data to the question of the increase in the incidence of cancer. The tables published by Gollmer of Gotha show that there has been a progressive increase of deaths from malignant disease in the period from 1829 to 1895. On the other hand, his tables show an almost parallel decrease of mortality from diseases of the esophagus, stomach, intestines, liver, pancreas, and bladder; that is, of organs that most frequently are the site of malignant disease. The increase in the incidence of cancer is therefore only an apparent one and is simply due to the more exact diagnosis made in the later periods. The Leipsic Life Insurance Company publishes later figures, having taken the periods 1864-1886 and 1887-1899 for comparison. These figures show that the mortality from malignant diseases in the ages from forty-one to eighty-five years is greater in the second than in the first of the two periods, but the increase is so small that it may likewise he explained by the advance in diagnosis and not by increase in the incidence of cancer.—*Blätter für Vertrauensärzte der Lebensversicherung*, January and February, 1910.

Intercostal Neuralgia from an Unusual Cause.—A certain applicant was insured at the age of twenty-seven, physical examination at the time showing a somewhat feeble and ill-nourished individual, otherwise being quite negative. Eight years later he applied for a larger policy. This time the examination showed little change from the first one, but the applicant gave the history of an intercostal neuralgia, which continued for six weeks and disappeared after a prolonged stay in a bathing resort. The medical examiner recommended the applicant for reinsurance, as pulmonary tuberculosis and any evidence of an aneurysm as possible causes of the neuralgia were excluded. The medical director, however, refused the applicant because of the fact that no change for the better so far as feebleness and ill-nourishment of the applicant had taken place in the interval between the two examinations. This applicant died in the course of the following year, having suffered from a left-sided pleurisy which later was shown to be caused by a suppurative focus in a rib cartilage. Later pus foci developed in other bones, among them in the vertebræ. The final diagnosis proved to be actinomycosis.—*Blätter für Vertrauensärzte der Lebensversicherung*, January and February, 1910.

Modern Sanitation.—At the fourth annual meeting of the Association of Life Insurance Presidents, held December 9 and 10, 1910, Alvah H. Doty, Health Officer of the Port of New York, presented a paper in which he contrasted the modern methods of sanitation with those traditionally in vogue. Cleanliness has ever been considered an important factor in the prevention of disease, receiving its first authoritative recognition in the Levitical code. Nevertheless superstition played an important rôle in ancient systems of sanitation, as evidenced by the use of incantations and the burning of magic powders. Even with the passing of superstition, the influence of fear was still manifest in the practices of burning houses and sinking ships, which were officially ordered as a means of checking the transmission of disease. Scientific sanitation began with the modern era of bacteriological investigation, and even within this period there may be discerned a gradual unfolding of more rational methods. In the early days of this era the "fomites theory" held sway: the theory that the clothing and baggage of the well no less than those of the sick were instrumental in the transmission of disease, dominated sanitary regulations. This theory has been shown to be fallacious, the influence of fomites in the transmission of disease occurs only in exceptional instances. It has been proved that in the majority of instances infection results from direct contact, or by means of infected water and food, or through the intermediation of insects. Recently the rôle played by "carriers," the apparently healthy harborers of pathogenic microorganisms, has been shown to be an important one in the propagation of infectious disease. The fact is emphasized that modern practical sanitation does not guarantee absolute protection, that health regulations are to be framed not to comply with rare instances, but to deal promptly and effectively with the common or ordinary modes of infection. As an example of the practical harmlessness of fomites, it is noted that employees of banks who are constantly handling old, filthy, and offensive money, are no more subject to infectious diseases than those who follow other callings. The safeguarding of public health demands the extermination of the mosquito, the fly, and other dangerous insects; the protection of water and milk supplies; the prevention of overcrowding and the provision of public baths, etc.; the destruction of the discharges of infected persons, and the performance of disinfection only under the direction of the physician or health official. Prevention is the keynote of modern sanitation.—*Proceedings of the Fourth Annuol Meeting of the Assaciation of Life Insurance Presidents, December 9 and 10, 1910.*

Suicide and Occupations.—Among men, day laborers and agriculturalists are least prone to suicide. Soldiers and sailors are most prone to it. It is common among saloonkeepers, brewers, cigarmakers, servants, architects, bankers, collectors, commercial travelers and druggists, tailors, journalists, and lawyers. Among employed women it is a prominent cause of death for telegraph and telephone operators, cigarmakers, and stenographers.

Book Reviews.

A Manual of Nursing. By Margaret Frances Donahoe, formerly Superintendent of Nurses, and Principal of Training School, Philadelphia General Hospital. Illustrated. New York and London: D. Appleton and Company, 1910.

This book contains twenty-eight chapters, and covers practically all the requirements of the trained nurse. In so far as it treats of nursing, the book is admirable; but, like most works of this class, it occasionally wanders a little into the fields of medicine and surgery, and then it is not quite so safe a guide. For example, after correctly saying that dislocations should be properly cared for till the doctor comes, the author adds "A finger or toe may be gently pulled into place, and a dislocated jaw may be set, etc." Those who have had any experience know full well that a dislocated thumb is not so easily dealt with. The "vesical bladder" is new to us, and seems to be somewhat redundant. A.c. and p.c. are generally said to be abbreviations of ante cibum and post cibum, rather than of ante coenatum and post coenatum (as here given). What "the salts of copper sulphate" may be, we do not know; nor were we aware that "the molecule of sugar was smaller than the molecule of starch, and consequently more easily soluble." It is hardly accurate to say that "Potts' fracture is a simple break of some part of the lower fifth of the fibula," or that "proteid consists of carbon, hydrogen, nitrogen, and sulphur"; both of these statements are partly correct. After a very sensible remark on the catheterization of male patients the author adds that if such an emergency arises "The nurse should be able to pass the catheter *without any previous instruction.*" Why will not this same intuition suffice in every other emergency?

A Manual of Chemistry. Theoretical and Practical, Inorganic and Organic. Adapted to the requirements of students of medicine. By Arthur P. Luff, M.D., B.Sc., Lond., F.R.C.P., F.I.C. Physician to St. Mary's Hospital and Joint Lecturer on Medicine at St. Mary's Hospital Medical School; and Hugh C. H. Candy, B.A.B.Sc., Lond., F.I.C.; Lecturer on Chemistry in the London Hospital Medical College. With 46 illustrations. New and enlarged edition. Price, $1.75. Chicago: Chicago Medical Book Company.

This is the fourth edition of Luff's Chemistry, and it has undergone considerable revision and some enlargement. Most of the changes have been made to adapt it to the changing requirements of the British examining boards. The first part of the book has been practically rewritten, and it forms a good introduction to the chief laws and principles of the science. Parts II and III deal with inorganic chemistry, and constitute the main part of the book. At the same time these are the most complete and satisfactory portions of the work. The part on organic chemistry is too brief for the requirements of the best medical colleges in this country; and physiological chemistry is practically absent. The word "proteid," or "protein," does not occur in the index, or (so far as we can ascertain) in the text. There are a few pages devoted to chemical problems, but we prefer this part as it was in the former edition. As an introduction, and for first-year work, this little book can be most confidently recommended.

Diseases of Children for Nurses, including Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene, and Nursing. By Robert S. McCombs, M.D., Assistant Physician to the Dispensary and Instructor of Nurses at the Children's Hospital of Philadelphia. Illustrated. Second edition, thoroughly revised. Price, $2.00. Philadelphia and London: W. B. Saunders Company, 1911.

There is no branch of medicine requiring of the nurse a greater mastery of details and a more extensive knowledge of special methods of management and treatment than pediatrics. There is certainly none in which the common sense and tact of the nurse are more productive of success than in this branch. It is difficult to decide how much of the natural history of disease a nurse should know; at any rate the more comprehensive her knowledge of the diseases of children the more competent will she be in understanding the rationale of and hence in carrying out the numerous procedures that she is constantly expected to perform. For this reason a book that describes rather fully the characteristics of childhood and the various diseases to which children are subject, as well as the numerous dietetic and therapeutic requirements pertaining to this period of life supplies a distinct want. The present volume answers these requirements. It contains all and a good deal more that the average nurse should know about children, presented briefly without a sacrifice of clearness and precision. It contains numerous helpful illustrations, including several colored plates of the various exanthemata. The chapter on artificial feeding is particularly good, embodying the simplest methods, based upon hospital experience, of modifying milk according to the various formulae.

Hay Fever and Paroxysmal Sneezing. By Eugene S. Yonge, M.D.; Physician to the Manchester Hospital for Consumption and Diseases of the Throat, with two colored plates; pp. 150. $2. New York: William Wood & Co., 1910.

This book is divided into three portions: Hay Fever (pp.1-86), Paroxysmal Sneezing (Vasomotor Rhinitis (pp. 87-123), and Idiopathic Rhinorrhea (pp. 123-131). The book opens with an excellent historical sketch of hay fever. Then follow chapters on etiology, symptoms, and diagnosis, prognosis and treatment, with general considerations as to diet, mode of life, etc. The same general plan is followed in the remaining sections. Nothing essentially new is presented. It is interesting that the best results in the author's hands have followed the bilateral excision of the tubercle of the nasal septum. Other surgical procedures mentioned are the correction of intranasal deformities, the application of the galvanocautery or chemical caustics, partial or total turbinectomy, and resection of the nasal branch of the fifth nerve. The book is an excellent presentation of some of the interesting questions of present-day rhinology.

Plastic and Cosmetic Surgery. By Frederick Strange Kolle, M.D.; Fellow of the New York Academy of Medicine, etc. pp. xii, 511. Illustrated with one colored plate and five hundred and twenty-two figures in the text. New York and London: D. Appleton & Co., 1911.

This interesting book treats of plastic operations, subcutaneous hydrocarbon prothesis, and electrolysis in dermatology. Beginning with a short account of the history of plastic surgery, it devotes about seventy pages to general operative requirements. After this introduction to the subject in hand the author describes many operative procedures for accomplishing restorations of the eyelids, ears, lips, mouth, chin, and nose, and then discusses the methods and uses of electrolysis in diseases of the skin. Many of the operations are, as would be expected, well known, but new plans or modifications of old methods are here and there introduced. The book gives the impression that the author is more interested in the use of paraffin and similar substances for altering contours of the face and other regions of the human body than in operative surgery. Almost one-quarter of the volume is devoted to the description of these prothetic measures. The difficulties, risks, and precautions connected with such subcutaneous operations, and the means for obtaining successful corrections of contour are elaborately set forth. Many useful hints are given. The title of the book would lead one to believe that it dealt with general plastic reparations. It discusses, however, such operations on the face almost exclusively. The specialist and the general surgeon will find it worthy of perusal. It will open up to them and their patients some new fields of surgical endeavor which have been too little cultivated. If a new edition is published the author and proofreaders should scan with keen vision the terminations of the Latin words used. Tenaculi is not the plural of tenaculum (p. 451), and nare not the singular of nares (p. 468). The reference to "laudable" pus (p. 51) will seem to the present generation of medical men like a survival of the preantiseptic era of surgery.

An Introduction to Vertebrate Embryology. Based on the Study of the Frog, Chick, and Mammal. By Albert Moore Reese, Ph.D. (Johns-Hopkins), Professor of Zoölogy in West Virginia University. Second Edition, Revised and Enlarged. With 118 Illustrations. New York: G. P. Putnam's Sons, 1909. Price, $1.50.

As its title indicates, the present volume deals with the development of the ovum of the amphibian, the bird, and the mammal. Most of the works on general embryology are larger and more expensive than is necessary for the use of the beginner in this subject, and the book is well adapted to serve as a classroom guide supplementing lectures in which somewhat more detailed information is given. The text consists of concise descriptions of the stages of development, and is well supplied with illustrations. In its present edition it has been enlarged by the addition of a chapter of about forty pages in the embryology of the mammal, which increases the usefulness of the work for medical students.

The Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume VIII. Materia Medica and Therapeutics; Preventive Medicine; Climatology. Edited by George F. Butler, Ph.G., M.D.; Henry B. Favill, A.B., M.D., and Norman Bridge, A.M., M.D. Series 1910. $1.50. Chicago: The Year Book Publishers.

Over two-thirds of this small volume is given over to the consideration of materia medica and therapeutics, the rest of the book being devoted to preventive medicine and climatology. The therapeutic agents are arranged alphabetically. Some of the subjects discussed are: "Carbon Dioxide," "Snow in the Treatment of Nevi and Skin Affections," "Serum and Antitoxin Therapy," "Vaccine Therapy," "Bismuth Paste," and "Enzyme Treatment of Cancer."

Volume IX. Skin and Venereal Diseases; Miscellaneous Topics. Edited by W. L. Baum, M.D., and Harold N. Moyer, M. D. $1.25.

As so much has been written about syphilis during the last year it is but natural that more space be given to it than to any other subject. Ehrlich's "606" and the Wassermann reaction have been considered at some length. J. B. Murphy reports almost as good, if not as striking, results from the hypodermic use of sodium cacodylate in doses of 1 to 2 grains, as have been obtained from the use of salvarsan. The miscellaneous subjects considered are: "Medical Education and the History of Medicine," "Biography; Life Insurance," "Medico-Legal," "State Control of Medical Practice," and "Vivisection."

Volume X. Nervous and Mental Diseases. Edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Polyclinic, Clinical Professor of Nervous Diseases in the Northwestern University Medical School, ex-President Chicago Neurological Society, and Peter Bassoe, M.D., Assistant Professor of Nervous and Mental Diseases, Rush Medical College. $1.25.

This book opens with a few pages devoted to the symptomatology of nervous diseases. Then follow articles on the various neuroses, diseases of brain, meninges, spinal cord, and peripheral nerves, miscellaneous and mental diseases. The book is full of interesting and instructive articles and, like the rest of the volumes of this series, will be found very useful to the specialist and the general practitioner.

A Handbook of Practical Treatment. By Many Writers. Edited by John H. Musser, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and A. O. J. Kelly, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania, Philadelphia. Volumes I and II. Price per volume, $6.00. Philadelphia and London: W. B. Saunders Company, 1911.

The recent untimely death of Dr. Kelly, one of the editors of this work, imposes upon the reviewer the sad duty of paying a tribute to the memory of one whose distinguished services in furthering the progress of medical science had already shed lustre upon his name. The termination of his career at the zenith of his activities was all the more pathetic in that he could not behold the complete publication of a work in the execution of which he had so ably shared. Two of the three volumes have already been published. The keynote of this work is the study of medicine as an art—the emphasis of the physician's function from the patient's point of view, the preservation or prolongation of life and the mitigation of suffering. With this aim the most modern and advanced views are presented in regard to the management of diseased states. In order to gain a fair conception of the scope of this work one need only glance over the table of contents, noting the various subjects and long list of distinguished authors. Volume one consists of the following: "The Fundamental Principles of Therapeutics," by John H. Musser; "Preventive Treatment," by Charles H. Harrington, revised by A. C. Abbott; "The Dietetics of Infancy," by Maynard Ladd; "The General Principles of Drug Treatment," by Sir Lauder Brunton; "The General Principles of Serum Therapy" by Ludwig Hektoen; "The General Principles of Organotherapy," by Warren Coleman; "The Rest Cure, the Work Cure, and Psychotherapy," by Charles W. Burr; "Exercise, Massage, and Mechanotherapy," by R. Tait McKenzie; "Hydrotherapy and Balneotherapy," by Guy Hinsdale; "Climatotherapy and Health Resorts, and Artificial Aerotherapy," by Henry Sewall; "Electrotherapy," by J. Montgomery Mosher; "Radiotherapy," by Henry K. Pancoast; "Miscellaneous Therapeutic Measures," by George P. Müller; "The General Care and Management of the Sick and the Treatment of Slight Ailments," by M. Howard Fussell; "Food Intoxication and Poisoning by Reptiles and Insects; Drug Poisonings and Drug Habits," by Horatio C. Wood, Jr.; "Sunstroke," by James Tyson; "Diseases of the Blood," by Richard C. Cabot; "Diseases of the Lymphatic System and Diseases of the Ductless Glands," by George Dock, and "The Surgical Treatment of Diseases of the Thyroid and Parathyroid Glands." One notes from this enumeration of titles that the old-time conception of therapeutics as equivalent to drug treatment has been supplanted by the more modern one of diet, exercise, mechanical methods, electricity, vaccines, etc., in addition to drugs; the discussion of the dietetic, physical, serological, and organotherapeutic methods takes up the greater part of the first volume. It would be difficult to pick out any one chapter for special commendation. All the topics are fully presented by experts in their particular field.

The second volume is devoted to the special treatment of many local and general diseases, and, like the first, is made up of contributions from men well known in their particular field. The contents of this volume are as follows: "Diseases of the Cardiovascular System," by Sir Clifford Allbutt; "The Surgery of the Heart," by Clinton T. Dent; "Typhoid Fever," by Rufus I. Cole; "The Surgical Complications of Typhoid Fever," by John M. T. Finney; "Pneumonia," by Hobart Amory Hare; "Diphtheria, Scarlet Fever, Measles, and rötheln," by George H. Weaver; "Intubation and Tracheotomy in Diphtheria," by John H. Jopson; "Tuberculosis," by Edward O. Otis; "Toxemia, Septicemia, and Pyemia," by Richard M. Pearce and Arthur W. Elting; "Syphilis," by J. William White and Alfred C. Wood; "Gonococcic Infection," by Edward Martin; "Vaccinia Variola and Chicken Pox," by Jay F. Schamberg; "Cerebrospinal Fever, Cholera Asiatica, and Plague," by Lewellys F. Barker; "Yellow Fever and Dengue," by James Carroll; "Influenza and Rheumatism, or Rheumatic Fever," by Alfred Stengel; "Tetanus, Rabies, Anthrax, Glanders, Actinomycosis, Madura Foot and Foot-and-Mouth Disease," by Joseph C. Bloodgood and Alexius McGlannon; "Pertussis, Mumps, Miliary Fever, and Glandular Fever," by Samuel McC. Hamill; "Dysentery," by Charles F. Martin; "Leprosy," by Isadore Dyer; "Typhus Fever," by John F. Anderson; "Tropical Diseases," by M. J. Rosenau and John F. Anderson; "The Ocular Complications of the Infectious Diseases," by Charles W. Richardson; "The Surgical Treatment of the Joint Complications of the Infectious Diseases and Animal Parasites," by David Riesman. As in the first volume, it is difficult to pick out any one topic that deserves special commendation, all parts fully covering their particular field, and written with a fullness of detail demanded by the everyday needs of the practitioner. One may regard this work as a collection of monographs on the many phases of treatment. The diseases of the cardiovascular system are amply covered in 175 pages of text; typhoid fever is given 92 pages, and tuberculosis 119 pages. The other subjects are accorded a space commensurate with their importance. In illustrations, type, paper, and binding this work is an example of consummate bookmaking.

Personal Hygiene and Physical Training for Women. By Anna M. Galbraith, M.D., Author of "Hygiene and Physical Culture for Women" and "The Four Epochs of Woman's Life"; Member of the New York County and State and the American Medical Associations; Fellow of the New York Academy of Medicine; ex-President of the Alumnæ Association, Woman's Medical College of Pennsylvania; former Attending Physician, Neurological Department, of the New York Orthopedic Hospital and Dispensary; late Attending Physician and Instructor in Diagnosis and Clinical Medicine at the Woman's Medical College, New York Infirmary. Illustrated. Cloth, $2.00. Philadelphia and London: W. B. Saunders Company, 1911.

As the author says in the preface, the aim of this book is the clear and concise presentation of the fundamental physical laws that form the true cornerstone of all personal hygiene. Then follow naturally practical, definite instructions for the training of the body by simple hygienic methods, utilizing fresh air, tonic baths, suitable clothing, food, and exercise. By these means will the entire system be put in such condition that it will be able to resist disease. Hydrotherapy, the care of the skin, the digestive, respiratory, and nervous systems, mental hygiene, dress, physical training, and symmetrical development are among the topics discussed. The material is well handled and engages the reader's interest while the spirit of the whole is scientific. The book is sure to prove of value to girls and women of all ages.

Society Reports.

AMERICAN PEDIATRIC SOCIETY.

Twenty-third Annual Meeting, Held at Lake Mohonk, N. Y., May 31-June 1, 1911.

THE PRESIDENT, DR. HENRY DWIGHT CHAPIN OF NEW YORK, IN THE CHAIR.

Wednesday, May 31—First Day.

President's Address.—Dr. HENRY DWIGHT CHAPIN of New York delivered this address. He chose for his topic "The Fundamental Principles of Pediatrics." He stated that pediatrics might be divided into two parts: first, that relating to the treatment of disease and perversion of function; secondly, that which was concerned with the production of well developed physique in children. If its scope were broadened pediatrics might be defined as that branch of science which concerned itself with the animal aspect of the protection of human beings. The science could then be divided into two parts: first, that devoted to the production of the highest development of the human being as an animal; secondly, that concerned with the management and care of the human being when malformed, or when afflicted with perverted function, or subjected to mechanical injury, or attacked by parasitic microorganisms or poisons. It would be greatly to the advantage of the parents, the child, and the community at large if every child, during its first period of growth, were supervised by a pediatrist. It would be to the advantage of every physician if the fundamental principles of the management of infancy could be firmly established. To attain this result it was essential that the teachings concerning chemistry should be in accord with the general science of chemistry, that the problems of infancy following those of physics be recognized as such, and that the teachings concerning animal life and development be true to those principles which had been found to apply to animal life in all its forms. An infant taking in thirty-six ounces of breast milk daily received food yielding 792 calories, or enough heat to raise the temperature of a fourteen-pound baby to 113° C. It might easily be appreciated then how important was the working of the infant's cooling apparatus, or system. Few realized that animals had cooling systems and that a large part of the sickness occurring in infants during the hot weather might be due to defective cooling. When an infant lay in a crib surrounded by curtains on a hot day the air movement was stopped. One could be kept cool by a current of hot air if a wet cloth was kept next to the skin. If an infant had been subjected to conditions such as rendered it unable to eliminate heat properly, the treatment should consist in stopping all food temporarily, giving baths to remove the heat, keeping the patient quiet to prevent the expenditure of energy, and sending him to the country where the air was cool, or dry, or in motion. Dr. Chapin emphasized the importance of fresh air and said that this could not be looked upon as a hobby. The dignity and importance of pediatrics must be made clear to the profession and to the public. It offered a most promising field for advanced work in scientific and experimental medicine. The general and broad methods of science at large should be applied to the solution of its problems.

A Study of One Hundred Infants from Birth to the End of the First Year.—Dr. CHARLES HERRMAN of New York said the work was originally undertaken for the purpose of determining what could be done in lowering the mortality in a series of infants by advising the mothers and supervising the infants from their birth. However, as the work progressed, it became apparent that other valuable data could be obtained. Although everyone recognized the important role played by predisposition in the causation of disease, it sometimes seemed as if outside agencies were given too much and the peculiarities of the individual too little consideration. From June 1, 1909, to June 1, 1910, 172 babies were born in the Lebanon Hospital. These mothers were instructed in the care and feeding of infants and a printed form containing a few of the most important points was given to them to assist the memory. Special emphasis was placed on the importance of breast feeding. They were also given a card to the pediatric department, and requested to return within ten days after leaving, etc. The total number of infants born was 172; the deaths during the first year numbered 14; the number followed for more than one year was 125. There were 100 males and 72 females. Those who were exclusively breast-fed for five months or more gave a percentage of 66; those who were partially breast-fed for five months or more, gave a percentage of 83.

The speaker demonstrated on the history charts of a number of cases the following points: (1) Breast milk might be made to reappear in a breast that had not functionated for more than two months. (2) A mother might believe that she had not sufficient breast milk when as a matter of fact she had more than enough. (3) The great importance of proper advice to counteract the improper advice of neighbors. (4) An infant might show an insufficient gain in weight during the first three months, although the food, breast milk or artificial, might be of proper quality and quantity. At about the third month, on the same food, the infant would rather suddenly gain much more rapidly in weight. (5) Cases presenting at different times during the first year the characteristic manifestations of the "exudative diathesis," with recurring attacks of loose mucous stools as one of these manifestations. (6) The importance of a babies' ward to which the very sick cases could be referred, and the necessity for having breast milk for the extremely bad cases. (7) Breast feeding might be possible in an infant even when several preceding infants of the same mother were artificially fed. In the entire series of infants there were 14 deaths, 9 male and 5 female. Eleven, or 80 per cent., were first children. Only 33 per cent. of the entire number, 172, were first children. This illustrated in a very striking way the greater mortality in the firstborn. Six of the deaths were in premature infants; one an instrumental delivery; one a cesarean section; and one a twin. Six of the deaths occurred during the first two weeks of life; four of these were premature infants. Not a single death occurred in an infant that was breast-fed for more than five months. None of those that died were breast-fed at the time of death.

Recurrence of Scarlet Fever.—Dr. J. P. CROZER GRIFFITH of Philadelphia said that recurrence of the typical forms of scarlet fever were a rarity. Their occurrence, however, was supported by the testimony of many writers. Little was said about these recurrences in the textbooks and but few instances were reported in the literature. The speaker reported the case of a boy who had nose bleed and vomiting. The following day he did not appear to be at all ill, though he vomited again in the afternoon. On the following day a scarlatiform rash appeared over the thorax and abdomen. The scarlet fever ran a mild course, efflorescence disappearing during the first week of the illness. One week later he began to cough and had a well defined attack of measles. Thirteen months later he again became ill and was covered with a typical scarlatiform rash. The speaker would not have believed that this was true scarlet fever had it not been for the final desquamation. There also developed a post-scarlatinal nephritis.

Duodenal Ulcer in Early Life.—Dr. J. P. Crozer Griffith said that this condition was such a rare one that even the text books, at least the majority of them, took no notice of it whatever. Duodenal ulcer might be the cause of melena neonatorum. These ulcers were often observed in atrophic infants. In early life the condition was an exceedingly rare one.

The speaker reported two cases, the first of which was uncertain, not coming to autopsy. Case I: This patient was ten years of age and had suffered from scarlet fever measles, and nephritis. He ate indigestible food which was followed by vomiting. Calomel was given and recovery resulted. The day following exercise on a trapeze, though there was no history of any pressure on the abdomen, he was seized with dizziness and faintness. The following day he vomited and had several loose bloody movements without any pain. On the two days following the bloody stools continued and the patient was very pale and much nauseated. He had on fever. The percentage of hemoglobin was 70 per cent. and the corpuscles were in proportion. Dr. Musser was called in consultation and diagnosed a duodenal ulcer. With proper dieting the boy improved and made a gradual recovery. Case II: This was a child six months of age who began to suffer after having been fed artificially for four weeks. Constipation developed and there was a discharge of very hard feces. A milk mixture rich in fat was given. Blood soon appeared in the vomited matter and there were dark bloody stools. Following this the child went into collapse, became moribund, and was sent to the hospital, where he died. At autopsy an ulcer was found just below the pylorus, measuring about five mm. in diameter. There was no stenosis at the pylorus.

Means of Protection Against Contagious Diseases in Hospital Work.—Dr. William P. Northrup of New York read this paper in which he described certain appliances in use at the Presbyterian Hospital. The "Grille," or bed screen, consisted of a three-leaf wire screen with two-way hinges; it was four feet high and each leaf was three feet wide. Two such screens would entirely enclose a child's bed. The psychological effect of such a screen was such as to indicate unmistakably that no one was to approach. Nurses could reach over this screen for many purposes in ward work and their clothing was protected from contact with the bedding. They acted upon the conviction that the infecting agent in contagious diseases was transferred by contact or very near approach and that even a few feet rendered the infected patient harmless to his neighbors. It was to be hoped that this lesson would ultimately reach the laity. The speaker next showed photographs of the examination table which enabled the physician to work with comfort. The head of the table could be raised or lowered, rendering the table useful in intubations, aspirations, punctures, etc. He then showed a photograph of a crib warmer, consisting of an asbestos box which contained an electric heater. Above this was an asbestos trough in which rested the bassinet. It was easy to regulate the heat, and the electricity from an ordinary 16-candle power illuminating bulb was sufficient. It might taken the place of the usual incubator for newborn babies. Dr. Northrup also described their method of bathing children. The requirement was a warm washing, dressing and changing room, the atmospheric temperature being 75° F. or more. Everything was kept warm—clothing, diapers, towels and water. The arrangement was such that there was no possibility of scalding or infection. The bathtub had been abolished as it was suspected of being a great source of infection, and marble slabs sloping to a sink had been substituted, with sprays for cleansing the skin. The baby was laid on a clean bath towel covering the marble slab, and after being sponged with liquid soap, was sprayed and then dried and dressed. The facilities presented had been the result of much studious attention on the part of the heads of the various hospital departments and the result was that the babies were washed in at least half the time formerly consumed and the danger from infection and accidents from overhot water had been eliminated.

Hospitals for the Care of Infants and Children and the Methods of Prevention of Infection.—Dr. Henry Koplik of New York presented this paper. He stated that one of the most interesting questions in connection with the hospital care of infants and children was the prevention of infection. Mild infections at birth or in early infancy received much greater care and consideration than at a later period of life. Hence in hospitals the question of the separation of infants of a tender age from older children was a very important one. The speaker described the institution of Dr. Keller in Berlin and the Augusta Victoria Haus where only infants under one or two years of age were cared for. The conditions in Dr. Keller's institution were ideal; the wards were bright, cribs far apart, clothing and linen immaculate and the nursing personnel of a high order. In this institution infections were rare, there having been only one case of vaginitis in two years. The only approach to an epidemic that had occurred was the development of three or four cases of a pertussis-like cough in premature infants. This infection was quickly controlled. Here the much vaunted box system was unnecessary, the isolation of one patient from another was accomplished through intelligent cooperation of a careful and conscientious nursing personnel. Each infant had a thermometer and other utensils for its own use. The confinement room in connection with this hospital was distinguished by its simplicity, which was in marked contrast to the gaudiness seen elsewhere. There was also a department which looked to the care of the infants after they were discharged from the hospital, called the "Säugling's Fürsorge" (Child's Welfare). There was a similar department in some of the New York hospitals, but they bore no comparison to that of Keller's institution. The speaker next described the box system of construction in the French hospitals. This system consisted of separating beds by partitions of steel and glass, the partitions reaching to the ceiling in some instances and being only six feet in height in others. The former was used principally for diphtheria, where a closed box was needed for flooding with steam or chemicals. With this system it was easy to hold mixed infections in check. The highest development of the box system was seen in the Pasteur Hospital which was constructed throughout on the box plan. The box system might be looked at from several points of view and the impression on the whole was not satisfactory when one had visited an institution like that of Keller, in which no boxes existed and in which infections were extremely rare. The author felt that given good conscientious nursing and care in the matter of details the box system was unnecessary in a noncontagious hospital. It was, however, a potent barrier to contact infection and also to infection in the immediate vicinity of the patient. A ward such as that of Lasage in which boxes were open at the top was a very potent argument against the so-called atmospheric mode of infection. If infectious diseases could be practically treated in the same ward in the manner indicated one had in the past certainly overestimated the importance of the atmosphere in conveying infection. In surgical wards the box system would be a boon in emphasizing the isolation of one child from another. In such wards simple partitions as seen in Heubner's box ward would serve all purposes and would not interfere with the free circulation of light and air. In the treatment of the exanthemata and of diphtheria the box was not only a means of cleanliness, but prevented reinfection and mixed infections.

A study of the system at the Pasteur Hospital led to the conclusion that they had solved the problem of the prevention of mixed infections. In ten years the number of infections in the hospital proper was 30 in an aggregation of 9,677 patients. Most of these infections could be accounted for by infringement of the rules laid down for the management of the patients and boxes. Taking scarlet fever, the mortality below two years of age in 71 cases was 8.4 per cent.; from 2 to 14 years of age, 798 cases gave a mortality of 6.9 per cent.; measles in 245 cases below two years of age gave mortality of only 9.8 per cent.; 200 cases from two to 14 years of age gave a mortality of 1.10 per cent.; 309 cases of diphtheria under two years of age gave a mortality of 20 per cent.; 437 cases from two to 14 years of age gave a mortality of 6 per cent. The speaker said that he knew of no such favorable statistics elsewhere. The old system of general wards was a thing of the past. In constructing children's wards today it would be wise to have, in connection with a service where non-contagious diseases were treated, several boxes for the immediate isolation of scarlet fever or measles which might break out in general wards. A study of the Pasteur system was a convicing argument against the potency of atmospheric infection. In the Pasteur system, while the same nurses cared for different contagious diseases, they washed their hands and changed gowns before entering each box.

Dr. William P. Northrup of New York, in discussing the three papers just read, asked Dr. Holt and Dr. Koplik whether they believed in the danger of the Klebs-Loeffler bacillus in the nose of patients not having diphtheria and of vaginitis with the presence of the gonococcus by smear without any discharge. The speaker thought that the presence of the diphtheria bacillus without lesion or that of the gonococcus without discharge was not very dangerous..

Dr. L. Emmett Holt of New York related the case of a relative in whom there was a recurrence of scarlet fever, the first attack being at the age of seven or eight and the second at the age of twenty-four. Both were severe and typical. In regard to Dr. Northrup's question, the speaker said it had been his custom to exclude cases which showed the presence of the Klebs-Loeffler bacillus from the ward only when a lesion was present. They had constructed a series of alcoves having marble slabs four and one-half feet in height and projecting about one foot from the foot of the bed. There were four or five of these in each ward and they put children of this class into these alcoves. They had come to fear these cases less and less, but they were subjected to close scrutiny. As to the danger of vaginitis, where there was no discharge, but only the presence of the gonococcus, the cases were watched very closely. In these cases they had given up the use of napkins and had used absorbent cotton covered by a piece of gauze. This procedure had done much to reduce the frequency of these infections. The speaker said that as far as his experience went the worst infections in hospitals were those of the respiratory tract, and their great problem was how to prevent these. They now put cases having a good deal of cough and bronchial secretion into alcoves. There should be an observation room where cases of a suspicious nature could be watched before admission to the general wards.

Dr. Charles Gilmore Kerley of New York reported two cases of recurrence of scarlet fever, one, a girl twelve years of age, the daughter of a physician, who was seen both times by an inspector of the Health Department; the other was a boy whom the speaker had seen in the second attack and both the doctor and the attendant stated that the child had desquammated freely after the first attack. The second attack was unquestionably a true one.

Dr. Abraham Jacobi of New York stated that in his long life he had seen but two instances of recurrent scarlet fever, but they were decided cases and he had seen both attacks. There were fever, eruption, and desquamation and in one of the cases, nephritis. So far as vaginitis was concerned, the speaker was of the opinion that there was nothing more dangerous. There would be relapses every few months. In the uterus of a young child there were furrows and wrinkles and in these the gonococci hid and they might not show their presence for two or three months at a time. He had seen cases lasting for years and seemingly incurable. The precaution of examining children for this trouble once a week was important. As to the presence of the Klebs-Loeffler bacilli they should be careful in discriminating between whether the bacilli were found on mucous membrane that was intact or on that which was not intact, and this was difficult. The bacilli were not dangerous unless there was a catarrh that allowed them to penetrate into the mucous membrane. There was no more dangerous thing than nasal diphtheria and forty years ago almost every case was fatal. They had modified this by keeping the nose washed out. Dr. Jacobi could not say whether it was necessary to isolate every child in whose nose or throat the diphtheria bacilli were found.

Dr. Thomas Morgan Rotch of Boston said that while the presence of the diphtheria bacilli in the nose was not dangerous to the individual as long as there was no lesion of the nasal mucous membrane, yet it was possible that these cases might be carriers. They had had cases where such children were isolated and the nurse caring for the child had contracted diphtheria. They could not state beforehand which individual child had some nasal lesion.

Dr. J. Lovett Morse of Boston said that their experience with these cases of diphtheria bacilli in the nose had been that these children were dangerous to those about them. At the Infant's Hospital they had been immunizing all the babies that came into the hospital as soon as the disease was discovered. As to the box system, the speaker said he had had no personal experience with it, but it had always seemed to him that it was bad for the patient in the boxes as it was difficult to provide proper ventilation and the patients were more liable to reinfect themselves. They were building a new child's hospital in Boston and had adopted the method of building pavilion wards of ten beds and two isolation rooms, so that if there was a doubtful case it could be put into one of these rooms. They were going to have two unoccupied wards so that if a contagious disease developed in a ward they could stop admission to that ward and open another one.

Dr. P. J. Eaton of Pittsburgh stated that his own family history recorded that he had had scarlet fever twice. He had recently discharged a little girl who had had true measles twice and German measles once. In the attacks of true measles she had been under his observation from the beginning.

Dr. Churchill of Chicago considered the question of latency in relation to gonococcal vaginitis. They had all seen instances where after not having a case for months one developed out of a clear sky. At the Child's Memorial in Chicago they had sent social workers into the homes of the children and in a large number of instances found that there had been gonorrhea in other members of the family and they now asked the question as to the presence of venereal disease in the family. They took smears twice a week of every girl patient who came into the hospital. They were building a new pavilion to their hospital after much the same plan that Dr. Morse had described.

Dr. Augustus Caillé of New York said that his twenty-five years' experience in trying to keep infection out of children's wards had convinced him that it was

mainly contact infection with which they had to deal. Twenty years ago Dr. Bouche of Berlin had said at an international congress: "I am not afraid of diphtheria; I put a fence around it and diphtheria cannot jump more than six feet." If they were going to keep the wards clean they must keep the surgeons out with their nose, throat, and ear cases. The moment they put those cases with a free discharge in the wards there was trouble.

Dr. G. R. Pisek of New York said that if they could get the bacteriologist to determine by some more ready method than was known at present in regard to the virulence of the bacilli they could decide which cases were dangerous to other children.

Dr. Blackader of Toronto confessed that he would not like to depend upon these boxes or screens. Until they could examine and differentiate between these cases better than at present he preferred to have something more than a partition between them.

Dr. W. P. Northrup of New York said there seemed to be confusion of terms. He had referred to a screen, not a fence. In the Paris hospitals they had the grille and also the box. At the Presbyterian Hospital they took individual precautions in all cases in which the Klebs-Loeffler bacilli were found in the nose. Every patient who was in bed was isolated, although only four feet from his neighbor.

Dr. Thomas S. Southworth of New York said that the questions brought up applied very strongly to institutions other than hospitals. It was of the highest importance that in institutions where the children were presumably well they should be protected from infection. The idea of building a ward with room for only ten beds was a step in advance. It was advisable to make them even smaller than for ten beds each. It had been the speaker's experience that the mortality had not been as great from the ordinary exanthemata as from respiratory infections, especially the influenza types of which Dr. Holt had spoken. For the past three winters practically the only infection had been from that type and particularly among the bottle-fed infants. It seemed that the only way that the spread of infections in institutions could be remedied, if not by the plan of alcoves or grilles, was to reduce the size of the wards. Their president had recently written a very able article in which he spoke of the fact that the death knell of institution life for infants had been sounded.

Dr. Samuel S. Adams of Washington said that he believed he was responsible for the discussion of the question of the recurrence of scarlet fever as he had raised it at the last meeting. Since a man of such wide experience that he was now attending the grandchildren of patients that he had attended in their infancy had seen only two cases of recurrence of scarlet fever it must be a very rare occurrence. In regard to the ward problems, the question that arose was how much air the the occupants of the boxes were going to have. It was not well to pen up a patient in this way without plenty of air. The question also arose as to how to keep the children who were running about the wards within bounds.

Dr. Northrup replied that that was where the screens came in.

Dr. Adams rejoined that the children would go behind them. Another factor was that in some hospitals there was a strong sentiment against the use of screens.

Dr. L. E. LaFetra of New York said that while scarlet fever was the subject before the meeting, measles had been referred to and he wished to say that he had seen two cases of recurrence of measles. In one of these children he had seen both attacks. He believed, however, that it was very unusual to see measles occur twice in the same patient.

Dr. R. G. Freeman of New York mentioned one modification of the box system to which no reference had been made. In one of the largest hospitals in Paris they had separate wards for contagious diseases, but in each ward they had glass enclosures in which they put suspicious cases to remain until a definite diagnosis had been made.

Dr. Koplik of New York recalled that he had described the system of ventilation on the Pasteur Hospital as being perfect. These cells communicated with the outside air by means of windows and there was also a fan system of ventilation. If they found the Klebs-Loeffler bacilli in the nose or throat of a patient with no symptoms of diphtheria, they put the patient in an outside room and the nurse took proper precautions. They did the same with other infectious diseases. There was then no reason why a very sick patient should be sent away from the hospital. They never refused a very sick child with vaginitis if it could be helped. He had recently put a child with this affection in a general ward, labeled the bed, took proper precautions to prevent the spread of the infection, and there were no bad consequences. If there was no discharge the staff were forbidden to touch the child as it disturbed her unnecessarily.

Dr. Churchill asked what was the objection to taking a smear?

Dr. Koplik replied that he believed in treating these children as they would want their own children treated.

Dr. Northrup of New York stated that he would not hesitate to treat scarlet fever in a ward with their grille. As to the desquamating cases, he did not fear them so long as the nose and throat were all right and there was no ear discharge. He did not believe the old traditions about scarlet fever being sent by a letter from the child to its parents.

The Treatment of Sepsis in Scarlatina with Antistreptococcus Serum.—Dr. Matthias Nicoll of New York presented this paper in which he stated that by the term "sepsis in scarlet fever" he desired to be understood a set of clinical symptoms occurring forty-eight hours or longer after the onset of the disease and apparently due to invasion of the body by organisms of the streptococcus group. These organisms might or might not be found in the blood. Scientific observers seemed inclined to disregard the possibility of streptococci representing anything more than an invasion of the secondary organisms upon a soil suitably prepared by some unknown agent. If this view proved to be correct it must be confessed that certain well authenticated phenomena were rendered difficult of explanation. Of these might be mentioned the undoubted success of vaccination with killed streptococci from scarlet fever as a means of preventing the latter. The speaker's experience had been obtained at the scarlet fever hospital of the New York Board of Health. The serum used consisted of eleven strains of streptococci from scarlet fever patients, blood, throat, glands, etc., and one streptococcus from a case of puerperal sepsis. Owing to a limited supply it was considered advisible to use but 50 c.c. as an initial dose. This precluded the possibility of comparison with European results. Only 30 cases were injected, of which 17 died. Of those that died, four were brought in in a moribund state. One died two hours after receiving the injection. Two others died within twelve hours, a length of time too short for any relief from a subcutaneous injection. One patient contracted measles and ileocolitis. In another case measles was followed by gangrenous varicella. There were other cases complicated by diphtheria; they failed to yield to large doses of antitoxin following the administration of the serum. Dr. Nicoll said that he was not prepared to recommend the general use of the serum except in those cases in which a delay of twenty-four hours would probably determine a fatal outcome. Here the intravenous injections were to be preferred. He presented

the apparatus which he used for inspection. While his experience was limited Dr. Nicoll said he felt that in a disease over which they had so little control the serum, if obtainable, should be used in full doses without delay.

The Therapeutic Utility of Diphtheria Antitoxin, with Remarks on Anaphylaxis and the Feasibility of a Scratch Test.—Dr. Augustus Caillé of New York presented this paper in which he stated that the use of diphtheria antitoxin had lowered the mortality in all kinds of cases, mild and severe, at least 50 per cent. The principal reason for the present-day mortality lay in the fact that they did not sufficiently recognize the great divergence of the clinical manifestations of diphtheria and, furthermore, that they had failed to educate the public along these lines. Primary pharyngeal, or tonsillar, or laryngeal diphtheria showed a great uniformity in behavior under repeated doses of from 3,000 to 5,000 antitoxin units. With good hygienic management and energetic and early specific treatment the mortality was not much more than 5 per cent. In the presence of a visible pseudomembrane or exudate, if they waited for a confirmatory laboratory report before the administration of antitoxin, the mortality would be 12 or 15 per cent. The experienced physician knew that it was impossible to distinguish between tonsillitis and diphtheria and that it was useless to wait for a confirmatory laboratory report. A running nose, a thin blood-colored greenish discharge, an excoriated upper lip, followed in the course of a week by croupy and stridulous breathing, and finally cyanosis were very suggestive of the disease. During this time the pharynx might be free from pseudomembrane and pale in appearance. The experienced doctor recognized the clinical picture of nasal diphtheria and extinguished the smoldering flame with a few doses of antitoxin. When diphtheria was complicated by scarlet fever or measles one or two doses of antitoxin would certainly counteract a part of the sepsis and might turn the tide in favor of the patient. In such cases it was extremely unwise to wait for a laboratory report. It was generally appreciated that certain forms of bronchopneumonia and pleuropneumonia could be favorably influenced by diphtheria antitoxin. Whooping cough might be complicated by a visible throat diphtheria. Antitoxin was indicated as soon as the slightest visible throat or nose exudate was in evidence. In ulcerative stomatitis and noma one should look for the diphtheria bacilli, suspecting a mixed infection. Such cases usually ran their course with clinical findings negative as to diphtheria. It was wise in such cases to give a few doses of antitoxin. Immunizing injections should be made only with serum other than that which came from the horse. Dr. Caillé concluded that they should widen the scope and application of diphtheria antitoxin; that they should apply a scratch test to detect hypersusceptibility in the prophylactic application of the serum; that they needed an animal serum other than that from the horse, or an antitoxin not associated with albumin to avoid anaphylactic shock.

Dr. Edwin E. Graham of Philadelphia said that he had recently looked up the subject of anaphylaxis. In the Widener Memorial Hospital for Crippled Children the patients were apt to remain for a long time. In spite of the greatest care a case of diphtheria would occasionally gain entrance and it was the practice to give an immunizing dose of antitoxin. As a consequence many children in the institution had at varying periods of six months or a year doses of 1,500 or 2,000 units of antitoxin and no injurious effects had been observed. In investigating anaphylaxis at the Municipal Hospital in Philadelphia, where there were records of children admitted two or three times and receiving an immunizing dose, in an experience covering years, no evidence of anaphylaxis, except in the very mildest degree, had been observed.

Dr. G. R. Pisek of New York thought that in discussing the subject of anaphylaxis one should bear in mind what constituted a foreign albumin. It seemed to the speaker that one should use antitoxin only in suspected cases and not in all cases unless there was a definite reason for it.

Dr. J. Mason Knox of Baltimore said that he was interested in the suggestion of a scratch test as a means of opening our eyes to the possible effect of horse's serum. In rabbits they found that they obtained a reaction, with all the local skin signs, and that this reaction could be prevented by an injection of some strong oxidizing agent. This could be done to some extent with dogs. The skin reaction was closely related to anaphylactic shock, but somewhat different from it. If the patient was susceptible to the skin reaction he doubted whether he would be susceptible to a subsequent injection of horse's serum.

Dr. Snow of Buffalo agreed with the speaker who had said that antitoxin should not be used unless there were definite symptoms. He had a sore throat and received 3,000 units of antitoxin. Three years later he was exposed and received 1,500 units. This was followed by erythema and urticaria, which lasted thirty-six hours.

Dr. Matthias Nicoll of New York said that in the Foundling Hospital and in the Scarlet Fever Hospital dozens and dozens of children had received more than one dose and there had never been a case of anaphylaxis. He feared physicians were getting hysterical on this subject.

Dr. Charles Gilmore Kerley of New York said that at the Nursery and Child's Hospital they had to take in every case of diphtheria the city sent, and with every case the children received from 500 to 1,000 units of antitoxin; if another case came in they had another injection. It seemed to Dr. Kerley that there could be no great danger or they would have seen something of it by this time.

Dr. John Ruhräh of Baltimore agreed with Dr. Kerley that it was a great mistake to lay too much stress on this idea of anaphylxis.

Dr. P. J. Eaton of Pittsburg had also used antitoxin in scarlet fever in cases having a bad throat condition and had seen the disease end by crisis.

Hypertrophic Pyloric Stenosis in Infants.—Dr. Henry L. K. Shaw and Dr. Thomas Ordway of Albany presented this communication. Pyloric stenosis might be defined as an affection occurring in young infants and characterized by forcible vomiting, constipation, visible peristalsis, and frequently a palpable tumor at the situation of the pylorus. Contrary to most affections of the digestive tract, pyloric stenosis nearly always occurred in breast-fed infants. The earlier writers considered it a congenital organic defect due to excess of development. Later writers were almost unanimous in the opinion that there was an hypertrophy or a muscular hyperplasia as a secondary manifestation. The condition progressed slowly and might last from three to twenty months. The dietetic treatment consisted in the use of breast milk if possible. If the milk contained too much fat it should be allowed to stand for a few hours and the fat should then be removed. It was best to give small amounts of food at frequent intervals. Feeding by gavage should be employed in many cases. The stomach should be washed out several times a day with cold water. Treatment by means of drugs was very unsatisfactory. Surgical treatment should be resorted to when no further improvement could be obtained by conservative methods. A posterior gastroenterostomy seemed to be the operation of choice with most surgeons. Spasm of the hypertrophied muscles due to local or reflex causes might be a factor in producing stenosis. Inflammatory changes might or might not be present.

(To be continued.)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, STATE OF COLORADO.

Denver, January 3-7, 1911.

ANATOMY.

1. Describe the radius, including muscular and ligamentous attachments.
2. Describe the sternum, including muscular and ligamentous attachments.
3. Describe the elbow joint.
4. Describe the ankle joint.
5. Give the origin, insertion, and nerve supply of the following muscles: triceps, pyriformis, peroneus longus, levator ani, levator anguli scapulæ.
6. Name the supinators of the forearm and give the nerve supply of each.
7. Name the branches of the internal iliac artery.
8. Give the collateral circulation that would follow ligation of the common carotid.
9. Describe the lumbar plexus.
10. Describe the right kidney, including its relations. Alternate question: Where are the cortical centers of the face, arm, and forearm?

PHYSIOLOGY.

1. Discuss metabolism.
2. Discuss digestion.
3. Discuss elimination.
4. Discuss respiration.
5. Discuss circulation (blood and lymph).
6. Give a physical description of the blood, with functions of its component parts.
7. Define reflex arc, give examples of reflex action
8. Give in outline the sympathetic nervous system with functions.
9. Give distribution and function of cranial nerves.
10. Define hyperopia, myopia, and astigmia, giving general principles involved in their detection and correction.

CHEMISTRY.

1. What is indican, and what does it signify when found in the urine?
2. How would you determine the presence or absence of acetone in urine?
3. Define osmosis.
4. What are the chemical constituents of normal urine?
5. Give a concise description of a chemical examination of normal urine.
6. Name a chemical incompatibility, describing the reaction.
7. What chemical tests are used in the detection of occult blood?
8. Give a general definition of an ether.
9. Give the composition of water by volume and by weight.
10. What is a compound radical? Give examples, with the valence of each.

TOXICOLOGY.

1. From a medical standpoint define toxicology.
2. In the event you were called to a case with the following symptoms—drowsiness, headache, giddiness, stupor, delirium, convulsions, and paralysis, what would be your diagnosis?
3. What would be your treatment?
4. Give symptoms of poisoning by lead acetate.
5. Treatment and post-mortem appearance.
6. Give symptoms of poisoning by tartar emetic.
7. Treatment and post-mortem appearance
8. Give symptoms of poisoning by corrosive sublimate.
9. Treatment and post-mortem appearance.
10. Give difference in symptoms of poisoning by corrosive sublimate and those of arsenic.

PATHOLOGY.

1. Give the pathology of acute anterior poliomyelitis.
2. Describe the process of amyloid degeneration.
3. Describe the structure of sarcoma, giving the various types.
4. How would you make a Widal test?
5. How would you distinguish *B. coli communis* from *B. typhosus?*
6. Define (1) anaphylaxis, (2) tuberculin, (3) *Treponema pallidum*, (4) Wassermann reaction, (5) leukopenia.
7. Discuss uremia.
8. Describe the most common tumor found in bone
9. Describe the changes undergone in the brain after cerebral embolism.
10. Give microscopic appearances of a gumma.

SYMPTOMATOLOGY.

1. Describe, locate, and give causes of the different heart murmurs.
2. In what order and at what time do the teeth erupt in childhood?
3. Give symptoms of tuberculous hip-joint disease.
4. Give cause and symptoms of tuberculous hip-joint disease.
4. Give cause and symptoms of multiple neuritis.
5. Give symptoms of scurvy in children.
6. Give cause, prognosis, and symptoms of myocarditis.
7. Give symptoms of chronic appendicitis.
8. Describe your procedure in making a physical examination of the abdomen.
9. Differentiate between pyelitis and cystitis.
10. Give causes and symptoms of pulmonary edema.

OBSTETRICS.

1. Describe in detail your procedure after arrival at the lying-in chamber when the patient is (*a*) in the first stage of labor, (*b*) in the second stage, (*c*) and the third stage.
2. Describe the toxemias of pregnancy and tell what you would do to prevent or relieve same.
3. What is "morning sickness"? Give causes, duration, and treatment.
4. What are the indications for the use of the obstetrical forceps? Describe their application.
5. Give directions for the care of a woman after delivery—(*a*) normal, (*b*) instrumental.
6. When should a lacerated perineum be repaired, and give technique
7. What means would you employ to prevent laceration of the perineum when the head is well down on the perineum and labor pains are strong?
8. How would you treat a case of ophthalmia neonatorum.
9. Give symptoms of pregnancy and their relative importance.
10. Give method of procedure in case of retained secundines in four month abortion.

SURGERY.

1. Give the causes of arteritis and describe the symptoms and complications.
2. What are the symptoms and causes of lymphadenitis?
3. Give the symptoms of a tuberculous abscess.
4. Discuss sarcoma of the kidney.
5. Give the symptoms and causes of acute osteomyelitis.
6. Give some of the complications and consequences of fractures.
7. Give the symptoms of fracture of the surgical neck of the humerus.
8. Give the symptoms of tuberculous arthritis of the elbow-joint.
9. Give the symptoms of dislocation of the head of the femur on the dorsum of the ilium and what per cent. of hip dislocations does this form comprise?
10. Give the symptoms of strangulated hernia.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, STATE OF COLORADO.

Denver, January 3-7, 1911

ANATOMY.

1. See Cunningham's "Anatomy" (1909), pages 108, 279, and 284; or Gray's "Anatomy" (1910), page 190.
2. See Cunningham's "Anatomy" (1909), pages 941 and 271; or Gray's "Anatomy" (1910), page 157.
3. See Cunningham's "Anatomy" (1909), page 279; or Gray's "Anatomy" (1910), page 306.
4. See Cunningham's "Anatomy" (1909), page 306; or Grey's "Anatomy" (1910), page 342.
5. TRICEPS. *Origin:* Below glenoid fossa or scapula, outer and posterior surface of humerus below greater tuberosity, and from posterior surface of humerus below musculospiral groove. *Insertion:* Olecranon surface of ulna. *Nerve supply:* Musculospiral.

PYRIFORMIS. *Origin:* Margin of anterior sacral foramina and great sacrosciatic notch of ilium. *Insertion.* Upper border of great trochanter of femur. *Nerve supply:* Sacral plexus.

PERONEUS LONGUS. *Origin:* Upper two-thirds of outer

surface of fibula, and external condyle of tibia. *Insertion:* Internal cuneiform and first metatarsal bone. *Nerve supply:* Peroneal.

Levator ani. *Origin:* Back of pubic bone, spine of ischium, and pelvic fascia. *Insertion:* Central point of perineum, external sphincter ani, sides of lower part of sacrum and of coccyx. *Nerve supply:* Pudic, and 3rd and 4th sacral.

Levator anguli scapulæ. *Origin:* Posterior tubercles of transverse processes of upper four cervical vertebræ. *Insertion:* Superior angle of scapula. *Nerve supply:* Anterior divisions of 3rd and 4th cervical.

6.

SUPINATORS OF FOREARM.	NERVE SUPPLY.
Supinator brevis.	Dorsal interosseous.
Biceps.	Musculocutaneous.
Supinator longus.	Musculospiral.

7. *Branches of internal iliac:* Superior vesical, middle vesical, inferior vesical, middle hemorrhoidal, obdurator, internal pudic, sciatic, ilio-lumbar, lateral sacral, gluteal; and uterine and vaginal in the female.

8. The collateral circulation, after ligation of the common carotid, is through (1) the internal carotid and vertebral of one side with those of the other, through the circle of Willis; (2) superior thyroid with inferior thyroid; (3) deep cervical of superior intercostal with princeps cervicis of occipital; (4) superior thyroid, lingual, facial, occipital, and temporal branches of external carotid, with corresonding arteries of the other side.

9. See Cunningham's "Anatomy" (1909), page 641; or Gray's "Anatomy" (1910), page 104.

10. See Cunningham's "Anatomy" (1909), pages 1130 and 1133; or Gray's "Anatomy" (1910), pages 1345 and 1356.

The *motor areas* are located and arranged on the cerebral cortex, immediately in front of the fissure of Rolando. At the upper part of the convolutions in front of this fissure are areas connected with the movements of the lower extremities; then from above downward are located the centers for movements of the shoulders, arms, wrists, fingers, face, lips, tongue, and larynx and pharynx.

PHYSIOLOGY.

1. *Metabolism* is the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds: (1) Assimilative or constructive (anabolism) and (2) destructive (katabolism).

2. *Digestion* is the process by which food is converted into material suitable for absorption and assimilation.

The different stages of digestion are: (1) *In the mouth*, where the food is crushed, mixed with saliva, and reduced to a pulp; a certain amount of starch converted into maltose and rendered slightly alkaline. Fats and proteids are unaltered. (2) *In the stomach*, where the contents are rendered acid, conversion of starch into sugar ceases, connective tissue of fats is dissolved and fats are set free. Proteids are dissolved and peptones formed. The albuminous foods are dissolved for the most part, and a grumous mixture of peptones, liquid fats, and starches is formed, which is termed chyme, and is gradually passed through the pylorus into the intestine. (3) *In the intestine*, where the chyme mixes with the bile, pancreatic and intestinal juices, becomes alkaline, conversion of starch into sugar recommences, emulsifying of fat begins, and the undissolved proteids are converted into peptones. The diffusible peptones and salts enter the portal vein, the fat in a fine state of division entering the lacteals. In the large intestine the liquid chyme becomes more and more solid, is rendered acid by fermentative changes, and acquires the odor of feces. (From Ashby's *Notes on Physiology.*)

The different fluids essential to the same are: Saliva, gastric juice, pancreatic juice, succus entericus, and bile.

The *source* of the saliva is the salivary glands; of the gastric juice, the glands of the stomach; of the pancreatic juice, the pancreas; of the bile, the liver; and of the succus entericus, the glands of the small intestine.

The functions of the saliva are: (1) To moisten the mouth, (2) to assist in the solution of the soluble portions of the food, and thus (3) to administer to the sense of taste, (4) to lubricate the bolus of food, and thus (5) to facilitate the acts of mastication and deglutition, and (6) to change starches into dextrin and sugar.

The functions of the gastric juice are: (1) To change proteids into proteoses and peptones, and (2) to curdle the casein of milk.

The functions of the pancreatic juice are: (1) To change proteids into proteoses and peptones, and afterwards decompose them into leucin and tyrosin; (2) to convert starch into maltose; (3) to emulsify and saponify fats; and (4) to cause milk to curdle.

The functions of the bile are: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.

The functions of the succus entericus are: The secretion of enterokinase, secretin, and erepsin, which assist the pancreatic juice in digestion.

3. *Elimination* is the process by which waste material is removed from the body; it takes place by the breath, sweat, urine, and feces.

4. *Respiration* is the process by which an interchange of gases takes place in the lungs; so that oxygen is introduced and carried to the tissues, and carbon dioxide is expelled. See Gray's "Anatomy" (1910), page 423.

The changes produced in the *air* by respiration are:

	INSPIRED AIR.	EXPIRED AIR.
Oxygen	21 per cent.	16.6 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	0.04 per cent.	4.4 per cent.
Other gases	Rare.	Often present.
Watery vapor	Variable.	Saturated.
Temperature	Variable.	That of the body.
Volume	Varies.	Diminished.
Bacteria	Always present.	None.
Dust	Always present.	None.

5. See Gray's "Anatomy" (1910), page 569.

The lymphatic circulation is, strictly speaking, not a circulation at all; since the lymph flows only in one direction, namely, toward the heart. The lymph capillaries take up any excess of the blood plasma which is not required for the nutrition of the tissues. These capillaries consist of a single layer of epithelium, and empty themselves into vessels very like the veins. The lymph vessels are well provided with valves, which are so closely approximated as to give the vessels a beaded appearance. All the lymphatic vessels, except those of the right upper half of the body, empty into the thoracic duct, which terminates in the left subclavian vein, where the left internal jugular vein also enters. Those from the right upper half of the body discharge into the right lymphatic duct, which, in turn, empties into the right subclavian vein at its junction with the right internal jugular vein.

6. The *physical properties of blood:* Fluid, somewhat viscid, red, specific gravity from 1055 to 1062, alkaline reaction, saltish taste, characteristic odor, variable temperature (average about 100° F.).

The *constituents of the blood* are plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (protein, leuconuclein, lecithin, histon, etc.).

The *function of the red cells* is to carry oxygen from the lungs to the tissues.

Functions of white cells: (1) To serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

There are also *platelets*, whose function is not determined; it is possible that they take some part in the coagulation of the blood.

Plasm conveys nutriment to the tissues; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver and kidneys.

7. *Reflex actions* are involuntary or unconscious movements due to suitable stimuli. They depend upon the integrity of the *reflex arc*, which is a complex made up of: (1) A surface capable of receiving an impression; (2) an afferent nerve; (3) a nerve cell capable of receiving and

also of sending out impulses; (4) an efferent nerve, and (5) a surface capable of responding in some way to the impulse conveyed by the efferent nerve. *Example:* The patellar reflex consists of a contraction of the extensor muscles of the leg and a movement of the foot forward when the ligamentum patellæ is struck; the quadriceps extensor must first be slightly stretched by putting one knee over the other. Its integrity depends upon a healthy condition of the entire reflex arc, consisting of tendon, afferent or sensory nerve, posterior roots, and anterior horn of the spinal cord, the efferent or motor nerve, and the muscle itself.

8. See Cunningham's "Anatomy" (1909), page 704; or Gray's "Anatomy" (1910), page 1066.

Functions of the sympathetic nervous system: "It may safely be said that the sympathetic system has, to a great extent, a controlling influence over the secretion of most of the glands, the lacrymal, the salivary, the sweat glands, the glands of the stomach and intestines, the liver, the kidney, etc.; that it presides over the circulation by regulating the caliber of the blood-vessels and the action of the heart; that it influences respiration; and, finally, that all involuntary muscles, those of the digestive apparatus, of the genitourinary system, of the hair follicles (pilomotor nerves), are under its control to such an extent that, for instance, in certain mammalians the bladder still continues to fulfil its function for weeks after all the cerebrospinal motor nerves leading to it have been severed. In short, we find that all vegetative life of the organism is, to a greater or less extent, under the control of the sympathetic system. Therefore it may properly be called the vegetative nerve system *par excellence*."—(*Reference Handbook of the Medical Sciences.*)

9. See Cunningham's "Anatomy" (1909), pages 674, etc.; or Gray's "Anatomy" (1910), pages 976, etc.

10. (1) *Hyperopia* is the condition in which the eyeball is shorter than normal, or the cornea or lens unduly curved, and so parallel rays of light are focused behind the retina instead of on it. It should be treated by a convex lens whose principal focus is at the far point of the hyperopic eye. (2) *Myopia* is the condition in which the eyeball is too long, and so parallel rays of light are focused in front of the retina. It should be treated by the weakest concave lens which gives clear distance vision, and by reducing the amount of near work. (3) *Astigmatism* is the condition in which the different meridians of the eye refract the rays of light differently. It is treated by a cylindrical lens properly adjusted; this should be worn constantly.

CHEMISTRY.

1. *Indican* is indoxyl potassium sulphate; it is found (in excess) in the urine in hypochlorhydria; in hyperchlorhydria of gastric ulcer; in conditions in which there is diminished peristalsis of the small intestines, as in ileus and peritonitis, not in simple constipation; also in conditions in which putrefactive changes occur in the body elsewhere than in the intestine, as in empyema, putrid bronchitis, gangrene of the lungs, etc.—(From Witthaus' *Essentials of Chemistry.*)

2. *Test for acetone:* Add to the urine a few drops of a freshly prepared solution of sodium nitroprusside, and then solution of potassium hydroxide; if acetone is present the liquid is colored ruby-red, and on supersaturation with acetic acid becomes purple.

3. *Osmosis* is the process by which certain fluids and substances in solution pass through a membrane or other porous substance.

4. *Normal urine* consists of: Water, 95 per cent.; solids, 5 per cent. The latter are: Urea, 2.8 per cent.; uric acid, 0.06 per cent.; hippuric acid, 0.03 per cent.; creatinin, 0.06 per cent.; extractives, 0.8 per cent.; sodium chloride, 0.8 per cent.; phosphates, 0.2 per cent.; sulphates, 0.1 per cent.; oxides of calcium, magnesium, sodium, and potassium, 0.1 per cent.

5. See French's "Practice of Medicine" (1910), page 1233.

6. Solutions of silver nitrate and sodium chloride would represent a "chemical incompatibility." The reaction is:

$$AgNO_3 + NaCl = AgCl + NaNO_3.$$

7. Chemical tests used in the detection of occult blood are: The aloin test, and the guaiac test. See French's "Practice of Medicine" (1910), page 1231.

8. An ether is the oxide of a hydrocarbon radical, produced by the action of an acid on an alcohol.

9. Composition of water. *By volume:* Two parts of hydrogen to one part of oxygen. *By weight:* Two parts of hydrogen to sixteen parts of oxygen.

10. A compound radical is a group of atoms behaving in chemical reactions as a single atom. *Example:* NH_4 with a valence of one; C_2H_5 with a valence of one; CO with a valence of two; CH with a valence of three.

TOXICOLOGY.

1. *Toxicology* is that branch of medical science which appertains to poisons; it includes their character, origin, actions, symptoms produced, antidotes, treatment, and detection.

2 and 3. Probably atropine poisoning. *Treatment:* "Lavage of the stomach; morphine may be given cautiously during the period of violent excitement. Maintain respiration; strong coffee by the mouth or rectum is beneficial. Pilocarpine may be given, in not too large doses, to stimulate the secretion of saliva."—from Witthaus' *Essentials of Chemistry.*

4 and 5. The *symptoms of acute lead poisoning* are: "Metallic taste; dryness of the throat; thirst; severe colicky abdominal pains, referred particularly to the umbilical region, and relieved by pressure; pulse very feeble and slow; great prostration; constipation; urine scanty and red; violent cramps; paralysis of the lower extremities; convulsions, and tetanic spasms."

The *treatment* consists in administering "magnesium sulphate, which brings about the formation of the insoluble lead sulphate, while the purgative action of the magnesia is also useful. It should be preceded by an emetic, or by the use of the stomach tube."

Post-mortem appearances: Not always characteristic; mucous membrane of stomach may be red or gray; there is blue line on the gums; the colon may be constricted.

6 and 7. *Symptoms of poisoning by tartar emetic:* "These are seldom delayed more than half an hour. Nausea, violent and continual vomiting, burning pain in stomach and bowels, with an acrid, burning sensation in the throat, are usually the first symptoms. Then purging, intense thirst, feeble, rapid pulse, cramps in legs, and general lowering of the temperature, with great prostration, follow. The coldness extends even to the internal organs. The bowels become tympanitic. The spinal centers are greatly depressed. The urine is generally increased, but sometimes diminished or suppressed, and may be bloody and passed with difficulty and pain. Delirium and convulsions may precede death, or the patient may sink into coma, or die from exhaustion."—(Riley's *Toxicology.*)

Treatment.—Wash out the stomach or assist vomiting by abundant warm demulcent drinks. Then give tannin in some form. As the poison is quite rapidly absorbed, promptness is important. It is well in washing out the stomach to use some form of tannin solution, as tea, infusion of oak bark, etc., if available. Borax in milk (5 per cent. solution) has been used with much apparent success. Then sustain the heart with strychnia hypodermically, digitalis, or strophanthus. If nausea is persistent opiates may be necessary.

Post-mortem appearances.—The mucous membrane of the throat, stomach and bowels is usually red, softened, and shows general signs of severe irritation or even inflammation. In the stomach the mucous membrane is apt to be covered with small extravasations of blood and occasionally pustular eruptions. The mucous membrane of the bowels is frequently covered with a dark yellowish, viscid secretion. The brain and lungs are generally congested. In chronic cases the large intestine is also inflamed and the liver enlarged and softened. (Riley's *Toxicology.*)

8 and 9. *Symptoms of poisoning by corrosive sublimate:* A nauseous, metallic taste is experienced during the act of swallowing. Within a few moments this is followed by an intense, burning pain in the mouth, throat, and stomach. The mouth and tongue are whitened and shriveled. There are vomitings of a white material containing shreds of mucous membrane, and tinged with blood, and bloody stools. Salivation occurs if life be sufficiently prolonged. Death sometimes occurs early from collapse, accompanied by convulsions, or in deep coma; but in most fatal cases life is prolonged for from three to six days.

Treatment: The antidote is white of egg, but too much must not be given at one time; this should be followed by an emetic.

Post-mortem appearance: The salivary glands are enlarged. The tongue, mouth, esophagus and mucous membrane are usually shriveled and grayish white in color, though sometimes they are reddened and intensely inflamed. The intestines are usually highly congested and the urinary bladder contracted and empty. (Witthaus' *Essentials of Chemistry and Toxicology.*)

10.

POISONING BY ARSENIC.	POISONING BY MERCURY.
(1) The symptoms rarely begin within 20 minutes.	(1) The symptoms begin almost immediately.
(2) Pain is usually limited to the stomach and throat.	(2) Pain is also severe in the mouth.
(3) The taste is very faint, sweetish and metallic. Usually none.	(3) The taste is intensely metallic, and nauseous.
(4) The mouth and tongue are normal.	(4) The mouth and tongue are whitened.
(5) The urine contains arsenic.	(5) The urine contains mercury.

(Witthaus' *Essentials of Chemistry.*)

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), page 1068; or Osler's "Practice of Medicine" (1909), page 915.
2. See French "Practice of Medicine" (1910), page 34.
3. See Rose and Carless' "Surgery" (1908), page 188; or Da Costa's "Surgery" (1908), pages 316 and 320.

4. The Widal serum reaction "depends upon the fact that serum from the blood of one ill with typhoid fever, mixed with a recent culture, will cause the typhoid bacilli to lose their motility and gather in groups, the whole called 'clumping.' Three drops of blood are taken from the well-washed aseptic finger tip or lobe of the ear, and each lies by itself on a sterile slide, passed through a flame and cooled just before use; this slide may be wrapped in cotton and transported for examination at the laboratory. Here one drop is mixed with a large drop of sterile water, to redissolve it. A drop from the summit of this is then mixed with six drops of fresh broth culture of the bacillus (not over twenty-four hours old) on a sterile slide. From this a small drop of mingled culture and blood is placed in the middle of a sterile cover-glass, and this is inverted over a sterile hollow-ground slide and examined. . . . A positive reaction is obtained when all the bacilli present gather in one or two masses or clumps, and cease their rapid movement inside of twenty minutes." (From Thayer's *Pathology.*)

5. The cultural and microscopical points of difference between the *Bacillus coli communis* and the *Bacillus typhosus* (of Eberth) are:

"(1) The motility of the colon bacillus is, as a rule, not very pronounced, sometimes absent; that of the typhoid bacillus is usually very active.

"(2) On gelatine plates the colon bacillus develops more rapidly and luxuriantly than the typhoid bacillus, and on potato it grows more abundantly, being almost always visible.

"(3) The colon bacillus coagulates milk with acid reaction within twenty-four to forty-eight hours; the typhoid bacillus does not coagulate milk.

"(4) The colon bacillus causes fermentation with production of gas in media containing sugar; the typhoid bacillus does not.

"(5) In nutrient agar or gelatine containing lactose and litmus tincture and of a slightly alkaline reaction the color of the colonies of colon bacillus is pink and the surrounding medium red; while the colonies of typhoid bacillus are blue and there is little or no reddening of the medium.

"(6) The colon bacillus produces indol in cultures of bouillon or peptone; the typhoid bacillus does not.

"(7) When a twenty-four-hour-old bouillon culture of the colon bacillus is mixed with the blood or serum of a patient suffering from genuine typhoid fever, in a dilution of one to ten or more, after the first week of the disease, the Widal reaction is negative; cultures of the typhoid bacillus treated in the same manner and examined in the hanging drop give the characteristic agglutination and clumping of the bacilli." (*Reference Handbook of the Medical Sciences.*)

6. *Anaphylaxis* is increased susceptibility to infection or to the action of any foreign protein introduced into the body, following a primary infection; it is the opposite of immunity.

Tuberculin is a preparation made from cultures of the tubercle bacillus, employed as a means of diagnosis and in the treatment, by active immunization, of tuberculosis.

Treponema pallidum is the pathogenic parasite of syphilis. See French's "Practice of Medicine" (1910), page 426.

Wassermann reaction is a diagnostic test for syphilis based upon the theory of complement fixation.

Leukopenia is a condition in which the number of leucocytes in the circulating blood is reduced below the normal for the individual. (From Stedman's *Medical Dictionary.*)

7. See French's "Practice of Medicine" (1910), page 905; or Osler's "Practice of Medicine" (1909), page 683.

8. Osteosarcoma. See Rose and Carless' "Surgery" (1908), page 602.

9. See French's "Practice of Medicine" (1910), page 1115; or Osler's "Practice of Medicine" (1909), page 977.

10. See Rose and Carless' "Surgery" (1908), page 152; or French's "Practice of Medicine" (1910), page 428.

SYMPTOMATOLOGY.

1. See French's "Practice of Medicine" (1910), pages 587, etc.; or Osler's "Practice of Medicine" (1909), pages 796, etc.

2. See Cunningham's "Anatomy" (1909), page 1027; or Gray's "Anatomy" (1910), page 1218.

3. See Rose and Carless' "Surgery" (1908), page 681; or Da Costa's "Surgery" (1908), page 553.

4. See French's "Practice of Medicine" (1910), page 1014; or Osler's "Practice of Medicine" (1909), pages 999, and 1000.

5. See French's "Practice of Medicine" (1910), pages 543, and 546; or Osler's "Practice of Medicine" (1909), pages 751, and 853.

6. See French's "Practice of Medicine" (1910), page 619.

7. See French's "Practice of Medicine" (1910), page 812; or Osler's "Practice of Medicine" (1909), page 513.

8. *Physical examination of the abdomen:* "All clinical methods are applicable to this region. The customary prior cathartic removes misleading fecal masses, but accomplishes little more, and may produce a flatulent distention and troublesome peristaltic activity.

"The head and shoulders, particularly the former, should be high, the feet firmly placed and the patient in an easy and unconstrained dorsal posture. To relax the walls the knees may be drawn up, but often better relaxation may be had with the legs extended or but slightly flexed. The breathing should be easy and natural, with the mouth open, and the patient's attention should be diverted by conversation and inquiry. The hands should be warm, the light should be adequate, its source behind the patient, and no clothing or other covering embarrass the examiner. The flat of the palm and fingers, not the tips, should be used, tender areas should not be immediately approached, nor does the discovery of one justify repeated and purposeless punching and poking. In palpating movable organs or growths respiratory movement should be met directly by the tips of the fingers at right angles to the free margin, the hand being firmly but gradually depressed in deep expiration and allowed to rise laggingly and shift slightly upward to meet the descending border in inspiration. If the hand moves the organ or growth under examination, the opposite palpating hand should be almost motionless as the other brings the organ or tumor to it. After tolerance is established, the finger tips may be used to determine consistence and outline. The deep or superficial character of any pain or tenderness developed by examination and its precise localization or extent of diffusion should be accurately determined. Malingering or hysterical patients can often be misled or diverted by conversation, by attracting their attention to some special region which is being explored by one hand while the supposed tender point is palpated by the other or by misleading and positive statements as to the effect of pressure, forced respiration, etc., upon the spurious symptoms. In some cases nothing less than general anesthesia suffices. The dorsal posture is the best for general purposes, but the lateral is of value in palpation of the spleen or kidneys or for the purpose of "spilling" the intestinal contents of a large-bellied person to render more accessible the lateral region under examination. The patient may with advantage be placed upon the hands and knees or in the knee-chest position to bring a growth forward against a thin and relaxed abdominal wall. Finally, all portions of the abdomen should be thoroughly examined, not forgetting the hernial openings. The full hot bath is a most useful adjunct." (Greene's *Medical Diagnosis.*)

9. See French's Practice of Medicine (1910), page 936.

10. See French's "Practice of Medicine" (1910), page 680; or Osler's "Practice of Medicine" (1909), page 616.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), pages 307, 312, and 298; or Hirst's "Obstetrics" (1909), pages 328 to 346.

2. See Williams' "Obstetrics" (1909), pages 507, etc.; or Hirst's "Obstetrics" (1909), pages 263 and 247.

3. See Williams' "Obstetrics" (1909), pages 189, 508, etc.; or Hirst's "Obstetrics" (1909), pages 187 and 237.

4. *Indications for the use of forceps* are: "1. *Forces at fault:* Inertia uteri in the presence of conditions likely to jeopardize the interests of mother or child. (*a*) Impending exhaustion; (*b*) arrest of head, from feeble pains. 2. *Passages at fault:* Moderate narrowing, 3¼ to 3¾ inches, true conjugate; moderate obstruction in the soft parts. 3. *Passenger at fault:* A. Dystocia due to (*a*) occipitoposterior, (*b*) mentoanterior face, (*c*) breech arrested in cavity. B. Evidence of fetal exhaustion (pulse above 160 or below 100 per minute). 4. *Accidental complications:* Hemorrhage; prolapsus funis; eclampsia. All acute or chronic diseases or complications in which immediate delivery is required in the interest of mother or child, or both."—(From Jewett's *Practice of Obstetrics.*)

And see Williams' "Obstetrics" (1909), pages 400, etc.; or Hirst's "Obstetrics" (1909), pages 811, etc.

5. See Williams' "Obstetrics" (1909), page 340; or Hirst's "Obstetrics" (1909), page 364.

6. See Williams' "Obstetrics" (1909), pages 325, etc.; or Hirst's "Obstetrics" (1909), pages 609, 868, etc.

7. See Williams' "Obstetrics" (1909), page 316; or Hirst's "Obstetrics" (1909), page 335.

8. OPHTHALMIA NEONATORUM. *Prophylaxis:* Whenever there is a possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 or 2 per cent. solution of nitrate of silver immediately after birth.

Treatment: Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burnt.

9. See Williams' "Obstetrics" (1909), page 180; or Hirst's "Obstetrics" (1909), page 204.

10. See Williams' "Obstetrics" (1909), pages 618 and 477.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), page 301; or Da Costa's "Surgery" (1908), page 354.

2. See Rose and Carless' "Surgery" (1908), page 364; or Da Costa's "Surgery" (1908), page 1075.

3. See Rose and Carless' "Surgery" (1908), pages 170 and 368; or Da Costa's "Surgery" (1908), page 148.

4. See Rose and Carless' "Surgery" (1908), page 1183.

5. See Rose and Carless' "Surgery" (1908), page 570; or Da Costa's "Surgery" (1908), page 440.

6. See Rose and Carless' "Surgery" (1908), pages 471 and 480; or Da Costa's "Surgery" (1908), page 457.

7. See Rose and Carless' "Surgery" (1908), page 498; or Da Costa's "Surgery" (1908), page 488.

8. See Rose and Carless' "Surgery" (1908), page 661; or Da Costa's "Surgery" (1908), page 561.

9. See Rose and Carless' "Surgery" (1908), pages 629 and 628; or Da Costa's "Surgery" (1908), page 600.

10. See Rose and Carless' "Surgery" (1908), page 1099; or Da Costa's "Surgery" (1908), page 994.

California.—By recent changes in the law the State board may issue a certificate to any person who has practised a special branch of medicine and surgery for not less than thirty-five years, if he give satisfactory demonstration of his qualifications. It is also provided that any applicant for a certificate obtaining 75 per cent. each in seven subjects shall be subsequently re-examined in those subjects only in which he failed. Every person is guilty of a misdemeanor who commits fraud in connection with a certificate or diploma or assumes the title of M.D. or doctor without right. Any surgeon honorably discharged from the medical department of the United States Army or Navy, regular or volunteer, is authorized to practise medicine on payment of a $50 fee.

Pennsylvania.—The new one-board bill goes into effect on January 1, 1912.

South Carolina.—There is a bill before the Senate requiring members of the State Board of Medical Examiners to pass "a strict examination before the faculty of the Medical College of the State of South Carolina as to their qualifications for the position."

Metatarsalgia.—W. Truslow makes a plea for more careful examination of feet that are painful and less empirical dosage for "rheumatism," for the treatment of a mechanical condition by mechanical means, and, in general, professional cooperation in the warfare on deforming shoes, even to the personal use by physicians of correct shoes.—*Long Island Medical Journal.*

Medical Items.

Importance of Analysis of Mother's Milk in Some Cases of Dyspepsia in Nurslings.—Barbier thinks that it is especially important in cases of dyspepsia in infants that are nursed to have an exact examination of the milk. There are considerable variations at different times of the day, and according to the food taken by the mother. The milk having the least casein and butter is obtained in the morning, while the richest is obtained about 4 in the afternoon. If we give the mother a diet rich in albuminoids we get a milk that is rich in casein, and in which the butter is increased. If she takes many carbohydrates we get little casein and much butter. We can thus see how a knowledge of the analysis of the milk may aid us in arranging the hours of nursing, placing the nursings farther apart, or may assist us in modifying the food of the mother so as to get more or less casein or butter than she is producing.—*Journal de Médecine de Paris.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended July 21, 1911:

CHOLERA

Places	Date	Cases	Deaths
Austra-Hungary: Trieste	July 19	1	..
Ceylon: Colombo	May 28–June 3	6	6
France: Marseille	July 19	4	2
India: Calcutta	May 21–27	..	55
Madras	June 4–10	..	1
Italy: Naples	July 7–11	76	24
Palmero, province	July 7–11	6	3
Palmero, city	July 7–11	87	24
Total for continental Italy outside of Naples July 7–11: Cases 66, deaths 24.			
Java: Batavia	May 21–June 3	170	97
Surabaya	Apr. 30–May 6	15	10
Russia: Siberia—Omsk	June 20–26	2	..
Straits Settlements: Singapore	May 21–27	8	6
Turkey in Asia: Alatsham	June 19	2	.
Basra	June 19	2	..
Samsun	June 11–24	..	22
Smyrna	June 5–18	79	39

YELLOW FEVER

Brazil: Manaos	July 13	..	Present
Pernambuco	July 19	..	Present

PLAGUE

Brazil: Pernambuco	July 19	..	Present
China: Hongkong	May 28–June 3	16	14
Apr. 23–June 3, 82 cases, including cases previously reported.			
Egypt: Alexandria	June 10–22	7	2
Cairo	Feb. 12–May 31	1	1
Port Said	June 14–29	4	2
India: Calcutta	May 21–27	..	59
Kurrachee	June 4–10	40	40
Java: Pasoeroean Residency	May 21–June 3	125	62
Persia: Lingah	May 18–28	4	
Peru: Departments—Ancachs	May 21–June 17	7	1
Arequipa	May 21–June 17	7	1
Callao	May 21–June 17	3	1
Chiclayo	May 21–June 17	1	1
Lambayeque	May 21–June 3	.	1
Libertad	May 21–June 17	4	2
Lima	May 21–June 17	18	8
Pacasmayo	May 21–June 3	1	..
Russia: Odessa	June 18–24	2	..
Astrakhan government—Sarepta	June 18–24	3	3
Kirghis Steppe—Naryma	June 24	..	Present
Straits Settlements: Singapore	May 21–27	1	1
Turkey in Asia: Basra	May 28–31	3	1

SMALLPOX

Austria-Hungary: Bohemia	June 11–17	3	.
Galicia	June 11–17	1	..
Canada: Ottawa	June 25–July 8	8	..
Quebec	July 2–8	2	..
China: Hongkong	May 28–June 3	1	1
Egypt: Cairo	June 4–10	4	2
Port Said	June 4–10	2	1
France: Paris	June 18–24	2	..
Germany		.	..
Total June 18–24: One case.			
Great Britain: London	June 18–24	4	..
India: Calcutta	May 21–27	..	2
Madras	June 4–10	..	2
Italy: Catania	June 18–24	..	5
Naples	June 18–24	10	..
Palermo	June 19–25	7	6
Japan: Yokohama	June 13–19	1	..
Mexico: San Luis Potosi	June 4–10	16	..
Tampico	June 21–30	..	1
Portugal: Lisbon	June 18–24	12	..
Portuguese East Africa: Lourenco Marquez	Apr. 1–30	.	1
Russia: Batoum	May 1–31	1	..
Libau	May 12–18	7	..
Moscow	June 11–17	19	10
Reval	May 1–31	3	..
St. Petersburg	May 21–June 4	35	10
Spain: Barcelona	June 8–14	..	1
Valencia	June 18–July 1	20	2
Straits Settlements: Singapore	May 21–27	7	2

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Original Articles.

THE PREVENTION OF EPIDEMICS OF INFANTILE PARALYSIS.*

By M. ALLEN STARR, M.D., LL.D.,

NEW YORK.

PROFESSOR OF NEUROLOGY, COLLEGE OF PHYSICIANS AND SURGEONS; MEDICAL DEPARTMENT OF COLUMBIA UNIVERSITY.

THE facts which I present to you to-night, while familiar to neurologists, are not sufficiently well known to the general practitioner, and hence, in this audience, I venture to put them before you without any claim to originality.

It has been known for some time that infantile paralysis is an acute infectious disease, like measles or scarlet fever—a fact which has been suspected ever since the occurrence of the first epidemics, the first important one in this country being that reported by Caverley of Rutland in 1895. Ever since that time the possibility of the epidemic extension of infantile paralysis has been admitted, and in 1908 I was able to collect the records of forty-six epidemics which had occurred up to that time,[1] and I have knowledge of eleven more epidemics that have been observed since. It is well known that these epidemics are increasing rapidly, that the disease is cropping out in different parts of this country, and is affecting many children in any town or village where it appears.

The prevalence of the disease in Sweden and Norway, the most extensive epidemics on record having occurred there, has led to the belief that it has been disseminated through this country by the ingress of Scandinavian immigrants, but as yet this is merely an hypothesis. The more definite knowledge regarding its nature and its mode of propagation is due to the investigations by Flexner and his assistants at the Rockefeller Institute. The disease is due to an infectious agent not as yet isolated, but present in the cerebrospinal fluid and probably in the blood of those persons who are affected by the disease. The infection can be communicated from one individual to another, and it is quite certain that the infectious material exists in the secretions of the nose and throat.[2] It is probable that it is through the inhalation of infectious particles which lodge in the mucous membranes of the nose and throat that the infection enters the system.

If these facts be granted, certain conclusions with regard to the means necessary for the prevention of the disease naturally follow. In the first place, it is essential that any patient suffering from the disease should be isolated from contact with others at the earliest possible moment, and should be quarantined as is a patient suffering from scarlet fever, from diphtheria, etc., so that the rest of the family or the neighbors shall not be exposed to the disease. An upper room in the house should be chosen, sunny and airy; a nurse put in exclusive charge, and supplies carried by another, and all dishes and clothing disinfected. This quarantine should be kept up for at least a month. Secondly, the more or less constant disinfection of the nasal and buccal mucous membranes should be maintained in the person suffering from the disease by means of sprays and gargles of an antiseptic nature. Dobell's solution or a saturated solution of boric acid is adequate. Thirdly, all those who are exposed to the disease should constantly use sprays and gargles which will keep the mucous membranes of the nose and throat in a condition less liable to receive the infectious material. The spraying with a saturated solution of boric acid or with Dobell's solution is distinctly indicated as a prophylactic measure. It should be used by healthy children every time they go out of doors in the city, and also when they come in. And if a case of the disease has developed in a child at school the other scholars should be made to use these sprays and should be dosed at once with urotropin. The contagious material persists for several months in the nasal secretion of the person who had the disease, hence constant disinfection should be kept up for three months at least.

The most recent investigations by Flexner have demonstrated the fact that urotropin given internally to monkeys who are subsequently exposed to the infection of this disease lessens the liability of their contracting the disease, and the administration of urotropin immediately after the injection of the poison of the disease in monkeys tends to mitigate the severity and sometimes to prevent the occurrence of the symptoms. For these reasons it seems evident that the early use of urotropin in cases where anterior poliomyelitis is suspected is decidedly indicated, and that the early treatment of patients with this remedy is imperative, not only as a method of cure for the individual, but also as a method for the prevention of the extension of the disease to others. It is this latter fact particularly which has led me to draw the attention of this audience to the possibility of prophylaxis in infantile paralysis, as I regard the discovery as one of immense importance in the possible prevention of epidemics of this disease which at present threaten the community.

But if these remedies are to be applied, it is evident that the disease must be recognized in its earliest stage. The early diagnosis of anterior poliomyelitis is extremely difficult. The cases come exclusively into the hands of the general practitioner and are rarely seen by the specialist until the disease is fully developed. For this reason these measures of prophylaxis must be exercised wholly by the family physician, and hence any

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facts leading to an early diagnosis should be in his possession.

The study of the cases appearing in epidemic form has demonstrated that the disease is by no means uniform in its mode of onset. Many varieties have been described, depending upon the part of the nervous system which happens to be attacked by the poison. Thus, if the infection attacks the brain, cerebral symptoms predominate; if it attacks the cerebral axis, including the pons and medulla, symptoms of the nature of bulbar paralysis appear early, and cranial nerve symptoms are the first observed; if the disease affects the spinal cord, as is most common, it may be the upper or the lower segments of the cord that are invaded, or a diffuse process may affect the entire nervous system. Hence it is evident that the variety of symptoms possible is very great.

There are great varieties in the severity of the onset, which have led to different types being classified. We may have the very slight affection which manifests itself even in the extreme degree by a moderate febrile movement and a mere general enfeeblement and temporary weakness of certain muscles, and this is described as the abortive type. From this light affection we may have every variety of invasion up to the point of a total paralysis of both arms, both legs, and of the facial muscles, with death occurring on the second or third day from respiratory paralysis. It is thus evident that the degree of the symptoms in any one case may be extremely variable and that the early diagnosis is therefore extremely difficult.

The earliest symptoms in almost all the cases resemble those of any acute infection. Hence for several days it may be a question in the mind of the physician whether the patient is about to develop measles, scarlet fever, or typhoid fever, the latter being the disease which is most commonly diagnosticated.

On the first day there is a fever, temperature of 101° or 102°, possibly 103°, with rapid pulse, occasional sighing, and irregular respiration and yawning, chilly sensations, general pain in the limbs and in the head, frequently in the back, and an irritation of the digestive organs shown by nausea, vomiting, or diarrhea, the latter being more frequent than vomiting. On the second day these symptoms usually increase in intensity, the headache becomes more marked, and the patient is restless and dull, sometimes somnolent, and has more or less the appearance of a patient in beginning typhoid, face being suffused, eyes congested, body generally hypersensitive, and there being occasionally rigidity of the neck and of the back. Very often profuse sweating is observed. Sometimes a diffuse rash like erythema is seen. On the third day the fever reaches its maximum in the majority of instances, not often rising above 103°. The pulse is rapid, respiration may be irregular, headache intense, general pains more severe, digestion more impaired, urine high colored, of high specific gravity, and possibly containing traces of albumin. At this time it is not uncommon to find some difficulty in passing the water, which may have to be drawn, and occasionally there is also a loss of control of the rectum. As a rule the tendon reflexes are diminished and sometimes are lost. Kernig's sign may be present. It is on the third day, as a rule, that some evidence of paralysis is discovered in some muscle or group of muscles in the body. This may be preceded by an unusual coldness of the extremity for some hours, due to an early vasomotor paralysis. There may be merely a strabismus or a facial palsy, or there may be a paralysis of one or more of the extremities. After the paralysis develops there is, of course, no doubt with regard to the diagnosis, and then the case will run its course so that the maximum of intensity of the symptoms is reached on the fourth or fifth day. In the extremely severe cases death has usually occurred on the fifth or sixth day from respiratory paralysis. In the vast majority of the cases the general symptoms subside, but the paralysis remains at its maximum intensity for at least two weeks, when the subsequent improvement that is customary begins.

It was already stated that during the first three days of the onset of the disease it is almost impossible to make an absolute diagnosis, but it seems to me that in view of the facts already stated with regard to the communication of the disease by the nasal secretions, and the possibility of aborting the attack by the use of urotropin, that in any case where a child is attacked with indefinite febrile symptoms, such as are here described, it is imperative upon the physician, without waiting for a positive diagnosis, to disinfect the nose and throat frequently and to administer urotropin from the very onset of the symptoms. The dose should be two grains of urotropin every six hours for a child of two or three years of age; a dose of three grains for a child six to ten years of age, and a dose of five grains for an adult. It is possible that if, in the early stage beginning with fever, this remedy is used, the subsequent development of a severe attack of anterior poliomyelitis may be avoided, and the extension of the disease to others may be prevented. It is for the purpose of making this suggestion and urging it upon the general practitioner that this brief summary of facts, familiar to the neurologist, is here presented.

An examination of the blood appears to be an important aid to diagnosis during the early stage of the disease. On the second day of onset an increase in the leucocytes has been observed, and in some cases on the third day a distinct leucopenia has been noticed, with an increase of eosinophile corpuscles and of lymphocytes. In a case recently reported by Dr. Frissell[3] the examination on the third day of the disease showed: red cells, 5,020,000; hemoglobin, 92 per cent.; leucocytes, 12,000; small lymphocytes, 30.2 per cent.; large lymphocytes, 4.8 per cent.; polymorphonuclears, 64.6 per cent.; eosinophiles, 0.2 per cent; basophiles, 0.2 per cent; and two days later the small lymphocytes had increased to 34 per cent., while the polymorphonuclears had fallen to 59 per cent. In another patient under my observation on the fourth day of the disease the red cells were 5,003,000; the leucocytes, 14,500; small lymphocytes, 32 per cent.; large lymphocytes, 5 per cent.; polymorphonuclears, 68 per cent.; eosinophiles, 0.4 per cent. The blood examination simply indicates, therefore, an infection which may be of various kinds, and there is nothing characteristic of this disease to be gathered from the blood count.

The examination of the cerebrospinal fluid, as obtained by lumbar puncture, is more important. From the many examinations by Flexner and his assistants of the cerebrospinal fluid from monkeys, certain definite changes may be said to have been found constantly, and in several recent cases where the cerebrospinal fluid has been examined on the

third or fourth day in infants these changes have been found as well. As a rule the amount of cerebrospinal fluid is slightly increased, so that on puncture the flow is a little more free than in the normal state. The fluid may be quite clear or there may be a slight opalescence, usually the latter. On centrifugalization the fluid yields a sediment containing a considerable number of small and large lymphocytes and a few polynuclear leucocytes. This increase of lymphocytes, or white corpuscles, occurs also in tubercular meningitis, but there is usually no difficulty in distinguishing this disease from anterior poliomyelitis. Flexner has shown that the clear fluid gives a protein reaction when tested by Noguchi's butyric acid test. This also is present in monkeys and is not present in tubercular meningitis. In the recent case reported by Dr. Frissell this change in the cerebrospinal fluid was detected on the fifth day of the disease and was present before paralysis developed, and led Flexner to predict the onset of paralysis, which occurred the next day. It is evident, therefore, that the examination must be conducted with great care, as it should be done under the most aseptic precautions; that the tubes in which the fluid is collected should be absolutely sterile; that it is not necessary to obtain more than 5 or 6 c.c. of the fluid; that the examination can only be entrusted to those who are most expert in the detection of these changes which have been described. While it is easy, therefore, for us who are in close communication with the laboratories of the city and of the Rockefeller Institute to have such examinations made, it is by no means easy for the general practitioner away from the chief medical centers to resort to this method of investigation. As the disease progresses and passes from the active stage into the stage of recovery the opalescence of the cerebrospinal fluid diminishes, the reaction for protein diminishes, and the leucocytes remain at about the same percentage of excess for several days. I believe the case recently reported by Dr. Frissell is the first one in which the diagnosis of lumbar puncture has been made before paralysis appeared, and therefore it deserves especial attention.[3]

If, therefore, the diagnosis of infantile paralysis can be made on the second or third day of the disease, and urotropin given promptly, we may mitigate the severity of the symptoms. And if the precautions here suggested are taken it is possible that the spread of the disease may be prevented.

REFERENCE.

1. *Journal of the American Medical Association*, July 11, 1908.
2. *Ibid.*, Sept. 24, 1910, Feb. 25, 1911.
3. *Ibid.*, March 4, 1911.

EPILEPSY AND THE EPILEPTIC TEMPERAMENT.*

By EDWARD LIVINGSTON HUNT, M.D.,

NEW YORK.

INSTRUCTOR IN NEUROLOGY, COLUMBIA UNIVERSITY; CONSULTING NEUROLOGIST, LINCOLN HOSPITAL; ATTENDING NEUROLOGIST, NEW YORK CITY HOME; NEUROLOGIST, WORKHOUSE AND PENITENTIARY.

THE term epilepsy is a symptom; it describes the seizure, which is the leading and principal clinical manifestation of several conditions. These are the early epilepsies, the late epilepsies, the organic and the idiopathic; this is Turner's division and definition.

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The early epilepsies are those which occur in children and are most frequently the result of the ills of that age, as encephalitis, hemorrhage and thrombosis. The organic are those due to trauma and following focal diseases of the brain. The late epilepsies are those which appear late in life—from the third decade on. These are generally toxic in origin, resulting from alcohol and syphilis or secondary to a degenerative cardiovascular apparatus. The idiopathic epilepsies are those for which no discoverable cause can be found.

The word epilepsy is derived from the Greek. The original word in that language was "epi lambeino," meaning to fall upon. The original spelling more nearly approached the Greek word than does the present; instead of epilepsy it was epilency. Trevisa, in 1398, writing of it as was the custom in the fourteenth century, spelled it epilency. To the Ancients, epilepsy was known under many names. Each nation had a title of its own, each century added a new one. The synonyms, therefore, are very numerous. Some tribes even had more than one name. It seems to have been a disease very ancient in origin, in practice very familiar. The earliest name which has been given to epilepsy is the "disease of Hercules." By many the appellation is thought to have arisen from the severity of the disease itself. A more probable explanation is the one given by Josat, who, early in the 50's, wrote a treatise on this subject. He explained it on the theory that Hercules was himself an epileptic. This idea seems to have been shared by the writers of the day, who speak of his possessing a violent and tempestuous disposition. From Euripides and Seneca we learn that once when sacrificing to Jupiter the demi-god suddenly stopped, rolled his bloodshot eyes, frothed at the mouth, and beat the air. He then attacked and finally killed his wife and children. Next he attempted to destroy his father and would have succeeded had not Pallas intervened. After these events he fell into a profound sleep. Upon waking he professed complete ignorance of any of the events. At the sight of the carnage he was heart-broken. When one adds to this the additional facts that Hercules on another occasion had attacked his music teacher, and at twenty-three had killed some of his children the fact stares one in the face that he was more than unstable and very dangerous. The picture certainly describes the epileptic and the characteristics of the epileptic temperament.

To the Romans epilepsy was well known and called by several names. One was *morbus caducus*, from *cado*, to fall. This the laity translated as the "falling sickness"—a term which has, to a certain extent, survived even to this day. The earliest recorded instance where the term is used occurs in an old Latin publication bearing the date 1200. Gowers says that a member of the Camden Society translated the passage and that it reads: "Another property which is good for an anchoress is the 'falling sickness'—she would otherwise prove too presumptuous." The more familiar instance of the use of the term occurs in the play of Julius Cæsar. In the very first act Cassius says: "What! did Caesar swoon?" Casca replied: "He fell down in the market place and foamed at mouth and was speechless." To this Brutus added: "'Tis very like he hath the falling sickness." Among the Romans, however, the more common name was

"*morbus comitialis.*" The comitia were the large public assemblages in which the Romans chose their magistrates. Great were the formalities at such gatherings. If in one of these meetings a Roman had an epileptic attack, not only did the assembly at once adjourn, but the mere occurrence of the fit at once annulled all acts just passed and rendered void the names of any candidates already proposed.

In the time of Hippocrates the Greeks called it the "divine ill" or the "sacred disease." Cullen says that it was so called because the ignorant thought it the result of a divine punishment. Some of the old books say that the Sibyls rendered their answers in the midst of epileptiform convulsions. That the entire nation were not so densely ignorant nor so superstitious regarding its origin, however, is proven by this remark of Hippocrates: "It appears to me to be in nowise more divine or more sacred than other diseases. Men regard its nature and cause as divine from ignorance and wonder because it is not like other diseases." Celsus, in describing epilepsy, used a term which became immortal. He called it "morbus major." The French translated this into their own inimitable language and gave a name which is today the common description of the condition "*grand mal,*" because the disease was terrifying and great and grand.

The ancient Egyptians had still a different word to describe it. They, too, were ignorant and superstitious. To them the moon and the planets were wonderful and powerful bodies, the moon especially so. It exercised control over the wind and stagnant waters; it was regarded with awe and great fear. In their ignorance these barbarians ascribed many ills, especially the ills of the mind, to the evil influence of the moon. The one ill which to all nations has been clothed with the greatest awe, the greatest fear, and the greatest majesty is epilepsy. Therefore it is not strange that in Egypt it should have been known as the *morbus lunaticus et astralis;* that is, the moon and star sickness. The Greeks had the same opinion: they regarded the moon as a potent cause of ills and ascribed many of their misfortunes and attacks of sickness to its baneful influence. The Romans, in a measure closely allied to the Greeks, also shared many of these ideas and most of these superstitions.

An old appellation was Saint John's illness. Just why it was so called I have not been able to ascertain. One explanation is that Saint John, the Baptist, was a sufferer; another, that it had been observed that on the feast of St. John epileptics were most apt to be afflicted with a seizure. This could easily be explained by the fact that St. John's day was a midsummer holiday; there was not only a great access of heat, but on such an occasion the population was gathered together in crowds. Either of these would serve as exciting causes. Still another explanation is that when the head of John the Baptist was presented on a charger to Herod's daughter the features bore a strong resemblance to those of an epileptic.

The eighteenth century furnished still a newer term for epilepsy. A certain Swiss, John Joseph Gassner, who lived in the middle of this century left a short article on the "morbus daemoniacus." He was somewhat of a religious fanatic, who devised a certain set of terms or incantations to ward off the attacks. In this way he acquired great celebrity. To him at one time was actually attributed the power of curing the disease. His methods were those of the charlatan, and, like most such methods, achieved considerable success. He would visit a certain town announcing that he possessed a cure for the disease. The epileptics would swarm about him. He would then work them into a great frenzy. Innumerable seizures would result. This would be his opportunity. Forthwith standing over and surrounded by their prostrate bodies he would speak his long magical incantations. He would make these rites of considerable length so that by the time he was finished the unfortunate patients would gradually, one after another, be emerging from their fit. The populace would applaud, giving to him and his words the credit of stopping the attacks. Strange to say, the followers of such a man were numerous and numbered men of distinction. Among them was so wise and observant a man as the great physiognomist Lavater. Today Gassner would be termed a rascal and probably placed under arrest. You will, however, be more disposed to treat him with charity when I tell you that he was himself an epileptic. If you will pause a moment to consider his character you will certainly find traits much like those found in Hercules. Each was impulsive, each was irresponsible. The one was a fanatic, the other a murderer. Violence and impetuousness were familiar traits in each. These two figures of the past, the one historical, the other mythological, furnish excellent types illustrative of the epileptic temperament—a temperament which is distinctive and one not easily feigned nor exaggerated. As you analyze more carefully the character of Gassner you will recognize, as you did in the case of Hercules, the familiar signs of the epileptic.

The epileptic is a degenerate, as is shown in both the physical and mental traits. He is, as a rule, small of stature and slight of build. Somewhere about him can be found stigmata of degeneration. Fere says that of all these astigmatism is the most common and occurs in 75 per cent. of the cases. Others are the high arched palate and the asymmetrical cranium. The face itself is not characteristic. In many of these sufferers it of course shows the telltale marks of the bromide eruption and scars, which have resulted from falls. While these two signs are very suggestive they can hardly be called characteristics of the disease but rather the results. The mental condition, even more than the physical, is characteristic. Here the effects may vary from a very slight impairment to actual dementia. The most constant and the earliest manifestation is an impairment of memory. So general is this that Spratling puts the figures as high as 90 per cent. This impairment of memory affects the more recent events rather than those of earlier years. In the prolonged and advanced cases there is complete destruction of memory for both recent and remote events.

A leading characteristic of the epileptic is impulsiveness, a trait which is the frequent cause of trouble. It is this impulsiveness which so frequently leads him to violence and even to homicide. There is no disease in which the fury is so sudden and the anger so violent as in epilepsy. These attacks of rage come without warning and end in disaster. For this very reason these patients can neither be relied upon nor reasoned with. An argument with an epileptic is an impossibility: to begin one is always a mistake. Their thoughts are impetuous, their expressions explosive, their actions disastrous. Those epileptics who are neither violent nor distracted still show some signs premoni-

tory to an attack. Even the very peaceful ones at this time become irritable and emotional. A minor form of this irritability and impulsiveness is shown in their daily life. To those nearest to the epileptic he always shows an overbearing attitude and a certain degree of intolerance. Many of these patients are afflicted with periods of depression, which alternate with similar periods of exhilaration, although it is the depressed period which is the more frequent and the more lasting. Along with this unstable and ill-balanced temperament there is an element of bigotry and hypocrisy, which manifests itself in a religious emotionalism and fervour. The advanced cases, such as are seen in asylums, are especially apt to develop periods of religious frenzy. One will frequently find them reading verses in the Bible and psalm singing. Coupled with this is a latent hatred for some individual. Samt puts this phase of their character very well when he says "poor epileptics, who, with a prayer book in the pocket and the word of God on the tongue, have the most extreme wickedness in the heart."

They are egotistical and selfish. They are self-willed to a degree. It is with great difficulty that one can persuade them to adopt the right course. This is probably accentuated by the strong belief which they all have in their own ability to accomplish. As a result they are constantly getting into trouble and constantly making failures. Success to them is rarely possible. So great is this belief in their ability to accomplish that they are never willing to attribute the cause of any failure to their own weaknesses. They have a marked incapacity for any form of valuable productive occupation. It is not possible for the epileptic to carry out any consecutive or well-planned campaign. Yet at the same time there is an ability to receive a certain amount of education and of book learning. I have in mind a man who graduated first in his class at college and was full of enthusiasm and desire to succeed. In a period of ten years this man has tried fifteen or twenty different ways of getting on in life. Finally at thirty-one he admitted that his great mistake had been his failure to adopt a profession. He immediately began the study of law. He actually obtained his degree. He then entered a law office. In a few months, however, he had abandoned law and had embarked in some entirely new career. This lasted a little while, only to give way to a newer plan. At forty-five this man came to me as a patient. He had been an epileptic for twenty years. In the short time that I have taken care of him he has brought in at each visit a new scheme,—the last still being the one which is to bring great profits of success.

The mentality of the epileptic shows a gradual but steady deterioration and as the years go by he becomes more and more difficult to live with. There is no greater trial in a home circle than to have as one of the members a confirmed epileptic. The character of the life and the strictness of the régime which he has to follow serves to accentuate his faults and idiosyncrasies so that after a time he becomes unbearable. In justice to the patient home life for him ought not to be tried. The morals of the epileptic are bad. At times he is not only wayward but vicious. He is morose, sullen, and ill tempered and at no time is to be trusted. He is a member of the community who ought to be guarded against.

The medicolegal question often arises as to the degree of responsibility which ought to be attached to these people. It is a question whether the crime committed by an epileptic in an impulsive burst of rage should be excused or not. To my mind the epileptic is not responsible. He is one of the unfortunates of the earth and deserves the care and protection of his brother man. There is no disease known to mankind which is more disastrous than epilepsy. It blights the morality, dulls the mentality, and makes of the sufferer a person to be shunned.

There are two other points in this discussion of which I wish to speak: psychic epileptics and epileptic automatism.

The psychic epileptic may be one of two kinds. Either the attack may be momentary, lasting a few seconds, or the duration may be for a period covering several days. Between the two every gradation exists. In an attack of psychic epilepsy the patient as a rule performs some single act to which he is accustomed. Spratling describes a case at the Craig Colony. This man was in the habit of directing envelopes. When the attack came on he continued at his work and to all intents and purposes was doing it properly. When the attack was over, however, it was found that he had written the same address as many as six times. Another patient so soon as the fit seized him would take out his watch, look at it, make some commonplace remark, and then go on with his work. I had a patient who in these attacks always entered and walked through stores. His conduct was so normal in appearance and his external behavior so natural that no one ever suspected the existence of anything wrong.

The more prolonged attacks are those which the newspapers narrate of persons disappearing and then regaining consciousness in a distant part of the country. Some of these patients may travel for two weeks or even more, appear quite natural, excite no suspicions, and even transact some business. The condition will then suddenly clear up and the patient will find himself in a strange and distant town. The memory of the recent trip, the object of the undertaking, and the manner of starting will all be a closed chapter. He will be able to remember nothing. The time consumed in these attacks varies very greatly. Charcot has described a case of eight days in duration, but Spratling has described a case of twenty-eight days. In this time the patient traveled a great many miles and transacted a great deal of business. The attacks of psychic epilepsy are serious and dangerous. They may be heralded by a series of minor seizures, but, on the other hand, they may come unannounced as the earliest and first manifestation of the condition. During these periods assaults and crimes of all kinds may be committed. In this connection Gowers cited a famous case, that of an epileptic cabman who drove through the crowded streets of London in a complete state of unconsciousness, without accident, and without in any way remembering what he had done. I should mention here that pyromania is a favorite form for their destructiveness to follow.

The other point to which I wish to direct your attention is the epileptic automatism. This is a state in which the patient goes through a series of acts without injury to himself or others. He carries out all mannerisms and peculiarities of the normal condition. It is a noteworthy fact that he is able to transfer the acts of the normal into the abnormal, but never those of the abnormal into the normal. History tells us that many of the distinguished and

great men were epileptics, such as Caesar, Napoleon and Swedenborg. The explanation of this is probably twofold. One is that they were great not because of their epilepsy, but in spite of it; another, that they all were sufferers from epilepsia tarda, *i.e.* the late epilepsies, a condition which developed after they had achieved their great deeds.

REPORT OF A CASE OF ANAPHYLAXIS.

By WILLIAM S. THOMAS, M.D.

AND

W. K. TERRIBERRY, M.D.,

NEW YORK

W. L. W., aged 55, broker; negative family history.

Personal History.—Marked alcoholic history up to one year ago, at which time, after considerable loss of weight, patient had an attack of "blindness," which lasted some weeks, and was diagnosed by a physician as being due to diabetes. The patient recovered rapidly on a restricted diet, and since then has used no alcohol. He has apparently been perfectly well during the past six months on ordinary diet.

Present Condition.—On April 20, 1911, at 6:30 P. M., the patient received 8 c.c. (3,000 units) diphtheria antitoxin subcutaneously in the abdominal wall. There was no bleeding through the needle. Antitoxin was administered with the patient in a recumbent posture. At the end of five minutes he felt well and arose, but began to sneeze continuously and his nostrils became obstructed. He soon grew dizzy and complained that everything was growing dark. About fifteen minutes after receiving the injection the patient was cyanotic and his inspiration was noisy and difficult. Preparations were made for intubation of the larynx, if the necessity should arise. He raised himself on one elbow in the bed, laboring for breath, with frequent cough and expectoration of pinkish serum. His face, especially about the eyes, was swollen. The conjunctivæ were injected; the skin was cold and covered with perspiration, and the pulse was absent in both radial and brachial arteries—even the apex beat not being palpable.

A hypodermic injection of atropine sulphate, gr. 1/100, and strychnine sulphate, gr. 1/30, was administered. In a few moments the respiration became more quiet and at the end of fifteen minutes the patient sank back to the recumbent posture and the serous expectoration ceased. At this time the patient had an urgent desire to defecate and passed a large, brown, semiformed stool. Twenty-five minutes after the injection of antitoxin the radial pulse became barely palpable. The blood-pressure, however, was too low to be recorded with the sphygmomanometer. The skin all over was brightly flushed. The tongue was swollen, its edges showing the impressions of the teeth; the soft palate and uvula were edematous and their vessels were injected. Twenty minims of a 1/1000 solution of adrenalin chloride with chlorotone were now given hypodermically. At the end of one hour the blood-pressure was still too low to record, but the apex beat had attained fair force and was regular, though rapid.

Two hours after the serum injection the patient drank a pint of water which he promptly vomited. The regurgitated liquid was pink and frothy. During the efforts at vomiting the pulse rate sped up to 150 but afterward dropped to 96.

At two hours and a half the blood-pressure had risen to 115 mm. mercury. The edema was diminishing and the erythema had about disappeared. Temperature 98.4°, pulse 96, respiration 18.

At three hours the conjunctivæ had become clear and the edema was now only slight, but the nares were still obstructed. The pulse became accelerated on slight exertion.

At three and one-half hours the arterial pressure was about 105 mm. The patient went quietly to sleep about four hours after the antitoxin injection, his symptoms having now disappeared.

Examination of the first urine voided after the antitoxin injection showed a specific gravity of 1032, neutral reaction, no albumin, a trace of glucose.

At midnight the temperature had risen to 101.8° F., but reached normal the following morning and remained so. There was considerable thirst during the night and the patient drank a good deal of water. No further symptoms developed until nine days later, when a general urticaria appeared with much edema of the eyelids. This continued three days and then disappeared.

Comment.—This patient had never been subject to asthma or hay fever, but for many years had had a tendency to sneeze a great deal at all times of the year, a characteristic which the patient shared with his mother. He had never noticed any symptoms or discomfort from the close proximity of horses, nor had he ever had an injection of antitoxin before.

It may be proper to call attention to the possibility that the erythema and thirst may have been due to the hypodermic injection of atropine. If so, his sensitiveness to a moderate dose of this drug would be of interest in connection with the patient's oversusceptibility to horse serum.

The site of injection at no time showed any signs of infection or reaction.

THE LIMELIGHT ON PNEUMONIA.

By JAMES R. MITCHELL, A.B., M.D.,

FORT WORTH, TEXAS.

LECTURER IN CHEMISTRY, FORT WORTH MEDICAL COLLEGE.

This conception seeks to explain the success obtained by good men and true. Sir Lauder Brunton considers calcium chloride the ideal heart tonic in pneumonia. Sir James Barr gave calcium chloride because it thickened the sputum, for as old as pneumonia is the law: The thicker the sputum, the more favorable the prognosis. Calcium chloride was prescribed by A. Crombie, because it shortened the course; by D. M. Moir, because it relieved suffering and distress; by James Couldrey, because it stopped headache and slowed the pulse. Selkirk recommended lime in pneumonia because he invariably found cement laborers and workers in lime kilns to be immune to lung infection. These men used calcium symptomatically and got results. Let us see if their symptomatic treatment had a justifiable pathological basis.

We will start our investigation in the bacteriological laboratory. Here we find the pneumococcus notorious for resisting growth in ordinary bouillon culture. For a time it grows fairly well, but soon snuffs out. Add calcium carbonate to the broth culture, however, and the reluctant growth assumes a splendid vigor. The natural deduction follows that the pneumococcus extracts calcium from the medium in which it grows. When all the calcium is exhausted the culture dies. The thought next

comes: If calcium is necessary to grow the pneumococcus in the test tube, must calcium not necessarily be present to grow the pneumococcus in living animal tissues?

We proceed to the physiological laboratory and renew our acquaintance with the experiment of the beating excised heart. A quarter of a century ago Sir Sidney Ringer discovered that while hydrant water and salt sustained perfect pulsations in the frog's excised heart, yet distilled water and salt allowed the heart quickly to lose contractile power. Investigation shows that calcium was the stepping-stone from the few contractions of distilled water to the many contractions of tap water. Ringer correctly attributed the continuance of the normal heart beat to the presence of calcium salts in the living blood. In other words, when calcium is deficient in the circulating blood the heart will refuse to beat.

We visit the clinical laboratory for our third test. We boil and filter the urine of a pneumonia patient and add a few drops of nitric acid. To this mixture we add an equal quantity of 3 per cent. silver nitrate. No curdy precipitate appears. This means that in pneumonia the chlorides are absent or markedly diminished.

In vain have I searched my text books for an explanation of what happens to these kidnapped chlorides. No writer cared to hazard a theory. A case in the children's ward gave me the clue. A child with pneumonia vomited persistently. Usually the vomiting of children, so common in pneumonia, has been ascribed to the mucus which is swallowed by children, and not expectorated, as by adults. With this child the vomitus contained no mucus. It did, however, smell acid, and a test showed it highly acid with hydrochloric acid. Since then I have examined stomachs of many patients with pneumonia and have found all to be hyperacid with hydrochloric acid. The chlorides, then, are withheld from the urine and retained in the body for the formation of an excessive amount of hydrochloric acid in the stomach. Berend comes near the mark when he asserts that pneumonia of children is constantly associated with digestive disturbances.

We know that chlorine is combined in the blood and tissues with sodium, potassium, and calcium. We know that calcium is most essential for the growth of the pneumococcus. I contend that the chlorides are retained from the urine and dispatched to the stomach as hydrochloric acid, in order that this hydrochloric acid may unite with the minerals of the food, especially with the mineral calcium, and so restore the mineral balance which is being destroyed by the ravages of the pneumococcus. I contend, further, that many symptoms of pneumonia are direct symptoms of calcium poverty, the calcium being abstracted for the growth of the pneumococcus and for the defensive agents which fight the pneumococcus.

Pneumonia is not merely "an inflammation of the lungs." It is a systemic disease. Its organism multiplies in the circulating blood. The lung lesions are a defense. All symptoms of pneumonia, even dyspnea, may be present without any lesion of the lungs. Mice, suffering from pneumonia are dyspneic, although pulmonary consolidation is never present. The human lung is solid when the crisis has passed, but the pneumococci disappear from the circulation as soon as the crisis starts. In syphilis or in typhoid the lymph glands fight the disease. In pneumonia there is no glandular involvement. The lungs take the place of lymph glands and constitute the organs of defense. The organs of respiration in health play the accessory role of lymph glands in disease. In the desperate battle with the pneumococci nature favors the host by choosing the lungs as the arena. The pneumococci hurl their challenge. The host exercises his prerogative of weapons and location—the white blood cells the weapons, the lungs the arena. Instead of a battle cry, "To arms," the cry of the white blood cells is "To the lungs." Consider how wise is nature's choice. The swift-moving blood current is too unstable an arena, but every drop of blood passes through the lungs again and again. The lungs are the nets to ensnare the circulating germs. In the presence of the air in the lungs the blood coagulates and precipitates fibrin. The fibrin entangles the pneumococci much as the cat retains a mischievous mouse in her claws. Then the ever-vigilant leucocytes crowd into the meshwork and devour the ensnared germs at leisure.

The most frequent first symptom of pneumonia is a rigor. Repeated *x*-ray pictures have shown that this rigor occurs long before any consolidation of the lungs. What is its significance? Physiology tells us that a chill is a whip to accelerate the venous current. The rigor, then, means that the venous blood is being accelerated. The venous blood is heading directly to the lungs, nature's chosen arena.

After the rigor the temperature ascends. Metabolism is active. The fever is an agent of defense to hinder the propagation of the pneumococci. Pasteur proved the protective power of heightened temperature in birds. The hen has a normal temperature of 104°, and is normally immune to anthrax, which will not thrive at 104°. Pasteur lowered the temperature of hens by wetting them or standing them in cold water. Hens so treated were susceptible to the anthrax to which their normal temperature gave them immunity.

I have already laid stress upon the decrease of the chlorides in the urine, the chlorine being transported to the stomach as a hyperchlorhydria. The hyperchlorhydria is neutralized by the mineral alkalis of food to increase the alkalinization of the blood. Water is rich in minerals; fortunately, nature gives the patient great thirst. Likewise, the patient has little desire for food. Milk alone satisfies. There is no blood to spare for the complexities of digestion. The blood is most needed for the lungs.

Active metabolism encourages an angry, bounding pulse. This keeps the machinery of defense in action—the more blood to the lungs, the more germs entrapped and destroyed. In moribund cases the blood coagulates slowly. It has lost its calcium to nourish millions of pneumococci and to manufacture the fibrin which ensnares these pneumococci. Usually the blood is rich in leucocytes; and well, too, for the prognosis varies directly according to the number of white blood cells. Thirty thousand strong, they are swiftly transported to the arena. Each leucocyte bears its hoard of calcium to activate the opsonins of phagocytosis, for no enzyme will act without the presence of calcium. The leucocytes exude from the pulmonary vessels into the arena and devour the opposing pneumococci.

Consider the drain upon the calcium of the blood; its use for food by the pneumococci; its loss in the extensive formation of fibrin; its necessity for stimulating six times the normal number of leucocytes; its requirement for activating opsonins and bacteriolysins. Remember that this loss of calcium

is proven by the delayed coagulation time of the blood and quantitative tests of the urine. Reflect that Ringer's experiment upon the beating excised frog's heart proves the necessity of calcium to the proportion of 1:10,000 in the blood for the maintenance of the heart beat. Then know that heart failure—that bugbear in the treatment of pneumonia—is due to the poverty of calcium in the circulating blood.

Pain in the chest originates from a fibrinous pleurisy overlying the consolidated lung. This pleurisy fixes the lung, making a solid fighting ground for the contest. "A circulating leucocyte gathers no pneumococci." In the solid lung phagocytosis is easy. For the time being the respiratory function of the consolidated lung is entirely lost. The function of defense reigns supreme.

If the secretion is scanty there is little cough. Any secretion in the bronchus is a foreign body, and with children nature provokes drastic vomiting to expel this foreign body. Clinicians affirm that the thicker the sputum the more favorable the prognosis. The thought next comes, "Why give expectorants, all of which decrease the coagulation time of the blood, thin out the expectoration and irritate the stomach?" The frequent occurrence of convulsions confirms the necessity of calcium in pneumonia. In a previous paper,* I showed that the convulsions of eclampsia are due to a calcium poverty of the nerves. I hold that the convulsions of pneumonia are due to the same cause. The poverty-stricken blood extracts calcium from the nerves, and the nerves writhe in protest.

We hear much concerning the toxins of pneumonia, yet nothing remotely resembling a toxin has been isolated from the cultures of the pneumococcus. The toxemia of pneumonia, like the toxemia of eclampsia, is simply an expression of calcium poverty. Death from toxemia is death from calcium poverty. Death from toxic heart failure is death from lack of calcium in the circulating blood.

Drennan has laid emphasis upon the fact that before an organ can undergo fatty degeneration calcium must be present to form soluble lipoids out of the fat. Gray hepatization is a fatty degeneration of the fibrin and leucocytes after they have fulfilled their mission, and the calcium of the blood unites with the fatty particles to form soluble lipoids. Gray hepatization, or fatty degeneration of lung débris, occurs coincident with the crisis. The added drain upon the already depleted calcium supply is enormous. No wonder heart failure is so frequent —especially at the crisis of pneumonia.

Edema of the lungs is the complication of impending death. MacCallum has shown that the *Eucharis multiformis* is very active in artificial sea water, which is calcium-free. When calcium is added to the sea water the contractions of the Eucharis immediately cease. MacCallum says that calcium appears to alter the permeability of contractile tissue to ions, inhibiting contractions by decreasing permeability of fibrils. So with edema of the lungs —when calcium is deficient in the tissue fluids the tissue is readily permeated by such fluids. Nothing reduces a cutaneous edema so quickly as a salt-free diet combined with large doses of calcium lactate. Edema of the lungs in pneumonia compares in origin with the edematous joint of the hemophiliac—an effusion always associated with calcium poverty.

*"A New Theory of Eclampsia," Medical Record, November 19, 1910.

Pneumonia is a nine-day obstacle race between the pneumococci and the leucocytes. Don't stimulate. The body can ill afford spurts. Support the body. At best it is an unequal fight for the pneumococci on hostile soil. Waylaid in the dark recesses of the lungs, what chance have they in a resistant body? The whole pathology of pneumonia is a sign language against the use of local treatment. Expectorants, inhalations, pulmonary antiseptics are meddlesome and worse than useless—meddlesome because they paralyze the leucocytes as well as retarding germ growth; useless because healthy leucocytes are abundantly able to cope with any pulmonic infection. Pulmonary antisepsis ranks with the use of intestinal antisepsis in typhoid—both provoked by a hastily assimilated knowledge of pathology. Did you ever stop to think how fortunate that typhoid ulcers are in the inaccessible small intestine instead of in the rectum? Typhoid would then have become a surgical disease. How the meddling surgeons would have irrigated, curetted, and daily dressed those ulcers! Until they learned better! It is painful to contemplate. Yet local treatment of the pneumonic lungs is as illogical as the local treatment of the typhoid ulcers. There is no laboratory antiseptic to compare with normal blood.

The logical treatment of pneumonia is rest, support, and calcium. Don't sit your patient up to examine him. Don't curse him with the company of his friends. Don't torment him with poultices and ice-bags. Cold sponge-baths and cold-air treatment are harmful and brutal. Nature provides the turbinates to warm, inspired air. Cold air treatment antagonizes nature. Warm air is just as fresh as cold air. Children instinctively shrink from a cold bath. In fact, you cannot give them a cold pack unless they are in stupor or delirium. When an adult is near the borderline of death he is as delicate as a child. His fever needs no special attention —no cold pack, no antipyretics. When you apply cold packs you repeat Pasteur's experiment to the detriment of your patient. Cold packs! So quickly does the doctor forget how a similar exposure to cold and dampness preceded the disease and chilled the patient's vitality so that he became an easy victim for the treacherous pneumococci. Statistics show that cases in which the fever has ascended to 105° suffer no higher mortality than those in which it has never risen above 103°. Fever does not constitute the danger. Fever merely announces the danger. You would not gag the dog that barks a warning against a thief. Why freeze the fever—your diagnostic friend? Is it logical to run the fever down one degree and then try to delude yourself into the belief that your patient must be better? Because you gag your dog must your house needs be safe from intruders?

Pneumonia in alcoholics is an ugly disease. Yet doctors there are who make a routine of alcohol in pneumonia—a drug that delays coagulation, relaxes the vasomotor system, wears out the heart. The beating excised heart soon stops when perfused with alcohol. If pneumonia often winds up an alcoholic debauch then alcohol often winds up a pneumonic debauch.

Guaiacol increases lung secretion, which is another way of saying that it predisposes to edema of the lungs. Lung antisepsis is meddlesome and is a poor substitute for the phagocytosis with which it interferes.

Quinine is undeniably harmful in pneumonia.

To quinine is correctly laid the responsibility for case after case of delayed crisis. Quinine retards the growth of the pneumococci, 'tis true, but quinine also paralyzes the 30,000 leucocytes per cubic millimeter which nature has prepared for your patient's defense. Would you beat a dog to drive off his fleas? It would be more illogical than to paralyze your patient with quinine when he needs only intelligently directed support.

Calcium is the rock on which our treatment is built. Ferments and enzymes can be activated only in the presence of calcium. Calcium is needed for activating the enzymes of phagocytosis. Tuberculosis and pneumonia are almost unknown among men who work in lime kilns. Many observers corroborate this fact. All my cases treated with calcium ended by crisis—a crisis unattended by collapse, for the heart was strong; a crisis which, transferred to the temperature chart showed a line straight as the crow flies.

The curative treatment is a diet solely of equal parts of milk and lime water, supplemented by ten grains of calcium chloride every three hours. No other treatment has ever been needed. In all diseases where pneumonia is a threatening complication—in measles, fractured neck of the femur, eclampsia—the administration of calcium in diet and medicine will abort lung complication. The proof of my theory is in the clinic. My experimental series of cases numbered thirty-three. No patient received other treatment than calcium, as milk and lime water diet, and medicinally as calcium chloride. Of the thirty-three, but two patients died, both within twelve hours after admission to the hospital, which means before the treatment was fairly instituted.

McKechnie has well said: "In a violent and dangerous disease like pneumonia, often threatening a valuable life in its prime, there is a great temptation put upon the medical man in charge of the case to 'do something.' The blood is swarming with pneumococci, and somewhere, somehow, the body is manufacturing those subtle substances—antitoxins, lysins, complement, and what not—which, given the time, will destroy the parasites and their poisons in about a week. This is the cure. Nature effects it; never the medical man."

Every aspect of pneumonia bears testimony to the value of calcium. We know that the pneumococcus extracts calcium from the medium in which it grows. We know that it extracts calcium from the human culture medium, for calcium products are increased in the urine and feces during pneumonia. We know that convulsions are caused by calcium poverty, and we have no reason to deny that this calcium poverty is the cause of the convulsions in pneumonia. We know that a hyperacidity is a chemical invitation for alkalis, and we suspect that calcium is the bidden guest in pneumonia. We know that calcium is absolutely required for the activation of lysins and opsonians, and all the phenomena of leucocytosis. We know that gray hepatization is impossible without the presence of calcium. We know that edema of the lungs and collapse of the heart occur only when the coagulation time of the blood is delayed. Gentlemen, is there any doubt in your minds concerning the importance of calcium in pneumonia?

If I had the teaching of physiology I would again and again perform Ringer's experiment upon the beating excised heart until its pulsations would sweep aside all temptation for my students ever to substitute alcohol for calcium in pneumonia. If I had the teaching of pathology I would show under the microscope how the leucocyte in a calcium solution is spoiling for a fight with the germs that surround him; how in a quinine solution the leucocyte floats listlessly about, all indifferent to the appetizing germs it was born to devour. The vision of this paralyzed leucocyte would haunt my students whenever they were tempted to substitute quinine for calcium in pneumonia.

THREE CASES OF NON-PARASITIC CYST OF THE SPLEEN.

By H. A. ROYSTER, M.D.,

RALEIGH, N. C.

I HAVE had occasion to remove the spleen but three times and each time for cystic enlargement of the organ. The first was a simple cyst of medium size, the second a large blood cyst, and the third, largest of all, a suppurative cyst (abscess). There was no special trouble in the operations, except the last one, in which unusually dense and widespread intestinal adhesions were encountered. An uncomplicated splenectomy is certainly not a difficult procedure, least of all from fear of hemorrhage, as the pedicle is in most cases easily secured. Removal of the whole organ is the only satisfactory mode of treatment for a splenic cyst. Partial excision, puncture, or open drainage are often more serious than splenectomy and are not to be thought of unless it seems impossible or dangerous to do a total extirpation.

Though conversant with the matter in a general way, I have never looked up the literature of this subject. In a recent paper describing one case C. G. Darling* states that "non-parasitic cysts of the spleen seem to have been rare in this country, at least only a small number have been reported," and that Powers' case in 1906 was the first one recorded in the United States, while Johnston (1908) had found only nineteen in which splenectomy had been performed. I therefore present the following cases merely for the purpose of adding them to the published list.

The first one was set forth in the Transactions of the Medical Society of the State of North Carolina for 1901 (pp. 138-140), but did not appear in the periodic literature. This antedated Powers' paper by five years. The other cases are of more recent occurrence and are here recited for the first time. A singular fact concerning these cases is that all three of the patients had had chills and that in none of them was the plasmodium demonstrated. Two of the patients were from so-called malarial regions, but it seems unlikely that malaria had anything to do with the splenic enlargement.

CASE I.—A colored school girl, twenty-four years old, has been healthy with the exception of chills, which she thinks were probably due to malaria. Menses began at the age of thirteen, always regular, but very free; she has indigestion occasionally, but complains of no special pain. In November, 1900, she felt an enlargement in her abdomen about the size of a hen's egg; it gradually increased in size until the present time (May 16, 1901) when it seems to her as large as the fist. Examination: Patient well nourished. There is in the abdomen just above the symphysis a central globular enlargement, smooth, of the size of a large orange, with a linear mass extending upward to the left; on bimanual examina-

*MEDICAL RECORD, January 21, 1911.

tion the growth appeared to move with the uterus; the cervix was rather soft. The diagnosis was considered obscure, opinion inclining to fibroma of the uterus, with the possibility of its being an ovarian cyst. No plasmodia were found in the blood. Operation: May 18, 1901, at St. Agnes Hospital. A three-inch abdominal incision was first made over the most prominent part of the tumor. When it was exposed and seen to be cystic, the fingers were swept around the broad ligaments, but no pedicle was found in that region. The mass was pushed upward and disappeared entirely from view, but was felt through the abdominal wall in the left hypochondrium. The incision was prolonged until it reached above the umbilicus, when it was discovered that the growth was a cyst of the spleen. After separating the adherent omentum, in which were found two smaller cysts, the vessels were tied with a doubled silk ligature and the whole spleen removed. Not a drop of blood was lost in this maneuver. The right ovary, which contained two or three cysts, was also removed. The abdomen was closed without irrigation or drainage. The patient had a perfectly normal convalescence and made a nice recovery. She continued to have chills for several months. She is now married, lives in another State and has recently written to say that she is in good health. The specimen after removal was seen to consist of a spleen nearly normal in size and shape, with a thin-walled cyst growing from its lower portion, containing about a pint of clear, watery fluid. Dr. R. H. Whitehead, who examined the specimen, reported that it was a serous cyst of the non-parasitic type.

Case II.—Young white man, age twenty-two, cotton-mill operative, first seen March 5, 1910. He complained of pain in the upper abdomen, chiefly on the left; also of "soreness under the breast bone." From September 1 to December 21, 1909, he had chills at irregular intervals; he never had any before that period and has had none since. About the time the chills began he noticed a swelling of his abdomen, which has remained and grown gradually larger. Examination shows the abdomen distended in its upper region by a huge cystic mass, fifteen inches in its longest diameter. It was easily traced to the left and a diagnosis of cyst of the spleen was made. The urine was normal: the blood analysis gave 5,000,000 erythrocytes, 14,000 leucocytes, and 70 per cent. hemoglobin; hook-worm examination was negative. Operation: March 7, 1910, at Rex Hospital. A high left-rectus incision exposed the tumor, which showed dark liquid contents through its thin wall. A trocar was inserted but the sac was very friable and the whole cyst suddenly collapsed, discharging four quarts of bloody fluid. The sac was then carefully peeled off from the abdominal walls, liver, diaphragm, stomach, and intestines; the spleen was turned outward, the pedicle ligated with linen and whipped over with catgut. The wound was closed in layers without a drain. The patient ran a pleasant postoperative course and was in the hospital only seventeen days. He is now restored to health, having made a considerable gain in weight. This large blood cyst sprang from the inner surface of the spleen and the organ itself was enlarged, weighing nine ounces. As traumatism may play some part in such a case, it will be well to state that after the operation this patient remembered that during his work he often had occasion to press his sternum and the lower part of his chest against a frame run by machinery. Dr. C. A. Shore, Director of the North Carolina State Laboratory of Hygiene, examined the specimen and made this report: "Wall of cyst consists of splenic tissue; not hydatidiform. Spleen hyperplastic."

Case 3.—Colored woman, twenty-three years of age, sent to my clinic January 20, 1911. One child, five years ago. Has no symptoms referable to her pelvic organs. Has had chills and fever every summer for several years except last summer (1910). Swelling of her abdomen has been noticed for two years or more, and she suffers increasing pain from pressure of the mass which has

Case III. Large tuberculous cyst (abscess) of the spleen.

grown rapidly in the past few weeks. Examination: A rather stout healthy-looking woman. Temperature normal. Chest and pelvis negative. There is an enormous distension of the abdomen, particularly in the left upper quadrant, where the lower ribs are everted (see Fig. 1). Fluctuation is easily elicited. Some respiratory embarrassment is evident. All signs seem to warrant the diagnosis of cyst of the spleen. Operation: January 21, 1911, at St. Agnes Hospital. Through a ten-inch incision in the left rectus, beginning at the lower border of the ribs, an attempt was made to deliver the cyst entire, but it ruptured on handling and the contents poured into the cavity. There escaped at least six quarts of a yellow, purulent fluid, of thin consistency, with cheesy flakes, and a faintly disagreeable odor. Troublesome adhesions to diaphragm, left abdominal wall, kidney, stomach and transverse colon required time and care in their separation; a part of the sac had to be left at the lower portion where it was immovably attached to the small intestine. The splenic pedicle was ligated with linen and the organ removed along with the cyst walls. There was no unusual bleeding. The abdomen was wiped out as quickly and as thoroughly as possible and three drainage tubes were introduced; one straight through the upper part of the incision down into the very deep cavity which the cyst occupied; one through a stab wound just above the pubes; and one posteriorly between the two lower ribs on the left side, going directly into the dependent space in which oozing might occur. The patient showed a marked degree of shock, but she soon reacted. Her respiration was chiefly affected. The head of her bed was elevated and she was propped on pillows from the first. Normal salt solution was administered continually by rectum for two days. Pain in the left chest, rapid breathing, and a moderate elevation of temperature were present for nearly a week after operation, but they subsided without serious import: no sign of

pleurisy was discovered. Slowly but surely the chest wall resumed its natural outline. The wound healed properly and the patient was discharged February 8, 1911. An examination of the specimen by Dr. Henry G. Turner revealed a spleen nearly normal in size, but honeycombed with multiple areas containing the same material as that evacuated from the cyst. Cheesy masses were deposited in and around these small cavities. The microscope confirmed the clinical opinion of tuberculosis. On the basis of a strict classification this case might not be included under the title of this paper, since it proved to be a turberculous abscess. But the physical signs were those of a cyst and the character of its contents were not such as to modify the diagnosis or the treatment.

CHRONIC BLOOD INFECTION SUCCESSFULLY TREATED WITH STAPHYLOCOCCUS AUREUS VACCINE.

By T. W. BEEMAN, M.D.,

PERTH, ONTARIO.

John M., aged 46, a Canadian employed in a grain elevator and a resident of Manitoba, consulted me in December, 1910, giving the following history: In July, 1909, he noticed a few pustules on one ala of the nose. He had been engaged temporarily in removing fresh earth from a cellar, but it is impossible to say whether this had any connection with the pustules on the nose. These soon disappeared, but shortly afterwards he had an attack of what was thought to be typhoid fever; he was for 35 days in a hospital, where it was soon noticed that the temperature curve was not of a typhoid character. Shortly after leaving the hospital a swelling appeared on the back of his neck that was very slow in developing. It was not attended with much pain at first, but, later on, interfered considerably with the act of swallowing. Several efforts were made to locate pus in this swelling before its presence was established, and several weeks after the first symptoms of the adenitis appeared a large abscess was opened in the median line over the second cervical vertebra. This continued to discharge for several months. From that time, October, 1909, until December, 1910, he was never without an abscess either forming or discharging. All of these abscesses were in muscular tissue and very deep seated. His condition at that time was far from promising. He was greatly emaciated, had no appetite nor energy, and dreaded going out of doors in the cold. He slept badly but had no night sweats. His temperature would run up to 100° or 101° for a few days before an abscess was opened. His complexion was sallow and his general appearance was very characteristic of a septic condition. The bowels were obstinately constipated and there were no albumin, tube casts, or sugar in the urine. A blood count showed 2,600,000 red blood cells. A very large abscess was forming on the anterior surface of the right thigh when he consulted me. Taking proper precaution I ran an exploring needle into the abscess and withdrew some pus. In this I found staphylococci in considerable numbers. Not having the facilities for making a culture from the pus, I sent small quantities to pathologists in both Kingston and Toronto, connected with the Provincial Board of Health of Ontario. Both pathologists very kindly reported to me within 48 hours that the cultures showed the presence of *Staphylococcus pyogenes aureus*. I began giving him injections of a stock vaccine of this microorganism, the first injection being 200,000,000 of the killed germs and increasing the dose until the sixth and last, giving the full amount, 400,000,000. After each injection he exhibited the characteristic symptoms of buoyancy, depression, and lastly a period of decided improvement. Injections were given about 8 to 10 days apart. All injections were given as near as possible to the site of an abscess. In every case the abscesses began discharging freely for a day or so after an injection. No rash nor, in fact, any disagreeable symptoms followed the administration of the vaccine. Each injection was given under the most scrupulous precautions, as also all abscesses were carefully opened. I might also add that some of the abscesses were so deep that drainage tubes had to be introduced. The pus from the newly opened abscess was free from odor, thick, and uniform in color, in fact, was exactly what we used to know as "laudable pus." Improvement was most marked in every way as soon as he began receiving the vaccine and he is to-day in his normal state of health. He gained 25 pounds in weight during the last two weeks of treatment and has now a good appetite and digestion and lots of energy.

Two things strike me most forcibly as the result of my study of this case. One positive and one a question. First, it would seem as though the clinical symptoms were a sufficient guide to treatment without the difficulty of obtaining the opsonic index of the patient; and, secondly, the question naturally occurs: what other treatment would have offered any prospect of a cure?

"HEAT WAVES" AND "HEAT STROKES": CLIMATIC CURRENTS, ATMOSPHERIC AND OCEANIC.

By JOHN KNOTT, A.M., M.D., Ch.,B. & D.P.H. (Univ. Dub.); M.R.C.P.I.; M.R.I.A., etc.

DUBLIN, IRELAND.

The significance of *animal heat,* in association with animal life in its higher types and aspects, is thoroughly familiar to all intelligent members of humanity; although the more critically discursive, or dialectic, may still be found to defend the thesis that it is not yet completely understood by any. As a mere matter of fact, the production and regulation of calorific supply, and the thermometric standard of the same, continue to remain—what they have been evermore—a mystery, or a *miracle* (the name does not matter), which few ever think of as such, from the fact that it has always been before them, as well as in and around their own persons. The problems of heat and climatic temperature have, however, pressed themselves this year into a prominence so exceptional that its practical interest has been regarded by a large proportion of the members of the Anglo-American communities on both sides of the Atlantic as hardly second to those of the recent historic prize-fight. The contemplative philosopher may easily find in his observations of the cyclic periods of existence arguments—and not a few—in support of the antique view that man can at best regard himself as but a nexile on the surface of this planet; and a heavily handicapped, and frequently persecuted, one at that. For meteorological conditions will from time to time arise which tend to persuade him that his external prosperity and comfort, and internal sensations and

conditions of well-being, are a good deal at their mercy—even when housed in conformity with the most righteous precepts of modern luxury and sanitation and decorative esthetics. In presence of the most effective provisions for material comfort that can be supplied by the combined counsel and effort of the geologist and meteorologist, the architect and the upholsterer, the decorative artist and the sanitary engineer, the attitude of the meniscus which forms the floor of the Toricellian vacuum, and the direction of the point of the horizon from which "proceeds" the original "breath of life," will be found to influence the equanimity, and tincture the phantasmic presentations of external and internal rectitude of even the tenant of the modern palace; whether a high bred scion of a long line of royal ancestors, or the vulgar compound of Eastern thug and Western attorney who boasts of the fact that he is not merely a "self-made" man but an autocratic millionaire. The passing change of the atmospheric medium in which we live, and move, and have our being, does not fail to influence by its variations the physical and mental sense and appreciation of well-being of every dweller at the bottom of the "spiritual" ocean which surrounds and supports us all. Such considerations, and the feelings which have given rise to the same, are from time to time reinforced by the irregularly periodic reminders which arrive from the various points of the compass: of the emphatic displays of meteorological phenomena (seasonal, thermal, pluvial, nebular and electric) which startle the subjacent denizens of the terraqueous surface of this restless and unrestful globe. What is the primordial source of the disagreeable influence of the easterly breeze on the temperamental equilibrium of the palefaced descendant of the original exiles of the Garden of Eden?—is a question which is being asked, pretty continuously, audibly or inaudibly, consciously or subconsciously, by one, more, or many of the more thinskinned inhabitants of western Europe. And there are some who cannot be brought to accept the diminished proportion of aqueous vapor as a satisfying explanation. The vagaries of the climate of the British Isles are, of course, not merely celebrated—or notorious, to use the (more appropriately) cacophonous term; they have secured for themselves the worthy heritage of a series of proverbs. A prominent public speaker and art critic announced to a large audience on one of the early days of July, and in one of the leading British seaports, that "our climate makes our national art a dull affair"; and the enunciation of that statement inspired a well known poet of the same nationality to ask, in the columns of a London daily paper:

> What is the origin and cause
> Of all the breaches of the laws
> Put down to human nature's flaws?
> Our climate.

So that a new importance has been given to the statistical fact that the brightest and sunniest part of the year reaps the largest crop of suicides, while the gloomiest and apparently surliest season yields by far the most meager return. The Parnassian commentator followed the above query by another, which will probably appeal to most readers—in the illumination of recent experience:

> What turns our best-laid schemes awry,
> Makes profits low, expenses high,
> And even humour hard and dry?
> Our climate.

Thus is man morally, as well as physically, enslaved by the influences of the gaseous ocean at the bottom of which he has crawled—with occasional attempts at climbing—for so many generations; and in which he has at last commenced to swim, with highly artificial fins and with a fairly encouraging modicum of success!

The sources of animal heat, and the physical—and *"vital"*—mechanisms which preside over and duly regulate the production and distribution of the same are far too complex (and too remotely located in one of the darkest areas of the Cimmerian Continent of Science) to be fully discussed in a communication of even a good deal above the average longitude. But some of the leading features may be touched—and, if luminously, the interest of reading cannot fail to be very markedly emphasized by the experiences of the current year. For it was not merely the British artist whose functions were impaired during and by the passage of the record marking electric and calorific waves of the present summer; these are known to have modified the professional efficiency of even the crossing sweeper at his familiar metropolitan corner of industrial refuge, and of the subterranean coal miner even in the best propped—as well as dust-free, whitewashed, and electrically lighted—gallery of the carbon lode which he had brought himself to regard as his workshop, if not his home. Thus the question of the mystery of "caloric" has been brought nearer to the hearths and homes of "intelligent and educated" citizens, on both sides of the Atlantic, by the anticyclonic phenomena of the present summer. The arrows of the far-darting Apollo have been shot over larger areas than usual; also more forcibly; and, accordingly, did not fail to penetrate more deeply. And the incongruous and inexplicable mixture of moods displayed by the aerial Juno have also proved to be correspondingly conspicuous—even when least esthetic or hygienic. So that most inquisitive readers have been led of recent weeks to ponder on the interaction of life and heat, of mind and atmosphere, of the internal *spirit* and the external πνευμα. Why do a few degrees of elevation of the thermometric index in the external gaseous medium afford reliable testimony to the lowering of the output of physical energy by the animal frame, and even to a dulling of the intellectual luminosity that enlightens the governing and distinctive faculty which characterizes the self-styled "lord of creation" himself? The facts have always been so familiar as to have evaded inquisitorial research; nevertheless the mystery of each is permanently present and profound—even to a depth beyond the reaches of our sounding lines—in the respective media. The mental apathy which excess of heat tends to produce—more especially in a moist atmosphere—can hardly have failed to suggest to some observant readers a physical comparison of the struggle against *insolation* which attracted the poetic attention of William Shakespeare and the amateurish philosophy of the contemporary (if not exactly identical) Francis Bacon. I refer to the struggle of a newly lighted fire against the brilliant beams of a torrid sun, and the lively sense of relief which it actually seems to express—and with which it unquestionably progresses—when the latter have been effectively screened off. The great furnace for the production of *animal heat* is the *muscular* system, and some amateur advocates of the philanthropic foresight of Nature—and her faithful conservation of all the powers with which

she has been entrusted—would be pretty surely found to suggest that the effect of heat on the neuromuscular system has at least one salving result: in tending to lower the evolution of muscular caloric, by restraining the expenditure of muscular energy.

Then the modification of the functional activity of the faculties of the human organism—both mental and physical—which results from exposure to unusually high temperature is, of course, very largely due to the alteration of the standard of necessary output of waste material by way of cutaneous transpiration. The average denizen of our busy and broiling thoroughfares during the working hours of our trying canicular days rarely realizes the vast importance to the well-being of his system which is represented by the *continuous* activity of the cutaneous glands—even when the quantity of fluid which these eliminate from the systemic circulation never attains the cumulative—visible and slightly odorous—formal standard which is usually connoted by the Anglo-Saxon substantive term *sweat*. The relationship of the physiological activity of the human integument to the coexisting conditions of atmospheric heat and moisture are very peculiarly complicated and are so peculiarly influential as to furnish ample food for research and reflection to the philosophical physiognomist and to the philanthropic politician. For as the healthy condition—and available function—of every organ and tissue of the animal mechanism depends (for the moment), in the last resort, on a due supply of healthy blood; and as the healthy human body always presents the well known standard of temperature (of which the continuous regulation is one of the most marvelous of the innumerable miracles which are never recognized as such because they are being continuously performed directly before our eyes); while the maintenance of the same means the exercise of a perpetually mobile adaptation of the internal conditions of the living body to the external conditions of the investing atmosphere—the enormous influence of meteorological conditions on the mind and body of *homo sapiens*, from the cradle to the grave, are not likely to be overestimated; and give good grounds to the skilled and inquiring observer for arriving at the conclusion that *climate* is, upon the whole, the most important factor in the formation (and maintenance) of *national character*. That the mere elevation of the temperature of the surrounding air is not the great central factor in the development of physiological mischief in the variably torrid season of our uncertain "temperate" climates is well shown by the conditions of contemporary existence in the warm chambers of a Turkish bath. This fact, too, calls emphatic attention to the importance of the cutaneous excretion in regulating the temperature of the human body; and will, I trust, be accepted as an apologetic explanation to the reader for taking the opportunity of dwelling at some length upon some of the underlying physical facts—which probably seldom arrest the attention of the busy general practitioner.

The immense importance of the (relatively watery) cutaneous excretion, as a contributory factor in the regulation of the temperature of the body, depends, in greatest measure, on the physiological utilization of the physical entity known as *latent heat*. This may be defined to be: the heat which is used up in changing the *state* of a body, without changing its *temperature*. Three varieties are generally recognized: latent heat of *fusion*, latent heat of *evaporation*, and latent heat of *expansion*. It is a readily recognizable fact that the various known forms of matter exist in three different (and highly contrasted) "states"; solid, liquid, and gaseous. (It would, of course, be quite a work of supererogation to discuss, on the present occasion, the properties or features—real or fancied, physical or metaphysical—which distinguish the corpuscular, electronic, ionic, radiant, or *ultimately* ethereal conditions of the material constituents of our still somewhat mysterious cosmos.) The fact can be most instructively illustrated, for present purposes, by the very familiar example of *water;* which in the solid state is spoken of as *ice*, and in the gaseous state is popularly referred to as *steam*. In the present generation of universal education and universal suffrage, it is known to the majority of our intelligent voters that the melting of a quantity of ice is a somewhat slow process, which requires the expenditure of a proportionally large quantity of heat; also that no marked elevation of temperature takes place within the contents of the containing vessel from the melting process has commenced till the *quam proxime* completion thereof has been effected. The heat which has thus been expended is known to physicists as the *latent heat of fusion—"latent heat" of water* in this instance—and represents a large quantity, indeed, having regard to the mass of matter employed. If the application of heat to the vessel be now continued, the temperature of the water will continue to rise till the liquid begins to "boil"—that is to say, till the rapid evolution of steam at the bottom and sides of the vessel begins to cause the characteristic bubbling agitation. The temperature then ceases to rise, till the whole of the liquid water has been converted into *gascous steam*—of the same temperature; after which the heating of the "water vapor" can be continued—by the aid of a suitable furnace, and within a suitable vessel—till any desired thermometric level has been attained. Any reader who has ever tried, even in the remote years of mischievous and lawless childhood, to boil off a kettleful of water into steam can hardly ever have been aged into forgetting what an extremely and aggravatingly slow process that experiment proved to be! It impresses the observant mind of the experienced adult, too, by its demonstration of the vast magnitude of the masked calorimetric quantity which is known as the *"latent heat of evaporation"*—in this case, *"latent heat" of steam.* The enormous quanties of (the old-time) "caloric" which are thus secreted—or disguised, or converted—in case of each of the great physical modifications of this most familiar of fluids are, as we shall subsequently see—and, especially in the case of the latter and greater, of *evaporation*—actually in continuous process of utilization by Dame Nature (and thoroughly utilizable by her somewhat clumsy servant, and so often densely unappreciative confidant, Man) in the maintenance of the stereotyped thermometric standard of the surface temperature of the human organism in presence of the immense range presented by the variability of calorific environment—of climate and clothing, of sunshine and shade. The immeasurable importance to the animal economy—and especially in the case of the originally naked human specimen—of the physical properties of the (single) *"element"* to which the first of Greece's "Wise Men" would fain attribute the genetic origin of all cosmic aggregations of

"*matter*" is also largely due to the unique magnitude of its calorimetric storage capacity: the physical property known as "*specific heat.*" This latter is usually defined to be *the quantity of heat required to raise a certain mass* (say 1 lb., or 1 kilo.) *of any substance through a given thermometric range* (for convenience of calculation and of reference, 1° of the scale in use) *compared with that required in the case of water.* The fact that the specific heat of water is *higher than that of any other* known specimen of Nature's manufacture—indeed, so far as I can ascertain at the present moment, is higher than that of any artificial mixture, excepting (*mirabile dictu*) that of alcohol *plus* water (so practically familiar as the genial British "grog"!!)—is, in itself, one of the most protective and adaptable provisions of the profound wisdom of a far-seeing Providence toward safeguarding the physical welfare of the most errant—not to say lawless vagabond—denizens of this planet's surface. And we may now proceed, and, I trust, with some profit, to examine the influence of these factors on the functional fitness of humanity, individually and collectively.

Having placed—permanently and conspicuously—before us the physical fact that water possesses the characteristic endowment of the maximum specific heat known to the scientific explorers of the dark ways of inorganic matter (that the combustion of a larger quantity of fuel is required to raise the temperature of a quart of water through one degree of the chosen thermometric standard than to produce the same calorific modification of the same mass of any other substance), the fact is easily grasped that the general climatic, and the individually physiological effect of the presence or neighborhood of a great body of water (externally), or of a vast number of systematically arranged channels (internally), is to act as a permanently placed "drag" upon the variations of temperature. Compared with the adjacent dry land, and especially the sandy and rocky areas of the same, the ocean warms slowly during the day, and cools with corresponding reluctance during the night. Hence the refreshing "sea breeze" of the sultry summer noonday; or as the cooler air of the layer of atmosphere which was placed in contact with the surface rushes continuously to shore to maintain the internal equilibrium of the aerial ocean—to supply the place of that which is continuously boiling upward in geyser fashion from the roasted surface of the land (while spouting more violently if the surface in question happen to be largely composed of rock or sand). Hence, too, the evening current always displays itself as a "land breeze" in the very opposite direction—so rapidly does the solid crust of earth cool, as compared with the slow devolutionary escape of the cast thermal store which had been laid up—without special exertion—by the investing fluid during "each shining hour" of the past day. And again, hence, when sitting on the rockbound seashore in the immediately postmeridional period of a torrid summer day, one hand is cooled by being dipped in the water while the other is actually scorched by contact with the adjacent rock. And inevitably—and inseparably—associated with these physical (circumterrestrial) phenomena is the genesis of the vast system of aerial currents, which in so very large proportion make and modify the temperature and other climatic conditions of our planet's highly variegated surface. Also, the movements *en masse* of this restless spheroid, on the surface of which we live and move and have our being influence the conditions of temperature under which we are obliged to exist—with more or less painfully struggling effort—in every department and in every particular. The relationship of orbital revolution to seasonal temperature is, of course, far too gross and palpable to sense to call for general discussion before an audience dowered with congenital intelligence and acquired scientific attainment. But that of its diurnal rotation possesses a very important interest, which used to remain very much unrecognized by the man in the street before the halcyon days of our "intermediate"—and universal—education, and the universal suffrage which has been so powerfully instrumental in the eliciting and culturing of universal discussion of all subjects, and among as well as by "all sorts and conditions of *men.*" (I sometimes wonder what will the approaching Babel of science and logic be like during the generation next following the conquest of masculinity by the inspired host of Suffragettes!)

Our heat is all originally derived from the etheral waves which radiate from the sun: even the subsidizing quantity which is enclosed within the contents of the kernel of our globe, as the experts assure us, must be admitted to the same paternity when we have recognized—with retrospective justice—the integrated sum of the claims of all the historic as well as contemporary factors and quantities. Those *luminous* waves—oscillations of the ultimate constituents of the primordial ether—are converted (modified) into "lower grade," and less regular, vibrations as they become entangled in our investing atmosphere; and by collision with the earth's unsympathetic surface materials are subjected to a "degradation of energy," and of type, which may, perhaps, not inaptly be illustrated by the hopping of a racket ball when it has been allowed to reach the smoothly cemented surface of its court, after forcible (parabolic) propulsion from a considerable distance. The energy of the resulting heat waves is disposed of, in a general way: by *conduction* along and near the earth's surface, and by bodies in contact therewith; by *convection*—by the constituent particles of the currents of liquid and gaseous media (water, air, etc.), and by *radiation*—the recoil and diffusion of the modified—and degraded—ethereal waves to the genesis of which a reference has already been made. The intensity of the sun's calorific effects varies with the inclination of the rays of our great diurnal luminary; it is at its maximum when their impact is vertical—as it always is *somewhere* in the tropics—and the direction of the recoil is accordingly coincident with that of the sunbeam, and approaches zero level as a "grazing incidence" is reached with the approach to the pole. Then on account of the facts that: as the ethereal solar waves traverse interplanetary space as *light*, and become transmuted ("degraded") into the more irregular *heat* undulations only after dashing into our circumterrestrial atmosphere, and colliding with and recoiling from the terraqueous surface of the globe itself; and, as air, although a very ready convector, is a very bad conductor of heat (while the ethereal medium which occupies interplanetary space does not seem to function in that way at all), the atmospheric envelope of our globe which displays physical evidence of retention of some solar heat corresponds pretty closely in thickness to the height reached by the recoiling solar waves. Hence the "eternal snow" of

the lofty mountain summits of the intertropical zone of the earth's surface, at the base of which the sun-baked inhabitants are obliged to have recourse to their very best ingenuity to make existence endurable during the hours of solar predominance. Thus does *climate* vary with *latitude* and *altitude*.

Again, as heat is, in the last resort, as we are always being reminded by the experts, merely a mode of motion, and as one of the most obvious as well as one of the most important and far-reaching effects thereof is *expansion* (a rule to which *silver iodide* appears still to remain the solitary, and strangely curious, exception), the making of this molecular "elbowroom" furnishes us with other notable factors and consequences which have to be theoretically considered and otherwise practically dealt with in this connection. On account of the expansive agency in question, the lower layers of the torrefied midday (and especially, of course, midsummer) air of every heat wave—are always "on the climb," while this diffuses itself circumferentially with the gradual ascent—which is also limited in the degree of its altitude by the concomitant processes of cooling and consequent condensation. The cooling effected by passing (upward) into contact and mingling with the air contained in the upper strata of the atmosphere is complicated by the condensation of retained water vapor which restores to the "*sensible*" state the previously *latent* heat of the same. This continuous vertical impulsion of the lower layers of the atmosphere and centrifugal —northerly and southerly—movements of those of the partially cooled strata which have reached the ascension limit (determined by the relative density that is regulated by the cooling and contracting process) characterize the equatorial zone all the year round, and the fact made the belt of *equatorial calms* familiar and fearful (to a degree even greater than the dread of storms) to the adventurous "Tars" of old who ventured to cross "the *line*" on their relatively fragile wooden barks under the mercy of the winds and waves on which alone they relied for propulsion. This general physical effect is, of course, inevitably modified—almost everywhere—by the endless variety of collateral conditions which influence nearly every considerable area of the terraqueous surface of our globe.

Then the suspended aqueous vapor of the atmosphere, which is derived from the water surface of the whole globe, exercises an immense influence in the making and breaking of climate—and its conditions and consequences. It is, I believe, admitted by most visitors that there is no feature in the physiognomy of Ireland so distinctively characteristic (at least to the non-political eye) as that which inspired the original suggestion of its most poetic appellation: the "Emerald Isle." And how much there is, or may be, in a name, or can be implied by an appropriately selected one, can well be exemplified by an examination of the significance of that epithet, and an analysis of the evidence for the appropriateness of its application. The unequaled verdure of our proverbially "*green* Erin" is a physical consequence of the fact that we are evermore under a cloud; a blanket screen of water vapor, which is but seldom completely volatilized, always intervenes between us and the sun. One of the most notable physical results of this atmospheric *plus* aqueous disposition of materials is a leveling of climatic extremes; a very pronounced tendency to moderation of temperature levels. While our physically misty and mentally depressing canopy curtains off the scorching rays of an otherwise possibly scorching sun, and thereby provides a natural protection from sunstroke and sunblisters, it also interrupts, by *absorption*, not only a notable proportion of the direct sun waves which had been trying to reach the earth's surface, but a far larger proportion of the recoil undulations of the radiating rebound—the hopping back of the primordial (corpuscular, ionic, or electronic?) missives (undulatory or translational) which succeeded in passing from the sun's surface to the bottom of our atmospheric ocean. Thus our moisture-laden—too often misty or clouded; too seldom quite translucent, if usually temperate—atmosphere forms a kind of intermediate storehouse of solar heat. For (in addition to the relatively small quantity of calorific energy which is applied to the raising of the temperature of its essential gaseous constituents) an enormous proportion of circumterrestrial heat is actually stored up, in the "latent" form of that "of evaporation," in the *invisible* water vapor which is suspended in the oxynitrogenous ocean whose fluid contents we breathe. And, as the minute droplets of our clouds and mists are ever so very ready and so very much in evidential preparation to intercept ("absorb," "render *latent*") a large *quantum* of the solar radiations (or the recoil waves therefrom derived), the *water vapor strata* of our all too temperate atmosphere actually function as a warm—if much too frequently "wet"—*blanket* cover in the conservation of the solar heat supply. (This function is further complicated by the restoration to the *sensible* type of the *latent* heat of water vapor in the reconverting process of *condensation*.) For the blanket is well known to the physical expert, if not exactly to the omniscient "man in the street," to owe its apparent warmth to *conservation*—and *not* to *generation*. It adds nothing to the heat of the living body which it covers, but it prevents the loss, by too rapid escape, of that which is being continuously produced by the living organism. And it owes this characteristic functional accomplishment to the natural tortuosity of the woolen fibers of which it is composed—which absolutely prohibits their arrangement in parallel lines and planes or in dense strata. Thus all woolen textures carry within them large quantities of imprisoned *air*, which is the *non-conducting* medium that walls in the body heat as it radiates from the surface. So that the lazy Irishman who was lounging along the roadside on a scorching summer day in a heavy frieze coat (his only untattered garment), and when asked, by a three-quarters naked acquaintance, was he not "railly out ow" his "latitude to be wearin' sich a load o' wool ow a day like this," promptly retorted (in Hibernian fashion) with the counter-query: "Sure doan't you know that what keeps out the cowld keeps out the hate as well," was actually endowed with a fund of "physical" *inspiration* (as it would seem to have been) of far greater magnitude and more penetrating and enlightening quality than he would have ever suspected for himself.

And as all items of information on this subject must possess a definite interest in the light of the experience (and after the swelter) of recent atmospheric and solar conditions, I will just embrace the opportunity of pointing out in passing that the conspicuous value of *silk* in the texture of *woven* garments is due to the non-conductivity of its fibers which holds in this case in relationship to *heat* as well as to *electricity*, as is the general rule. Thus

it offers a direct and interesting contrast in the passive exercise of this practically useful accomplishment, to the correspondingly utilizable thermal qualities of *wool,* which are simply based upon the physical fact that every fiber of the natural overcoat of *ovis aries* is a miniature corkscrew, or in Hibernian phraseology, something "aiquilly worse" in the matter of axial rectitude, and accordingly in the hands of the weaver it inevitably is made to help to construct billions of somewhat leaky air prisons, which, when adapted in series, to the surface of the human body "keep out the cold" simply by keeping in the heat. Heavy articles of clothing, it may be appropriately noted here, necessarily cause increase of heat production by the mere muscular exertion which is expended in carrying them about. It will be remembered in this connection that muscular tissue is the great central furnace of the human (the vertebrate) body. Also it is found that non-porous, waterproof, and the various allied articles of clothing are specially objectionable in hot weather; the reason is that they obstruct the free circulation of air—which is the most efficient aid in the promotion of evaporation by the continuous current of a fresh supply that conveys away the water vapor as rapidly as formed and before the clogging condition of *saturation* can have an opportunity of manifesting itself. The importance of this factor is due to the gradual diminution of the rate of evaporation of the water which lies beneath an immobile stratum of air; when the latter becomes "saturated," evaporation in the ordinary (the *visible*) sense of the term must cease, however actively the molecular and ionic interchanges may continue to proceed at the surface of contact of liquid and gas. And this, in turn, to the physical possibilities attached to the *latent heat of evaporation,* which accounts for the dispersion of quantities of "caloric" relatively so enormous—when considered in connection with the quantities of liquid concerned. Thus it is that we can understand, too, why the light and porous articles of dress—those which favor the free circulation of air—prove so desirably refreshing in warm weather; they promote the utilization of the *latent heat* which Nature continuously employs for the physical dispersion of the physiological surface supply.

Thus it becomes apparent that "latent heat" is the most continuously important—even indispensable—of the physical agencies by which the relationship of animate to inanimate matter is continuously controlled in accordance with the universal plans and laws of the all-regulating power which presides over the whole. It even proves to be the most important agent through the intervention of which external influences can be brought to bear upon the functional activities of the great collective governing powers that are located in the neuronic systems of the central cerebrospinal axis. It is through its physical capabilities, and the adaptation thereof, that man has been enabled to prove himself the unique specimen of organic life which has displayed something of approximate attainment to cosmopolitan climatic adaptability. The skilled control of latency of heat over the surface of the naturally naked human body was even more essential to Commander Peary's attainment of the North Pole than were those truly heaven-sent raindrops in preparing Benjamin Franklin's kite string to conduct the lightning from the thundercloud to earth and dethrone forever the demoniac "Prince of the Powers of the Air"; while simultaneously wrecking, and by the irreparable process of startling (and so often depressing) disillusion, the terrorizing dignity which had been thereunto attached by the creative imagination of *homo sapiens,* down through the whole period represented by the annals—traditional and transcribed—of recorded time.

The comparative unfamiliarity—to use a clumsily mild phrase—of even the more intelligent and "well read" citizen with the important influence on the human organism of the physical factors above referred to, both in health and disease, is perhaps due (in great measure at least) to the fact that heat has evermore been looked at askance with an oblique superficiality by the inquisitive amateur as probably the nastiest of all the sciences that he has at any time endeavored to assimilate. But surely in the present stage of the rectilinear progress and circumferential, if not even centrifugal, diffusion of physical knowledge and the application of the same to human health and human comfort there is all the more reason that the laws and facts of one of the most important and still curiously mysterious as well as interesting of the vital phenomena which characterize the highest types of animal life (while displaying surface facets of intimate contact with the properties possessed by inorganic matter) should be at least peptonized, if not perfectly pasteurized, for universal circulation, digestion, and permanent assimilation by the members of a profession the validity of whose practice and the safety of whose clients depend largely on a thoroughly firm intellectual grasp of the same. The deficiency of the more than desirable degree of proficiency in the department of knowledge referred to is far too often conspicuous even in the contents of those columns of our medical journals which are occupied by the contributions of physicians of authoritative—alas! too often "professorial"—positions Even the leading representative journal of British physical science yielded space, in the past year (!), to a discussion of the special accomplishment of Æsop's hero, who *blew hot and cold with the same mouth,* in terms which seemed to send a cold shiver down the intellectual backbone of the present writer—and certainly suggested that the general *latency* of "latent heat" (the indulgent reader will, I trust, tolerate the passing play of words), to the mind's eye of even the amateur scientist, is one of the most epidemic of the defects of cerebral equipment in the present day. Accordingly, the fact can hardly be overemphasized that the *misdirection* of latent heat—whether by the error of the conditions imposed by inevitable Nature, or that of misguiding man—is *the* great cause of *chill;* which is, in turn, the great cause of *inflammation;* which, again, is the *foundation of each of the commonest ailments of the human body*—and is, accordingly, by far the *most frequent cause of disease,* both acute and chronic, and of *death* itself! Thus, if the influences of latent heat were duly controlled and rectified, at least three-fourths of the microbes which prey so prosperously on the weakened tissues of humanity would be hopelessly consigned to the ranks of the "unemployed"!! And, even in the best regulated families, and among the best behaved individuals, the phenomena of latent heat, and the laws which govern the same, influence the surface temperature more than do any other. The "latent heat of *fusion*" need not be further discussed in this connection. But the "latent heat of *evapora-*

tion" not merely represents the expenditure of a vast quantity of heat (and valuable coal or other combustible matter) in the conversion of liquid water into gaseous (over the kitchen fire); it is, as I have repeatedly indicated, accountable—in greatest proportion—for keeping down the surface temperature of the human body to the normal standard of health; and—more startlingly serious—it is accountable for nearly all of the items of the perpetually evolving catalogue of the deadly chills that develop during rest after copious perspiration or drenching by rain. Evaporation of the layer of watery fluid which lies on the skin is, of course, promoted by the warmth of the latter. And the enormous quantity of heat which is consumed in the process is *drawn off* from the inner store which is supplied by the medium of the circulating arterial blood as it courses continuously toward the surface. The evaporation proceeds more rapidly, as above explained, when the stratum of air which lies in contact with the surface is continuously renewed, so as to prevent any approach to *saturation*. And for this reason it is that a sudden (so often deadly!) chill takes place when exposed to an air draught, seated in a damped skin—whether by perspiration, rain water, or other *fresh* water. The importance of the term "fresh"—on that account purposely italicized—is, I fell pretty sure, practically known (as a result of personal experience) to the vast majority of readers. But I incline to be at least correspondingly confident that the theoretic explanation of the familiar physical fact that one feels more chilly after a freshwater bath than after emerging from the seawater plunge could be supplied offhand by the members of the minority only. After the freshwater dip the latent heat of evaporation exercises its usual influence—modified by the conduct of the individual, and the coexisting conditions of environment. After emergence from the fluid embraces of Father Neptune the *latent heat of fusion* of the saline compounds held in solution in the seawater is restored in *"sensible"* form, on return of the various items to the solid (crystalline) state; and, as we all have in our respective turns felt, with consequences quite delectable to the human frame. The billions of crystals which form on the skin after a saltwater bath prove so many microscopic fires, which go collectively to the formation of a soothingly hygienic edition of the mythological shirt of Nessus! Hence the blissful *glow!*—while after emergence from fresh water the latent heat of evaporation never fails to supply the necessary—*negative*—conditions and influences for the genesis of chill. And before dismissing the subject of this special physical agency, and its influence—continuous and paroxysmal, "tonic" and "clonic"—on the temperature, directly ("immediately") on the surface, and indirectly ("mediately") on that of the whole interior of the organism I will just take the opportunity of calling the reader's attention to the evidence of the importance of the influence of the water vapor of the atmosphere as a regulator of temperature which is furnished by the authentic records of the phenomenally high temperatures which the human frame can tolerate when the air is perfectly dry. The rapid "boiling off" of the perspiration from the whole cutaneous surface renders "latent" quantities of heat so enormous as to maintain the body temperature at its normal standard level. (*Saturation* of the surrounding atmosphere with water vapor under such conditions would generate the duplex calorific horror of preventing the escape of the body heat by the surface, while introducing the prospect of being cooked in a dilute watery medium!) Also would I remind her or him that the luxurious escape from the suffocating surroundings and conditions of a torrid summer's day (especially one of central urban existence) into the delightfully cool sea water is one of the physical experiences which is, I believe, universally rated among the most delightful; graced, as it is, on both aspects, by hastening anticipation, and by recollections of past enjoyment. And the unique possibilities of this delectable item of compensatory luxury are definitely based upon and provided by the great *specific heat* of water. Fortunate, indeed, is suffering humanity in this one fact at least of its physical environment—that water is so much less easily heated than fixed land, and than mobile air.

This same physical quality of the high (highest) specific heat of water, which accounts for the almost startling contrast of the scorching temperature of the seashore rock with that of the refreshingly cool water which ripples and eddies by it, in its eternal ebb and flow, is also accountable for the genesis of the vast circumterrestrial phenomena of the "land breeze" and "sea breeze" (and influences the geometrical precision of the limiting borders of the "trade winds"; and for the production of the generally familiar atmospheric phenomena of *cyclonic* depression, and *anticyclonic* elevation of the average weight of the superincumbent column of the atmospheric ocean at the bottom of which we breathe. The general tendency of atmospheric movement in the vicinity of the equator is, as we have seen, to the primary vertical, and secondary horizontal; the latter being directed at right angles to the original plane of projection—in response to the respective necessities of expansion and gravitational equilibrium. When this latter condition has been approximately restored and the upper air current has reached a degree of *latitude* of which the frigorific conditions combine with those of atmospheric *altitude* to produce a degree of condensation sufficient to cause a tilt of the gravitational balance in the opposite direction, the result is a tendency to a vertical downward current, to the influence of which is due the development of the meteorological phenomenon of the *tropical calms*. And, at the foot of this latter partition wall of aerial movement, the same physical laws determine the production of diverging—centrifugal—tidal movements; one, a return current directed toward the equator, which is determined by the diastolic suction of lower pressure in that direction, and is continuously utilized in the maintenance of the ever mobile equilibrium; another directed toward the poles, which owes its primordial genesis to the *vis a tergo*. And so on—with the endless variety of local modification imposed by the inexorable conditions derivable from the physiognomy of subjacent Mother Earth. The irregular distribution of land and water, of the solid and liquid, the rough and the smooth, the smiles and the tears, the rotundities and the wrinkles on the face of our *alma mater* combine with the obliquity of her axis and the eccentricity of her orbit to give our apparently lawless atmosphere the inscrutable uncertainty which the (semi-) inspired pagans of old made symbolically incarnate as Ἥρα or Juno. In the absence of the hopelessly entangled complexities of physical phenomena presented by every zone and section of the terraqueous surface of our planet, the climatic conditions for the year, as well as for

the day, could be predicted with the same confidence as the result of a well-known laboratory experiment in physics. As it is, the nearest approach to clock-work regularity of atmospheric activity is to be found in the interesting example of the "trade-winds." And their genesis is as understandable as a natural phenomenon can well be made in presence of the facts referred to. The *return currents* which tend to restore equilibrium on either side of the belt of *equatorial calms* have their directions modified by the diurnal rotation of our globe on its axis. The world as it spins around carries its air mantle with it, but not exactly with its own surface velocity; the heavier nucleus is always slipping away from beneath the superimposed gaseous investment—thus providing the latter with a wholly factitious movement of its own in the opposite direction. The combined effect is the genesis of a "resultant" current with the oblique direction of geometric regularity and prophetic reliability which was so familiar and so important to those who went down into tropical seas in ships during the generations which preceded the invention of the steam engine.

Then, not only does the resultant direction of component aerial impulsions determine the orientation of currents under conditions comparatively uniform, as in the case of those supplied by the vast oceanic areas of the intertropical zones; it governs the movements of the local—so often startlingly irregular—eddies which move with the great oceanic matrix in which they were generated and continue to lie imbedded, the great as well as the little; the vast (and oft far too violent) cyclone, and the much vaster anticyclone. It is the knowledge of the fact that our own (so usually) moisture-logged currents and "systems" are "derived," with a fairly definite degree of regularity, from the Atlantic surface, with a general southwest to northeast trend; that our broad cyclones and still broader anticyclones are conveyed bodily along the same lines of traction as those which so lightly and gaily convey the local gusts and eddying breezes—it is this physically utilizable and mentally gratifying fact that has made our system of *weather* soothsaying provisionally possible, if not always quite satisfactorily prophetic. And it is surely one of the most characteristic triumphs of the practical American mind—and its methods—that it has made the present system of aerial prophecy the conspicuous feature of physical science that it now is.

With so many various—and all too readily variable, and almost continually varying—influences at work on our slippery atmosphere there is no reason for surprise at the fact that weather should be one of the most kaleidoscopic of physical entities. Not only the great cosmic physical laws and factors to which I have referred at some length, but every sunspot, every wobble of the earth's axis, every great cosmic disturbance (even the unseen, the unheard, and the unfelt); thermal or ethereal; luminous, magnetic, electric, electronic or ionic—as well as the still mysterious physical conditions of the interior of our globe, has its individual effective influence on our atmospheric phenomena and the weather which is created (and connoted) by the same. Every schoolboy knew—even before the luminosity of intermediate education penetrated our atmosphere—that our seasonal summer heat was given us by the more direct (less oblique) incidence of the solar rays at this season in presence of the fact that the great calorific focus occupies a considerably more remote position. And, if all physical conditions remained steady, the heat of July and early August would always be greater than that of the solstitial June days and for the same reason that the hottest time of day is toward 2 P. M.—that the heat which has been absorbed by earth, water, and air has been in part retained, and is accordingly added to that which continues to be supplied by the solar radiation which has declined in relatively smaller proportion. Such would be our estival experience of every annual cycle—in the absence of that almighty IF!

I have dwelt with reiterative emphasis on the enormous influence on temperature of the two physical properties of water, in each of which that familiar fluid displays an opulence that is practically unique: *specific heat* and *latent heat of evaporation.* The former acts as a permanent drag on the thermic variations of the atmosphere and of the adjacent limiting land borders; the latter as a leveling standard regulator of the temperatures of the surface (and less directly of the whole interior) of the human body. The stages by which those illuminating items of thermal science were brought to their present state of faceted brilliancy made the landmarks of a tedious and tortuous and inevitably thorny pilgrim's pathway—every forward stride on which was faced by obstruction flanked by contradiction and pursued by detraction. Not a rare feature, it must be added, in the biographical record of the "advancement of learning" and science! And to some of us who have had special opportunities of seeing and hearing such artists at work at their natural callings of prevention of progress and enlightenment and soiling of superior reputations it must ever remain a peculiar pleasure to render, whenever possible, even a contributory mite of justice to the philanthropic genius of science whose enthusiastic devotion has made the human race richer and happier in the best sense of each of these terms. All tyros in the history of physiological chemistry are, of course, aware that the solid bedrock on which our knowledge of animal heat has since been erected was first laid bare by the founder of physiological chemistry, the illustrious scientific martyr of the "leveling" principles of the great French Revolution. It was indeed, in the opening year of that unique political cataclysm that Lavoisier formulated his theory of animal heat in the following terms:

"La machine animale est principalement gouvernée par trois régulateurs principaux: la *respiration*, qui consomme de l'hydrogène et du carbone et qui fournit du *calorique;* la *transpiration,* qui augmente ou diminue suivant qu'il est necessaire d'emporter plus ou moins de calorique; enfin, la *digestion,* qui rend au sang ce qu'il perd par la *respiration* et la *transpiration.*"

The physiological horizon of that great pioneer was, very necessarily, limited by the very defective luminosity of the twilight dawn of the period, but, having regard to his environment, the brilliancy of his intuitive conception and the crystalline lucidity of his expression of the same, shine out all the more clearly in the retrospective view of the skilled observer. The subject, peculiarly entangled as it is in the complexity of its associations, and faceted on every aspect by its innumerable impressions of contact with the problems of living and non-living matter, is one specially appropriate to the display of the relative strength and weakness of the intellectual powers and attainments of those who

grappled with it in public for the edification of their contemporaries and of posterity. A few selected examples in illustration of this fact cannot fail, I think, to interest the inquiring reader. The illustrious Boerhaave, who held the highest reputation among the medical giants of his generation in all the intellectual attainments ancillary to the science and art of the physician, believed that the higher animals could not exist in a medium of temperature equal to much less higher than their own. His opinion is expressed with all confidence: "Observatio docet nullum animal quod pulmones habet posse in aere vivere cujus eaden est temperies cum suo sanguine." (The ruling idea there was, very evidently, that one of the great uses of the inspired air to the animal economy was the *cooling of the blood.*) Indeed, the first great physiological pioneer who put forth his best powers in the refutation of that view was the encyclopedic scientist, Albrecht Haller, who devotes no less than seven pages of his great work to that highly meritorious task and concludes in these terms: "Ex his ergo omnibus comparitis conficitur, canguinem quidem ex recepta opinione pluramque atmosphera calidiorem esse, in qua vivitur: sed etiam in eo aere vivi posse, qui supra summum sanguinis calorem *sedecim gradibus* calescat et ultra." And the epoch-making series of experiments on the tolerance of high temperatures of the surrounding air which were carried out in 1775 by Blagden, Fordyce, Banks, Sorander, and Dobson are said to have been originally suggested to Blagden by an ideal specimen of cryptic Caledonian wisdom which he had heard enunciated by Professor Cullen (of nosological fame): that certain of the higher animals were endowed with a faculty of *producing cold* under special crucial circumstances. (So that this specimen of scientific inspiration was actually fraught with results comparable to those of the best illumination of North British *second sight!*) And when Blagden demonstrated that he was able to bear a temperature of 128° C. in a dry oven for eight minutes and a supplemental exposure to 110° C. during twelve minutes, the classical theory was finally displaced by the convincing results of modern experiment!

But while that new light and the source thereof are generally familiar to the expert British reader, the fact is seldom emphasized in English scientific records that, in spite of the criticisms of Haller, the opinion of Boerhaave held conservative sway till the communication by Tillet to the *Académie des Sciences* of Paris of the results of his researches "Sur les degrés extraordinaires de chaleur auxquelles les hommes et les animaux peuvent resister." In company with Duhamel, he had (in 1760) had an opportunity of observing that "trois jeunes filles, attachées au service four banal de Larochefoucault pouvaient rester cinq et même *dix* minutes dans l'interieur de ce four, quoiqu'il fut encore assez chaud pour cuire de la viande et des pommes." Thermometric measurement showed that a ten-minute exposure to a temperature of 132° C. was borne without inconvenience; while a closely corresponding tolerance was displayed for "pendant cinq minutes, une température *supérieure de quelques degrés* à la precedente." His "Memoire," which was published in 1763, contained the results of a long series of experiments on the endurance of high temperatures by dogs, cats, rabbits, and birds. And far more remarkable, having regard to dates and circumstances, and infinitely more instructive in the arrangement of demonstrative facts and the deductions therefrom derivable, are the results of a series of investigations which were communicated, in 1758, to his friend Dr. Linning of Charlestown by the amateur pioneer of science and philanthropic champion of liberty and justice, well-being, and well-doing, Benjamin Franklin. In dealing with the question of evaporation and its refreshing effects, he explains:

1. Why, within a room in which his body was covered with sweat and wearing but a shirt and linen drawers, his temperature remained continuously below that of the air, which registered 37.78° C. in the shade. 2. Why the harvestmen of Pennsylvania, while at their work and exposed to the direct rays of a bright and burning sun, were not incommoded by the heat so long as they continued to sweat profusely, while they rapidly succumbed if the sweating ceased; and, accordingly drank copiously of a beverage formed of a mixture of *rum and water* with the object of keeping up the process of perspiration. 3. The custom of venerable use among sailors of holding above the head a finger moistened with saliva in order to ascertain the direction of the wind by observing on which side it felt coolest. 4. The resistance offered by young shoots of trees to the scorching effects of the sun's rays. 5. The use of the fan as a means of refreshment. 6. The use of compresses soaked in spirit of wine for the relief of parts affected by acute inflammation in preference to linen cloths moistened with water, which evaporates less readily.

Thus he displays and reveals for the benefit of humanity one of the most important (as well as remarkable and otherwise interesting) series of observations and conclusions that has ever been made and elucidated by any one scientist or physiologist, whether expert or amateur. The extraordinary keenness of observation and almost inspired clearness of mental vision, by which he was able to look internally for theoretical explanation and externally for practical application, in the very best interests of humanity, too, show Franklin to have been here, as in so many other departments of science as well as of politics, one of the most gifted and earnest, and ultimately useful, of the guides and prophets who have so long been leading erring humanity to the promised land of perfection of human spiritual wisdom and material comfort. And here I cannot refrain from calling the reader's passing attention to the startling contrast which is presented in this connection between the views and the practical applications thereof of the Philadelphian journeyman printer and self-taught amateur scientist and those of the Caledonian army surgeon and physiological expert, of whose loudly trumpeted "discoveries" and collateral scientific performances and teachings every unfortunate British medical student is doomed to hear so much during the hardworked sessions of his heavily weighted *Lehrjahre.* While admitting that each organ and portion of the human body possessed the *faculty* of heat production, John Hunter considered that there was a great primordial source of animal warmth and concluded that "it is probable that this principle resides in the *stomach.*" (Sound Scotch materialism—or was it an echo of the view of the famous iatrochemical mystic, Van Helmont, whose hypothesis located the human *soul in* the *antrum pylori?*) And that redoubtable apostle of *inflammation* and the mysteries thereof credited the *vital forces* with the *faculty* of annihilating a certain proportion of the animal heat in maintaining the prescribed normal standard of temperature!

Allusion to the views of the "Father of Electricity" on latent heat reminds me of the fact that there are as good grounds for recognizing Benjamin Franklin as the *Father of the Gulf Stream,* too. For it was he who laid the foundation of its physics, and he transmitted the living product to posterity dowered with the healthy constitution which was inherited by every member of his scientific offspring. But the *nimia diligentia* of a nursing and pampering posterity led to its development into a mythological monster! Thoroughly characteristic of that extraordinary genius and enthusiastic scientist, the indefatigable journeyman printer, self-taught philosopher, devoted philanthropist, and inspired, as well as patriotic, statesmen is the fact that in the April of 1775 on his return voyage from London to Philadelphia on which he had been obliged to embark hurriedly in order to secure his personal safety after having received the most ruffianly insults from his aristocratic superiors of the mother country when attempting to negotiate the rights which had been claimed by the New England colonists to a share in the management of their own taxation; that man, whose past period of earthly pilgrimage had then come closely to approach the hagiographical limit of three score years and ten, was seen hour after hour daily on the margin of the deck of his homeward bound vessel taking the temperature of the air and then dipping his thermometer in the Atlantic, and scanning the record of the rise or fall on withdrawal, as eagerly as if no other object of earthly interest specially concerned him at the time. (And equally characteristic is the fact that he had then with him on board his *first* velvet *"court suit,"* that he had worn on the special occasion on which he was admitted to the presence of the English ministers in his functional capacity of representative of the New England colonists and advocate of their political rights; and from which he was soon ejected with gross insult as a mere mechanic. That suit was then carefully laid aside, to be next assumed after an interval of eleven years, when the wearer, as Minister Plenipotentiary of the newly inaugurated Republic of the United States, attended in Paris to witness in his then *inviolable* capacity the signatures of the same English ministers to Great Britain's documentary recognition of the independence of the newborn and fullgrown Pallas of the nations, whose wisest citizen had served her so long, so devotedly, so stainlessly, and so successfully!) On the voyage referred to Benjamin Franklin gave the first practical demonstration of the fact that the thermometer could be utilized for the purpose of determining the relationship of the voyager to the Gulf Stream, and thereby defining the longitude, which was more often guessed at than measured in those days, and an exact knowledge of which was of comforting importance at a date when a transatlantic excursion occupied a diurnal space of some six to nine weeks. But it must be noted here, as we pass, that fully five years before the same observer prepared and had engraved for the prospective enlightenment of all future Anglo-American navigators *the first chart of the Gulf Stream.* At the same time he laid down the view that the permanent *trade winds* were the initial factor in the production of the Gulf Stream; and though partly erring in the details of his hypothesis he was right in believing that the aerial circulation over the surface of the North Atlantic is the dominating agency in the development of the aqueous surface drift. And his theory regarding the action of winds in the genesis of ocean currents has been fully borne out by modern hydrographic research. But when he arrived in Philadelphia he found that the battle of Lexington had already passed into history and he proceeded to suppress his charts as effectively as he could so that they might not be utilized by the enemy during the war—or after! The net result, so far as the much libeled Gulf Stream *drift* is concerned, was that no further detailed discussion of the subject was presented to the scientific world till the appearance of Maury's "Physical Geography of the Sea" in 1855. This author made the existence of the Gulf Stream an argument in proof of "design in the physical world." And he opens his volume with a thrill quite dramatic in its effectiveness: "There is a river in the ocean." (!) This "stream" he described with fantastic vividness of conception as "a sheet of warm water said to be more than three thousand times greater than the Mississippi River," which was transmitted "entirely across the Atlantic Ocean." He proceeded to compare its effects on the climate of the British Isles to the heating of a house in winter by the circulation of hot water, and informed his readers—without a shadow of hesitating doubt—that "one of the benign offices of the Gulf Stream is to carry heat from the Gulf of Mexico, where otherwise it would become excessive, and to disperse it in regions beyond the Atlantic for the amelioration of the climate of the British Isles and of all western Europe." He maintained that "winds had little to do with aqueous currents" and in accordance with that view totally contradicted the notion advocated by Franklin that the trade winds originated the Gulf Stream at all, either wholly or partly.

Such was the teaching which caught the eye and proceeded to hold the ear of the whole civilized world and is still taken seriously by a very large proportion of its "intelligent and educated" citizens! This, too, in presence of the fact that a good many years ago one of the most accomplished of living meteorologists, Mr. Henry Maitland Watts, pointed out to the reading world in a popular scientific article: "that the belief that the Gulf Stream is the sole cause of the mild oceanic climate of western Europe is still held by millions to-day, that it is still taught in public schools in England and in the United States, and that, although it is absolutely without any foundation whatsoever, it should come to have all the sacredness of a gospel truth is a tribute to its attractive statement by one man and the hypnotic influence of one book. . . . In consequence the 'Gulf Stream myth,' fathered by Maury, persists, while the broader, grander, and more reassuring facts as to climate and weather causation are viewed with suspicion, and make slight headway against the universal acceptance of a theory that gained its whole value from the way it was stated by a strong man in the transition period in the development of an inexact science. The essential facts are that the Gulf Stream as an ocean current ceases to exist, that is, to differ in set and temperature from the rest of the ocean, east of the longitude of Cape Race, Newfoundland."

In presence of knowledge which is so readily and universally available, it is surely time that all medical readers had thoroughly grasped the fact that the "Gulf Stream *drift*" does not and cannot convey a *river* of warm water to the shores of western Europe, there to modify the climate and give to the British Isles the breezes of the "unvexed Bermudas," and to Sweden and Norway the soothing sunny

warmth of the Carolinas. The meteorologist who is duly conversant with the fundamental data on which his scientific specialty is now based well knows that causation of climate is not a function of oceanic currents, but of aerial; and easily grasps the fact that the mild oceanic climate of western Europe is due to the distribution of the permanent aerial circulation over the great Atlantic basin, taken with the moderating effects of the proximity of the great ocean reservoir, as a whole. This "permanent circulation" takes the form of a great cyclone in high latitudes, and of an enormous anticyclonic eddy in mid-latitudes. Thus it is to the great mid-Atlantic anticyclone that must, in scientific fact and justice, now be transferred the generative nucleus of the superlative climatic credit that has been so unrighteously retained for so many years by that mythical "river in the ocean," the Gulf Stream. Let us now note the important complemental fact that in the temperate zone the atmospheric drift tends generally from west to east; which means that all coasts and countries lying to eastward of great ocean surfaces possess climates decidedly tempered and ameliorated by oceanic influences; while the eastern borders of large masses of land have their climates very distinctly affected by the extent of the areas of the earth's surface over which the aerial currents have traveled, and we are in possession of the key which unlocks the whole climatic mystery. The great anticyclone which so effectively controls the climate of the bordering countries of western Europe practically covers the mid-Atlantic basin. Its pressure increases in summer and diminishes in winter. And the necessity, already referred to, of its continuous translation in a direction north and east determines the luxuriant mildness, somewhat too frequently over-diluted with moisture, I must regretfully add, of the enviable climate of the British Isles; also, the overruling aerial influence which gives Ireland the distinctive emerald surface tint that haunts the dreams of every "exile of Erin" during the rest of his earthly pilgrimage. The conditions, desirable as they may appear at first sight, are found, as in the case of most experiences of sublunar blessings, to be fairly balanced by the counterweighing drawbacks.

The curious fact in the history of the Gulf Stream myth, as it passes before our mental scrutiny at present date, and exposed to the ample revelations already alluded to, with the glare of the scientific searchlights which were ignited thereby, is that it is still seriously accepted (with more or less critical discussion) by many of the presumably leading authorities, and in the highest class textbooks and journals of physical science. Thus we find a professor of geography at one of the most celebrated of the French universities accepting the mythical stream, and with all the *impedimenta* of its imaginary functions. Our surprise is diminished, indeed, when we come to find the summary of the evidence which the distinguished author found convincing. The direction and velocity of a current have been calculated by observing its effects on the real positions of ships at definite dates—by contrasting the same with those which had been forecasted without taking account of its existence. After consideration of which we learn that: "Elles sont insuffisantes dans le cas ou les courants sont peu rapides et changeants. L'usage des flotteurs permet une évaluation plus precise. Des bouteilles, renfermant une notice sur le lieu et le jour de leur lancement, sont recueilles lorsqu'elles atterrissent, et indiquent le sens et la vitesse moyenne de leur translation. On a pu ainsi démontrer la fausseté des idées admise pendant longtemps sur la circulation dans le golfe de Gascogne, et vérifier l'existence d'un circuit fermé de courants dans le bassin de l'Atlantique. Mais le seul procédé vraiment précis est celui des flotteurs de dimensions assez considérables. Lancés dans une mer assez fréquentée, ces flotteurs ont chance d'être reprénè et observés jour par jour." The writer adds then in a tone of disappointment: "L'operation est malgré tout difficile et hasardeuse; il y a encore peu d'exemples." (As if the *wind* took care to pass by those floating bottles and buoys without physical interference, in deference to the scientific wishes of the geniuses who launched them!!!) Then again in *Nature* July 14 of last year the physical journal which specially reflects the light of the *Royal Society* (London), the topics of this current and its influence on the weather are discussed with all seriousness by a leading meteorological expert. And after oscillating around the center of gravity of his subject this *authority* solemnly suggests: "It seems probable therefore that the Gulf Stream drift, owing to its inertia and its great heat capacity, should have a similar effect to that of the flywheel of an engine, and tend to obliterate the disturbances due to the more unstable and variable atmospheric circulation." After treading one's way through the ponderous nonsense of this article, it is, at least emotionally, refreshing to return to contemplate the childlike faith and reason of the French professor whose Gulf Stream lore and logic recall so vividly the poetic version of the navigational feats of the pearly *Nautilus*, which I used to read with such thrilling interest in my schoolboy days! The only gleam of lightsome hope that meanders through the recorded views of the Anglo-Saxon contemporary authority from whom I have just quoted is that he refers each time to the entity in question as the "Gulf Stream *drift*" (italics mine)! Thus are very vividly illustrated some of the surviving defects of the human understanding—standing forth in the foremost rank of intellectual progress, as generally recognized and appreciated.

Before concluding a communication already, I fear, tediously prolonged, I must ask the favor of the indulgent reader's attention to another calorific or rather frigorific item which has proved productive of a rich crop of nonsensical thermal opinions, "uttered or unexpressed." I allude to the *latent heat of expansion* which seems to have inspired comparatively little popular discussion, in spite of the fact that its influence is even more readily and familiarly demonstrable than that of either of the two other types of latent heat to which I have already called attention—to one indeed, at some length, on account of its continuous importance in physiology, and its unrivaled *productive* powers in the wonderland of pathology. For it is the special physical entity by the agency of which each of us is able, like Æsop's hero, "to blow hot and cold with the same mouth." Every human being attains, I believe (and without special training), to the highly characteristic human accomplishment of blowing cold with (from) a warm mouth—that is, through a whistling orifice. The fact seems to have escaped general knowledge that, although the steam escaping from the pipe of the ordinary boiling kettle is productive of caustic effects—even to degrees of high clinical and pathological importance—when admitted to imprudently close quarters, as so many inquisitive young people discover for themselves before having arrived at the

first climacteric milestone of secondary dental discretion, the "*superheated* steam" which escapes from a correspondingly small orifice in the circumference of a *Papin's digester* will *not* scald although the internal temperature has been actually one, or even two, hundred degrees above that of ordinary boiling water and its steam. This important physical fact will, by itself, account for the uniquely innocuous clinical record of *atmocausis*—a procedure so dear to the hearts and speeches, written and articulate, of so many operative (and otherwise enterprising) gynecologists—even while the appalling dignity of its etymology would seem to rank it with *appendicostomy* in practice, and with the *opsonic index* in theory! The physical anomaly, as it must ever appear to the uninitiated to be, is, of course, due to the instantaneous dissipation of motile energy which results from the rapid escape of imprisoned molecules into a relatively free—almost vacuous—space.

In taking a parting backward glance at the vast field of scientific and clinical thought which has been thus indicated in the course of the present communication and which can be profitably cultivated only after a reliable mastery of the various subjects and viewpoints imperfectly discussed therein, the writer can only dare to entertain a faint hope that he may have succeeded in "raising a spirit" of general investigation—which may tend, progressively, to contribute to the further general illumination of a series of (practically) most important and (theoretically) most intricate topics and problems. I trust that I have included in the usually limited compass of a single (although the reader must have been provoked into calling it a tediously prolonged) article items of important information and authoritative reference which may stimulate the scientific physician to further research. I have endeavored to do passing justice to the memory of the world's greatest scientific benefactors, to the (necessarily very short) list of which young America has contributed so conspicuously. The fact that the summer of this year has made a record in *solar* fatalities and thermal oppression encouraged me to discuss the subjects of *heats* and *chills,* of *heat-strokes* and *light-strokes* and *sun-strokes,* in the hospitable columns of its leading medical journal. Every American citizen must have had the importance of selected attire impressed on his memory by personal experience —of the white raiment from which the light rays rebound; and also the value of the imprisoned air of certain porous and fluffy garments, and of the all-important bi-mural headgear. And similarly for the cold season of trial, the genesis of chill—on which some peculiarly opaque illumination has recently been thrown in British medical literature. The moderating drag of the presence of the great bodies of water interests every intelligent man in the street at present date, even when not hourly called upon to analyze, as we are in Ireland, the factors of our blankety, enervating, moisture-laded atmosphere. I trust that some readers at least, will now have formed a clearer idea of what the *Gulf Stream "drift"* is not, and realized more definitely the honor due to the memory of the "Father of the Gulf Stream." And, to indulge in a moment's aerial flight in closing, I will just remind my transatlantic readers that the fact has been observed that in their great commonwealth a series of droughty years is always followed by a financial crisis (1837, 1873, 1893), even by political revolutions, local and general; while one of Europe's economic sages has pointed out that variations of customhouse charges are closely connected with those of pluviosity; the protectionist boom being always loudest after long periods of excessive rains in western Europe, accompanied by a deficiency of the same in the eastern section of our continent.

Slight Bronchial Dilatations in Small Children.—Hutinel describes small bronchial dilatations as not infrequent in children, although not so serious and intractable as in the adult. They are not often infected and fetid expectoration is rarely seen. They occur in hereditary syphilis, in tuberculosis rarely, after bronchopneumonia, measles, pertussis, and the aspiration of foreign bodies into the trachea. They are accompanied by a considerable amount of sclerosis and dilatation of the blood-vessels of the lung. They often begin insidiously with few symptoms, slight fever, almost no dyspnea, persistent cough, and little else. When they have a more acute course there are more marked fever, purulent expectoration, and moderate dyspnea, with a harassing cough, which recurs easily. The physical signs are moist, subcrepitant râles, large and small, gurgles, and rhonchi. The vesicular murmur is impaired, the voice and cough cavernous. If the sclerosis is not marked the cavities may disappear with the development of the lungs. Treatment in the acute attack consists of enveloping the chest in moist compresses. Later general tonic and hygienic treatment, respiratory gymnastics, and life in the open air are valuable remedies.—*La Presse Médicale.*

Chronological Relations of Ovulation and Menstruation.—H. Busquet in considering the chronological relation of ovulation and menstruation, cites the observations of Leopold and Kufferath, who examined the ovaries of women operated on during menstruation, and during the intermenstrual period, with reference to the presence of the corpus luteum. They found that the menstruation occurred at the moment of maturity and rupture of the ovisac. Pouchet has published a case of unique coitus in which the act occurred fifteen days after menstruation and fecundation occurred. Fraenkel was of opinion that one of the results of the internal secretion of the corpus luteum was to cause menstruation. In nine cases of laparotomy with healthy ovaries he cauterized the corpus luteum and prevented the next menstruation. Villemin found that the cycle occurs thus: the Graafian follicle ruptures midway between the menstrual periods; twelve to fifteen days afterward the corpus luteum is present and menstruation occurs. Conclusions are that menstruation is a hemorrhage caused by the corpus luteum fourteen to fifteen days after ovulation. This question could be decided if surgeons would systematically examine the follicles of all women on whom laparotomy is done, in connection with the date of the last menstruation.—*La Presse Médicale.*

Congenital Malaria.—Pietro Sabella discusses the possibility of the communication of malaria to the infant by way of the placenta, a subject on which a variety of opinions have been expressed. It has been demonstrated that in many infectious diseases the microorganisms pass from mother to child by the placenta. But communication by the placenta has not been demonstrated for the schizomycetes and some forms of protozoa. The opinion that malaria may be congenital has been expressed by many authors and founded on many cases. Could we find a case in which the parasite of malaria was found in the blood of a new-born child at the same time that it was present in that of the mother the transmissibility would be proven. But no such case has been recorded up to the present date. The author gives the histories of two cases in which malarial parasites were present in the blood of the mother, in both of which abortion occurred. The blood of the fetus in each case was examined and no malarial parasites found on the fetal side of the placenta.—*Il Policlinico.*

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HOSPITALS IN GREAT BRITAIN AND THE PROPOSED NATIONAL INSURANCE BILL.

UNDOUBTEDLY if Mr. Lloyd George's bill for the insurance of the working classes of Great Britain becomes law, and this now seems the probable outcome of the situation, the effect on medical practice will be revolutionary. Especially its influence for good or evil, as the case may be, will be felt on hospitals. The most striking feature of the recently published British Parliamentary Committee's report dealing with the matter is that part which foreshadows the future of the hospitals as affected by the bill. Of course, the conclusions of the report are to a large extent guesswork, but these appear to be founded on fairly sound premises and are the expression of opinion on the part of men qualified to speak with authority. At any rate, the predictions of the committee as to what may happen have the merit of probability, and as such will commend themselves to the consideration of the general public.

With respect to educational administration the committee is of the opinion that, should the bill pass into law, its effect will be to revolutionize completely the conditions of medical treatment and relief which now exist among the entire elementary school population. Organization will take the place of hap-hazard methods, and the wage-earning classes will be brought into universal and direct contact with medical practitioners. The main point, however, is that the British hospital system as a whole will be profoundly affected; indeed, shaken at its base. The committee holds the views that voluntary funds, the Hospital Saturday Fund for instance, will cease. Admittance to hospitals in Great Britain is free and most of them are maintained chiefly by charity; therefore the conjecture is advanced by the committee that the need for charitable relief for the working population will no longer exist. Outpatients' departments will have no *raison d' êtrc.* and will, therefore, disappear, and in the words of the report "inpatient institutions and hospitals must eventually come under the supervision or control of the local Health Councils." If these prophetic utterances by the sages of the Parliamentary Committee should come to pass, the result may be quite dissimilar to that which some of the ardent supporters of the bill imagine it will be. The benefits that appear likely to accrue to the community at large from the passage of the bill are that outpatients' department of hospitals will be free to undertake the service of affording medical relief to school children, while the serious objections which have been brought against the subsidizing of charitable institutions which are not under official supervision or control will vanish. The present system of voluntary contributions to hospitals will pass into oblivion and, according to report, "will practically throw much of such hospital provision open to new arrangements and make support from public funds necessary." In short, it seems that all relating to medical and surgical care will ultimately come under state or public control. Not only will the hospital system be revolutionized, but the momentous event will be merely incidental to the revolutionizing of the medical profession. It will become to all intents and purposes, a branch of the civil service and its members will be servants of the state and of the people. Whatever may be the effect of the bill as regards the population at large, in the opinion of those best able to judge, it will not conduce to the dignity, efficiency, or prosperity of the medical profession. Less scope, by far, will be given to individuality, and whenever this happens efficiency is necessarily lowered.

That the bill has grave defects is obvious to all, from the very fact that the medical profession of Great Britain, with a most remarkable unanimity, is opposed to it. Medical men are not generally regarded as selfish, so that it is not for selfish reasons alone that the whole trend of medical opinion in Great Britain is antagonistic to the bill as it now stands. A most reasonable appeal has been made to the British Chancellor of the Exchequer, that before so important a measure is made law its provisions should be subjected to careful and minute scrutiny, and that it should be discussed from every standpoint. The bill is of international interest, and particularly so to members of the medical profession. Great Britain is leading the way in a great social revolution which must of necessity be a matter of concern to other nations.

ANAPHYLAXIS.

SINCE the development of serum therapy, it has been observed that occasionally serious and even fatal results follow the employment of antitoxic serums. An explanation of many of such cases is found in the phenomena of anaphylaxis, a term first employed by Richet, and which literally means something antagonistic to the protection of the individual. Richet gave some animals a non-lethal dose of actinocongestin, a protein derived from the starfish. After a definite interval of time had elapsed the animal received a second injection of an even smaller amount, which was followed by grave symptoms and often death. This phenomenon was diagnosed anaphylaxis. This result could not be due to cumulative action, since both doses were non-lethal. The preliminary dose is termed the sensitizing, the second the intoxicating injection. The period of incubation is the time that must elapse before the intoxicating dose will provoke the

characteristic symptoms. This period ranges from eight to fifteen days, after which the animal is sensitized or hypersensitive.

In an article appearing in the *Medical Chronicle* for May, 1911, Mr. R. Donaldson presents an exhaustive review of anaphylaxis in which he discusses the various facts known and theories still unproven. The number of persons who exhibit intolerance is estimated at about 20 per cent. Of all persons inoculated such results may follow both primary inoculation and reinoculation, but are considerably more frequent after reinoculation, constituting 80 per cent. or so of all serious accidents. Further, such accidents in man may be subdivided into those followed by more or less local reaction, and those which present all the phenomena of complete anaphylactic shock. Local symptoms are usually slight, the most frequent lesion is an urticaria short or prolonged. In some cases, however, the injection may be followed quickly by a simultaneous general urticaria with edema and cyanosis of the face, the respirations resemble those in a very severe attack of asthma; the heart's action becomes weak and the patient is in a state of collapse; rigors and convulsions may occur or the patient may become comatose. Intolerance of or undue susceptibility to the action of serum has been mostly observed after the use of antidiphtheritic serum, and it was found that the symptoms were not due to the antitoxin but to the horse serum containing it.

The discussion by the author on the relationship of anaphylaxis to certain diseases, although suggestive, is far too long to be more than briefly referred to here. Pellagra has been stated recently to be an anaphylactic lesion, and according to Moschowitz nearly all the various manifestations of the "exudative" diathesis occur in neurotic individuals. This diathesis includes hay fever, urtcaria, mucous colitis, eczema, and other skin lesions. But all the above, as the same investigator points out, occur in susceptible individuals, persons who have somehow become sensitized. Exophthalmic goiter, migraine, epilepsy, tetany, and eclampsia have been included among the anaphylactic diseases. Von Pirquet regards the local and general reactions following the administration of tuberculin as anaphylactic in character. All the diseases which are associated with anaphylactic reaction have been shown by Moschowitz to possess one factor in common, an eosinophilia, and he declares that eosinophilia, like the neurotic diathesis, is frequently inherited. He concludes by stating that in view of the fact that diverse manifestations of anaphylaxis are associated with a persistent eosinophilia, it may be found that a susceptibility to anaphylaxis is present only in those with an acquired or congenital eosinophilia. In his opinion the eosinophil cells may both sensitize and excite the anaphylactic symptoms.

In consequence of certain individuals becoming anaphylactized or exhibiting extreme sensitiveness to the injection of some serums, many physicians are averse to using diphtheria antitoxin, for instance, as a prophylactic. They argue that a person, even if he be not subject to asthma, may be specially susceptible to the serum, and if he be not naturally susceptible injection of the serum may render him artificially so. The question then arises whether it is justifiable or rather advisable to give antitoxin to persons who are only suspected to be suffering from diphtheria. Of course, in a few cases the delay may be injuriously prejudicial to the chances for recovery, but in the majority of cases the doubtful ones are not severe, and little risk will be run if the use of antitoxin be delayed for a day or two when a correct diagnosis can be made. In children under ten when the larynx is affected and in the absence of exudation of the fauces, if the disease is diphtheria the diagnosis is frequently difficult and outcome serious, therefore in such cases the safest course is to employ antitoxin, otherwise in doubtful cases a prophylactic injection is condemned by many as unnecessary and attended with some danger. Methods to diminish the anaphylactic toxicity of some serums without modifying the antitoxic action have been tried, but with little success.

THE CHRISTIAN SCIENTIST'S CRUELTY TO CHILDREN.

No one possessed of an open mind and a reasonable trend of thought would go so far as to assert that the practice of Christian Science as a healing agency is never of any avail. The influence of the mind over the body, of course, is very great and in certain affections, to which the adherents of this cult are very prone, Christian Science and allied modes of treatment have at times a remarkable recuperative effect. Unfortunately the leaders of the sect will not admit the patent fact of its limitations, but profess to believe that all and every kind of organic as well as functional ill can be cured by their denials of facts.

Henry Dwight Chapin, writing in the *Independent* of June 29, points out this evil and exemplifies it by the child. The complaints which are amenable to treatment by mental suggestion and the like are essentially affections of civilization due chiefly to the stress and strain of modern existence. For such as these the influence of the mind is ofttimes a panacea. But the mind of a child is not fully enough developed to exercise an intelligent influence over its own body; nor is the child competent to will and to determine its own course of action. If an adult in full possession of his senses elects to be treated for an organic disease by a Christian Scientist, the matter is mainly his own concern, except as regards infectious diseases. But in the case of a child the question is altogether different and it is not fair to the child that his life should be endangered.

The followers of Mother Eddy when shown the absurdity of their therapeutic pretensions turn the subject: "Ah!" say they, "but it gives us such rest and peace." To this says Chapin: "A peace derived by ignoring the sterner facts of life is too dearly bought. Against the vapid joy and peace that this form of faith gives to any neurotic man or woman you may often count a sick or maimed or dying child. This is the dark, cruel, sinister side of the picture. It is really the child that is offered

as a sacrifice on the altar of this unnatural belief." The author is of the opinion that this age is too tolerant and he thinks it is time for plain and emphatic words. He says that an appeal should be made not only to the intelligence, but to the public heart and conscience by those who can speak with knowledge and authority.

PARABIOSIS AND XIPHOPAGI.

The term parabiosis was introduced into biology to express the condition which results when two animals are artificially united in such manner as to constitute a single organism. It was first performed about fifty years ago by suturing together two rats by raw surfaces of skin. Vascular anastomosis promptly resulted and when when atropine was injected into one of the animals its action was at once manifested in the other. In quite recent years this experiment has been amplified by making an enteroanastomosis between the parabiotic animals (rabbits). The latter must be young and should preferably be of the same sex for the complete success of the experiment. The animals soon begin to exhibit a correlation of acts, as if moved by common nerve centers. If one animal dies the other soon succumbs, apparently from absorption of ptomains; but if at once separated from its fellow it survives. If both kidneys are removed from one animal, both animals die of uremia, and the intact one is the first to show the symptoms. Many other interesting data have been accumulated along this line of research.

In the *Berliner klinische Wochenschrift* for June 19 Coenen calls attention to the parallelism which is evident between parabiotic animals and human xiphopagi, the latter exhibiting many of the phenomena of parabiosis, such as result from a common systemic circulation. A few paradoxical exceptions occur; for example, in one case chloroform inhalation by one was without effect on the other of the xiphopagous twins. The chief interest in this biological question relates to the possibility of separating xiphopagi and other double monsters capable of extended survival, without prejudicing their vital integrity. As is well known, this was partially effected on the so-called Brazilian twins in 1900, one of the twins surviving, while the other died of pleurisy and pneumothorax in the sixth postoperative day. The twins were united by their sterna and a bridge of hepatic tissue while there was an anastomosis between the pleural, peritoneal, and pericardial sacs. Owing to the imperfect results the expediency of such operations has naturally been called in question.

Xiphopagi are by no means rare, for as far back as 1861, 114 had been placed on record. The fact that in two cases separation was readily effected, and this in preaseptic days, tends to show that the bridge in such cases was composed of skin, fibrous tissue, and cartilage only. When the Maria-Adele xiphopagæ were separated in 1881 a small bridge of liver and peritoneum required division and the intervention ended fatally for both twins. According to Coenen of ten twins thus far operated upon, one-half have died from the intervention.

SYNERGISM AND THE FULL UTILIZATION OF DRUG ACTIVITY.

While synergistic drugs have been used intelligently for decades, their employment has been largely empirical. Purgatives, for example, have usually been given in combination, first upon the merely cumulative plan, and later in order to combine remedies which act upon different portions of the alimentary canal, or which induce purgation in different ways. Combination naturally favors economy in the use of the individual drug, since the single dose can thereby be made smaller; and it is probably true as a general proposition that two drugs which act well as synergists will not exhibit any parallelism as to unpleasant over-action, collateral effects, or sequelæ. It not infrequently happens that good synergists neutralize the undesirable effects of each other. Synergists occur side by side in drugs—as morphine and codeine in opium, strychnine and brucine in nux vomica; and pharmacists have striven for years so to manipulate fluid extracts as to eliminate all but the synergistic ingredients, thereby getting rid of useless ballast and non-synergistic active principles. With the great development of synthetic remedies it has also become possible to introduce the principle of synergism in this field. With all these advances, however, little has been done in the exact quantitative or biometric direction. Bürgi of Berne has devoted much time and labor to pioneer work in what he calls "the action of mixtures." One of his articles appears in the *Berliner klinische Wochenschrift* for May 15. His work is founded on hundreds of experiments and his results often differ greatly from theoretical deductions. Thus if x is a narcotic drug, Nx may represent the minimum narcotic dose when given alone. If y is a second narcotic drug Ny represents its minimal dose. In theory a combination would be represented by ½ Nx + ½ Ny. But experiment shows that ¼ Nx + ¼ Ny will give the desired narcotic effect. Thus in combination each remedy doubles the activity of the other, so that the actual amount of medicine given is practically decreased by combination. Even more surprising effects are in evidence if one drug is somewhat increased while the other is greatly diminished. Thus, Bürgi has obtained narcosis by such formulæ as these: 2/5 Nx + 1/25 Ny; ¾ Nx + 1/100 Ny, and ½ Nx + 1/80 Ny. This principle is in evidence throughout the entire domain of therapeutics. The remarkable effects of certain mineral waters are set down in part to the synergism of small amounts of salts in solution. It would seem as though terms such as synergism and full economy of drug power are hardly strong enough to do justice to such remarkable "phenomena." It may, perhaps, be more fitting to state that a certain quantity of one drug is able to activate a certain quantity of another drug, using the verb to activate in the ordinary biochemical sense.

New York City Passes the 5,000,000 Mark.—On August 3, 1911, the population of the City of New York reached an estimated total of 5,000,407, distributed by boroughs as follows: Manhattan, 2,393,636; The Bronx, 487,437; Brooklyn, 1,716,852; Queens, 312,630; Richmond, 89,852. The population of the Greater City, July 1, 1898, was 3,272,418, and during these thirteen years the city has increased 53 per cent.

News of the Week.

Cholera Reports.—Cases of cholera have been reported in several points in France, in Trieste, Austria, and in Yucatan. No cases have been developed in New York, and but few suspicious cases have been found among the immigrants from infected ports. One death from the disease has occurred in Boston, the mode of infection in the case not being ascertainable.

Bellevue Hospital.—The one hundredth anniversary of the founding of Bellevue Hospital occurred recently. On July 29, 1811, the cornerstone of the original building was laid on land originally known as Kip's farm, which had been acquired by the city a few months before.

Vital Statistics.—For the week ending July 29 the Health Department of New York announces a total of 375 deaths from all causes among infants under one year, a decreases of 170, as compared with the corresponding week of last year. From diarrheal diseases alone there were 179 deaths during the week, as compared with 334 in the same time in 1910, a decrease of 155. Since January 1, 8,583 babies under one year have died from all causes in New York, while in the same period of 1910 there were 9,471 infant deaths.

The French Birth Rate.—The population of France in 1910 was 39,252,245. During that year there were 774,358 births and 703,777 deaths, making the net excess of births over deaths 70,581. In the previous year the excess of births over deaths was only 13,424, the number of deaths having been 52,768 greater than in 1910. In certain sections of the country the death rate considerably exceeded the birth rate. For the five-year period from 1901-1905, the number of births per 1,000 of population in some of the leading European countries was as follows: In Holland, 155; in Germany, 149; in Great Britain, 121; in Austria, 113; in Italy, 106, and in France, 18.

Health of the Canal Zone.—The report of the Department of Sanitation of the Isthmian Canal Commission for the month of May, 1911, gives the total number deaths from all causes among employees as 44, of which 33 were due to disease, and 11 to violence, giving an annual average per thousand of 10.89. The annual average death rate among employees in May previous years was as follows:

1904	5.35
1905	16.65
1906	24.79
1907	30.15
1908	10.44
1909	9.45
1910	7.72
1911	10.89

Including both employees and civil population, the death rate in the cities of Panama and Colon and in the Canal Zone for May of each year was as follows:

1905	41.96
1906	42.32
1907	31.57
1908	20.87
1909	15.77
1910	18.69
1911	22.32

Among employees 5 deaths were due to nephritis, 6 to lobar pneumonia, 6 to malarial fever, 4 to tuberculosis, and 2 to typhoid fever. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

Health Department Bulletin.—The demand for copies of the Monthly Bulletin issued by the Department of Health of the city of New York has become so great that it has been found necessary to increase the edition very largely. Hereafter physicians resident in New York desiring to receive the Bulletin may have their names placed upon the mailing list for free copies upon application to the editor, Monthly Bulletin of the Department of Health, Fifty-fifth Street and Sixth Avenue.

The Pennsylvania State Department of Health.—Dr. Samuel G. Dixon, Pennsylvania State Health Commissioner, claims that his State is doing more to aid the country practitioner of medicine in his daily work than any other Commonwealth. Since 1906 48,760 examinations of water, sputum, blood, tissues, etc., have been made by the State laboratories for physicians practising outside of municipalities. Widely distributed throughout the State at convenient points are 65 stations where diphtheria antitoxin can be procured gratuitously for indigent patients. Also there are 67 stations where tetanus antitoxin can be obtained under the same conditions for a like class of patients. Further the department furnishes on request of attending physicians printed directions as to the sanitary precautions to be observed by those in charge of cases of communicable disease. Finally, the State is doing successful work for the tuberculous poor at Mount Alto Sanatorium and through the 115 dispensaries conducted by the department in different parts of the State.

Typhoid Outbreak.—An epidemic of typhoid fever among the employees of the Colony Club of New York has made it seem advisable to close the clubhouse. Dr. Charles E. North has undertaken an investigation of the sanitary conditions of the building.

Mr. Nathan Straus has been appointed by President Taft to represent the United States at the Third Internations Congress for the Protection of Infants, which is to be held in Berlin on September 11 to 15, and also at the Seventh International Congress on Tuberculosis, which will be held in Rome some time next year.

The Babies' Dairy.—The incorporation of the Babies' Dairy in New York City, for the purpose of supplying proper food for infants and children suffering from nutritional disorders and other diseases of childhood, was recently effected. Among its objects are the maintenance of a proper place or places for the supply and distribution of food, the supervision my physicians of children suffering from disorders of malnutrition, and the education of mothers in and care and feeding of infants.

No State Sanitary School.—Governor Dix recently vetoed the bill passed at the last sessions of the New York State Legislature appropriating $10,000 for the establishment at Cornell University of a State School of Sanitary Science and Public Health. This action was taken by the Governor because of the condition of the State funds.

New York Milk Stations.—Commissioner Lederle of the New York City Department of Health has sent to the Board of Estimate an urgent request for additional funds to meet the increasing demands on the milk stations in the city. On July 22 milk was supplied to 9127 babies, an increase of 2674 over the number applying on July 1. The commissioner asks for ten additional inspectors and

twenty-five additional nurses to be assigned to the stations. At present some of the nurses have to look after between two hundred and three hundred babies apiece.

Havana Not Infected.—A contradiction has been issued of the rumor that some cases of yellow fever had appeared in Havana and that typhoid fever was prevalent. On the contrary, it is said, the health of the city has never been more satisfactory.

Hospital for Tuskegee.—The Tuskegee Institute in Alabama has received a gift to be used for the erection of a hospital in connection with the institute, to be known as the John A. Andrew Hospital. The name of the donor has not been announced.

Eighth District (S. C.) Medical Association.—At the annual meeting of the association, comprising the Counties of Lexington, Bamberg, Orangeburg, and Calhoun, which was held at St. Matthews on July 18, the following officers were elected: *President*s Dr. T. H. Dreher of St. Matthews; *Vice-President*, Dr. J. S. Matthews of Denmark; *Secretary-Treasurer*, Dr. Sophia Brunson. The next meeting will be held in Orangeburg.

Big Horn Medical Association of Wyoming.—At a recent meeting, held in Baslin, the following officers were elected: *President*, Dr. C. Dana Carter, Basin; *Vice-President*, Dr. R. M. Hamilton, Grayboull; *Secretary*, Dr. George A. Harris, Basin; *Treasurer*, Dr. Torgeson, Lowell.

Lehigh Valley (Pa.) Medical Association.—The annual meeting of this society was held at the Delaware Water Gap on July 21, when the following officers were elected for the ensuing year: *President*, Dr. C. B. Smith, Washington; *Vice-Presidents*, Dr. E. H. Kistler, Lansford; Dr. P. F. Lyttle, Birdsboro; Dr. A. H. Hornbeck, Catasauqua; *Secretary*, Dr. J. W. Luther, Palmerton; *Assistant Secretary*, Dr. J. H. Santee, Palmerton; Treasurer, Dr. A. A. Seem, Bangor.

The Medico-Legal Society of Rhode Island became a duly chartered State organization at a meeting held on July 20. The objects of the society are the investigation, study, and advancement of medical jurisprudence, particularly as related to crime and its punishment, the public morals, health, and welfare. The following officers were elected: *President*, Judge Benjamin W. Grim, Cranston; *Vice-President*, ex-Senator Daniel A. Lathem; *Secretary-Treasurer*, Dr. Carl R. Doten.

The Medical License Law in Alaska.—Two years ago last February, largely through the efforts of Dr. Harry Carlos DeVighne of Douglas, Alaska, Congress was induced to pass a medical law for Alaska. Previous to this time there was no law regarding the practice of medicine in the territory. The first case to be tried under this law resulted on July 20 in the conviction and imprisonment of a man at Juneau for practising medicine without having secured a license.

Obituary Notes.—Dr. William Cullen Bryant of Brooklyn, New York, a graduate of the New York Homeopathic Medical College in 1871, and a member of the American Institute of Homeopathy, the Homeopathic Medical Society of the State of New York, and the Kings County Homeopathic Society, died at his home of nephritis on July 22, aged 62 years.

Dr. Albert G. B. Hinkle of Philadelphia, a graduate of the Medical Department of the University of Pennsylvania in 1857, a veteran of the Civil War, and later a police surgeon in the city of Philadelphia, and a member of the American Medical Association and the State and county medical societies, died at his home on July 19, aged 80 years.

Dr. Julia Hibben Flagg of Vancouver, Washington, a graduate of the Medical College of Indiana in 1890, and a member of the Clarke County and Washington State medical societies, and of the Portland, Ore., city and county medical societies, died at her home on June 2 from injuries received in a runaway accident while returning from a professional call.

Dr. W. L. Pollock of Boone, Iowa, a graduate of the Jefferson Medical College, Philadelphia, in 1871, and a member of the American Medical Association, and the Iowa State and Boone County medical societies, died suddenly on July 15, aged 61 years.

Dr. Franz B. V. Becker-Laurich of Brooklyn, New York, a graduate of the Long Island College Hospital in 1893, and a member of the New York State and Kings County medical societies, died at his home on July 27.

Dr. Isaac Adams of Annisquam, Mass., a graduate of the Harvard Medical School in 1862, died at his home on July 24, aged 75 years.

Dr. W. J. Castleberry of Lincoln, Ala., a graduate of the Medical Department of the University of Georgia in 1872, died at his home after a short illness on July 14, aged 63 years.

Correspondence.

FINLAY'S WORK ON YELLOW FEVER.

To the Editor of the Medical Record:

Sir:—My attention has recently been called to your most excellent editorial of April 22, giving due credit to Dr. Charles J. Finlay for his genius in observing the facts and from them forming a correct idea of how yellow fever is transmitted. Though he was born in Cuba, the Scotch really claim him and are particularly proud of his work and his persistence in forcing it to attention. Considering the times, it will eventually be considered one of the most wonderful pieces of constructive work in the history of medicine, but like every other advance it was rejected by contemporaries. Unlike nearly all other great medical discoverers, however, he has lived to see the acceptance of his facts and has not had to die of a broken heart; but it has been enough to break anyone's heart to see himself so utterly ignored while the world has been singing the praises of the men upon whom he forced his ideas. It is so like praising the builder of a beautiful church and ignoring the architect who conceived it. No doubt Reed himself, if alive, would blush at the methods used, and would continue to insist upon giving Finlay full credit for the great conception. Too high praise cannot be given also to Lazear and Carroll for their bravery, but Finlay did the same self-inoculation twenty years earlier. Finlay, indeed, used these Americans as one would a tool, and he had to force them, for they, too, laughed at him.

It seems to me that the credit for initiating the experiments confirming Finlay's discovery is due to Leonard Wood, who, as Governor, forced the matter along in the very city where Spanish generals had positively prohibited such work. It was a time, too, when military satraps the world over were doing their utmost to hamper the new sanitation as to

malarial extermination. The stories printed as to their interference with the treatment of the sick make very sad reading. So the possibility of success was due entirely to the wonderful foresight and ability of this exceptional man who has been successful in every position he has occupied.

A Lover of Justice.

Edinburgh, July 15, 1911.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ROYAL COMMISSION ON TUBERCULOSIS—FINAL REPORT — CONSUMPTION DISPENSARIES — SANATORIUM TREATMENT DISCUSSED IN PARLIAMENT—MEDICAL NEWS—OBITUARY.

London, July 14, 1911.

The final report of the Royal Commission on Tuberculosis was issued on Wednesday, and gives the results of the research in which it has been engaged for the last ten years. Though the "Final Report" of this commission, the work is confessedly incomplete, and research will still go on concerning many questions connected with tuberculosis. The members of the commission were Sir W. H. Power, Dr. Sirus Woodhead, Dr. Sidney Martin, Sir J. McFadyean, and Sir Rubert Boyce. The last named died, as I reported, before the issue of the report on which he had labored assiduously. The commission was to consider: (1) Whether the disease in animals and man is one and the same. (2) Whether animals and man can be reciprocally infected with it. (3) Under what conditions, if at all, the transmission of the disease from animals to man takes place, and what are the circumstances favorable or unfavorable to such transmission. The answer given to the first question is practically "Yes," as far as the public health is concerned; for, notwithstanding differences in the characteristics of the two forms of bacilli, it is shown that human beings can be infected by the bovine form. To the second question the answer is also "yes," as might be expected from the reply to the first. As to the third question, further research is needed on some points, but the milk of tuberculous cows is decided to be the chief cause of human infection by the bovine bacillus. In fact, a considerable amount of tuberculosis in childhood is to be ascribed to the bovine form, which reaches the children in cows' milk, and it is evident that the agitation for more effective precautions against the distribution of tuberculous milk has been more than justified. Further, the crusade against consumption now being waged must be largely directed against milk infection; for, although phthsis in adults is, with few exceptions, due to the human bacillus, the various forms of tuberculosis in children are no less important. Even adult man is not immune to the bovine variety. The report considers the three types of bacillus—human, bovine, and avian, and the methods by which they are differentiated, but this must not detain us. The results of one hundred and eight cases of human tuberculosis are recorded, none of them being lupus. In fourteen only the human bacillus was found. In twenty-eight others it was the same in twenty-six, but in two it was bovine, and these two cases were of young adults, and were "definite cases of pulmonary tuberculosis caused by bovine bacilli, and, as far as could be ascertained during life, cases of primary pulmonary tuberculosis. In neither was there any evidence of tuberculous disease elsewhere." These patients died, and the cause in one was stated to have been phthisis, the other seemed generalized tuberculosis, but no post-mortem could be obtained in either. Another group of cases was formed of twenty-nine infants and children, all suffering from primary tuberculosis of the stomach. Of these fourteen yielded bovine and thirteen human bacilli; in the other two there was a mixture of the two varieties. Of the total one hundred and eight cases eighty-four gave human tubercle bacilli only, nineteen yielded bovine tubercle bacilli only, and five gave both. The commissioners hold that though the bovine may be solely responsible for some cases of consumption, and may be present with the human bacillus, the majority of cases infected by the bovine are cases of alimentary tuberculosis, such as those of the cervical glands and primary abdominal cases. These last are cases in which the "bacillus has unquestionably been swallowed."

The report gives some very important information about lupus. In nine cases the bacillus exhibited the cultural characteristics of the bovine form, but in only one of them did it possess the high virulence as well. In the other eight it was less virulent, not only for the calf and rabbit, but also for the guinea-pig and monkey. It was found possible in two cases to bring up the virulence to the usual degree by residence in the tissues of the calf and rabbit.

Pork being so largely consumed, the prevalence of swine tuberculosis is of great importance. In fifty-nine cases investigated fifty yielded the bovine, three the human, five the avian, and one a mixture of bovine and avian forms. This shows there is danger from pigs, and the commissioners admit as much, but they regard the risk of infection from birds as negligible. But the danger from cows is very great, and they say it is not necessary for the cow to have tubercle in the udder for the milk to be infected. Any tuberculous cow is dangerous.

The commissioners express the conviction that the prevention of the ingestion of bovine bacilli in milk would greatly reduce tuberculosis of the cervical and abdominal glands in children. They would therefore exclude from the food supply the milk of any tuberculous cow, irrespective of the site of its disease. Further, in the interests of infants and children, who are specially endangered, they urge that existing regulations as to milk and meat should not be relaxed, but, rather, enforced throughout the kingdom, and so increased as to afford better security against the infection of human beings through articles of diet derived from tuberculous animals.

The foregoing is but a first glimpse at this important report, which cannot fail to be studied in all its respects, for it appears at a time when the public is excited on the subject, Parliament is occupied with it, and the profession is glad to receive so practical an addition to its researches.

Showing, too, the public interest, a powerful appeal has been made for a central fund to support a crusade in favor of tuberculin dispensaries. This appeal is signed by Lord Glenconner, chairman, and Sir Alex. Henderson, treasurer, and asks for £100,000, of which more than £26,000 has been subscribed. Since I wrote to you about one of these dispensaries four or five others have been opened. It is said that each costs about £1,000 to maintain efficiently. One advantage of the dispensary is that it follows the patient to his home and gives the

more important instruction as to preventing the spread of infection and making the home healthy.

On Wednesday night the House of Commons debated the government's proposal (in connection with the insurance scheme) to devote £1,500,000 to build "a chain of sanatoria" across the country, and a million more annually to maintain them. Mr. Austin Chamberlain moved the exclusion of this provision from the bill. He questioned the propriety of including the treatment of a special disease in our insurance bill, and asked, if consumption was to be thus provided for, was there not reason to extend the plan to cancer? Funds obtained from national insurance should rather go to a campaign to improve national health, and a special case be otherwise met.

Mr. Walter Long also objected to the scheme; said other diseases caused more misery, and the evidence of the value of sanatoria was not conclusive.

Dr. Addison maintained that the data available justified the proposal. He said medical men had no knowledge as to the prevention of cancer, but much as to the prevention of tuberculosis. In Germany it had been shown that the earning power of patients was greatly increased after sanatorium treatment. He declared that our friendly societies are spending more than a million a year in this treatment. Dr. Hillier, another medical member, followed on rather different lines. He would support any effort on the part of the State to deal with tuberculosis, but he pointed out that the proposal to treat only insured persons was not statesmanlike. The families of those treated would continue to spread the disease, and unless the plan were extended and supplemented it would merely become a costly luxury for a few. Other speakers followed with similar criticisms, and Mr. Lloyd George replied at length. He had been well primed, and poured out statistics, but made no attempt to confute the medical member of parliament, although he spoke as if he were himself an authority on such questions. He said there was an improvement year by year in the results obtained in sanatoria, and they gave an increased chance to the man who was struggling for life. He had no objection to supplementary treatment. It was impossible at once to provide for some 200,000 or 300,000 patients, and the people of this country preferred to go step by step. It was an experiment he had proposed, and it would be a mistake to go further until it was seen how this worked out. He further intimated that he would be willing to extend it as success attended, and pointed out how the Treasury might join local authorities in doing so.

At the Royal Society of Medicine, Sir Henry Morris has been elected president for the session 1911-12. Sir W. S. Church and Sir F. C. Champneys are the new Hon. treasurers; Mr. Arthur Latham and Mr. H. S. Pendlebury Hon. secretaries.

Queen Alexandra and the Empress Marie of Russia visited the Radium Institute on Monday, and were shown the effect of radium rays on bacteria and other organisms, as well as their penetrating power in regard to lead and other substances. The effect of the rays on various minerals, including diamonds, was also shown. On a later day a visit was made to the museum of the College of Surgeons.

Sir William Osler on Monday unveiled in the Chapter House of Reading Abbey the memorials to the first and last abbots presented to the town by Dr. Jamieson B. Hurry as a coronation gift.

The King has received from Lord Iveagh a gift of £50,000 to distribute at His Majesty's pleasure to Dublin hospitals and the consumption hospital at Newcastle, Wicklow. His Majesty has appointed a committee to carry out the donor's intention.

The Hon. Whitelaw Reid distributed the prizes at the London Hospital yesterday afternoon.

The death of Mr. Furneau Jordan, J. P., has occurred at the age of eighty-one. Mr. Jordan was for many years a leading consulting surgeon in the midland counties. He was surgeon and then consulting surgeon of the Queens Hospital, Birmingham, and professor of anatomy and surgeon in the Queens College, which now is a part of the University. He also held other surgical appointments in the Women's Hospital, the Dental, the Skin Hospitals, and some others in midland towns. He had served as president of the Midland Medical Society. He has for some years lived in retirement in Devonshire. He qualified in 1854, and became F.R.C.S. in 1866. He took M.B., Ph.B., at the Royal University of Ireland, and later, when the Birmingham University was established, the same degrees in that. He published "Notes on One Hundred Consecutive Cases of Abdominal Section," 1897, and "After Effects of Removal of Appendages and Uterus," 1899, in the *Gynecological Journal,* and contributed other papers to the *Birmingham Medical Review,* and other periodicals.

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

TREATMENT OF CALCULUS OF THE KIDNEY—TREATMENT OF ANEURYSM OF THE AORTA—TREATMENT OF RENAL TUBERCULOSIS—NECROLOGY.

PARIS, July 15, 1911.

POUSSON of Bordeaux has made a study of the question of the best route for the extraction of renal calculi, which is of prime importance at present. Should we do nephrotomy or pyelotomy? Pousson thinks that there are circumstances in which extraction by the transrenal incision presents more of a guarantee of effectiveness than section of the pelvis of the kidney. Pyelotomy is indicated especially when the calices and pelvis, distended or not, contain single concretions or a small number of them, whose surface, although irregular, presents no prolongations which can be broken off and left in the passages unknown to the operator; these characteristics may be recognized by preoperative radiography. Not only may the concretions be extracted whole by incision of the pelvis, but also infection of the kidney may be victoriously combated by lavage and drainage sufficiently prolonged. Nephrotomy, on the contrary, is indicated when the concretions are voluminous and branching, occupying with their many branches the most of the calices, and being prolonged even into the parenchyma of the kidney, which they have crowded back into pockets, to the walls of which they are adherent very strongly. Nephrotomy cannot be reserved for those cases in which the functional value of the kidney is nil. Indeed, the surgery of kidney calculus should be above all conservative, for lithiasis being generally diathetic we should always fear that after it has manifested its effects on one kidney, on which we are called upon to operate, it may later attack the opposite organ.

An interesting observation was detailed by Cuneo with reference to the surgical treatment of aneurysm of the aorta. It concerned a woman 49 years of age, who had an aneurysm of the ascending por-

tion of the arch of the aorta. Cuneo made a ligation of the brachiocephalic trunk. Under its influence the patient had a marked amelioration of the symptoms. She lived five years after the operation. Jean-Louis Faure reported a similar case of ligature of the brachiocephalic trunk in an aneurysm of the aorta. The operation was a perfect success, and the patient died three years after without a rupture of the aneurysm, discharging blood from the mouth. Savariaud showed that direct intervention on the sac of the aneurysm is destined to be unsuccessful; on the contrary, operations which are based on the coagulability of the blood in the aneurysm, whenever they diminish the rapidity of the current of blood, give excellent results.

Leon Bernard published an article on the treatment of renal tuberculosis. Should we to-day do nephrectomy early when we have to deal with a unilateral tuberculosis of the kidney, or should we treat the patient by the subcutaneous injection of tuberculin? The progress made in diagnostic and operative technique, the demonstrative value of the results obtained everywhere, thanks to that technique, have little by little conquered all surgeons, and brought them to the doctrine that has been maintained for years by Albarran in regard to the treatment of renal tuberculosis; that is, since the discussions that took place in the Congress of Urology and in the learned societies of France and elsewhere, the conclusion is justifiable that in renal tuberculosis early nephrectomy in demanded, whenever there is no contraindication to that necessary and curative operation. Now, a movement which began abroad seems to be beginning here, which tends to substitute for this rational conduct the non-operative treatment by tuberculin. The conclusions arrived at by Bernard are these: First, unilateral renal tuberculosis (with caseous infiltration) demands early nephrectomy, as soon as diagnosis has been made; second, tuberculin therapy, which has not actually cured cases as a result, cannot modify this indication, which results from fifteen years of work and discussion by urologists; third, medical treatment, including the so-called specific treatments, should be reserved for cases in which surgery is contraindicated (bilateral generalized tuberculosis which is inoperable) and recurrences in the opposite kidney.

Dr. GUINARD.—A lamentable drama unrolled itself at the Hôtel-Dieu, in Paris. Guinard, surgeon to that hospital, fell assassinated by the murderous blows of a man who some months before had been under his professional care. Guinard was about to leave his wards and was slowly going away with his assistants when the assassin drew a revolver upon him and fired five shots, four of which struck him in the abdomen. Carried immediately to the operating room in which he himself had so often operated, laparotomy was done on him, and six perforations of the intestine were found and sutured. The severity of the wounds caused grave fear of the results of the operation, and in spite of a momentary rally Guinard rapidly succumbed, showing magnificent courage. Knowing himself mortally wounded, he discussed the case with his colleagues, to whom he gave himself up with a firmness of mind and a heart less anxious than those of his friends who assisted at the scene, and full of true greatness. Guinard died nobly, showing that he was one of the men of courage and devotion, noble heart, and disinterested zeal, whose example will remain a powerful and durable memory to us. The obsequies were conducted publicly in the city of Paris. The coffin was placed upon a catafalque at the head of the grand staircase of the court of honor of the Hôtel-Dieu, in which were present, besides the representatives of the Government, many deputies and senators, Agrégé Professors of the Faculty, and Members of the Academy of Medicine and Surgical Society. In this court draped in mourning, before a mute audience, were pronounced discourses by the President of the General Council of the Department of the Seine, and by the Director of Public Assistance. Finally, Dr. Jalaguier closed the ceremonies, as president of the Surgical Society. Guinard has made himself known by many interesting communications on appendicitis, perforations of the duodenum, and traumatic lesions of the intestines and liver.

OUR BERLIN LETTER.

(From Our Regular Correspondent)

ANNUAL MEETINGS OF GERMAN MEDICAL SOCIETIES—DISINFECTION OF HANDS AND OPERATIVE FIELD—GRAVES' DISEASE—RADIOGRAPHY WITHOUT A SCREEN-GRAFTING—NON-OPERATIVE TREATMENT OF MALIGNANT GROWTHS—LIGATION OF BRANCHES OF PULMONARY ARTERY IN THE TREATMENT OF PULMONARY DISEASE—FIXATION OF CECUM—RÖNTGENOLOGY OF ALIMENTARY CANAL—THERAPEUTICS OF X-RAYS—DIATHERMIA FROM HIGH-FREQUENCY CURRENTS IN GONORRHEAL ARTHRITIS, GOUT, AND RHEUMATISM.

BERLIN, May 15, 1911.

THE meetings of the large German societies, including those of surgery, internal medicine, orthopedics, and röntgenology, which meetings usually are held in the week following Easter, are over. They brought out a large number of interesting papers. In this letter it is possible to refer only to certain striking passages in these papers, and only to papers read before the congresses held in Berlin.

At the fortieth meeting of the German Surgical Society Küttner of Breslau discussed the subject of the disinfection of the hands and of the operative field. He concludes that the newer mercurial preparations are not superior to iodine, and that pure alcohol is the best disinfectant for the hands. For the operative field the best antiseptic is the 5 per cent. tincture of iodine. Kocher of Berne, in his review of Graves' disease, concludes that this condition is a hyperthyreosis, that is, a manifestation of oversecretion of the thyroid together with an increase in its iodine content; this is to be met by operation in the early stage, when the danger is small and the result certain. Bauer of Breslau has succeeded in practising radiography without a screen. By means of bandages impregnated with platinum-bariumcyanate, and wrapped about the part to be examined, he has been able not only to make a better topical diagnosis but also to perform extractions and repositions to better advantage. Lexer of Königsberg read a paper on free grafting. In making skin-grafts it is important to allow the wound to bleed a long time until clots are formed and then to press the transplanted skin firmly on the part. Grafts of mucous membrane are disturbed by infection. For transplantation of ureter, the small intestine freed from serosa has been utilized. Grafting of fat is easily performed, while that of muscle and nerve is unsuccessful. Transplantation of vessels and of fascia has been quite success-

fully performed. The free grafting of tendon has resulted in the formation of a strong band in the resting condition, and in early motion in a structure that can functionate as a tendon. In the grafting of bone the best results are obtained with fresh bones covered with periosteum which have been removed from amputated limbs. Even bone removed from the dead is superior to dead bone. The transplantation of joints from amputated limbs or from the recent dead gives good results. A knee-joint that had been transplanted eight hours after its owner's death has healed into its new site five months later without a fistula. Entire extremities and organs have not yet been successfully transplanted.

Werner of Heidelberg has reported on the non-operative treatment of malignant growths. He has come to the conclusion that certain sarcomata and epithelial formations may be cured by means of radiation, toxins, and arsenic therapy; all other cases are best attacked surgically. Schumacher of Zurich described his experiments performed on animals and his two cases in human beings, in which by ligation of branches of the pulmonary artery he succeeded in causing atrophy of the diseased portion of the lung supplied by these branches. Similarly, Tregel of Dortmund, by using narrowing ligatures of silver thread, has caused venous hyperemia in the lungs and has been able to demonstrate that in these sections tuberculosis develops with great difficulty. Wilms of Heidelberg and Klose of Frankfurt discussed the subject of movable cecum. By fixation of the latter (cecopexy) they produced not only alleviation of the pain but also permanent cure of the chronic constipation.

At the seventh Congress of the German Röntgenological Society there was an extended symposium on the gastrointestinal canal. Kaufmann and Kienböck of Vienna brought *x*-ray pictures to demonstrate that foods do not mix in the stomach, but form layers. These pictures were obtained by giving individuals alternate portions of bismuth-containing and bismuth-free foods. Haudeck of Vienna described the distinguishing characterstics of ulcer and cancer. The ulcer is represented by its prominence in the picture, the cancer by its indistinctness. Other distinctions are associated wth the form of the stomach and the time taken for the expulsion of foods from the stomach. Günther of Bonn recommends barium sulphate as a cheap and non-toxic substitute for bismuth. A number of communications were presented as to whether the *x*-ray appearances of the hilum of the lung are to be attributed to the bronchi or to the vessels. No definite agreement was reached on this point. Albert Schönberg of Hamburg described the permanent therapeutic results of the *x*-rays in gynecology. Fibroids undergo considerable diminution in size, and the hemorrhages cease for good. These favorable results were even noticeable in climacteric hemorrhages as reported in the discussion. For epithelioma of the face Schmidt of Berlin recommends a combination of *x*-rays and mercury light. Grunmach of Berlin claims to have cured trigeminal neuralgia by means of *x*-ray treatment. Schulz of Berlin reported that he produced blanching of nevi without any reaction by means of the use of exceedingly mild rays. Plageman of Rostock has observed that staphylococci grow much better on culture media that have been exposed to the *x*-rays than on media that have not been so exposed. Even the garden soil exposed to the rays but once yielded a better growth from the seeds subsequently planted than neighboring soil not treated in this manner. In order to produce a better epilation of the skin, Bucky of Berlin resorted to a preliminary inunction with mercury. The epilation was thereby accelerated. A new glass for the manufacture of *x*-ray tubes has been known as the Lindemann glass. It consists of lithium, beryllium, and boron and absorbs about one-fifth as much of the rays as does ordinary glass.

At the tenth Congress of the German Orthopedic Society Stein of Wiesbaden reported his results with the use of diathermia, by means of which he succeeded in distinctly raising the temperature in the tissues. He utilized forms of apparatus that generate a high-frequency current with alternations of one million per second. The treatment is better than any other in acute gonorrheal arthritis. An acute attack of gout is always relieved by means of this measure, while chronic gouty and rheumatic articular changes are favorably influenced. Acute periostitis responds quickly to this method of treatment.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

SCHOOL ANEMIA—PROGNOSTIC AND THERAPEUTIC SIGNIFICANCE OF UROCHROMOGEN IN PULMONARY TUBERCULOSIS—CLINICAL STUDIES ON HEART DISEASE.

VIENNA, July 1, 1911.

SCHOOL anemia and its prophylaxis was the subject of investigation by Medical Inspector J. Mendl, who examined the morphological condition of the blood in fifty school children. None of these had any complicating conditions, such as diabetes, nephritis, helminthiasis, etc. The changed relationships of the leucocytes and erythrocytes were found to be more of a qualitative than of a quantitative nature. There was neither a marked oligochromemia, nor a marked oligocythemia, nor was any difference to be noted in the sexes. The absolute count of the erythrocytes was markedly diminished in half of the cases, as a compensatory change there were small-celled poikilocytosis and increased pigmentary content. The anemia of school children is not an essential anemia, but is a pseudoanemia, with partly accountable and partly unaccountable causes. It affects not only the children of the poor, but also those of the well-to-do. In one-half of the cases there was a marked increase, amounting to as much as 25 per cent., in the eosinophiles. Substance in the school atmosphere that have a deleterious effect upon the blood of the children, have a positive chemotactic action for the acidophile cells, to which the child's organism reacts by means of an eosinophilia. This is a so-called toxic eosinophilia. A positive myelocytosis indicated a stimulation of the spinal cord by the school air, through the medium of the blood.

The significance of urochromogen in the prognosis and therapy of pulmonary tuberculosis was the subject of investigation by Moriz Weisz. The excretion of urochromogen has an unfavorable prognostic significance, being the result of a toxemia, occasioned by the toxins of the tubercle bacillus. In most cases this substance indicated an excess of toxins in the blood, taken up from lesions so extensive that cure is impossible. In other cases the excretion of urochromogen indicates a vulnerability of the organism to the tubercle bacillus, a condition that may be termed a predisposition. The protective mechanism of the body must therefore be associated in some way with the metabolism of urochromogen. This chemical process

is connected with the oxidative activity of the cellular protoplasm, in which one must perceive the chief weapon against the tubercle bacillus. The appearance of the excretion of urochromogen at the beginning of tuberculin treatment, and its later disappearance in the course of this treatment, show a gradual intoxication of the cells, due to a component of the tuberculin action. The appearance of urochromogen during tuberculin treatment indicates either that a particularly high tuberculin susceptibility exists, or that the chosen dose of tuberculin was too large.

The control of tuberculin therapy by means of urinary examinations can therefore serve to prevent the dangerous pushing of this treatment. A transient excretion of urochromogen is no contraindication to tuberculin therapy, but it emphasizes caution. In cases in which urochromogen is already being excreted in the urine, tuberculin treatment can hardly have any effect. The results of the penumothorax treatment is unilateral tuberculosis are better.

Clinical studies on heart disease have been reported by Privat Dozent D. Breuer. He notes that in various diseases of the heart the hypertrophy of the left auricle causes pressure of neighboring organs, such as the aorta, the esophagus, the bifurcation of the trachea, and the main bronchi. The greatest enlargement occurs in the left auricle, when it becomes hypertrophic and insufficient, as happens particularly in renal disease and arteriosclerosis, with the possibility of acute dilatation. Many cases of cardiac asthma depend upon such a paralysis of the left auricle. When enlarged this may press upon the bifurcation of the trachea, producing an obstinate cough. By pressure on the aortic arch the left recurrent laryngeal nerve may be compromised. Similarly, the esophagus may be pressed upon. The esophagus and the recurrent laryngeal nerve are seldom affected, however, unless they are immovably fixed, as by scars. Moreover, the esophagus is not very susceptible to stenosing action from without. The increased size of the left auricle may also cause cardiac orthopnea. Breuer believes that in the recumbent position the left auricle is pressed upon by the remainder of the heart; this occurrence is obviated by the sitting position or by some special attitude while lying down. Certain cardiac patients experience Cheyne-Stokes breathing, particularly during fatigue and during sleep. After a number of respirations there occurs a pause, lasting a half minute. Awaking occurs at the beginning of the respirations, and is associated with dyspnea, cyanosis, and dilatation of the pupils. In the period of respiratory pause the patients fall asleep again. Morphine cannot be used in these cases, for it is apt to bring on Cheyne-Stokes breathing. Effective remedies for the latter are a combination of atropine and morphine, and inhalation of oxygen; also, the inhalation of carbon dioxide is effective in stimulating the respiratory center.

Aerogenous Infection in Pulmonary Tuberculosis.—F. Gaertner maintains that in 90 per cent. of all cases the tubercle bacillus enters the body through the respiratory tract. Following the inhalation of tubercle bacilli, these are deposited on the walls of the pulmonary alveoli, which they irritate, with the resulting exudation of serum and the formation of tubercles. There is an early infection of the lymphatic glands at the hilum.—*Lancet-Clinic.*

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

SMALLPOX IN THE PROVINCE OF QUEBEC—ANNUAL REPORT UPON FEEBLE MINDED IN ONTARIO—PRIVATE HOSPITAL IN TORONTO—PROTECTION OF FOOD STUFFS IN TORONTO—DR. GEORGE ARMSTRONG APPOINTED TO ROYAL VICTORIA HOSPITAL, MONTREAL—FILTRATION PLANT FOR MONTREAL—CHOLERA ON BOARD SHIP—ACCIDENT TO DR. ANDREW MACPHAIL.

MONTREAL, July 24, 1911.

SMALLPOX has been present in epidemic form in the Province of Quebec for a period of eleven years. In November, 1899, the disease gained a foothold in the province, and each year since, especially during the winter and spring, appears in parts of Quebec. According to Dr. J. A. Beaudry, chief inspector of the Board of Health of Quebec province, one reason why the efforts put forth to stamp out the malady have not been crowned with success is because of the mild and somewhat abnormal form of the disease.

During the epidemic which has continued since November, 1899, smallpox in Quebec appears to have varied considerably from the classic type. The cases have been of a remarkably mild type, and have exhibited themselves in very variable forms. As said before, the type of the disease has been mild—so mild, indeed, that individuals affected, especially children, have not been confined to bed. Many of the children have amused themselves as usual, and the adults have followed their usual occupations and customs. The eruption has shown itself in an irregular manner, and in varied forms. In short, the disease has been of so modified a type that it has been frequently diagnosed as chicken pox and has been regarded so lightly that no special attention has been paid to it. Often medical men have not been called in, and even, sometimes, when their services have been made use of, they have not deemed the cases of sufficient gravity to notify the authorities, and the chief reason for its spread is that vaccination in the Province of Quebec, to a large extent, has fallen into disuse. Recently several cases of smallpox have occurred in Montreal which has attracted the notice of the public to the situation. The Board of Health, greatly hampered in its work by the apathy of the public, and in some instances by negligence of physicians to report cases, has seized the opportunity afforded by the cases in Montreal and the consequent fear of the community to institute a campaign against smallpox throughout the Province of Quebec. The following notice has been issued and distributed in all parts of the province:

"The Board of Health of the Province of Quebec, alarmed, and for cause, at the increasing spread of the epidemic of smallpox, not only in the Province of Quebec, but also in the whole of North America, and considering that consequently all municipalities of the province are actually threatened, and that vaccination is, in such circumstances, the only means that will save the province from the disasters which a generalized epidemic would mean, acting under the powers conferred upon it by the Quebec Public Health Act, orders each municipal council of the province to avail itself, within a period of five days from the date of reception of the present notice, of the powers conferred upon municipalities by said act and by Article 605 of the Municipal Code, and by virtue of such powers

to adopt, promulgate, and cause to be obeyed the following by-laws." These insist upon immediate vaccination where needful and advisable.

A considerable amount of opposition has been manifested in Montreal against the enforcement of compulsory vaccination, but Dr. Beaudry, with whom your correspondent had an interview, does not think that the objection is deep rooted. He ascribes the indifference of the people to taking measures for prevention to the fact that they have become so familiarized to smallpox by having the disease constantly in their midst that they have come to regard it as a matter of small importance.

Dr. Helen MacMurchy, in her fifth annual report upon the feeble minded in Ontario, thus sums up the situation so far as the school population is concerned in this respect. It is estimated that of about 600,000 school children .03 per cent. are feeble minded. In other words, about 1,000 feeble minded children are in the schools or of school age. In the opinion of Dr. MacMurchy these should be registered under the direction of the Education Department in order to be known and located. As for those remaining, the adults or those over school age should be reported to the Provincial Secretary's department. Those coming under the notice of the officers of the law should be tabulated in a similar manner. Finally, there should be a gradual development of this policy of care of the feeble minded in accordance with enlightened public opinion in the province. It has been announced recently that Drs. Bruce, Cavan, and other medical practitioners of Toronto have bought a large private residence in the city with a view of converting it into a private hospital. The house is commodious and well adapted for the purpose for which it is intended and is situated in about three acres of ground. A new wing is to be added with accommodation for sixty-six patients. Dr. J. U. E. Brown, who filled with success for several years the position of superintendent of the Toronto general hospital, has been appointed superintendent of this institution. There are also to be two house surgeons, together with an adequate staff of nurses. The Board of Health of Toronto has submitted to the Board of Control a by-law to protect food stuffs from contamination. The law is to the effect that all articles of food for sale are not to be conveyed from place to place or kept in an open window or doorway or outside a building unless covered with clean material; that every place where food is stored and sold shall be kept in a wholesome condition; that all persons engaged in handling articles of food shall wear clean outer garments; that any room in which articles of food are kept or sold shall not be used for domestic purposes; that the use of newspapers or unclean paper for wrapping articles of food is to be prohibited; that every vendor of food stuffs shall keep in his wagon a water-tight covered receptacle for the waste products of his business.

Dr. George Armstrong has been appointed surgeon to the Royal Victoria Hospital, Montreal, in place of the late Dr. James Bell. Dr. Armstrong has resigned from the staff of the Montreal General Hospital and will enter at once upon his new duties. Work on the new filtration plant for Montreal, to cost about $2,000,000, is in progress and it is thought that it will be completed in two years. Some cases of suspected cholera have occurred on a vessel bound to Montreal. The crew have been detained in quarantine at the quarantine station at Grosse Isle.

Dr. Andrew Macphail of Montreal, editor of the *Journal of the Canadian Medical Association*, some five weeks ago met with a somewhat serious accident. He was about to open a bottle of aerated water when the bottle exploded and pieces of glass cut his face and injured both eyes. Dr. Macphail has been treated in the Royal Victoria Hospital and has just left that institution for his country house on Prince Edward Island. It is stated that although one eye was badly injured his sight will not be affected permanently. Dr. Macphail is a writer of much versatility and is a man of great personal charm. His large number of friends in Canada and in Great Britain will hope that he may be soon able to resume his literary work with unabated vigor and undiminished power.

Progress of Medical Science.

Boston Medical and Surgical Journal.

July 20, 1911.

The Present Position and Value of the Exploratory or Operative Diagnosis. M. H. Richardson.
A Retrospect. A Few Thoughts and Suggestions Based upon Twenty-five Years' Experience with Tuberculosis. V. Y. Bowditch.
The Mobilization of Stiffened Joints. R. B. Osgood.
The Clinical Tests for Apraxia and Their Value in the Diagnosis of Brain Disease. I. H. Coriat.
Soluble Silver Oxide. Its Use in Medicine. A Provisional Notice. T. W. Schaefer.
A Case of Syphilis Treated by Inunction of Mercury Related in the "Gesta Romanorum," which Was First Printed in 1473. C. M. Cobb.

Exploratory Diagnosis.—M. H. Richardson admits his strong inclination, under the restrictions of common sense, to the operative demonstration and diagnosis of suspected surgical diseases. He proposes the following conclusion: Operative investigation of suspected disease remediable only by mechanical or surgical means, when used by those fitted to make it, deserves the indorsement of physicians as well as of surgeons. Before resorting to the exploratory operation all reasonable means of diagnosis should be exhausted, except in cases of emergency from obscure causes in which the necessity for mechanical remedy is self-evident. In tumors of uncertain nature, especially those associated with areas or organs subject to malignant disease, and especially at the cancer age, exploratory demonstration of the tumor and, if necessary and possible, microscopic determination of its nature should, in the absence of contraindications, be the rule. In the multiplication of indications for mechanical and operative treatment, surgery has become a highly specialized art and broad science, for the practice of which special preparation is essential. For the practice of surgery, the study of the morbid anatomy of surgical diseases in the living as well as in the dead, and its relation of symptoms, especially those diseases producing mechanical symptoms, should be, with the study of normal anatomy, the surgeon's chief endeavor. Finally, the exploratory diagnosis should be restricted in its application in those cases in which certainty of diagnosis is essential to relief, and in which, from lack of surgical remedy, error means disaster or death.

Tuberculosis.—V. Y. Bowditch sums up his attitude toward the question of the final eradication of tuberculosis in the following way: He has had a faith for years and still feels that one may be on the eve of some brilliant discovery of a method which shall be a greater aid in one's work than anything thus far adopted. That we are moving in the right direction and have already accomplished much he is firmly convinced. While he cannot share the optimism of those who believe that in a generation, by the general extension of present methods, one will find tuberculosis under complete control, yet he believes that at the end of that time vast progress will have been made toward the desired result.

Mobilization of Stiffened Joints.—R. B. Osgood reports three cases in which is shown the possibility of preventing reunion of bone in cases of complete bony ankylosis. In the cases reported the membrane of Baer, of Johns Hopkins, was used to prevent union. This is a tough membrane obtained from the bladder of the pig, sterilized and chromicized like catgut, and supposed to remain in the body tissues without being absorbed for at least thirty days.

Clinical Tests for Apraxia.—I. H. Coriat presents an outline of some clinical tests for motor apraxia, and indicates their value in the diagnosis of organic diseases of the brain. Motor apraxia occurs in lesions of certain portions of the brain, particularly of the corpus callosum and of the left parietal lobe, as a result of which the sensorimotor zone is cut off from communication with the temporal and occipital lobes. The following varieties of apraxia are to be distinguished from one another: eupraxia, the intactness of reproduction of coordinated movements; apraxia, complete lack of reproduction of coordinated movements; dyspraxia, partial lack of reproduction of coordinated movements; motor apraxia, an inability to make movements or to use objects for the purpose demanded by the will; ideational apraxia (or agnosia), a misuse of objects due to a disturbance of identification.

Soluble Silver Oxide.—T. W. Schaefer states that this is a soluble preparation of silver, entirely free from an acid radical, and therefore eminently available for the various therapeutic uses of silver.

Mercury in Syphilis.—C. M. Cobb cites a fable from the "Gesta Romanorum" of 1473, which contains a veiled allusion to the treatment of syphilis with the aid of mercury.

New York Medical Journal.

July 22, 1911.

The New York Academy of Medicine. C. L. Wheeler.
The Laboratory Findings in Neurological Manifestations. D. M. Kaplan.
Fracture of the Anteroexternal Portion of the Lower Condyle of the Tibia, Complicating Pott's Fracture. M. Leale.
Some Medical Gossip Pertaining to the Last Illness of Queen Anne of England. C. G. Cumston.
Early Diagnosis of Cancer of the Breast. A. E. Isaacs.
Papular Eruptions of the Buccal Mucous Membrane. H. K. Gaskill.
The Etiology, Prophylaxis and Treatment of Postanesthetic Vomiting. J. Halperin.
Some Remarks on an Operation for Progressive Spinal Deformities in the *New York Medical Journal* for May 27, 1911. W. G. Elmer.

The New York Academy of Medicine.—C. L. Wheeler presents a short history and description of the present home of this organization.

Laboratory Findings in Neurology.—D. M. Kaplan concludes that the Wassermann reaction is only an etiological indicator, and in neurology its presence cannot always serve as a therapeutic guide. The serologist's technique should be inquired into. Cerebrospinal syphilis and general paresis cannot be differentiated, using the finding of Plaut as a working basis. The cytology is the most important element in the pathology of the cerebrospinal fluid. No meningitis ought to be excluded or established without a cerebrospinal fluid analysis. Multinucleosis and the absence of the Fehling reducing substance go hand in hand and are significant of an acute process. The ring test for the detection of an excess of protein in the cerebrospinal fluid gives an approximate quantitative insight into the degree of increase.

Fracture of Lower Condyle of Tibia.—M. Leale reports a rare case of fracture of the anteroexternal portion of the lower condyle of the tibia, complicating Pott's fracture.

Last Illness of Queen Anne.—C. G. Cumston reviews certain documents relating to the last illness of Queen Anne of England.

Cancer of the Breast.—A. E. Isaacs states that pain is an inconstant symptom, especially in the early stages. Limitation of mobility of the breast is an important sign. Raising of the level of the nipple on the affected side is an early sign of value. Retraction of the nipple comes later. Discharge from the nipple, when cloudy or bloody, is always suspicious. The more pronounced evidences, such as glandular involvement, metastasis, adhesion of the tumor to the chest wall, or puckering of the skin, are comparatively late signs.

Papular Eruptions of Buccal Mucous Membrane.—H. K. Gaskill states that the most common of the papular eruptions that resemble at certain stages of their development Koplik's spots are Fordyce's disease, aphthous stomatitis, lichen planus, mucous patches, sprue, and thrush.

Postanesthetic Vomiting.—J. Halperin states that the best method of combating postanesthetic vomiting is to keep the patient motionless in a quiet room and to administer small quantities of hot water or cracked ice at frequent intervals.

Spinal Deformities.—W. G. Elmer advances arguments in opposition to the performance of an operation for ankylosing the affected vertebræ in tuberculosis of the spine, and to the performance of arthrodesis of the spine in lateral curvature.

Journal of the American Medical Association.

July 22, 1911.

Animal Experimentation in Relation to Epidemic Cerebrospinal Meningitis. C. H. Dunn.
The Optometry Question and the Larger Issue Behind It. E. Jackson.
Serous Labyrinthitis. J. R. Fletcher.
Tuberculous Cyclitis Following Non-Perforating Injury to the Eye. O. Dodd and F. Lane.
Plastic Surgery of the Eyelids Using the Wolffe Graft. F. P. Calhoun.
A Case of Acute Gastric Ulcer of the Anterior Wall. A. Bassler.
Fracture of the Cervical Spine. T. M. Williams.
Anaphylaxis and the Toxic Substance from Virulent Pneumococci. E. C. Rosenow.
Emphysema of the Skin Occurring During Labor. M. J. Siegelstein.
Removal of an Open Safety-Pin from the Trachea by Upper Bronchoscopy. G. Hudson-Makuen.
Studies on Pyocyaneus Immunity with Special Reference to the Therapeutic Value of Vaccines. N. Gildersleeve.
A Case of Raynaud's Disease. G. B. Lemmon.

Animal Experimentation and Cerebrospinal Meningitis.—C. H. Dunn discusses the history of the experimentation that led up to the production of the antimeningococcic serum, and the favorable manner in which the latter has influenced the mortality of epidemic cerebrospinal meningitis.

The Optometry Question.—E. Jackson discusses the fallacies of the arguments advanced by the optometrists.

Serous Labyrinthitis.—J. R. Fletcher states that this condition should be recognized as one of the inflammatory diseases of the labyrinth.

Tuberculous Cyclitis.—O. Dodd and F. Lane report a case of this condition following a non-perforating injury to the eyeball—the result of the patient being struck with a baseball ten months before.

Plastic Surgery of Eyelids.—F. P. Calhoun recommends the Wolffe deep cutaneous graft as the ideal one to be employed in restoration of the lids and the cul-de-sacs in complete ectropion of the eyelids.

Gastric Ulcer.—A. Bassler reports a case of gastric ulcer of the anterior wall—an uncommon condition.

Fracture of Cervical Spine.—T. M. Williams presents the history of a case of fracture of the fourth and fifth cervical vertebræ.

Anaphylaxis and Pneumococci.—E. C. Rosenow reports the results of his experiments on the anaphylotoxic substance obtained by the interaction of pneumococci, immune serum, and normal serum.

Cutaneous Emphysema During Labor.—M. J. Siegelstein reports a case of this condition.

Removal of Open Safety-Pin from Trachea.—G. Hudson-Makuen reports the successful removal of an open safety-pin from the trachea of a young girl by means of bronchoscopy.

Pyocyaneus Immunity.—N. Gildersleeve concludes that a marked increase in both the opsonic and agglutinative elements can be induced in the animal economy by the injection of vaccine as well as the living organisms. Therefore, the employment of vaccine in the treatment of local pyocyaneus infections would appear to be rational. However, there is also a toxin produced by the organisms under consideration, the action of which manifestly cannot be counteracted by the use of vaccine. Should one decide to employ vaccine in treating these infections, such vaccine must be prepared from the organism concerned in the individual infection under treatment, and never from strains that have been cultivated on artificial media for a number of generations. These organisms soon lose their virulence under artificial cultivation and at the same time, at least to a great extent, their power of conferring immunity.

Raynaud's Disease.—G. B. Lemmon reports a fatal case of this condition, in which there was a strong hysterical element.

The Lancet.

July 15, 1911.

A Clinical Study of Cardiovascular Degeneration. J. Bruce.
The Treatment of Phthisis and Hemoptysis by Artificial Pneumothorax. C. Lillingston.
Notes on Four Cases of Phthisis in which Artificial Pneumothorax Was Induced. L. Colebrook.
A Case of Artificial Pneumothorax Produced in Treating Chronic Pulmonary Tuberculosis. S. A. Pearson, A. de W. Snowden, and C. Lillingston.
A Case of Torsion of the Pedicle of a Uterine Fibroid. C. A. Morton.
A Case of Acute Inammation of the Thyroid Gland. C. W. Bonney.

Cardiovascular Degeneration.—J. M. Bruce states that disorders of nutrition are included among the causes of cardiovascular degeneration. One of the most important of the former is intermittent glycosuria. The subjects of degeneration of the heart and arteries associated with glycosuria suffer from all the ordinary symptoms of cardiac disability and distress. As to the physical signs, the aortic diastolic murmur which figures so largely in syphilis is never found, but in many of these cases an apical systolic murmur is present. The clinical course is unusually slow. In the author's 100 cases of cardiovascular degeneration gout was the important etiological factor in 44. In most of these cases the heart is enlarged, with a normal or increased impulse, an aortic systolic murmur, and an apical systolic murmur. A small proportion of cases of cardiac enlargement, with or without arterial sclerosis, may be traced to physical strain in early manhood. There is another group of cases in which the relation of physical stress to the nutritional condition of the cardiovascular walls is the reverse: where the original stress falls upon a middle-aged or old heart already unsound.

Treatment of Phthisis and Hemoptysis by Artificial Pneumothorax.—C. Lillingston states that Forlanini's plan of introducing nitrogen between the two layers of the pleura through a fine, hollow needle, and thus inducing collapse of the lung, can now be carried out with ease in cases uncomplicated by adhesions, provided the operator carefully carries out every detail of the recently improved technique.

Phthisis and Artificial Pneumothorax.—L. Colebrook reports four cases of pulmonary tuberculosis in which artificial pneumothorax was induced. These were all very grave cases, and in two of them the rest afforded to the lung marked a turning point in the infection. The author concludes that the method is worthy of serious attention.

Artificial Pneumothorax.—S. V. Pearson, A. de W. Snowden, and C. Lillingston report two cases in which artificial pneumothorax was induced in the treatment of chronic pulmonary tuberculosis. In one of these cases the success of the treatment was striking; in the other case the treatment was a failure.

Torsion of Pedicle of Uterine Fibroid.—C. A. Morton reports a case of this condition, noting its extreme rarity.

Acute Inflammation of the Thyroid Gland.—C. W. Bonney reports the case of a small patient who had had a goiter for 16 years, and in whom, following an attack of pneumonia, the goiter increased greatly in size. As the result of this the patient suffered greatly from dyspnea, pain, and progressive deterioration of health. At operation it was found that the entire left lobe of the thyroid had become converted into an abscess cavity.

British Medical Journal.

July 15, 1911.

Three Cases of Cardiac Failure without Evident Dilatation of the Heart. T. S. Wilson.
A Case of Obliterative Endoaneurysmorrhaphy for Popliteal Aneurysm. A. E. Barker.
A Case of Antbrax Treated by Sclavo's Serum. W. M. Fergusson.
Intramuscular and Intravenous Injections of Antimony in Trypanosomiasis. C. N. B. Camac.
The Treatment of Serum Sickness Occurring in Diphtheria. J. R. Keith.
Some Notes on the Absorption of Iron. D. G. McL. Munro.
Treatment of Pulmonary Tuberculosis by Means of Carbolic Acid Injections. H. Vallow.
A Report on Fifty Cases of Trachoma Treated with Carbon Dioxide Snow. G. M. Harston.
Administration of Serum by the Mouth. G. I. Cumberlege.
Intrathyroid Hemorrhage Followed by Acute Dyspnea and Death. S. G. Champion and C. B. M. Aldridge.
The Discrimination of Color. F. W. Edridge-Green.
Menorrhagia in Virgins: A Medicinal Treatment. F. Hare.

Cardiac Failure Without Cardiac Dilatation.—T. S. Wilson reports three cases of muscular failure of the heart without marked enlargement and without valvular disease. The first case showed heart weakness with diminution in the size of the cardiac area from damage to the heart muscle from the toxins or microorganisms of acute rheumatism. In this case the left ventricle was rather weaker than the right, and the latter showed a slight amount of the adolescent type of dilatation and a pulmonary artery murmur. The second case was one of the muscular failure of the heart, without evident dilatation, due to malnutrition presumably from atheroma of the coronary arteries. In this case the left ventricle was more affected than the right. The third case was exceptionally interesting owing to the limitation of the fatty degeneration to the right ventricle as well as from the absence of physical signs of cardiac failure except those associated with a relative emptiness of the heart and great vessels, and the weakness of the cardiac sounds, especially those heard over the right ventricle.

Endoaneurysmorrhaphy.—A. E. Barker reports a case of popliteal aneurysm treated by means of the method elaborated by Matas—obliterative endoaneurysmorrhaphy. The results in this case were good.

Anthrax Treated by Sclavo's Serum.—W. M. Fergusson reports a case of anthrax treated by Sclavo's serum, in which recovery took place without excision of the pustule. Most cases of recovery after treatment by Sclavo's serum have been treated by excision as well.

Antimony in Trypanosomiasis.—C. N. B. Camac reports a case of trypanosomiasis in which intramuscular and intravenous injections of antimony were used. For over two years prior to the treatment there had been twenty-six febrile paroxysms associated invariably with trypanosomes in the peripheral blood. Following the treatment, except for two rises of temperature that occurred with the other symptoms of poisoning, no fevers have occurred and the trypanosomes have not been found in the peripheral blood or in animals inoculated with blood and spinal fluid.

Treatment of Serum Sickness.—J. R. Keith reports a case of serum sickness following the use of antitoxin in diphtheria. Calcium lactate administered in one of these cases caused the disappearance of the rash, but no other effect was seen. The salicylates produced more satisfactory results.

Absorption of Iron.—D. G. McL. Munro reports the results of his experiments, in which it would appear that iron in organic combination with vegetable albumin has an advantage over Blaud's pill or ammonicitrate of iron.

Carbolic Acid Injections in Pulmonary Tuberculosis.—H. Vallow reports three cases in which this treatment was followed by good results. The method employed was the injection once a week of 0.1 to 0.2 c.c. of a 1 per cent. solution of pure carbolic acid in distilled water. The improvement, which was most marked in the early cases, consisted in regular increase in weight, improvement in appetite, and diminution and even disappearance of physical signs.

Carbon Dioxide Snow in Trachoma.—G. M. Harston reports the successful treatment of 50 cases of trachoma by means of carbon dioxide snow.

Diphtheria Antitoxin Administered by the Mouth.—G. I. Cumberlege advocates this method of administration, claiming good results in his own experience, without any of the disadvantages associated with the hypodermic administration.

Intrathyroid Hemorrhage.—S. G. Champion and C. B. M. Aldridge report the case of a domestic, aged 24, who, following a fall from a car, soon gave signs of collapse and severe dyspnea, and died an hour and a half after the accident. At autopsy the thyroid, which was goitrous, was found to be the seat of a large hemorrhagic cyst.

Discrimination of Color.—F. W. Edridge-Green states that when special means are taken to have as pure a spectrum as possible he can find no method which will enable him to distinguish as separate colors the wave lengths in a monochromatic region.

Menorrhagia in Virgins.—F. Hare states that excessive menstruation may depend upon exaggerated vascular tone. For this reason he finds justification for the use of amyl nitrite, the inhalation of which even in single administrations of 3 minims has been sufficient to effect permanent relief from the tendency to excessive losses.

Berliner klinische Wochenschrift.
July 10, 1911

Syphilitic Reinfection or Pseudochancre?—Gutmann brings this subject up in connection with the recent advances in the diagnosis and treatment of syphilis. He is inclined to think that in the main both "superinfection" and "reinfection" represent secondary manifestations. He does not refer in this paper to the chancre redux or recrudescence of the disease in the scar of a former chancre. The nature of this accident is well known, and it should never be taken for a lesion of reinfection. The author appears to believe that most of the alleged reinfection chancres have no sounder status. Two cases are given in which about a year after a chancre had first developed and had been found to contain spirochetes, and had been duly treated until the Wassermann became negative, second "chancres" had appeared. In one instance the second chancre was close to the site of the first, but in the other it appeared in the urethra. In the interim the patients had been thoroughly mercurialized. The question of a second exposure to contagion is not touched on. The second chancres were solitary manifestations, as is usually the case with so-called chancre redux. The Wassermann was still negative. Such lesions are by no means unknown, even without reference to the question of second infection; for in 1907 Thalmann described a solitary secondary lesion which was able to set up local adenopathy, and even at times a roseola. It is possible that such lesions develop only after thorough mercurialization. The organism being thereby largely freed from spirochetes, a local depot of the latter might later become actuated and simulate reinfection. The negative Wassermann would appear to document such a theory. It is, of course, understood that this line of argument applies solely to alleged recent reinfection. Of a wholly different character are cases of supposed reinfection many years after the primary infection. After five years' interval at the very outside—far less in actual practice—no secondary manifestation could occur without a revolution in our nomenclature. From this point of view, *i.e.* reinfection of recent date, the author is inclined to be very skeptical as to all reported cases. The burden of proof of reinfection lies upon the writer who reports such cases; and if it is admitted, as it must be, that these pseudochancres which answer all tests for chancre may develop within the first year or two, it will be very difficult to prove that reinfection ever occurs in such interval. The question can only be decided by experiments on human volunteers.

Syphilitic Anterior Poliomyelitis in Adults.—Zadik takes up this subject, which becomes of much interest when we reflect that the epidemic type of the Heine-Medin syndrome is now known to attack adults. Goldflam was the first to record the syphilitic type, in 1893. The condition developed in the early secondary period, and was cured with Hg; hence it could not in all likelihood be classed as metasyphilitic, but as a variety of syphilitic myelitis. Nonne reports three cases which recovered under mercury, while two patients of Hoffmann did not make complete recoveries, the matter of treatment being ignored by the writer. Zadik now quotes two personal cases which bring the total number to eight. The successful use of mercurials in treating his patients not only suffices to clinch the diagnosis of luetic poliomyelitis, but it further shows decidedly that this location of disease in the anterior columns of the cord possesses not the remotest relationship to tabes dorsalis.

Specific Tuberculosis Therapy.—Wolff-Eisner concludes a serial article on this subject as follows: Tuberculin artificially prepared has the same action on the organism as the tuberculin absorbed from specific lesions. The parallelism is complete from all sides, including the fluctuations of the opsonic index. Different tuberculins have been prepared, but a nontoxic product has thus far defied isolation. The different activities of tuberculin do not rest on different components, but on a polymorphic activity of tuberculin itself. The latter is not a "toxin" in the commonly accepted sense of that term. It is a poisonous albumin, akin to endotoxins. It is not a toxin because it does not generate an antitoxin, *i.e.* a neutralizing antibody. It does bring about the formation of a lysin, and only after uniting with the latter does it become toxic. The nonappearance of a tuberculin reaction after tuberculin treatment means perhaps that the foreign tuberculin has united with reactionary receptors. From the practical side all writers agree that tuberculin should be exhibited in minute doses so that a reaction will not be provoked. This, however, does not necessarily exclude the fact that sometimes a reaction is demanded. There is a reactionless and a reactionary therapy. The former is requisite in dispensary cases, at least. Four weeks should elapse between injections. Falyvalent tuberculin—or a combination of the old and new—should be employed. In treating typical consumption the vaccine therapy should reinforce the specific treatment, and a mixed or polyvalent vaccine should be employed containing strepto-, staphylo-, and pneumococci. The chief immediate dangers to the tuberculous subject come from superinfection.

Prevention of Adherent Pericardium.—Alexander has found that adhesion of the two layers of the pericardium that usually follows pericarditis may be prevented by the introduction of sterile air into the pericardial sac, which serves in a simple and harmless manner to keep the two serous surfaces apart until the inflammatory process has run its course.—*Zeitschrift für physikalische und diätetische Therapie.*

Insurance Medicine.

Hospitals in Great Britain and the Proposed National Insurance Bill.—(See page 281.)

American Association of Medical Examiners.—(See page 306.)

Appendicitis in Relation to Life Insurance.—John Fawcett does not altogether agree with the condition laid down by an American office that an applicant must have been free from an attack of appendicitis for a period of two years ere his application would be considered. Several medical authorities take a similar view. The author makes the following points: (1) The risk of a second attack of appendicitis occurring is a diminishing one. (2) For practical purposes some limit of time must be fixed at which the risk reaches zero, and for that purpose a period of five years is suggested from the termination of the first attack. (3) Some additional rate must be fixed to the premium to cover the risk for these five years. (4) Whatever the rate fixed may be, in the case of an applicant who is going abroad or who will be out of the reach of skilled assistance at least double the fixed rate should be charged. Fawcett proposes to tax those cases in which appendicitis has occurred by an addition to the premium for a period of five years of 1 per cent. on the sum assured. This is thought to be a better plan than to create a debt on the policy; first, the insurer gains thereby the full value of his policy for a comparatively small extra cost considering the risk the company is taking; secondly, there is no dissatisfaction on the part of the beneficiaries, as there would be if after the death of the insured in the first year or two they found they were entitled to only half or three-fourths of the sum for which the deceased was insured on account of the debt on the policy.

In the case of relapsing appendicitis the author suggests postponing the application until after the vermiform appendix has been removed, or else the determination of a rate to cover the risk of operation. Fawcett thinks such a rate might be recommended as would cover a possible claim of 2 per cent. of all cases in which the vermiform appendix is removed during the quiescent period, and this would be met by a single addition of 2 per cent. on the sum assured.

In the case of an applicant accepting the terms but not undergoing an operation and dying from appendicitis within twelve months Fawcett is of the opinion that the risk of such an attack is so exceedingly small that the company might accept it. In the case of a proposer who at the end of a year, when about to pay his second premium, was found not to have submitted to operation, it is suggested that 2 per cent. be added each year to the premium for the first five years and 1 per cent. for the next five years, unless, in the meantime, a certificate shall have been received that the vermiform appendix had been successfully and completely removed, when no further extra premium would be required.

In the case in which an abscess has been opened and the appendix not removed, if the operation wound has healed and tht applicant appears in all ways sound, acceptance might be reasonably granted three months after operation with an addition of 1 per cent. on the sum assured for two years. Twelve months after the operation risks might be taken with 1 per cent. on the sum assured for one year. After eighteen months to two years from the time of complete recovery from the operation ordinary rates may be charged. In case of appendicular abscess in which the appendix was removed at the time of the operation, if all is satisfactory at the end of three months, the applicant might be accepted with an extra 1 per cent. on the sum assured for one year, and after a year has passed at ordinary rates. In a case of appendicular abscess ruptured spontaneously and not operated upon, no applicant, even in the simplest case, should be accepted until at least six months after complete disappearance of all signs and symptoms of appendicitis or its results. After that an addition of 1½ per cent. on the sum assured for the next two years would be a reasonable one to make to cover the risk involved.

Cases of general peritonitis (*a*) with or (*b*) without a localized abscess and removal of the appendix: (*a*) No cases should be accepted at an earlier period than twelve months after the operation wound has soundly healed. If the case is one in which simple drainage has been carried out and the appendix has not been removed, then some such addition as 1½ per cent. might be charged for two years and no case accepted earlier than twelve months from date of operation. (*b*) In severe cases at least two to three years' immunity from symptoms should be required before acceptance is considered, and for the next two or three years, at any rate, some addition would be necessary to cover the risk—possibly 1 per cent. on the sum assured for the period mentioned might suffice.—*Transactions of the Life Assurance Medical Officers' Association, London, for 1908 and 1909.*

The Work of the Census in Vital Statistics.—Cressy L. Wilbur, chief statistician of the United States Census Bureau of Vital Statistics, read a paper with this title at the fourth annual meeting of the Association of Life Insurance Presidents held in Chicago. He stated that life insurance is a commodity, the value and chief cost of which depend primarily upon the risk of dying, and its derived function, the expectation of life. These can be measured only by a correct mortality table, or as it may be preferably called for general statistical and sanitary purposes, a life table. Sanitation is likewise a commodity even more necessary and important than life insurance. Knowledge as to the prevention of disease and disability and the prolongation of life, which is absolutely necessary for modern scientific public health work, cannot be acquired without the aid of accurate vital statistics. Yet the United States is far behind other leading countries in the registration of deaths, and even more so in the registration of births. According to data secured by the French Government for its international tables, China, Turkey, and the United States cannot present any statistics of infant mortality because they do not register their births and deaths. Japan is now fifty years ahead of the United States in the registration of vital statistics. This country does not possess even fairly accurate registration of deaths for much more than one-half of the total population (55.3 per cent.), and there is practically no complete registration of births for even a single State or a single city in the entire Union. Boston, which claims to have the best system of registration of births among the cities of this country, records only about 96 per cent. of those that occur. The worst form of birth registration may be found in Baltimore, Chicago, and New Orleans. Model laws for securing better vital statistics have been drafted and have been endorsed by the Bureau of the Census, the American Public Health Association, and the American Medical Association. Since the census was placed on a permanent basis, the area of registration for deaths has been extended. To the ten States that constituted the registration States in 1900, namely the six New England States, New York, New Jersey, Indiana, and Michigan, there were added, for 1906, California, Colorado, Maryland, Pennsylvania, and South Dakota; for 1908, Washington and Wisconsin; and for 1909, Ohio. On February 1, 1910, the model law went into effect in the State of Missouri. Kentucky began with its new law on January 1, 1911. The South, except for certain registration cities, now stands nearly unrepresented in the national vital statistics. The present system in Illinois is worthless and it is hoped will soon be discarded. Even in States which possess laws for the satisfactory registration of births, no systematic effort is made to *enforce* these laws, with the exception of Pennsylvania, Ohio, and Missouri.

in which are being made the first determined efforts ever made in the United States to enforce thorough registration of births on a State wide basis and under State law. Pennsylvania is the pioneer in this respect. State and city boards of health that undertake to carry on their work without reliable vital statistics are blindly working in the dark. The foremost work done by the census in vital statistics is that for the extension of the registration area and the adoption and thorough enforcement of good registration laws for births and deaths. The foundations for this work should be laid square and strong, and one should not be too anxious to gain some temporary advantage in adopting principles that will prove disastrous in practice. One of these is the compensation of physicians and midwives for reporting births, and even of physicians for reporting deaths, as is the law of Illinois at present. Money expended for this purpose is not only unnecessary, but serves as an actual detriment to complete registration. Legislators should not be given occasion to impugn the motives of the medical profession in regard to proposed legislation for better vital statistics by any suggestion of "medical graft." The system which attempts to collect or transmit registration returns of births and deaths through the agency of some county official is worthless. The county official is simply a middleman, a fifth wheel that interferes with the direct control that should exist between the State registrar and the local registrars. The standardizing of registration returns and published data can be accomplished by the use of the United States Standard Certificate of Death, and the corresponding certificate of birth. The standard death certificate which went into effect January 1, 1910, contains provision for the more precise statement of age of infants dying very soon after birth, thus enabling one to make a sharp distinction necessary between still births and deaths of children born alive; the more definite statement of both industry and specific occupation of decedents, and uniform instructions for the proper statement of occupation and cause of death. The international system of classification as adopted by the census has been largely instrumental in securing its general acceptance. The precise statement of occupation is of great importance; in the new standard certificate there is to be stated not only the trade, profession, or particular kind of work, but also the general nature of industry, business, or establishment in which employed. The subject of uniform tables for use in federal, State, and municipal reports and bulletins upon vital statistics is now under consideration. The aid of the life insurance companies is invoked to hasten the time when accurate vital statistics will be had for the entire United States. Life insurance, like sanitation, is crippled by the lack of vital statistics. To-day many parts of the South are misrepresented and discriminated against because of the fact that in these regions no accurate vital statistics are available. Companies fear to enter certain States and higher rates are charged to persons insuring. The person insured has by far the greatest interest in knowing the exact conditions of mortality upon which his rates are or should be based. The Bureau of the Census publishes annually a report and a bulletin on mortality statistics, and contemplates the publication of special volumes with "corrected" death rates, a special report on occupational mortality, and a volume on Life Tables, the last with the aid and advice of the Actuarial Society of America. It is important that every life insurance company, its president, general officers, district representatives, agents, and policy holders, should demand full information upon the vital statistics of the United States and should urge the adoption and thorough enforcement of laws for this purpose.—*Proceedings of the Fourth Annual Meeting of the Association of Life Insurance Presidents*, December 9 and 10, 1910.

Early Gout in Two Fatal Cases.—An applicant for life insurance gave the history of a "rheumatic" inflammation of the midjoint of the foot which was treated by massage and baths. His family history was good. Physical examination showed an excess of "panniculus adiposus" in a rather small-statured man. The medical examination recommended him for insurance, explaining the inflammation of the joint by the existence of a flat foot. The medical director, however, pointed out that this affection would compel the applicant to choose a sedentary occupation and thus favor further increase in adiposity. He was therefore insured not for life, but until sixty-five years of age. Two years later he renewed his application for life insurance, the medical examiner having changed his diagnosis to gout instead of flat foot as the cause of the joint trouble. In the interval he had gained further in weight. This time the medical director recommended that fifty-five years of age should be the terminal limit of insurance. He was thirty-two years old at the time of the first application. The prognosis of the medical director proved to be even too favorable, the patient dying of chronic myocarditis at forty-nine years of age. Another applicant was thirty-one years old and gave a history of a gouty attack two years previously. The medical examiner described it as a very light case of gout and the medical director, though with some misgivings, recommended insurance for life. Six years later the applicant applied for a second policy. In the interval he had more attacks of gout, one brother became likewise affected and the applicant's mother was also subject to gout. The medical director recommended refusal of reinsurance, but finally compromised on fifty-five years as the limit of insurance because of the warm recommendation of the examining physician. The applicant refused this compromise. He died at fifty-nine years of age from a cerebral hemorrhage in consequence of gout and accompanying arteriosclerosis.—*Blätter für Vertrauensärzte der Lebensversicherung*, January and February, 1910.

Significance of an Acute Costosternal Angle.—Ebstein, writing in the *Münchener medizinische Wochenschrift*, 1909, No. 46, concludes that a well-marked angle at the articulation of the second rib with the sternum has some relation to a growing aneurysm of the aorta. Otherwise its pathognomonic significance is *nil*, neither pulmonary tuberculosis with consequent emphysema nor rickets having anything to do with its appearance. A prominent articulation between the manubrium and the body of the sternum (angle of Louis) has no greater significance, though certain authors have tried to show its relation to pulmonary tuberculosis.—*Blätter für Vertrauensarzte der Lebensversicherung*, January and February, 1910.

Claim Under Workman's Compensation Act.—A judgment was recently given by the Recorder of Dublin in a case in which compensation was claimed under the workman's compensation act by the widow of a deceased workman, who had been employed loading a wagon, and had just carried a bag weighing 224 pounds and thrown it into the wagon, when he fell dead. The post-mortem examination showed the existence of advanced valvular disease of the heart. The Recorder held that the work in which deceased had been engaged contributed to his death and awarded $750 compensation.

Mortality of Hand-Fed Infants.—Mr. Frederick S. Crum, statistician for the Prudential Life Insurance Company, furnishes statistics showing the comparative death-rates among hand-reared and breast-fed infants. He says that in Hull, England, it was found that in their third quarter of the year, during a five-year period, there were 991 deaths from diarrhea of infants fed on a mixed diet, as against only 190 deaths from the same cause of infants entirely breast fed. The Berlin statistics for a number of years show the definite relation of hot weather and method of feeding to infant mortality. Invariably the death-rates of both classes of infants go up above normal during the hot weather, but the increase in mortality among the artificially fed is greater—out of all due proportion—than the increase in the mortality of the breast fed.

Book Reviews.

Case Histories in Pediatrics. A collection of histories of actual patients selected to illustrate the diagnosis, prognosis, and treatment of the most important diseases of infancy and childhood. By John Lovett Morse, A.M., M.D., Assistant Professor of Pediatrics, Harvard Medical School, Associate Visiting Physician at the Infants' Hospital, and at the Children's Hospital, Boston. Price, $3.00. Boston: W. M. Leonard, 1911.

The title page of this book amply indicates its purpose and scope. If one has not yet gauged the value of the method of case teaching which has been introduced into the Harvard Medical School, then a perusal of this book will dispel any doubt as to the efficiency of this didactic method. One need only recall the memories of one's own student days to realize the fact that clinical lectures are largely commensurate with the teaching skill and not necessarily with the knowledge of the lecturer. The wise teacher utilizes the case as a means of developing the diagnostic powers of his pupils. Dr. Morse has succeeded in combining with an extensive knowledge of his subject matter this correct psychological method of presenting it. The practitioner will find between the covers of this book a real pediatric clinic in which all the common ailments of childhood are presented in the order commonly observed in text books on pediatrics. A book like this is obviously far from being thorough, but it has the advantage of being concise and concrete. Altogether one hundred case histories are presented. Their diagnosis is given in detail, with the various points in different diagnosis. The treatment of each case is given with a due regard for therapeutic details that are generally lacking in most text books. The latest advances in pediatric science are mirrored in the pages of this book which will prove valuable to the postgraduate no less than to the undergraduate student.

A Practical Medical Dictionary of Words Used in Medicine. With Their Derivation and Pronunciation, Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance, and Other Special Terms; Anatomical Tables of the Titles in General Use and Those Sanctioned by the Basle Anatomical Convention; Pharmaceutical Preparations, Official in the U. S. and British Pharmacopœias and Contained in the National Formulary; Chemical and Therapeutic Information as to Mineral Springs of America and Europe, and Comprehensive Lists of Synonyms. By Thomas Lathrop Stedman, A.M., M.D., Editor of "Twentieth Century Practice of Medicine"; Editor of the Medical Record. Illustrated. Price, thumb indexed, $5.00; plain, $4.50. New York: William Wood & Company, 1911.

This new dictionary, of over 1,000 pages, gives the derivation of all words when known. Pronunciation is indicated whenever it is not self-evident, and accent is marked in all the main titles and in most of the subtitles. Tables of the anatomical structures, such as arteries, muscles, nerves, sulci, convolutions, foramina, fossæ, and pharmaceutical preparations, such as acids, tinctures, etc., are run along in columns in alphabetical order, distinguished by different type. Other tables, such as of the elements with their symbols and atomic weights, thermometer scales, weights and measures, etc., are placed in the Appendix. Besides the regular medical terms this dictionary includes: dental, chemical, veterinary, botanical, insurance, homeopathic, and eclectic terms; and biographical data (nationality, date of birth, and death) with the eponymic terms. All the [BNA] terms are indicated. All the preparations of the United States and British Pharmacopœias and National Formulary are included. Chemical symbols are given with the names of acids, salts, etc., and also entered as main titles referring back to the full name. The work also includes mineral springs, giving pronunciation of place (if foreign), country, character of the water, and indications for its use; and a thesaurus feature, that is, defining back from the English or popular terms to the scientific. Words which should begin with a capital are so printed. The spelling of the U.S.P. is used.

The House Fly, Disease Carrier.—An Account of Its Dangerous Activities and of the Means of Destroying It. By L. O. Howard, Ph.D. Price $1.60 net. New York: Frederick A. Stokes Co., 1911.

To the author of this timely book is largely due our knowledge regarding the dangerous character of this common insect, and as long ago as 1900 he called attention to the transmission of typhoid fever by means of it. In this book Dr. Howard gives a clear and interesting description of the house fly (to which he gave some years ago the name "typhoid fly"), its habits, breeding places, etc., its natural enemies, and the means for its extermination. A valuable chapter is that on the carriage of disease by flies in which the charge against this enemy of man is proved beyond any gainsaying. The author insists upon the necessity of concerted action in the war upon the insect and offers suggestions as to organization, publicity, etc. The book concludes with a chapter on flies other than *Musca domestica* which frequent houses, some of which may possibly in certain cases also be disease carriers, but which do not deserve the name of "typhoid fly."

The Reduction of Domestic Mosquitos.—Instructions for the Use of Municipalities, Town Councils, Health Officers, Sanitary Inspectors, and Residents in Warm Climates. By Edward Halford Ross, M.R.C.S. Eng., L.R.C.P. Lond.; Liverpool School of Tropical Medicine; Late Health Officer, Port Said Canal District; Author of "The Prevention of Fever in the Suez Canal." With Illustrations. Price $1.75. Philadelphia: P. Blakiston's Son & Co., 1911.

This is an excellent, brief, but very practical treatise on the best methods for the extermination of the mosquito in town and villages. The book is founded upon an experience gained by the author in his campaign against mosquitos along the Suez Canal. The varieties most commonly found there are *Culex fatigans* and *Stegomyia calopus*, but the measures found useful in reducing the number of these will be equally efficacious in the warfare against those of the genus *Anopheles*. The book is most timely and those public spirited citizens who are now conducting campaigns against this pestiferous and exasperating insect will find many hints of value in these pages. The book is eminently practical, being founded upon actual experience.

Compend of Gynecology. By William Hughes Wells, M.D., Associate in Obstetrics in the Jefferson Medical College; Assistant Obstetrician in the Jefferson Medical College Hospital; Fellow of the College of Physicians of Philadelphia, etc. Fourth edition, revised and enlarged; with 153 illustrations. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1911.

In this revision the author has eliminated descriptions of operations and other methods which are now out of date. The book contains all that a student is likely to look for; and it will prove useful to those who have to make a hurried review for some State Board (or other) examination. The numerous tables of differential diagnosis constitute one of the features of the work, and the illustrations are well selected. In a future edition the subject of gonorrhea might well be treated a little more in detail.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Articles on Treatment, Medicine, Surgery, etc. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U. S. A. Volume I, Twenty-first Series, 1911. Price, $2.00. Philadelphia and London: J. B. Lippincott Company, 1911.

The opening volume of the new series of this well known quarterly contains numerous articles of interest to the specialist, as well as to the general medical practitioner. Thus Zeller writes a paper on the spread of pellagra in the United States which shows how extensive this disease has become in the last few years, over 7,000 cases being accounted for. Wechselmann gives further personal experiences with salvarsan; his views are very favorable to the new specific. Faught describes the many sphygmomanometers now on the market, including two forms of his own apparatus; Jump follows with a paper on the value of blood pressure estimation in internal medicine. Mills has an extensive article on the clinical investigations of poliomyelitis, material being gathered from a study of 45 cases of the disease. Thomas writes on open treatment of fractures and the use of plates and screws in holding fragments. Carl Beck prints a clinical presentation of several interesting surgical conditions. Hall summarizes the recent advances in our knowledge of nutrition. These few selections from the contents show the widely distributed subjects treated in this volume. In addition to original articles progress of medical art and science in treatment, medicine, surgery, etc., is shown by complete abstracts of the more important papers recently published. A collection of the successive volumes of this periodical forms a very valuable addition to a practical man's medical library.

Differential Diagnosis. Presented through an analysis of 383 cases. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard University Medical School, Boston. Profusely illustrated. Price, $5.50. Philadelphia and London: W. B. Saunders Company, 1911.

If one had the power in some astral manner of accompanying a distinguished clinician upon his hospital rounds and upon his consultation appointments, and furthermore, of discerning every step in the latter's mental processes by means of which a diagnosis is arrived at, no greater advantage would be gained than by a perusal of a book such as this. As we turn its pages our wonder grows that until Dr. Cabot had conceived the happy idea underlying the execution of this work, no one had ever made the attempt of writing a book exactly along these lines. Its keynote is the study of medicine from the viewpoint of the presenting symptom; that is, the symptom chiefly for which the patient comes to the physician for relief. The author recognizes the presenting symptom as a fragmentary expression of the underlying disease, which symptom is to be followed as a lead to the actual seat of disease. The symptoms most frequently complained of by patients are taken up separately, their common causes presented and classified in the order of their frequency, with the aid of "gridiron" diagrams, and furthermore illustrated by case histories in which the presenting symptom is followed home until a diagnostic problem and its solution are presented. Thus, the opening chapter of the book deals with the subject of pain, its general considerations, degree, types, relation to other facts, habit pains, and the theories regarding the production of pain. The following chapter takes up the subject of headache, discussing its numerous causes, and illustrating these by means of a "gridiron" diagram constructed from an analysis of numerous statistical investigations. Then follow twenty-two case histories, in which headache was a prominent symptom, and in which the operations of the diagnostician's mind are fully revealed as, step by step, with careful consideration of all the possible causes, and with a judicial balancing of all the available evidence, a diagnosis is finally reached. This is the plan followed throughout the book in the discussion of lumbar pain, epigastric pain, pain in the arms, etc., fevers, chills, coma, convulsions, cough, vomiting, hematuria, dyspnea, jaundice, and nervousness. In the selection of cases the author has chosen none in which the diagnosis was obvious and none in which it was impossible or depended chiefly on good luck. The cases are not the cut-and-dried models patterned after the usual textbook descriptions, but are actual cases such as are found in everyday hospital and private practice. It requires years of experience for one to appreciate fully the process of reasoning by means of which in each instance the diagnosis is deduced from the available evidence, and it is with a sense of pleasure no less than of profit that one turns the pages of this book. The discussions appended to each case provide not only a mirror of the reasoning process of the trained clinician, but furnish also many wise conclusions derived from a rich experience. "Unresolved pneumonia is mostly a myth; in the vast majority of cases it spells empyema." This is an example of the many pithy utterances with which the book is studded. In the conciseness and elegance of diction with which the case histories are presented the style of the author may serve as a model. Some errors have crept in; future editions will no doubt correct the frequent reference to the Kernig symptom as the "Koenig" symptom, and the use of the word "sputa" for sputum.

Food and Feeding in Health and Disease. A Manual of Practical Dietetics. By Chalmers Watson, M.D., F.R.C.P.E., Assistant Physician, Royal Infirmary, Edinburgh; Editor of the "Encyclopedia Medica." Price $4.00. New York: William Wood & Company, 1911.

In reading the pages of this book one is impressed with the fact that the author has fully accomplished his aim in presenting a work that is practical. No treatise on dietetics can be regarded as satisfactory unless it is eminently practical. In the multiplicity of details associated with his daily work, the practitioner requires definite information on various subjects, in a form that is not buried amid a mass of theoretical discussion. This is also true of the medical student, who, with his overcrowded curriculum, demands that the textbook should furnish the essentials of each subject in a form that is complete and satisfying. This book apparently satisfies the needs of both student and practitioner. It presents the broad foundations of dietetics, the physiology of digestion, the nature of foods, the normal laws of feeding, and the deviations affecting these laws, as an essential preliminary to the more practical aspects of the subject. The author has followed the general trend of recent advances in the physiology and pathology of digestion, by placing greater emphasis than usual upon the influence of food on the digestive and bacterial processes in the gastrointestinal tract. The various animal and vegetable foods and proprietary preparations are fully described, together with the culinary art by means of which these may be combined in menus agreeable to the invalid. There are chapters on food preservatives, food adulteration, and diseases caused by food; diet at different periods of life; underfeeding and overfeeding; general serving of food for invalids and rectal feeding; infant feeding; and chapters on the dietary of various clinical entities and groups of diseases. Of special interest are the chapters devoted to the dietetic management of diseases of the stomach and intestine, arteriosclerosis, diseases of the kidney, tuberculosis, gout and allied conditions, glycosuria and diabetes, and obesity. There is a separate chapter on special diet cures, such as vegetarianism, purin-free diet, Salisbury diet, etc., and one on hospital dietaries. One admirable feature of this book is the inclusion under each disease of various detailed menus to which the practitioner may refer for guidance. This reference is furthered by a particularly complete index. There is an appendix comprising a series of papers which have been published within recent years by the author and by others, all of which deal with experimental investigations on the influence of diet on the structure of the tissues. This section of the work should prove particularly helpful to those who are interested in the experimental aspects of dietetics. The experience of the author as editor of the "Encyclopedia Medica" is discerned on every page in the literary skill with which the prosaic matter of this work is handled. In elegance of typography, paper, and binding there is nothing left to be desired. One may recommend this book without reserve as a valuable addition to the literature of dietetics.

Principles of Public Health. A Simple Text Book on Hygiene, Presenting the Principles Fundamental to the Conservation of Individual and Community Health. By Thos. D. Tuttle, B.S., M.D., Secretary and Executive Officer of the State Board of Health of Montana. Cloth, 60 cents. Yonkers-on-Hudson, New York: World Book Company, 1910.

In this compact little volume of 186 pages are treated many topics relating to health and its preservation. The chapters are arranged under two headings: "The Fight for Health" and "The Enemies of Health." Among the subjects considered in the first part are clothing; the uses, care, and decomposition of food; neatness, cheerfulness, and good manners; the necessity for pure air and rest; and the care of the skin, eye, and ear. In the second section are chapters on disease germs and their transmission by insects, air, and water. As this book is intended for use in the public schools only such preventable diseases are discussed as the author deems wise to present to school children. The style is interesting and concise, and a series of questions and summaries at the chapter ends are of value in the school routine.

Mikroskopiske Undersögelser over Bugspytkirtelens normale og patologiske Anatomi. Hvorunder Forholdene ved en del Tilfaelde af Sukkersyge. Af K. A. Heiberg, Klinisk Assistent ved det Kgl. Frederiks Hospitals Mediciniske Afd. A. Köbenhavn, Andr. Fred. Höst & Son, 1910.

Unfortunately this monograph is written in Danish and consequently can be of but limited value to the profession in this country. The line of investigation is one already outlined by Opie and others; that is, the determination of the number of the islands of Langerhans in the pancreas in normal persons and in persons suffering from diabetes. The photomicrographic illustrations and the drawings are admirable in execution and in reproduction.

Stoffwechsel und Stoffwechselkrankheiten. Einführung in das Stadium der Physiologie und Pathologie des Stoffwechsels für Aerzte und Studierende. Von Prof. Dr. Paul Friedrich Richter, Privatdozent an der Universität Berlin. Zweite Auflage. Price, 8 marks. Berlin, A. Hirschwald: 1911.

The first edition of this useful volume on metabolism was issued six years ago. At that time it was one of the best books on the subject. Since then, however, the growth of our knowledge of the chemical processes of the body has been rather remarkable, and unfortunately many points have been omitted by the author in his revision. The technical methods for analyses have not been brought up to date, many of those given in the text having now been replaced by simpler procedures. The volume still remains, however, a useful summary of the chief facts known in regard to metabolism, both in health and in disease.

Society Reports.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Forty-First Annual Meeting, Held at Spring Lake, June 13 to 15, 1911.

Oration in Surgery: The Education of a Surgeon.—Dr. Joseph A. Blake, of New York City, delivered this oration. He said that in our school and hospital organizations no provision was made for the systematic training of surgeons. The education of a young surgeon was carried out systematically and well until he reached the end of his interne service in a hospital. Then he was left to his own resources until he got a hospital appointment as visiting surgeon. The period between these two appointments averaged at least five years, years that were the most impressionable and therefore the most valuable in a receptive sense. Even when he became a visiting surgeon, his services were short and spasmodic; and until he acquired a large private practice his experience was in no way continuous. To remedy this state of affairs Dr. Blake proposed that in the large hospitals having continuous services a post-graduate course of six years should be created. For this course men should be selected from the outgoing surgical house staff of the hospital. They should each serve one year as assistant resident, one year as resident, two years as assistant visiting surgeon, with assignment of duties in the laboratories of surgical pathology and experimental surgery, in addition to duty in the wards and operating room; and two years as assistant visiting surgeon, with duties in the out-patient department, as well as the wards and operating room. In these last two years the appointees should also be demonstrators of anatomy in a medical school. Such a course could be carried out to advantage only in a university hospital. The full organization of a surgical staff for such a hospital of one hundred beds should be a chief, or director of the surgical staff; a visiting surgeon; two associate visiting surgeons, all of which should be permanent positions, and four assistant visiting surgeons and two resident surgeons, constituting the rotating members of the staff, as above described. It was believed by the reader of the paper that such an arrangement would be of great benefit to the young surgeons, who would get a splendid experience, including pathology and anatomy, and should be able to fill with credit any hospital position to whch they mght be called.

Splenectomy.—Dr. John C. McCoy of Paterson said that splenectomy was indicated in certain conditions causing an enlargement of the spleen, interfering with the health of the individual ,and for the reason that an enlarged spleen was a source of danger to the patient, owing to its susceptibility to laceration in trauma, or even to rupture without external violence. The spleen probably took an active part in disposing of broken-down blood cells; but in no reported case had its removal been followed by conditions that could be attributed to its absence. In both his cases of extirpation following traumatism of the spleen, eighteen months and seven months after operation, respectively, the general condition seemed to have remained as good as it was prior to the loss of the organ. Both had gained in weight and were able to take part in athletic exercises. Certain changes in the blood seemed to be constant following splenectomy; but it was only a question of time when the blood constituents should again reach a normal state. During the past three years Dr. McCoy had seen four cases of rupture of the spleen, two of which could be attributed to direct violence. Removal of the spleen was followed by a fatal result in one of these cases. The diagnosis of contusion of the spleen causing an enlargement of that organ from intercapsular hemorrhage could, he said, be made only upon the previous history of trauma; nor was it possible to differentiate this from a tumor of the spleen due to other pathological changes that might have been present prior to the injury. A patient showing splenic symptoms following trauma in this region, particularly if accompanied by abdominal rigidity, should be carefully observed for subsequent rupture of the spleen. The diagnosis of rupture of the spleen was difficult, the clinical picture not differing materially from intraabdominal hemorrhage due to rupture of other organs. The pressure resulting from the accumulation of blood from a ruptured spleen might cause urinary symptoms closely resembling those found in rupture of the kidney. Sometimes a careful rectal examination would reveal an elevation of the posterior parietal peritoneum of the left side, due to the hematoma from the ruptured kidney, this symptom being absent in splenic hemorrhage.

Dr. Robert M. Curtis of Paterson said that the most interesting feature brought to his mind by these cases was the well-worn diagnosis of internal injury. Physicians should not be content to make this diagnosis and then let the patient die. An early diagnosis of the true condition should he made, but medical men were excusable if they did not depend upon that refinement of diagnosis which led to a positive determination as to which particular organ was or was not ruptured. The surgeon should be allowed to open the abdomen and make the exact diagnosis afterward. The proper time to do this was at once, not waiting until the patient was ready to die. The same kind of blow might cause either rupture of the spleen or rupture of the kidney, or both. Many cases of the latter would recover spontaneously, while it is better to operate in all cases of rupture of the spleen. One should, however, be conservative about operating on patients for a diseased condition of the spleen, as the mortality from such operations was very high.

Dr. McCoy said that in both his cases the operation was deferred because, though there was hypertrophy of the spleen, it was questionable whether this had not been present before the accident.

Chronic Gastritis of Secondary Origin, Presenting the Phenomenon of Achlorhydria Hemorrhagica Gastrica.—Dr. James T. Pilcher of Brooklyn, who read this paper, stated that chronic gastritis was frequently traceable to reflexes emanating from irritation in distant organs. The primary etiological conditions should be appreciated and receive treatment, rather than the result in the stomach itself. The object of the paper was to indicate the deductions to be drawn from the single symptom, viz., absence of free hydrochloric acid and presence of occult blood. Observations were made from examinations in a series of 4,000 patients. Of this number 271 presented the symptoms in question. Of these 271 patients, in 156 the onset of the gastric symptoms was traceable to certain infectious diseases, circulatory disturbances, derangement of ductless glands, and various forms of abdominal operations; in 100 others the symptoms of extragastric pathological conditions were evident and exploratory operations were done, revealing distinct involvement of the appendix in 36, involvement of the gall-bladder in 32, involvement of the gall-bladder and pancreas together in 16, and involvement of the gall-bladder and appendix together in 12. The reflex stimulations received by the stomach from distant organs, the author said, might be evidenced in several ways; as, for example, by hypersecretion or pylorospasm. Of the 100 cases of achlorhydria hemorrhagica gastrica operated upon, in 24 there was a distinct spasm of the pylorus, accompanying appendicitis 18 times, and gall-gladder involvement 6 times. In conclusion Dr. Pilcher said that intermission of hydrochloric acid was a reflex nervous phenomenon; and that the view that the gastric lesion was not the causative factor was

supported by the fact that in 88 of the 100 abdominal explorations in which there were direct exploration and palpation of the stomach no gross change in the stomach walls could be demonstrated. Bacterial flora were a second factor in the production of this symptom, *i.e.* achlorhydria hemorrhagica. Large numbers of bacteria were always present in the fluids extracted from the stomachs in these cases. Streptococci, diplococci, and colon bacilli were almost always found. The growth of these bacteria was dependent solely upon the lack of the inhibiting action of the hydrochloric acid. A third factor was the presence of superficial erosions of the mucosa and round-cell infiltration. The diagnosis was to be determined by the analysis of the stomach contents. Free hydrochloric acid was never present, and the blood reaction was always present.

Dr. Thomas W. Harvey of Orange said that there was no organ that might not send a reflex influence back to the stomach, causing to appear in that organ symptoms often so severe as to cause one to overlook the original disease. Physicians were often misled by a long name, forgetting that these titles were only names of symptoms, or possibly neuroses or aberrations of function, and conveyed no pathological meaning. He thought that usually too little attention was given, in studying the etiology, to the effect of continuous disturbance of function as a cause of pathological changes. Changes in the nervous or circulatory supply of a distant organ would have an important reflex influence upon the stomach and its secretions, and this, operating continuously, might easily induce a train of symptoms simulating or even producing serious pathological conditions.

Dr. Frank D. Gray of Jersey City remarked that the necessity, in every symptom presented, however trivial, of making a diagnosis by exclusion was too frequently forgotten, because a snap diagnosis was so very easy, and to unravel all the etiological factors in the case required considerable time. No one should pass over a case without knowing what a test for free hydrochloric acid and a test for occult blood would show. These tests were not beyond the capacity of the general practitioners, but if they did not feel competent or had not time to make these tests themselves most of them were within reach of a pathological laboratory. Dr. Gray then asked Dr. Pilcher whether the pathology of the stomach was due to nervous influence or to the presence of bacteria, creating mild inflammatory changes in the mucosa.

Dr. Pilcher replied that of the eight or nine thousand patients complaining of nothing else than stomach distress that he had lately had the good fortune to examine there were not more than 10 or 15 per cent. who had any organic change in the stomach itself. Their trouble was in most instances a reflex one. He had chosen this Latin name chiefly because it would be too long to express conveniently in English. He wished, however, to impress upon them the fact that it was the name of a symptom, and not a disease. Patients complaining of stomach distress should not be treated for the thing of which they complain, except incidentally. The symptomatology should be inquired into and a careful history taken. From the symptomatology of ten to twenty-five years before one might get an inkling as to what the primary etiological cause was. He considered the importance of the analysis of the stomach contents greatly overrated, and stated that only one absolute diagnosis could be made from it, that of stenosis. It seemed to him reasonable to suppose that this condition of the gastric mucosa was produced by the action of bacteria subsequent to the diminution in the amount of hydrochloric acid.

Final Results in Surgery.—Dr. Otto Kiliani of New York City presented this paper. He said that, since the ability of the surgeon was gauged by his immediate operative results and the short length of time that the individual patient occupied a bed, most patients were dismissed from the hospital as healed, but not cured; and the interest of the surgeon in his cases and his knowledge of them ceased with the dismissal of the patients from the hospital. Any one attempting to collect statistics of the actual end surgical results was confronted with the impossibility of following up the cases. The difficulty in estimating the relative value of different methods of operating in certain diseases was that very frequently ten or fifteen years must elapse before the final results could be determined. In only a few instances were the final results known to the surgeon; it was the family physician who was aware of them. The patient, however, was the only proper person to judge of the final results of the operation performed on him. The wound that healed by primary union, Dr. Kiliani said, gave the best results. As soon as infection took place the final results were at once endangered. The study of final results in amputations and fractures was much facilitated by the use of the *x*-ray. Among surgical accidents the unintentional severing of the facial nerve during mastoid operations or in the extirpation of glands in the neck was so terrible that, to his mind, the patient would have been better off without an operation, even though his condition had led to death. The general practitioner, who was so much better able to judge of the final results than was the surgeon, should publish these or enable the surgeon to do so in that ever desirable collaboration of internal medicine and surgery which was so necessary for each of them.

President's Address: A Plea for Attaining and Maintaining a High Standard of Medical Education.—Dr. Thomas H. Mackenzie of Trenton said that it was the duty of the State to protect the public from unscrupulous practitioners by enacting laws that would eliminate entirely from the practice of medicine those not qualified for such service. Qualification was determined by measurement with some standard. A medical education standard should be established. The Federal Government should enact a law creating a Bureau of Medical Education and Sanitation, one of whose duties should be to establish a standard for preliminary medical education. A degree from a medical school would then be a guarantee of efficiency. The over-production of ill-trained men was mainly due to the existence of commercial medical schools. Medical science could make but little progress while it depended upon such mercenary institutions as its source of inspiration. A Federal Bureau would have the power to regulate this evil. In the absence of such a bureau we must look to the progressive, public-spirited, and well-endowed medical schools, to the State Medical Boards, and to whatever results might be obtained from the agitation instigated by the American Medical Association. Improvement in medical education had been rapidly accomplished since the organization of the Council on Medical Education in 1904. The Association of American Medical Colleges had discussed the standards of medical education with a view to their improvement. The result was that nearly all colleges were requiring, in addition to the high-school course, one or more years of college work. The good offices of the New Jersey State Board had been somewhat handicapped by the defective laws regulating medical practice. The Medical Society had for three successive years asked in vain for relief. The Legislature seemed to suspect that the doctors had asked for legislation for their own selfish ends. The mind of the general public should be disabused of such false notions. The medical profession should organize a campaign of education and seek to set the matter in the proper light.

Advances in the Knowledge of the Circulatory System.—This was the oration in medicine, and was delivered by Dr. George W. Norris of Philadelphia, who,

after briefly outlining the gradual development of our knowledge of the circulation from the earliest historical times, proceeded to a discussion of the relatively recent methods of study. He said that percussion, auscultation, etc., would probably never be suspected; but that they had been materially abetted by various procedures. Among these the auscultating method of estimating blood-pressure, especially by a study of the five phases of Korotkow, the practice of sphygmography, the orthodiagraph, the electrocardiogram, and the plethysmograph were respectively discussed. The relative merits of various instruments were pointed out. The primary importance of dirt, hygiene, mode of life, and of physical methods of treatment was urged in contradistinction to the secondary rôle of drug therapy. The practice of massage on the part of the youthful and less busy practitioner would save many a patient from the osteopath and his kin. Thanks to recent investigations, much more accurate knowledge regarding digitalis and strophanthus was available and much more reliable preparations were to be had. The newer patented preparations of the former drug had not proved sufficiently superior to the ordinary preparations to counterbalance the increased cost. The newer conceptions regarding the cardiovascular system in health and disease were alluded to, viz., the myogenic doctrine; the importance of vascular, as well as cardiac, compensation; the frequency of syphilis as an etiological factor; and that of low-grade chronic infection as a cause of progressive endocarditis.

The Advantages of the Autopsy and Other Pathologoanatomical Examinations.—Dr. Harrison S. Martland of Newark said that, on account of lack of time, he would speak only of the advantages of the autopsy, omitting a discussion of frozen section work and other pathological and anatomical eaminations. He stated that the greatest importance of the autopsy was shown in the proper signing of the death certificate. Clinicians who had followed their cases to the autopsy table would admit that a large percentage of them were ones of mistaken diagnoses. The filing of vital statistics by the Census Bureau, for instance, on the causes of death in the United States was a very amusing procedure, since in only a small percentage of the cases was a control by autopsy made. Jacobs, in the campaign against tuberculosis in the rural districts of Germany, had advised that an obligatory examination of all dead bodies should be required for one or two years for the purpose of a more exact determination of the mortality from tuberculosis; and Dr. Martland considered the clinical diagnoses in this country far too faulty to be accepted for statistical purposes. Vital statistics concerning death would, he thought, be greatly improved if all the States would adopt an appendix to the death certificate for the purpose of filing the pathological anatomical cause of death when an autopsy was performed. The greatest scientific advantage of an autopsy was seen in the combining of the anatomic lesions at autopsy with the clinical picture of the disease. In order to obtain this a constant commingling of the clinicians and pathologists in the wards and laboratory was necessary. The combining of clinical data to formulate a diagnosis, and the proof of the correctness of the clinical data, constituted the only ideal method of teaching medicine. Clinicopathological courses should be required in all medical schools as the basis of the medical teaching. Pathology and medicine should be taught side by side, in the hospital and the morgue; and not by separate didactic lectures. Dr. Martland believed that another advantage of the autopsy would be in the restraining of the modern idea of specialization. Autopsies frequently exposed the narrow-mindedness of various specialists, even the most talented of them. He illustrated, in more or less detail, the importance of the autopsy, as shown by a few cases selected from 500 consecutive autopsies performed at the Newark City Hospital from 1909 until the present time. He did not include among these cases of primary kidney, heart, liver, or cardiovascular disease. He then stated that the advances made in experimental biology and pathology had proved that most monstrosities originated in the earliest periods of the segmenting ovum. Hence the rôle played by superstition in the past should no longer exist. It was surprising how, in the case of diaphragmatic hernia, life existed for many years with gross deficiency of the parts. He called attention to the presence of patent foramen ovale in numerous adult autopsies; but said that it must be remembered that during life the opening might have been practically closed by the blood stream.

Dr. John C. McCoy of Paterson said that there were two phases of this work that seemed to him both encouraging and profitable. One was to be able to study the end results of repair and the effects of various ways of applying sutures, so as to be able to determine what to do in similar conditions in other cases. The other was the study of severe injuries of the head, either from traumatism or gunshot wounds, so as to be able to make the differential diagnosis between operable and inoperable cases. Fractures of the skull should be looked upon just as other fractures were. To get good results one should overextend the force that has caused the fracture, thus dislodging the bone at the point of fracture and being able to get it back into place.

Dr. Walter B. Johnson of Paterson said that the pathologist had the advantage of a condition in which he was permitted to determine absolutely the state existing; whereas the physician or surgeon must take into consideration the conditions that might be existing. It was only by a study of these conditions at autopsy and their investigation in the pathological laboratory that the possibility of being more certain in one's judgment concerning the conditions existing during life could be attained prior to the time when the decision to perform an operation might assist in saving the life of the patient.

Dr. Frank W. Pinneo of Newark said that observation could not be perfected unless one had followed the case to autopsy and seen what could not be discovered from the outside. Autopsies might be obtained in private practice more frequently than they were, and were often not performed in private cases when they would have been had the patient died in the hospital.

Dr. Edward W. Worl of Newark remarked that in compiling vital statistics one sometimes came across diagnoses that could not be classified by any system. Official autopsies would settle the question in many cases of this kind. It seemed to him, however, that in some cases of infectious disease the anatomical findings would not correspond with the essential etiological factor. There should be a law in the State to compel an official autopsy in every case, no matter what the diagnosis of the family physician might be.

A Needle Carrying a Single Strand of Suture Material.—Dr. H. D. Corbusier of Plainfield stated that the advantage of this needle was that there was not the double tearing of the tissues when it was used that occurred when a double strand of suture material was pulled through; also, the surgeon could work faster, tie more quickly, and use less suture material. The needle had an eye in the base and a jaw that caught the catgut. The thread was passed into the needle and cut off, no suture material being left protruding. When the single strand was used the hole made by the needle was not enlarged.

Some Diseases of the Gall-Bladder.—Dr. Frank W. Donohue of New Brunswick read this paper. He stated that the diseases of which he wanted to speak particularly were cholecystitis, cholelithiasis, and cancer of the gall-bladder. In looking over the etiology of gall-bladder diseases it was found that in almost every case they were

caused by infection, not only infection of the gall-bladder itself, owing to the presence of gallstones, but also infection from the other organs of the abdomen. If pressure was made over the region of the common duct (steady, continuous pressure) and the patient with suspected gall-bladder disease told to breathe long and deeply, one would find that, as the pressure was increased, he was unable to take a long, deep breath. In order to make a diagnosis of floating kidney the patient should be made to stand up or lean forward a little rather than to assume the recumbent position. The pain of gall-bladder disease was always referred to the right hypochondriac region, shooting to the shoulder-blade and radiating up to the right shoulder. Jaundice occurred in about 30 per cent. of the cases of gall-bladder disease. It was caused by interference in the common duct with the passage of bile from the gall-bladder and liver to the duodenum. This interference might be produced by a stone or by the swelling brought about by the irritation due to the passage of a stone. Dr. Donohue had never been able to demonstrate the existence of stones in the gall-bladder by means of the *x*-ray. The prognosis in gall-bladder disease was almost invariably good after surgical treatment, except in the case of cancer. He had long ago ceased to treat well-marked gall-bladder diseases with drugs. The incision that he preferred was a straight one through the right rectus muscle. Drainage of the gall-bladder he looked upon as essential to the recovery of the patient.

Dr. Edward J. Ill of Newark wished to call particular attention to the so-called sensitive points in the abdomen as being exceedingly misleading. For instance, in the more important cases McBurney's point was entirely lost. It was the same with the other points. In looking for Morris's point one might get into difficulty in cases of movable kidney.

Dr. Gray, as to the differential diagnosis from movable kidney, took issue with the reader of the paper concerning the greater facility in diagnosing movable kidney with the patient standing than in the recumbent position. He found that patients, on standing or stooping slightly, became rigid. When they were lying on the back with their knees flexed he had usually found it easy, on deep inspiration, to make out a movable kidney. In gall-bladder cases there was often so-called hunger pain and the gall-bladder attacks were most likely to occur nocturnally, more frequently in the latter part of the night.

Dr. B. Van D. Hedges of Plainfield said that one thing that had deceived him in the differential diagnosis was a central pneumonia involving the right lower lobe in children. He had recently had a case of this kind, with diaphragmatic pleurisy, whose symptoms exactly resembled those of gall-bladder disease. There was no indication of any involvement of the lung until after four days. In young children gall-bladder disease was very rare, the speaker said; and one should be chary of making a diagnosis of that until one has waited long enough to exclude pneumonia with diaphragmatic pleurisy.

Dr. Donohue admitted that if one made direct and firm pressure over the kidney while the patient was standing up the muscles of the abdomen would contract and become rigid, and it would be difficult to make out floating kidney; but said that if one made firm, gentle pressure and gradually increased it and then, when the lump was found, made a slight pressure over that and gradually increased it, one could almost always make out floating kidney.

Excision of the Superior Maxilla for Sarcoma of the Antrum.—Dr. Walter B. Johnson of Paterson stated that the patient was a woman thirty-three years of age, with no history of cancerous disease. The injury, which occurred one year previous to operation, was followed by swelling, which persistently increased. It involved and filled the nostril, exfoliated the teeth, perforated the palate, entered the orbital cavity, and involved the nasal and ethmoid bones. The operation was performed in the usual manner, curetting the ethmoid. The patient was discharged in three weeks. The pathological report was alveolar sarcoma cells, spindle-form variety, arranged in distinct nests. The patient, at the time of the report, could do any kind of work that she ever was able to do. At this time, fourteen months after the operation, no symptoms of recurrence of the disease were evident.

Report of a Case of Foreign Body in the Eyeball, in Which the Excessive Pain Was Relieved Immediately After Radiography.—Dr. Walter B. Johnson stated that the foreign body was in the eye for one week. Then pain began, increasing daily, with diminution of vision. At the end of the second week, after the use of radiography for the purpose of locating the foreign body, the pain left and the inflammation subsided. Vision returned and the foreign body became encysted in the sclera. Did radiography cause this change? he asked.

Dr. John G. Ryerson of Boonton said that in a case in which he had removed the upper jaw, thirty years ago, for fibrous tumor, he had made the incision in the usual way down the median line of the mouth and palate. Then, by drawing the teeth aside, he was able to cut with a sharp instrument over the junction of the palate bone with the other bone and enucleate and remove the tumor, leaving the palate bone behind. Afterwards, the cavity was filled by a dentist, leaving almost no deformity. The danger in this operation was that of getting blood in the trachea. To avoid this the head should be allowed to hang over the edge of the table.

Dr. David T. Huston of Philadelphia said that Dr. Johnson had referred to the difficulty in controlling hemorrhage. Recently Dr. Huston had had to remove the maxilla, and in doing this he felt that the vessels in the posterior and accessory palatine canals had to be reckoned with. In order to control this hemorrhage he conceived it to be best to ligate the external carotid artery. This rendered the removal of the maxilla almost bloodless. The artery should be ligated in the neighborhood of the greater cornu of the hyoid bone, and there would be no danger of any infection of the ligation wound through the removal of the maxilla above; though this was not the case in the removal of the mandible. By calling into requisition the services of a good dentist it was possible to replace the maxilla by an artificial bone and thus preserve the speech of the individual.

Dr. William J. Lamson of Summit said that in many cases it was possible to remove the upper jaw with just a single lip incision. In this way disfigurement might be avoided to a great degree.

Dr. Elbert S. Sherman of Newark said that it seemed like an unusually good result in Dr. Johnson's first case, because there is almost always a rapid return of these growths. He had a similar case at present, which he had been advised to let alone. He had had given to the patient an injection of sulphur sand, in the hope of producing some improvement, great improvement having been reported in a similar case. Whether he was making a mistake in letting this alone he did not know.

Dr. William S. Schauffler of Lakewood had found that the interrupted *x*-ray gave the good results of the ray without its bad effects. Dr. Schauffler considered it absolutely safe, and said that he had had a large number of cases with no disagreeable results.

Dr. George H. Balleray of Paterson thought that preliminary tracheotomy obviated to a great degree the danger of hemorrhage into the trachea.

Dr. Carl E. Sutphen of Newark said that treatment of the eye with the *x*-ray was novel to him, though he knew that it has been employed. Dr. Johnson's case was one in which one might expect panophthalmitis. The only way

in which the *x*-ray might relieve such a case, so far as he could see, was by the destruction of germs. His impression, however, was that this result was merely a coincidence. The pain was due to the inflammatory condition caused by the foreign body, and one often heard of great and increasing pain suddenly getting better. Probably when the foreign body became encysted and worked its way out to the external portion of the eye the pain became relieved.

Dr. Johnson had not meant to say that there would be no recurrence of the malignant growth in this case; but up to then there had been none. The vision had remained normal, regardless of the fact that the orbital plate of the malar bone had been destroyed. If this woman needed a dental plate he would have to buy it for her, as she was very poor. The reason that the hemorrhage was alarming in this case was that, on account of the friability of the bone, he had to work slowly and could not get at the vessels that were bleeding so quickly as would otherwise have been the case. He thought that by the use of care one could usually keep the throat pretty clear of blood, so that tracheotomy would not be necessary. In regard to the *x*-ray he said that the reports of the results of this treatment were not very satisfactory. The question was not whether one should use the interrupted *x*-ray or not, but what could be done to effect a change in the metabolistic processes about the eye at the time of the application of an *x*-ray current.

The Early Diagnosis of Tuberculosis; Original Method.—Dr. Irving E. Charlesworth of Bridgeton stated that if tuberculosis had not been so difficult to detect early it would have been conquered generations ago and added to our long list of curable diseases. The onset was slow and insidious. The patient thought that he was run down and consulted a physician. If the latter could recognize the early symptoms the prognosis was quite hopeful; but if he made only a desultory examination and failed to discover the true condition the patient soon joined the large army of advanced cases and the prognosis became relatively grave. The decrease in the death rate from this disease was due not so much to the improved treatment as to the increased ability on the part of physicians to diagnose the disease in its early stage. The following symptoms should lead one to suspect the presence of tuberculosis and suggest a physical examination: Progressive loss in weight; an increase in the pulse rate, especially in the afternoon; slight fever, particularly if present between the hours of four and five in the afternoon; loss of appetite without apparent reason; unusual fatigue without a known cause; an attack or a history of spontaneous pleurisy; pain in the chest, especially in the interscapular region; a cough that persisted, especially following an attack of influenza, bronchitis, or pneumonia; a protracted convalescence following an infectious disease, especially after an attack of pneumonia, typhoid fever, or malaria; a slight cough, worse in the morning, at night, or on awaking from sleep; a history of blood-streaked sputum or pulmonary hemorrhage (about 20 per cent. of all cases had this for the first subjective symptom); a chronic indigestion, which persisted in spite of treatment. The best times for making examinations were in the morning for the pulmonary signs, and in the afternoon for the general symptoms. The examination should consist in inspection, palpation, percussion, and auscultation, with the patient stripped to the waist. Tuberculin should not be used until all other means of making the diagnosis have been exhausted. If it was necessary to employ it, this should be done by a careful and experienced physician, skilled in this particular branch of diagnosis. The *x*-ray was a valuable adjunct to our armamentarium, to confirm the findings of the physical examination. Sputum examinations should be made repeatedly. The presence of the bacilli usually indicated an advanced stage of the disease, but it might mean the softening and emptying of a node directly into the bronchial tube; the latter would be in the early stage. The presence of the bacilli was not necessary for the diagnosis; since only in half of all the cases were they found, and only in 2 per cent. of the incipient cases.

Dr. Samuel B. English of Glen Gardner said that the greater number of those that died in the first two years after being accepted for life insurance died of tuberculosis. The fact of their not having been discovered at the time of making the application must be due rather to carelessness on the part of the examiner than to ignorance. The greater portion of patients with advanced tuberculosis must have consulted a physician for some reason or other when the disease was incipient. Sometimes the physician knew the disease was present, but did not like to tell the patient so. It was exceedingly important that the diagnosis be made before the tubercle bacilli could be found in the sputum. It was almost a crime to make but one examination of the sputum and tell the patient that he had not the disease. Not enough attention was paid to the kind of stethoscope used in examining the patient, as a faulty one might prevent the hearing of sounds that would otherwise be heard. A patient who had ever had tuberculosis always had it, even though he was able to work for his living. Unless he took the greatest care the time would come when he would be as sick as he was at first.

Dr. Philip Marvel of Atlantic City said that greater stress should be laid upon the history. In the majority of the cases in which there was an absence of the bacilli the physical signs and the history were the only things upon which one might make a diagnosis. The fact that one did not find bacilli did not show that none were present, but merely that none were present in the sputum examined. It was probable that the bacilli were not actively thrown off in the sputum unless there was a concurrent infection.

Dr. B. S. Pollack of Jersey City thought that if the bacilli were found a great deal of tissue destruction had taken place, and the case was no longer in its incipiency; though there were some very rare cases in which small tubercles became dislodged and expectorated. In the institution with which he was affiliated, there were 490 cases of tuberculosis last year, only 8 of which were incipient. Therefore, he thought that this term should be dropped. Very few of the cases were incipient; they were merely able to work. While the remark regarding the stethoscope was *à propos*, he thought that nothing could take the place of good hearing.

Dr. Theodore F. Corwin of Newark said that in every case in which a patient had been under treatment for a long time for nervous exhaustion a very particular search should be made for tuberculous infection. Dr. Charlesworth had referred to a lack of resistance as not being the only factor controlling the invasion of tuberculosis. Dr. Corwin believed that we should all have tuberculosis if we did not have plenty of tissue resistance. The function of the physician was mainly to build up that resistance.

Dr. Alexander Armstrong of White Haven, Pa., said that if one examined one's patients as they came, according to the rules laid down by Dr. Charlesworth, one would not overlook any cases. The trouble was that physicians who saw these cases before the specialist saw them did not like to send them to a specialist. The sanatorium was simply an educational institution. The patients remained there an average of ninety days, and could not be cured in any sense of the word. A cure, if accomplished, would take from three to five years. To call a patient cured, he must have been absolutely free from symptoms for ten years. After that, if he got another attack, it would be a distinct disease. The cases discharged from sanatoria

were merely relative cures. He granted that there was some danger in injecting tuberculin under the skin, but said that there was absolutely no objection to the use of the von Pirquet method for diagnosis. Every physician should be acquainted with the von Pirquet reaction. If any case known to be tuberculous failed to react the patient was dying. The reason that one did not get more cures was that physicians often gave the patients the foolish idea that a few weeks spent at a sanatorium would effect a cure. One should impress upon them that it would be a long fight, and that it could not be shortened.

Dr Ralph H. Hunt of Orange said that the most important physical sign was the presence of a fine râle. It was very necessary to get the family history, as these cases often spread from one member of the family to another. When a patient was sick enough to come to the dispensary one should look over the family; and the probability was that there would be incipient cases among them. He had never seen harm come from using the von Pirquet reaction. In regard to the cowardice of the average practitioner in not telling patients that they had tuberculosis, Dr. Hunt said that he saw many patients with advanced tuberculosis who had never been told that they had the disease. He admitted that it was painful to tell them the truth, but said that the end results would justify it; for it was the only way to get them to do the things necessary to save their lives.

Dr Charlesworth, in closing, emphasized the fact that in any family in which tuberculosis was found the other members should be examined. In half of the families in which there was a case of tuberculosis a case was found in another member. He urged them not to be afraid to tell the patients that they had tuberculosis, because then they could be taken care of.

Our Profession: Its Changes in Forty Years.—Dr. Enoch Hollingshead of Pemberton, in delivering the Address of the Third Vice-President, said that the medical profession had changed from one of individual empiricism to a standard seen through the microscopic lens, the researches of the laboratory, and animal experimentation. These researches had placed the profession upon a scientific basis and inscribed upon its banner that prevention was better than cure. Forty years ago pathology and histology were almost untaught in our medical schools. To-day they opened up a vista for the profession. In no way had that profession produced results greater than by the enforcement of sanitary laws unknown and untaught forty years ago. By this means the plague spots of the earth had been cleansed. The connecting of two oceans as the result of the enforcement of sanitary laws of medical men was the greatest achievement of the age, and the highest compliment to the profession save one; the placing of a man educated in medical, and not in martial, halls at the head of the military forces of the nation.

Significance of Pain in the Diagnosis of Disease of the Lower Abdomen.—Dr. Thomas B. Lee of Camden said that freedom from pain in benign tumors of the abdomen, particularly ovarian cyst, meant freedom from at least parietal adhesions, the converse being equally true. Pain in uterine conditions was referred to the lower parts of the back, near the top of the cecum, and to the hypogastrium. This was owing to the fact that its nerve supply was the hypogastric plexus, which sent fibers directly to the fundus; while the cervix was supplied by branches from the pelvic and ovarian plexuses. The ovaries, with practically the same nerve supply, were associated with the tenth dorsal segment, the pain being referred from them to the lower portion of the back and to the groin; while the characteristic ovarian pain was described as at a point two inches internal to the anterior superior spine of the ilium. Tenderness of the ovaries was frequently a misnomer, as slight pressure upon the hypogastric automatically rigid muscles over the ovary—elicited pain before pressure could be brought to bear upon the organ itself. The Fallopian tubes were connected with a segment higher up in the spinal cord, and the attempt to utilize this fact in the diagnosis of ectopic pregnancy unruptured had been made; but it seemed doubtful whether this could become of real value in the differential diagnosis. A long appendix, adherent to the bladder, might cause painful and frequent micturition, which might be the only evidence of appendiceal trouble; and a retrocecal appendix might cause intense and persistent backache. Localized peritonitis might give rise to pain in the lower abdomen. In differentiating this from other conditions that caused muscular rigidity and tenderness the following facts should be borne in mind: The pain in peritonitis was not referred pain. Referred pain was eased by pressure, whereas the pain in peritonitis was increased by pressure. Referred pain often had a definite distribution, and might extend to the angle of the scapula or down over the crest of the ilium. There was no true cutaneous tenderness in peritonitis. The causes of pain peculiar to the right iliac fossa, in the order of their frequency, were disease of the appendix, perineal tuberculosis, and duodenal distension and adhesions. Those peculiar to the left iliac fossa were the referred pains from the malposition of the uterus and from the cancer of the sigmoid. Those causes that occurred with equal frequency in each iliac fossa were pus tubes and pelvic adhesions, ectopic pregnancy, dysmenorrhea, ovarian cyst with twisted pedicle, ureteral stone, localized tuberculous peritonitis, inguinal hernia, and the debility of neurotic, anemic women.

Dr. J. Watson Martindale of Camden in opening the discussion on the paper of Dr. Lee said that the author had gone so thoroughly into the physiological and anatomical conditions present that there was practically nothing more to say concerning them. He would, therefore, confine his remarks entirely to the clinical side of the subject. He said that pain was the most constant gynecologic symptom. It was more frequently noted in the lumbosacral or inguinal region. Spontaneous pain was usually produced by an acute lesion, while evoked pain was generally due to a lesion more or less chronic. Pain in pelvic lesions was commonly worse at night. The amount of pain was not always in proportion to the severity of the lesion. Many women suffering from large growths were comparatively free from pain; while, on the other hand, some of the more trivial conditions to which women were subject were often accompanied by very severe pain—for instance, dysmenorrhea. Another condition accompanied with severe pain was an acute flexion. This lasted until the uterus righted itself or was replaced. Cystic conditions of the ovary were not particularly painful. The pain accompanying acute salpingitis was spontaneous and very severe. Puerperal infection was often accompanied with severe pain in the milder cases, though many of the severe forms of this condition were not accompanied with much pain. In tubal pregnancy there was a period in which there was no pain. A woman might have a pair of pus tubes and enjoy comparative immunity from pain. While pain in the sacral and inguinal regions was generally suggestive of pelvic disease, a lesion in the groin was often productive of pain in the upper abdomen. It was a good plan in going over a patient suffering with pelvic or abdominal pains to look into the hernial orifices to see that there was no knuckle of gut caught and pinched.

Dr. Balleray had hoped that the meaning of the title of this paper was pain as a factor in the diagnosis of abdominal lesions, and wished that some one would write a paper on that subject and give some definite information regarding it. Pain located in certain regions of the

abdomen, he remarked, might mean one thing and when located in other regions might mean another. He quite agreed with the reader that some patients ran from one surgeon to another finding new conditions to be operated on, and surgeons ready to operate. If one could keep their minds off the pelvis it would be an advantage.

Dr. Elton S. Corson of Bridgeton said that the only diagnostician that he had ever seen who was able to put his finger on the location indicated by pain was an osteopath, and suggested the appointment of an osteopath to read a paper on this subject at the next meeting.

Calcium Sulphide.—Dr. John E. Pratt of Dumont said that there was a dearth of medical literature on the subject of the use of this drug as a prophylactic in infectious diseases. It was not strange, in view of the extreme variability of the drug and the facility with which, on exposure, it combined with oxygen to form different chemical compounds, that it lost caste with both physician and druggist. The failure to get results after repeated experiments by careful clinicians seemed to prove clearly and explicitly that the value with which the salt had been credited was a myth, and that the effects claimed to have accrued from its use were mere coincidences. Those who had retained a working element of faith in its therapeutic activity had urged a silent warfare against certain forms of disease, especially infections. In his own practice he had had occasion to use calcium sulphide in cases of scarlet fever to a considerable extent within the last two years. While he could not speak positively of its prophylactic virtue he could say that where it had been used in a family, among children that had been exposed to a case of scarlet fever already existing in one of its members, in no instance had a second child in the family been infected. The only child who had presented any complications during the two years of his employment of this drug in scarlet fever was a boy who had had the disease a week and whose sister before him had had it for two weeks without the cases having been reported or a physician having been called. This boy had otitis media, followed by mastoiditis.

Dr. Henry H. Sherk of Camden said that chemically pure calcium sulphide was prepared by heating calcium sulphate in hydrogen, or by heating calcium oxide in hydrogen sulphide gas. It was white, had an odor of hydrogen sulphide when moist, and was insoluble in water. It was phosphorescent in the dark. The reason that some did not get as good results from calcium sulphide as others did was on account of the impurity of the preparation.

Dr. Edward B. Rogers of Collingwood had used calcium sulphide, he thought, intelligently; had used it in full doses; and had employed the best preparation that he knew of. In his opinion it had been without any result whatever. He did not intend to give up trying it yet, because friends of his were getting results from it. He gave it in doses of one-sixth of a grain every hour, or one-third of a grain every two hours.

Dr. Horace L. Rose of Camden had many times obtained no results from the use of calcium sulphide; but when he secured a good preparation of it he thought that he did.

Dr. Hedges wished to ask Dr. Pratt what doses he gave calcium sulphide in, and whether he had the druggist make it up in the form of capsules or that of sugar-coated pills.

Dr. Pratt replied that he used granules, one-sixth of a grain every hour, usually, though he had given as much as a grain three times a day.

Certain Juxtajoint Fractures, and Certain Mechanical Principles in These Fractures.—Dr. Fred. H. Albee of New York City said that the limb should be put up in plaster in a position of strong flexion. This posture relaxed most of the strongest muscles. The longer fragment was put in accurate alignment with the position of the short fragment, and was held very securely. If limitation of motion at the shoulder occurred this relation of humerus to scapula was one of selection, both because it was a position of usefulness and also because it permitted the scapulo-thoracic muscles to functionate the most efficiently. The position was also more comfortable than one of extension.

Dr. F. D. Gray asked whether Dr. Albee, in the old classical fractures at the junction of the middle and upper or the middle and lower third of the femur, superseded the earlier double inclined plane by the plaster-of-Paris application.

Dr. Livengood of Elizabeth said that he saw more deformities from Colles' fracture of the wrist that had been set by competent surgeons than he did from any other fracture. He would like to have Dr. Albee's idea of the proper mode of repairing that fracture.

Dr. Albee in reply to Dr. Gray's question concerning the use of the double inclined plane said that he thought plaster was better. He believed that there was a perfect analogy between these fractures of the femur and the fractures of the shoulder that he had described, in which the long fragment was put in alignment with the position of the short fragment. In regard to Colles' fracture he used only the regular routine treatment that he had described. He thought that in many cases the trouble was caused by not etherizing the patient thoroughly enough to get muscular relaxation. The hand should be thoroughly and firmly extended and the displaced fragment brought into position. The hand should then be put up in plaster, with pads over the posterior and anterior sides of the reduced part.

Direct Transfusion of Blood: Its History and Probable Future—Author's Method.—Dr. A. L. Soresi of New York City said that transfusion had been well-nigh abandoned on account of numerous accidents that had happened during this procedure; such as hematuria, emboli, infarcts, etc. Besides, the advent of the isotonic salt solution made direct transfusion of the blood, in the minds of many surgeons, an absolutely useless procedure. This view was held by all the European surgeons, who never used transfusion now. The real dangers in transfusion of blood lay in hemolysis and blood clotting at the point of anastomosis. American surgeons deserved the credit of having discovered that to perform successfully a direct transfusion of blood the two intimas of the blood-vessels must be put in perect contact without traumatizing them. Transfusion was not a therapeutic means; it was only a procedure. It was the blood that was the therapeutic agent. Therefore this should be called hemotherapeutics. The methods devised for the transfusion of blood consisted in the suture method and mechanical devices. The former was very complicated, while mechanical devices made transfusion an easy procedure. Two methods, vein to vein and vein to artery, had been employed. Each should have its special indications. The future of hemotherapeutics lay in the possible discovery of means of avoiding hemolysis and being able to use, in this way, the blood of animals of different species. The method devised by the author differed from all the methods now in use; because the first step in the other methods (that is, cutting the blood-vessels) was the last in this. The instrument devised by him consisted of two hemicylinders. One end of each was encircled by some hooks. The two hemicylinders could be opened and closed at will, and were put and held together by a small bar and a screw. To perform transfusion it was necessary to isolate a blood-vessel for about three centimeters, open the instrument, insert the blood-vessel into the instrument, and cuff the blood-vessel over the hooks. When the two blood-vessels were in this way prepared they were cut close to the cylinder and the intima would in this way be inverted over the hooks. The two hemicylinders were put together and the

blood flowed from one blood-vessel to the other very freely, without danger of coagulation. It was necessary to isolate but one of the blood-vessels.

Dr. Gray said that the operation should be used only when there was occasion to replenish a decrease in the actual blood elements. Saline transfusion should be used in acute shock, where there was not a diminution in the blood elements, but a reduction in vascular tone. End-to-end anastomosis was difficult and tedious, and should not be considered, as mechanical devices had shortened the operation. The disadvantage of direct anastomosis, either by suture or by mechanical devices, was that it required close apposition of the arms of donor and donee. This strain on the vessels could be avoided by the free dissection of the vessels for an inch or an inch and a half. Dr. Gray thought that the best technique was the use of either the Elsberg or the Soresi instrument. It was very important, for the sake of the donee, to keep close watch of the condition of the circulation. The danger to the donee was acute cardiac dilatation. One should give plenty of blood, but not too much. Before beginning the procedure an accurate outline of the heart dullness should be traced on the chest of the donee. This should be checked up from time to time, and any increase of cardiac dullness should be a warning to suspend the process. It was not so difficult to get a willing donee in most cases as one would suppose.

Officers.—The annual meeting next year will probably be held at Spring Lake at the same time in June. The following officers were elected for the ensuing year: *President*, Dr. Daniel Strock of Camden; *First Vice-President*, Dr. Norton L. Wilson of Elizabeth; *Second Vice-President*, Dr. Enoch Hollingshead of Pemberton; *Third Vice-President*, Dr. Frank D. Gray of Jersey City; *Corresponding Secretary*, Dr. Harry A. Stout of Wenonah; *Recording Secretary*, Dr. William J. Chandler of South Orange; *Treasurer*, Dr. Archibald Mercer of Newark.

AMERICAN ASSOCIATION OF MEDICAL EXAMINERS.

Eleventh Annual Meeting, Held at Los Angeles, Cal., June 26 and 27, 1911.

(Special report to the Medical Record.)

(Concluded from page 54.)

Second Day—Tuesday, June 27.

Resolution.—It was moved, seconded, and carried that the Interstate Association of Medical Examiners sink its identity and become the Northwestern Section of the American Association of Medical Examiners.

Industrial Needs.—The industrial requirements which were contained in the President's address were discussed and it was decided that the time was inopportune for action, and that it would be inexpedient or unadvisable to take any action at this time.

The Early Diagnosis of Tuberculosis.—Dr. C. A. Shepard of Needles, Cal., read this paper. The French authorities had claimed that 90 per cent. of the cases of rectal fistula were of tuberculous origin. He did not think that they should rely upon such a statement in their insurance work. The tuberculin tests should be insisted upon in many cases. Was there any danger attached to this test? He did not think there was. Any physician could employ it if properly instructed in its use.

The Medical Examiner.—Dr. W. Ed. Grant of Louisville, Ky., presented this paper, which was read by Dr. G. Strohbach of Cincinnati. The foundation-stone of a successful insurance company depended upon the medical examiner; medical examiners who called themselves such and who became reckless fell short in their calling and compromised themselves. The importance of a proper understanding of the blanks upon which the reports were made to the companies was emphasized; this was not at all difficult if they only took the time to think them over. This saved the company much trouble.

Dr. Beckett thought that if they could get the medical examiners together at these meetings where they could listen to such papers as had been read before this association the blanks provided would be more fully filled out and much delay prevented. Many times he had to write and rewrite to a medical examiner in order to obtain certain facts which should have been made clear at the first examination. The medical director wanted a complete statement as to whether the applicant was insurable or not; had he a beginning tuberculosis; had he heart trouble, or some other condition which prevented his becoming insured?

Dr. Milton C. Conner of Middletown, N. Y., said that the medical director did not want the unimportant facts, but he did want facts upon which he could base an opinion as to whether the applicant would make a good risk or not.

The Use of Alcohol.—Dr. Allison Maxwell of Indianapolis, Ind., Medical Director State Life Insurance Company, discussed the question of the use of alcoholic liquors, one of the hardest questions the medical director was called upon to consider. Many applicants did not wish to answer the question properly; many times the examiner wished to shelter the applicant because of friendship or for other reasons. The very searching question was propounded: "If you use beverages of the alcoholic type, how much do you use in one day or in one week?" This was really a very hard question to answer properly. It was very important that they should get at the little details regarding the use of beer, wines, and other alcoholic beverages.

Dr. John Sidney Branch of Oakdale, La., said that it was difficult in many instances to get a satisfactory family history from the applicants, and particularly as to the use of alcoholic beverages. It was hard to get any accurate idea as to what amount of alcohol was consumed daily. He might not be what was called a "drinking man" but he frequently got more alcohol than he should get if he was to be a good insurance risk.

Health Conservation of Policy Holders.—Dr. Denslow Lewis of Chicago presented this paper, which was read by Dr. Stanton. A knowledge of the truth was the sure means of prevention and a conservation department had been recently established in New York. This movement was protective, and was of great benefit to the community. Bulletins were published regarding pure food, pure water, pure air, and the dangers of intemperance. The importance of correcting any deformities was emphasized, especially those of the nose and throat. The bulletins also told of the folly of accepting certain medicines as certain cures. The significance of aching pains was explained. First aid to the injured was taken up. Also the innocent way one could contract syphilis. The value of certain and definite hygienic measures was considered, all of which tended to the health conservation of policyholders. Venereal prophylaxis was also considered quite in detail.

Dr. Frank W. Foxworthy of Indianapolis, Ind., referred to the tubes that were used in the United States Army for the prevention of venereal diseases and the formula consisted of: Suet, 50; vaseline, 30; calomel, 20. This had not been successful in preventing venereal diseases. Dr. Foxworthy thought the day would come when the policyholder would be examined at regular intervals. There would also come inoculation of the various sera and vaccines for the prevention of disease among the policyholders. As the result of the injection of typhoid vaccines not a single case of the disease had appeared among 12,000 troops in San Antonio; yet in the town

where the vaccines were not used nine or ten cases had appeared. This showed the good that resulted from the antityphoid inoculations. There seemed to have occurred less reaction from these inoculations than from the use of the ordinary vaccines. When the day came when they would inoculate all the soldiers a great decrease would result in the mortality rate. Dr. Russell, who made the serum for use among the troops, stated that one dose was not sufficient, but that two doses should immunize the man against typhoid fever for life.

Dr. G. Strohbach of Cincinnati believed that this question of conserving the life of the policyholders by the life insurance companies was a very valuable and sensible undertaking, and that he had been contemplating a monthly publication which would take up health questions. The so-called "fad" side of health should be avoided; there should be taken up periodically in a sane and safe manner the way to have and to keep good health, food matters, clothing, and all other things that had to do with health. The various ways that food was being adulterated should be taught. Personally he believed in the movement under consideration and he felt positive that the leading sanitarians of the country would give their moral support to it.

Dr. Liston H. Montgomery of Chicago said that several months ago, during a conversation with a medical man in Chicago, one who had been in the United States Army, he obtained the following formula for use in the prevention of venereal diseases: Phenol, 3; calomel, 22; lanolin, 75. This formula was used among the United States troops about eleven years ago and the result nicely contrasted with the results given out by Belgium.

The Alcoholic Problem in Medical Examination.—Dr. Thomas D. Crothers of Hartford, Conn., presented this paper, which was read by title.

Arteriosclerosis—A Review of Cases.—Dr. Donald G. Frick of Los Angeles presented this paper, which was read by title.

Philadelphia Neurological Society.

At a stated meeting held April 28, 1911, Dr. Samuel Stern presented a communication entitled "Neurological Manifestations of Pellagra." He pointed out the relation that the ingestion of maize as food bears to the etiology of the disorder, and he dwelt upon the fact that the mental symptoms are rather to be looked upon as a complication, and accordingly they may exhibit wide diversity in both character and intensity. Dr. George E. Price demonstrated a patient presenting symptoms of "Cervical Pachymeningitis of Unusual Traumatic Origin." The case occurred in a colored man, 44 years old, employed in a steel works. In the course of his work he dislodged a flying splinter of steel, which struck him in the neck above the thyroid cartilage. There was pain with stiffness in the movements of the head. *X*-ray examination disclosed the presence of the fragment of steel in the deep tissues, and this was finally expelled in a paroxysm of cough. There had been some elevation of temperature, and it was believed that infection resulted, with extension to the cervical dura mater. Dr. Price reported "A Case of Unilateral Ascending Progressive Muscular Atrophy." The patient was an acrobat, who, following a sprain of the ankle, observed wasting and weakness of the corresponding lower extremity. He was soon able to resume his work. Seven years later, following a fall, it was found that the disorder had invaded the upper extremity on the same side, and it was now observed that there were fibrillary contractions in the affected muscles and that the knee-jerks were exaggerated. The opinion was expressed that the condition was one of chronic anterior poliomyelitis, with invasion of the lateral columns. Drs. M. H. Fussell and Samuel Leopold reported "A Case of Tumor of the Right Temporal Lobe Presenting Cerebellar Symptoms." The patient was a man who presented partial third-nerve palsy with ptosis and irritation in the distribution of the fifth nerve in association with paresis of the extremities on the opposite side of the body. Convulsions also occurred from time to time. There had been a history of headache. Further there was a tendency to fall backward. After death a tumor was found occupying the inferior aspect of the temporal lobe and exhibiting the histological characteristics of glioma. Drs. Wm. G. Spiller and C. J. Hunt presented a communication entitled "Extensive Spinal Epidural Endothelioma Causing Ascending Paralysis." The patient was a woman, who, following an acute infection of the chest, presented pain and weakness in the lower extremities gradually extending also to the upper extremities. The knee-jerks were enfeebled, but ankle clonus was present. After death an abscess-cavity of considerable size was found in the deep muscular structures of the back, and on the posterior surface of the dura mater, between the cervical and lumbar regions, there was an extensive new formation, which on histological examination presented the characteristics of endothelioma Drs. S. D. Ludlum and E. P. Corson-White presented a communication entitled "The Study of Heredity in Defective Children." Heredity they defined as the transmission of qualities from parent to child through the agency of chromosomes. As a result of their investigation they found that most of the conditions in defective children are acquired as a result of environmental influences, comprising, together with other things, morbid states of the parents resulting from toxic and nutritional states, syphilitic infection and the like. Dr. Andrew H. Woods read a paper entitled "Traumatism in Relation to Amyotrophic Lateral Sclerosis, with Two Cases." In the cases related, as well as in others studied, while there was an antecedent history of traumatism, there was reasonable room for doubt that this was the exciting factor. It seems not impossible that the condition arising from the nervous disease might be, in some instances at least, sufficient predisposing cause for the occurrence of the supposititious causative traumatism. Dr. Tom A. Williams presented a communication entitled "Psychogenic Quadrantic Hemianopsia by Simulation," relating the case of a pensioner who had made application for increased pension, and who apparently had loss of vision in one quadrant of the field. By tests, however, it was discovered that the loss of vision was simulated, and was due to voluntary suppression. Dr Williams also reported "A Case of Partial Hemianopsia and Partial Pituitary Syndrome," in which improvement followed treatment with the *x*-ray.

Dystocia Due to Echinococcus of the Female Pelvic Organs.—A. Bertino finds from statistics of the occurrence of echinococcus cysts in 2,785 cases that this complication is more frequent in women than in men, and that of the cases occurring in the pelvic organs more are found in women. They may occur in any part of the female genital organs; pararectal, paravaginal, paracervical, and paravesical, while they may invade the bones of the sacrum, the uterus, tubes, and ovaries. The effect of pregnancy and labor is bad. The increased blood supply of pregnancy causes the cysts to develop rapidly; when labor comes on they produce an obstacle to delivery, which has to be surmounted by an obstetrical operation. In some cases rupture of the cysts occurs during labor, allowing of the delivery of a living child. Out of 39 cases of pelvic cysts collected by the author 27 recovered and 11 died; of the children 16 were born alive and 19 dead (2 not recorded). The deaths in the mothers were from sepsis, rupture of the uterus, exhaustion, etc. When such a complication is diagnosed before labor operation should at once be performed to relieve the woman of the tumor.—*Annali di Ostetricia e Ginecologia.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

FUNKTIONELLE DIAGNOSTIK UND THERAPIE DER ERKRANKUNGEN DES HERZENS UND DER GEFÄSSE. By Prof. Dr. AUG. HOFFMANN. J. F. Bergmann, Publisher, Berlin.

ANALYSE DES HARNS. By A. ELLINGER, F. FALK, L. J. HENDERSON, F.N. SCHULZ, K. SPIRO and W. WIECHOWSKI. C. W. Kreidels, Publisher.

DER GEGENWÄRTIGE STAND DER PATHOLOGIE UND THERAPIE DER GALLENSTEINKRANKHEIT. By Dr. LUDWIG ARNSPERGER. 77 pages; paper; price 2.00 M. Carl Marhold, Publisher.

MODERN SURGICAL TECHNIQUE. By C. YELVERTON PEARSON, M.D., M.Dh., F.R.C.S. 484 pages; cloth; illustrated; price $4.00 net. William Wood & Company, Publishers, New York.

PLASTER OF PARIS AND HOW TO USE IT. By MARTIN W. WARE, M.D. Second edition; 99 pages; cloth; illustrated; price $1.25. Surgery Publishing Company, Publishers, New York.

GONORRHEA IN THE MALE. By Dr. ABR. L. WOLBARST. 175 pages; cloth; illustrated. The International Journal of Surgery Co., Publishers, New York.

AN INTRODUCTION TO DERMATOLOGY. By NORMAN WALKER, M.D., F.R.C.P. 338 pages; cloth; illustrated; price $4.00 net. William Wood & Company, Publishers, New York.

FOOD AND FEEDING IN HEALTH AND DISEASE. By CHALMERS WATSON, M.D., F.R.C.P.E. 638 pages; cloth; illustrated; price $4.00 net. William Wood & Company, Publishers, New York.

PRACTICAL CYSTOSCOPY. By PAUL M. PILCHER, A.M., M.D. 398 pages; cloth; illustrated; price $5.50 net. W. B. Saunders Company, Publishers, Philadelphia.

CLINICAL SYMPTOMATOLOGY. By ALOIS PICK and ADOLPH HECHT. 833 pages; cloth. D. Appleton & Company, Publishers, New York.

SOME NEGLECTED FACTORS IN EVOLUTION. By HENRY M. BERNARD, M.A., F.Z.S. 489 pages; cloth; illustrated; price $3.00. G. P. Putnam's Sons, Publishers, New York.

DISEASES OF INFANTS AND CHILDREN. By JOHN RUHRÄH, M.D. New third edition revised. 12mo; volume of 534 pages; illustrated; flexible leather; price $2.50 net. W. B. Saunders Company, Publishers, Philadelphia.

CHEMISTRY OF FOOD AND NUTRITION. By HENRY C. SHERMAN, Ph.D. 355 pages; cloth; price $1.50 net. The Macmillan Company, Publishers, New York.

WHAT TO EAT AND WHY. By G. CARROLL SMITH, M.D. 8vo; 310 pages; cloth; price $2.50 net. W. B. Saunders Company, Publishers, Philadelphia.

RADIOGRAPHIC ATLAS OF PATHOLOGIC CONDITIONS OF BONES AND JOINTS. By AMADÉE GRANGER, M.D. 206 pages; illustrated with 78 full-page half-tone plates; cloth; price $6.00 net. The A. L. Chatterton Co., Publishers, New York.

A WORKING MANUAL OF HIGH FREQUENCY CURRENTS. By NOBLE M. EBERHART, A.M., M.S., M.D. 303 pages; illustrated; cloth. New Medicine Publishing Co., Publishers, Chicago.

MENINGITIS, SINUS THROMBOSIS, AND ABSCESS OF THE BRAIN. By JOHN WYLLIE, M.D. 258 pages; cloth; price $3.00 net. Paul B. Hoeber, New York, Publisher.

FIRST AID IN NURSERY AILMENTS. By EVELYN LINCOLN COOLIDGE, M.D. 77 pages; cloth; price 50 cents net. Sturgis & Walton Co., Publishers, New York.

THE NERVOUS LIFE. By G. E. PARTRIDGE, Ph.D. 216 pages; cloth; price $5.00 net. Sturgis & Walton Co., Publishers, New York.

CRIMINAL MAN. By GINA LOMBROSO FERRERO. 322 pages; cloth; illustrated; price $2.00. G. P. Putnam's Sons, Publishers, New York.

DISEASES OF THE STOMACH AND INTESTINES. By BOARDMAN REED, M.D. 1037 pages; cloth; illustrated; price $5.00. E. B. Treat & Co., Publishers, New York.

TRATADO DE GINECOLOGIA. By Dr. MIGUEL A. FARGAS. Second Edition. Vol. I, 409 pages; Vol. II, 784 pages; paper; illustrated. Salvat & Co., Publishers, Barcelona, Spain.

RECHERCHES SUR LA MENINGITE CEREBROSPINALE. By ROBERT DEBRE. 120 pages; paper; illustrated. Felix Alcan, Publisher, Paris.

GEDENKREDE FRANZ KÖNIG. By Prof. Dr. OTTO HILDEBRAND. 10 pages; paper. August Hirschwald, Publisher, Berlin.

Medical Items.

A Special Complication of the Pasteur Treatment by Antirabic Vaccination.—C. Frogoni and C. Gargano direct our attention to a cutaneous effect of antirabic vaccination which is sometimes seen. This complication occurs from 20 to 25 times out of 400 to 500 cases treated by injections of antirabic vaccine. Soon after the injection there appears at the point of injection a sense of discomfort, the part becomes swollen, painful, and roughened, in a patch that is round or oval. The skin is hot, infiltrated, inelastic, adherent to the deep strata, and painful This goes on increasing for 24 hours; after 48 hours these phenomena have mostly passed away and there is itching of the region. This same condition is repeated after each injection; in some cases this causes the skin of the entire abdomen to become reddened, swollen, and painful. This condition never ends in suppuration or sepsis. There is never any fever. This effect was not caused in all the patients injected with a given specimen of serum. It is the result of a peculiar reactivity of certain individuals. It is possible that this phenomenon is one of anaphylaxis.—*Il Policlinico.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended July 28, 1911:

Places	Date	Cases	Deaths
Austria-Hungary: Trieste	July 23	1	1
Ceylon: Colombo	June 4–10	1	..
China: Kulangsu	June 17	..	1
Hoihow	June 2		Present
India: Calcutta	May 28–June 3	..	33
Italy		..	..
Continental Italy outside of Naples province and city, July 12 16: cases 56, deaths 22.			
Genoa	July 21	..	Present
Leghorn	July 16	..	Present
Provinces—Caserta	June 27–July 1	34	11
Naples	June 27–July 1	57	19
July 12–16: cases, 48, deaths 19.			
Naples	June 27–July 1	41	11
July 12–16: cases 64, deaths 21.			
Palermo	June 27–July 1	12	5
July 12–16: cases 15, deaths 7.			
Palermo	June 27–July 1	70	18
July 12–16: cases 62, deaths 19.			
Rome	June 27–July 1	3	2
Salerno	June 27–July 1	32	10
Java: Batavia	June 4–10	60	25
Russia:		..	.
Total July 5–7: cases 15, deaths 2.			
Disna	June 13	1	.
On the Düna.			
Nikolaiev	July 24		Present
Straits Settlements: Singapore	May 28–June 3	11	9
Turkey in Asia: Ezra's Tomb	June 17	6	..
70 miles from Basra.			
Samsun	June 11	33	30
At sea	June 23	1	1
Bulletin Quarantenaire d'Egypte, June 29, 1911			
On s. s. *Goeben* bound from Southampton for Suez. one day after leaving Naples.		Case developed	
YELLOW FEVER			
Brazil: Manaos	June 18–24		2
Ecuador: Guayaquil	June 16–30	10	1
Milagro	June 16–30	4	2
Taguachi	June 16–30	1	..
PLAGUE			
British East Africa: Kismayu	Apr. 24–29	2	..
See p. 782, vol. 1.			
From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, July 5, 1911.			
Nairobi	May 27	2	2
China: Kulangsu	June 17	..	2
Hongkong	June 4–10	37	26
Japan: Formosa	June 4–17	35	27
India: Bombay	June 4–17	92	85
Calcutta	May 28–June 3	..	44
Kurrachi	June 11–17	24	22
Java: Pasoeroean residency	June 4–10	53	21
Philippine Islands: Mariveles quarantine station	May 25–26	1	1
From s. s. *Taisang* from Amoy.			
SMALLPOX			
Brazil: Para	June 25–July 1	2	..
Canada: Fort Alexander	July 8	19	..
Among Indians.			
Halifax	May 23–July 8	2	..
Lac du Bonnet	July 8	1	..
Point du Bois	July 8	..	..
Epidemic.			
Montreal	July 9–15	1	..
Ottawa	July 9–15	4	..
Quebec	July 9–15	1	..
Selkirk	July 8	1	..
From Mapleton.			
Ceylon: Colombo	June 4–10	1	.
Chile: Talcahuana	June 17–24	13	3
Valparaiso	June 24	..	..
Increasing.			
China: Hongkong	June 4–10	3	1
Germany	June 25–July 1	5	..
Great Britain: Birmingham	July 2–8	1	..
Liverpool	July 2–8	1	..
Plymouth	July 2–8	..	1
Sheffield	June 18–24	..	1
India: Bombay	June 4–17	19	1
Italy: Naples	June 25–July 1	6	

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Original Articles.

A DARWINIAN INTERPRETATION OF ANAPHYLAXIS.

By R. G. ECCLES, M.D.,

BROOKLYN, NEW YORK.

WHEN the discovery was made that the rubbing of a piece of amber (electrum) excited an unknown force which caused the electrum to attract to itself small pieces of paper and other light bodies no one had the slightest suspicion of the vastness of the range of the phenomenon to which the Anglicized Latin name—electricity, *i. e., ambericity*—had been applied. When Magendie, in 1839, "found that rabbits which had tolerated two (closely timed) intravenous injections of egg albumin without any injury whatever, immediately succumbed to a further injection made after a number of days,"[1] he was as little conscious of the great importance his discovery was destined to become for medical science. When doctors Salmon and Theobald Smith, on Feb. 20, 1886, presented to the Washington Biological Society the first paper ever written on the subject of vaccinating with the soluble proteins of bacteria it was not possible for them to foresee the momentous sequences that were soon to follow.[2] Behring, Kitasato, Roux, Ehrlich, and others, while pursuing the same route of research, have given us diphtheria antitoxin, serum therapy, and our knowledge of immunology. When Flexner, while experimenting along the route first blazed by Salmon and Theobald Smith, found in 1894 "that animals that had withstood one dose of dog's serum would succumb to a second dose, given after the lapse of some days or weeks, even when this dose was sublethal,"[3] it apparently did not dawn upon his mind that he was treading on the verge of a piece of phenomenon destined before long to open up a new era for medical science. Unhappily every important new development in human knowledge brings its martyrs. When Langerhans, in 1896, lost his two-year-old son—the first definitely recorded death following the use of serum—ignorance and wilful prejudice sought to attribute it to antitoxin. No one was yet sufficiently alert to see the great significance to humanity of the phenomenon that most likely was the direct cause of this pitiful sacrifice.[4] When Theobald Smith, in 1896, "was very much surprised to find that some of the guinea pigs which had been inoculated with heated bacilli, and in which there were no signs of active tuberculosis, after eight weeks succumbed promptly to small doses of tuberculin,"[5] he did not suspect that he was forging a new link to the chain of evidence that is rapidly carrying us toward a genuine science of medicine—a science crystallized around a single, uniting, definite, fundamental principle. When Portier and Richet, in 1902, injected into the veins of pigeons and dogs small amounts of a glycerin extract of the filaments of sea anemones (*Actinia*) and found that while first injections caused no harm second ones, containing no more, but given several days later, caused speedy death in animals of the same kind, although such animals could stand both doses if given together, without the slightest evidence of harm, there was still no suspicion of the deep significance of these results.[6] When, amid the public excitement aroused by the Langerhans' and a few other sporadic alien protein tragedies, Theobald Smith and his associates of the Massachusetts State Board of Health Antitoxin Laboratories found, prior to 1903, "that when guinea-pigs which had survived an injection with a mixture of diphtheria toxin and antitoxin" received a second dose some days later "they frequently died within a few hours," a new light began to dawn. When Professor Smith, in April, 1903, put into the hands of Dr. R. A. Lewis a record of some fragmentary experiments which he had made upon this strange phenomenon and supplied material and advice for a series of special experiments thereon,[7] the first move was made toward determining its meaning and consequences to mankind. When the same gentleman, in 1904, enlisted the interest of Ehrlich in this phenomenon, and when Ehrlich started Dr. R. Otto on another special investigation thereof, the second important move was made toward its definite solution. When our Public Health and Marine-Hospital Service, through doctors Rosenau and Anderson, in October, 1905, made certain experiments "in order to throw light upon the cause of this unfortunate accident" of death under antitoxic treatment,[8] a third step was taken in a direction which probably means very much more for life and health than even medical men can see. When Dr. Otto's report upon *"Das Theobald Smithsche phänomen der serum Ueberempfindlichkeit"* was published in Berlin in 1906[9] it opened a new page in medical history. It was the first publication of a special investigation devised for elucidating what has come to be known as anaphylaxis, allergy, serum sickness, hypersusceptibility, hypersensitiveness, etc. When Portier and Richet recorded their "hypnotoxin" experiments—experiments with *actinia* extract—as *"De l'action anaphylactique de certains venins,"* they evidently had no idea that they were dealing with other than a peculiar phenomenon of a peculiar poison. It did not dawn on their minds that it was a general protein reaction. Ehrlich, in giving the name "Theobald Smith phenomenon" to this anaphylaxis or allergy reaction, paid a gracious tribute to American medical science, for which we ought to feel thankful. We have the phenomenon of Arthus, the phenomenon of Kretz, the Bordet-Gengou phenomenon, Pfeiffer's phenomenon, Stohr's phenomenon, Babinski's phenomenon, Purkinje's phenomenon, Danysz's phenomenon, and others to act as incessant reminders that European

men of science are doing valuable biological work. Where is America's mark of honor? Ours is a pitiful blank in this galaxy. Since 1906 American work in anaphylactic research has been as great as that of any other country in the world, but unfortunately the busy men in the profession have not been able to give it deserved attention nor to bestow due honor on the thinkers and workers who have been promoting it.

A startling recent revelation is "that one-millionth of a cubic centimeter of a five per cent. solution" of a three times crystallized egg-albumin, "or *one-twentieth of a millionth of a gram of protein, will sensitize a guinea-pig* enough so that distinct and typical symptoms are produced after a second injection of the same material, while one fifty-thousandth of a cubic centimeter of solution containing but *one-millionth of a gram of protein sensitizes fatally.*"[10] Try and grasp the full significance of these words. Think of a grain of egg-white being divided into over 66,600 equal parts and one of these parts proving as deadly to a guinea-pig as a bullet through its heart. Strychnine and prussic acid are deadly, but they are almost harmless when compared with hen's egg protein administered intravenously after sensitization. We consume this deadly material with impunity as a constant article of diet. Friedberger tells us that "if into a guinea-pig a tenth of a milligram of the serum proteid of a sheep is injected subcutaneously, and if at a later period, as early as after ten days, five milligrams of the same proteid are injected into a vein, the animal goes into convulsions, has asphyxia, and dies."[11] His sheep's serum gave a lower toxicity than egg albumin, owing most likely to a difference in the toxicity of its molecules and to the less pure condition in which it was given. Gay and Adler found that "by fractional precipitation of horse serum with saturated ammonium sulphate precipitates are obtained which vary in their sensitizing and toxic properties. The first fraction is as highly sensitizing as whole horse serum, while the latter fractions are distinctly less sensitizing but more toxic than the first."[12] After years of work "in the study of cleavage products of proteins, bacterial, vegetable, and animal," Vaughan and associates report being able to split from more than thirty kinds, non-poisonous as well as poisonous proteins.[13] Wells declares that the "sensitizing and intoxicating effects have been produced with such extremely minute quantities of protein that it seems not unwarranted to maintain that these experiments settle this point conclusively. As a repeatedly recrystallized egg albumin, giving every evidence of chemical purity, is capable of causing sensitization in doses of one twenty-millionth of a gram, and of killing sensitized pigs in doses of one-twentieth of a milligram, it is evident that if either of these effects were due to something other than the egg albumin itself this contaminating substance must have a potency beyond the bounds of imagination."[14] The apparent discrepancy between the results of Vaughan and Wells are evidently due to the differences in their methods. The former, by cleaving his protein molecules would, if he left some intact, get just the results claimed, but on the other hand his claim that he splits all the molecules into haptophore and toxophore groups, if correct, would be a fair explanation. Those retaining the toxicity, by being weakened, would not be expected to give any greater poisoning power than did the intact molecules, and might not give as much. That such potency for evil should exist in them at all is remarkable, and it "cannot but excite our wonder that the chemistry of the body should be so delicately balanced that the introduction of 1/10,000,000 part of a gram of foreign protein should be able to so profoundly influence it as to result in serious symptoms when injected a second time."[15]. Most of this wonder centers in the fact that it is protein—our vitally essential food—that is so superlatively destructive. Nor is this poisonousness confined to animal proteins. The fact has been established that plant proteins have the same fatal power. Wells and Osborne have found that the sensitizing and intoxicating power of our common food grains is as great as those of the animal products. They tell us that "the sensitizing power of edestin (from hemp seed) is not noticeably less than that of crystallized egg albumin, as one ten-thousandth of a milligram (0.0000001 gm), the smallest sensitizing dose tried, rendered the guinea-pig sensitive to edestin. The intoxicating power of edestin is, however, much less than that of egg albumin."[16] The same authors tell us that "experiments have been performed with globulin from the castor bean (*Ricinus communis*), flax seed (*Cannabis sativa*), excelsin from the Brazil nut (*Bertholletia excelsa*), with proteins from the cocoanut (*Cocos nucifera*), legumin and vicellin from peas (*Pisum sativum*), legumin from the vetch (*Vichia sativa*), vignin from the cow pea (*Vigna sinensis*), glycinin from soy beans (*Sosja hispida*), gliadin from wheat flour (*Secale cereale*), hordein from barley flour (*Hordeum vulgare*), and zein from maize (*Zea mays*). It has been found that all of these proteins cause typical anaphylaxis reactions in sensitized animals, with all features essentially the same as when serum and other animal materials containing soluble proteins are used."[17] Whether plant proteins can injure alien plants as they do animals has not yet been determined, but it is evident that they do not injure the plants that produce them. Ehrlich's "horror autotoxicus" is here seen to extend to both kingdoms of living nature. The study of vegetable anaphylaxis is virgin soil that promises rich harvests in discovery to the botanists who take it up. The field is fallow and only awaits the husbandmen. What Hertwig tells us about the taking of grafts is early evidence of what may be expected. He asserts that "generally speaking, in the case of plants not adapted to each other, no attempt at union occurs, and the grafted twig speedily perishes, sometimes even the stem dies as if it had been poisoned by the graft."[18] If this is not anaphylaxis, then it would trouble an expert to distinguish between them. Since vegetable proteins as well as animal ones produce anaphylactic symptoms the evolutionist would expect, *a priori*, to find the bridging organic forms that lie between ourselves and these higher plants —the bacteria—also producing anaphylaxis. It, therefore, comes as no great surprise to them to learn from Prof. V. C. Vaughan that "egg-white contains the same poison, physiologically at least, as that found in the typhoid bacillus, and if egg-white could grow and multiply in the animal body it would, as a result of such growth and subsequent cleavage, be just as deadly as the bacillus of the infectious disease."[13] In essential confirmation of this are the experiments of Rosenau and Anderson, in which they secured pronounced anaphylaxis from injections into guinea-pigs of colon bacilli, yeast germs, hay bacilli, anthrax bacilli, tuberculosis bacilli, and typhoid germs.[19] Bergey, not long ago,

produced anaphylaxis with four common saprophytic bacteria.[20] Many others, both here and abroad, have had like results, so that it is now a settled fact that dead bacteria introduced into the body in spaced injections about ten days apart produce disease symptoms of a pronounced character. Lewis tells us that "the phenomenon of anaphylaxis with bacterial cultures responds exactly with the anaphylaxis to non-poisonous proteids, such as serum or egg-white," and then declares that "in order to assign the phenomenon of anaphylaxis in the narrower sense a fundamental place in the immunity to disease of the type of typhoid fever, cholera, or the septicemias, the localized diseases due to micrococci, it would seem necessary to assume that the disease is due to the bacterial product as such."[21] In agreement with this Von Pirquet attributes the symptoms of vaccinia, smallpox, glanders, actinomycosis, lepra, syphilis and other diseases to anaphylaxis.[22] In disease symptoms there is a sameness attached to all, together with the particular symptoms characteristic of the given pathogenic organism. In anaphylaxis from food proteins the same is the case. Wells tells us that "it is possible to tell with assurance whether a reaction is being produced with egg-white, which causes highly irritative effects, or with serum, which causes more paralytic symptoms."[23] There is, likewise, the same specificity to food-protein anaphylaxis as is seen in disease. "A guinea-pig," says Rosenau and Anderson, "may be sensitized with egg-white, milk, and horse serum, and subsequently react in a brief period of time to a second injection of each of these substances"; and they add, "the guinea-pig differentiates each anaphylactic-producing protein in a perfectly distinct and separate manner. The animal acts as though susceptible to three separate infectious diseases."[24] A list of anaphylactic symptoms, produced by, say, a dozen different food proteins, would include every prominent symptom of the diseases we are familiar with, from chill and fever to inflammation and death. Is it then not quite probable that typhoid fever, diphtheria, scarlet fever, measles, meningitis, yellow fever, malaria, pneumonia, consumption, and the many other diseases with which physicians are familiar, may be but the specific anaphylactic reactions of the proteins of the respective parasites? Moschcowitz recently pointed out that asthma, hay fever, urticaria, skin diseases characterized by exudative lesions, eclampsia, pellagra, goiter, tetany, migraine, and epilepsy give indications of being due to anaphylaxis. Others before him referred to many of these as probably having such an origin, but he has added the observation that they are all associated with eosinophilia and that "the invasion of eosinophiles in increased numbers into the organism is the expression of an active agent or the agent itself in the production of anaphylaxis."[25] "In hook-worm disease," says Ward, "the main feature of the blood is an eosinophilia, both relative and absolute,"[26] and "one of the most characteristic features of the animal parasites," says Wells, "is that they exert a positive chemotaxis, particularly for eosinophile leucocytes."[27] It thus seems that at last we are on the track of an all-embracing principle with which to link medical facts together, rationally, as in the well advanced inductive sciences. Such a view as this, if established, is certain to revolutionize medicine as completely as the inductive sciences have been revolutionized during the last century, and for the same reason. "The discovery of new facts," says Bancroft, "makes a subject more complex and more difficult to grasp. The discovery of new relations simplifies matters because it enables us to get a better grasp of the subject."[28] This relating of all medical phenomena under a common principle will simplify medicine for its students to such an extent that it will literally introduce a new era.

On considering how tremendously toxic to sensitized animals alien proteins are we are constrained to ask ourselves what it means. Why should our one essential life-sustaining substance always appear as a veritable Azrael? Why require protective devices to save ourselves from its awful destructiveness? There is certainly nothing of selective value to the consumer in such deadliness. To him it is an ever-present menace—a diabolic mal-adaptation—a sort of sword of Damocles, constantly threatening destruction. "Natural selection," says Darwin, "will never produce in a being anything injurious to itself,"[29] and in agreement with this obvious implication of his doctrine we find that it is invariably *alien protein* that injures. The animal's own proteins, as well as the proteins from members of its own species, are harmless. Is there not weighty evidence of some sort of systematic selecting or sifting discernible in the fact that all plants and all animals produce proteins perfectly safe for themselves and close of kin, yet deadly to their marauding foes? Mere chance could never have made so perfectly even a distribution. It has every appearance of either purposefulness or selection. But if it is purposeful why has it been directed so completely against man? Every particle of protein food we consume is alien protein and carries with it a threat of death. Only by becoming cannibals could we escape the ever-constant menace. What sort of beneficent purpose can be subserved by thus placing a penalty on the consumption of such food as we are compelled to use, and a premium on cannibalism? In the struggle for protein food that always exists between the plant or animal that produces and the man or beast that consumes there is ample evidence of selective value. Any change in the protein that can make it safe for its producing owner and dangerous for its consuming foe helps the owner in its battle for life. If every particle of protein in the world could be suddenly transmuted into harmless, homologous protein would it be long before the fight for possession would convert it back into toxic protein again? Granted that it would vary, as all things do, and that the variations would occur in all possible directions, then some of it would vary toward poisonousness. Such a variation would instantly give the advantage to the organism in which it occurred as against all other organisms. If the toxicity should suddenly become great it would quickly exterminate every animal that tried to consume it. If it occurred slowly and by degrees then there would be time for protective variations to arise in the consumers. They would hold each other at bay to just such a degree as would permit of both living. It appears to the writer that if under existing conditions the transmutation referred to should happen it would not be cosmically long before all alien proteins would regain their toxicity through natural selection. Every known biological condition tends in that direction. On the other hand, the consumers must vary protectionward. Since all alien proteins are dangerous and since only alien proteins are available as food, it necessarily follows that all consumers of alien proteins must acquire means of

overcoming the toxicity or perish from the earth. It thus happens that all have some degree of protection against most proteins and a small degree against deadly toxins. Remove the protective devices, as in the production of anaphylaxis, and all become equally deadly, or nearly so. The reason why tetanus and diphtheria toxins are so much more deadly toward us than is beefsteak or egg-white is that our barriers against the latter are more perfect than against the former. Remove the barriers by sensitization toward the latter and then compare the figures of their respective toxicities. If beefsteak and egg-white could reach the life centers of our cells as completely and as rapidly as the toxins do, what reason have we for believing that they would prove less destructive? Both lose their toxicity by being digested. Both have their toxicities heightened by sensitization. Both produce in the cells after successive doses a heightened resistance. Both give indications of a protein nature. We have little or no immunity of toxins because we and our progenitors have not been fed for many ages upon them, as we have upon beefsteak and egg-white. The particular cells for which the toxins have an affinity have not built up protective mechanisms against them as have the cells for which the steak and eggs have their affinities. The digesting enzymes used in the destruction of the last named can because of generations of adaptation destroy their deadly qualities quickly and effectually, while no such perfect adjustment for the speedy destruction of the toxins has been selected. Existing meat-eating and egg-eating animals are here to-day because all of their species that failed to make such adaptations disappeared long ago from the planet. The intestine in each individual now "forms a solid barrier between the heterologous compounds in the food and the homogenous building material for the blood and tissues, the composition of which has been established by the entire development of the given animal species."[30] Thus it happens that "the whole problem of protein metabolism seems to be an adjustment in the sense of a defense," for "the power to assimilate and use foreign proteins is not achieved without a certain amount of violence to the body."[31] Thus it is that when anaphylactic experiments are conducted in conjunction with digestion experiments it is always found that the anaphylactic symptoms depend "upon some constituent of the serum that decreases *pari passu* with the coagulable protein," that "peptic digestion of egg albumin destroys its power to intoxicate sensitized guinea-pigs only when it has destroyed practically all coagulable protein," that "for the anaphylaxis reaction we must have intact protein molecules,"[32] and that "digestion with trypsin gradually destroys the sensitizing and intoxicating principles."[33] It is because of protein toxicity, if Darwinian deductions coupled with the test of research-discovery as a check can be relied upon, that our digestive organs have developed to what they are. The data of paleontology, embryology, and comparative physiology, already in our possession, lead to the conclusion that if we could secure a complete panorama of the successive steps which have led to the production of our present digestive mechanism it would probably show, (*a*) a time on our planet when only monocellular forms of life existed, and that then each cell captured, destroyed, and digested its own prey; (*b*) a time when differentiation produced cells having a phagocytic function that made them the chief agents in capturing and destroying the prey for their associated fellow cells;[34] (*c*) a time when a surface sulcus, developed into a gastrula where prey could be trapped, rendered harmless, and in a partially digested condition carried to the cells;[35] (*d*) a time when the gastrula deepened into forming an intestine that better enabled the owner to evacuate waste materials;[36] (*e*) a time when some cells of the intestine developed into glands that secreted digestive enzymes and poison-neutralizing substances;[37] (*f*) and, finally, a time when this primitive liver-pancreas divided its functions, giving us pancreatic, peptic, Brunnerian, hepatic, and like glands as distinct organs.[38] Every one of these steps seems to have had as its chief, if not its sole, purpose the saving of the internal cells from anaphylactic and other toxic means of destruction. To such medical men as entertain any remnant of the old exploded doctrine that the digestive organs exist for the purpose of putting our food into solution, so that it can be absorbed by the tissues, this statement will appear to be nonsensical. They should get a mental grasp of the newer physiology. Let them consider the facts of the next paragraph.

Before it was discovered that the getting of proteins into perfect solution did not properly fit them for cell assimilation our notions of the true function of digestion were exceedingly hazy. The belief that "the 'purpose' of the splitting of protein in the intestines" was merely "to make it soluble and capable of being absorbed," is now a thing of the past.[39] Chittenden declares that "it is difficult to see why if digestive proteolysis has for its sole object the conversion of the proteid foods into forms suitable for absorption there should be any considerable breaking down of protein beyond the proteose or peptone stage, since the latter bodies would seem to be most easily adaptable for transportation into the proteins of blood, lymph, and tissue."[40] With the food digested into perfectly soluble condition, as proteoses and peptones, why should it be torn down into the much smaller amino-acid shreds? These acids do not, as such, appear in any appreciable amounts in the circulation. The blood is not a stream of dissolved amino-acids. In it they are all found *reconverted into protein again*. What is the meaning of such a reconversion following immediately after the destruction of the original protein? Why is it that our bodies after going to the trouble of destroying almost every shred of the food proteins takes "from the common protein, typified by serum albumin," instead of from the products of digestion, the material with which to form "the specialized body proteins?"[41] All of the work of tryptic and erepsin digestion is, if the old notions of digestion are true, utterly wasted. Of what conceivable use to the body, according to that view, could such digesting be when every particle of it has to be, to all appearances, undone? Think of a man tearing down a house merely for the fun of having to rebuild it again. So bungling an arrangement is certainly far from economical. From the viewpoint of either natural selection or purpose the whole matter looks absurd. The doing of work that needlessly increases the labor of the body could have no selective value—could save no lives. Natural selection could not select wastefulness, nor can we imagine beneficent foresight tolerating it. If the molecules of alien proteins are dangerous in their structures toward the protein molecules of consuming organisms, then we can readily see why the whole molecule should be torn asunder and rebuilt

after the pattern of that organism. There is no mystery in that, and it contains positive evidence of being of selective value. If a death menace hangs over the consumer that fails to tear every molecule into its final physiological fragments, and if this menace has always hung over the race, it is easy to see exactly why the entire intestine and its complex digestive apparatus slowly evolved along the route to which reference has been made. Every successive step, by giving an advantage in the struggle for existence to its possessor, allowed that possessor to live and multiply its kind, while those not thus favored must have perished. Step by step gains were made on one side, while step by step poisonousness increased on the other. That which was at first developed as a poison ceased to act as such because the protective mechanism destroyed its power to kill. Thus, in spite of increasing toxicity, no such increase was observable. The poison of to-day became the food of to-morrow. Indeed, its triple deadliness, on the removal of the protective devices, is probably due to its food qualities, since as a food it would be chemotaxic for the cell receptors of food, and deadly because of being unadapted in size or form for fitting into the cell molecules. It would, like a crowbar thrust between the cogs of a swift-moving machine, bring wreckage. A study of the structures of some protein molecules will make the matter clearer. The following five, viz., casein, ovalbumin, muscle, zein, and gliadin, give the amino-acid composition of each to the extent of 12 of their acids. As can be seen by the percentage figures, none of them are complete. They lack from about 20 to 50 per cent. of their totals.

		Milk Casein.	Egg Ovalbumin.	Chicken Muscle.	Maize Zein.	Wheat Gliadin.
1	Glycocoll	0.00	0.00	0.68	0.00	0.02
2	Alanin	0.09	2.22	2.28	9.79	2.00
3	Valin	1.00	2.50	....	1.88	0.21
4	Leucin	10.50	10.71	11.19	19.55	5.61
5	Aspartic acid	1.20	2.20	3.21	1.71	0.58
6	Glutamic acid	10.70	9.10	16.48	26.17	37.33
7	Lysin	5.80	3.76	7.24	0.00	0.00
8	Arginin	4.84	4.91	6.50	1.55	3.16
9	Histidin	2.59	1.71	2.47	0.82	0.61
10	Prolin	3.10	3.56	4.74	9.04	7.06
11	Phenylalanin	3.20	5.07	3.53	6.55	2.35
12	TYROSIN	4.50	1.77	2.16	3.55	1.20
	Total %	47.52	47.51	60.48	80.61	60.13
	Missing %	52.48	52.49	39.52	19.39	39.87
		100.00 (42)	100.00 (43)	100.00 (44)	100.00 (45)	100.00 (42)

In considering the figures of this table the reader should particularly note that any single one of the five proteins named at the top contains in one of its molecules one, two, three, or more of the twelve amino-acids given. Imagine the sections of an orange and each section will represent one of these amino-acids, while the whole orange represents the protein molecule. If the various sections of the orange differed in color or shape and it was large enough to contain, say, twenty or thirty sections, the resemblance would be the greater. In one single molecule of casein, for instance, there are building sections in its structure of alanin, valin, leucin, aspartic acid, glutamic acid, lysin, arginin, histidin, prolin, phenylalanin, and tyrosin radicals all clinging together as a single chemical unit. As our analysis shows less than 50 per cent. of its total contents, supposing there are only one of each of the twelve radicals named, then it only shows about one-half of the real size of the casein molecule. But since it is known that there are many more than one molecule of glutamic acid and of leucin in a single molecule of casein the size must be very much greater. Lusk says that "the chains of amino-acids forming this complex must be of (relatively) immense size to comprise the many and varied elements set forth above. Osborne calculates the molecular weight of protein at 15,000 or some higher multiple of this."[46] A molecule of casein is not less in weight than 15,000 atoms of hydrogen, but it may be equal to 30,000, as chemical methods of calculating such things can only give multiples of the minimum. Relatively immense as such molecules are when compared with hydrogen atoms they are exceedingly small as compared with the size of a leucocyte, which is most likely made up of hundreds of thousands of these protein molecules. It is out of relatively small cells that we are made, out of relatively small protein molecules that cells are made, and out of relatively small amino-acid radicals that protein molecules are made. The analysis shows that wheat gliadin contains 60.13 per cent. of its weight, minus a minute amount of water of hydrolyzation, in the twelve amino-acids named, while zein from Indian corn has over 80 per cent. of its structure accounted for by these. Of the missing constituents only 19.39 per cent. were lost in analyzing zein, while 39.87 per cent. could not be crystallized out of gliadin. Milk casein shows 52.48 per cent. missing, or nearly three times as much as does zein. As the figures represent many analyses of each, the missing elements are peculiar to each particular protein. Now observe some of the differences in the amounts of the acids common to each. Gliadin, as it exists in bread, has less than half as much phenylalanin as exists in ovalbumin, while the ovalbumin has only about one-fourth the amount of glutamic acid that exists in the gliadin. In no two of the five proteins do the ratios of their respective amino-acids agree. When the digestive organs of a chicken undertake to convert wheat gliadin into food for chicken muscle what must occur? The gliadin contains 37.33 per cent. of glutamic acid, but the muscle only needs 16.48 per cent. There is 5.61 per cent. of leucin, but the muscle must have 11.19 per cent. To get the 5.61 per cent. up to 11.19 per cent. over twice as much gliadin would have to be destroyed than is needed. There is 7.06 per cent. of prolin and only 4.74 per cent. needed. There is not a trace of lysin, yet chicken muscle demands 7.24 per cent. We can see in this why a mixed diet is imperative. With only 0.61 of histidin there is a demand for 2.47 per cent. Four molecules of gliadin must be destroyed in order to get out of it the needed amount of histidin for a single molecule of muscle protein. If the chicken adopts for its diet wheat gliadin and corn zein, since neither contains lysin there is likely to be a longing void for something, it knows not what, felt within its stomach. Distribute the amino-acids of alien proteins as we choose and there must be a surplus of several kinds that are unavailable for assimilation as amino-acids and that must be disposed of by the body. As with the chicken, so with ourselves. We must rend zein, gliadin, and all other available protein molecules asunder so as to be able to sift the amino-acid products into useful and, until further broken up, useless fractions. The unused surplus is disposed of by being destroyed by having its nitrogen "split off in the form of ammonia, and this ammonia, uniting with carbon dioxide, is carried as ammonium carbonate to the liver and there synthetized as urea."[46] Because of

this, "ammonia is found in considerable amount in the portal vein after a meal, but is normally screened from the general circulation by chemical changes in the liver,"[47] while "the portal blood during digestion contains four times as much ammonia as arterial blood."[48] Such amino-acids as tyrosin, phenylalanin, tryptophane, and cystin as are in excess of the body's needs become food for bacteria. The bacteria digest away from them all the available elements, leaving the indigestible parts unconsumed, as phenol, paracresol, indol, skatol, sulphurous acid, sulphureted hydrogen, and other malodorous constituents of feces.[49] The reader should note at this point that the food and not the bacteria contain the radicals that become such poisonous substances. They preexist as pro-poisons in the food. The bacteria leave them because of being unable to digest them. They are generally more poisonous for the bacteria than for us. Natural selection never can produce anything in an organism that is injurious to that organism. The plants and animals that produced the proteins placed these poisons in them and the bacteria being endangered by them leave them in our intestinal tracts unconsumed. There are still other pro-poisons in ordinary food that deserve attention here, but the descriptions of which would make this paper too long. Among these we may mention the cholins, the purins, pyramidin, and the amino-acids that on bacterial destruction leave behind putrescin, cadaverin, and isoamylamin. Some cholins are very poisonous, and the purins are the source of uric acid.

Theories of the cause of anaphylaxis are numerous, but none of those heretofore advanced have tried to trace the subject out as a fraction of the larger problem of organic evolution. This is probably the first attempt of the kind ever made. That anaphylaxis is due somehow to alien proteins is conceded by all. That its specificity follows the path along which species have been produced has been proven by experiments. Von Pirquet declares that "the power of a given serum to produce anaphylactic symptoms corresponded absolutely with the intensity of the precipitin reaction,"[50] and Schryver tells us that "the more nearly allied the species to that from which the precipitinogen has been derived the more readily will its protein give a precipitate with the precipitin."[51] This specificity of the precipitin agrees with the species of the animal and the anaphylactic manifestations follow exactly the same path. Wells declares that "the question of specificity stands up as a sphynx-like obstacle that has so far not been passed,"[52] and an evolutionist could hardly expect it to be passed until such times as its students brought it into logical harmony with the power that directs the formation of species—the power of natural selection. The proteins (the precipitinogens) that all acknowledge to be the cause of the production of precipitins have a specific structure. This structure is due to their being chiefly built up of definite amino-acids, definitely arranged, in definite proportions. Abderhalden assures us that "in the formation of proteins the amino-acids alone participate as far as we know, with the single exception of the amino hexose glucosamin."[53] As the specific structures of the proteins are due to their amino-acid content and arrangement, why should we not infer that the specificity of the phenomena produced by them is due to their chemical natures that are due in turn to the amino-acids? Experiments have shown that alien proteins in which the amino-acid contents have been disturbed in their relations refuse to produce specific results either in precipitins or in anaphylaxis. Reagents that destroy the aromatic amino-acids, tyrosin and tryptophane destroy thereby the specificity.[54] Remove these same amino-acids by digestion and the proteose fragments display no specificity.[55] In connection with this let us consider the exceedingly significant fact that these very amino-acids—tyrosin and trytophane—are among the pro-poisons of the body to which reference has been made. But there is a third amino-acid that is likewise a pro-poison, and that is one of the early ones to be removed by digestion. It goes by the name of cystin, and is, like the other two, mostly removed from proteoses that refuse to produce specific precipitins and specific anaphylaxis.[56] When a house is being torn down piecemeal the last row of bricks placed upon the walls by the builders is the first row to be removed by the unbuilders. The fact that the three pro-poisons, cystin, tryptophane, and tyrosin, are always among the first to be removed in digestion indicates that they were the last to take their places upon the protein molecule. Digestion is a reverse process to growth. The fact, too, that specific precipitins are producible for all sorts of animal proteins indicates that these amino-acid pro-poisons are under constant change with every change of species. In no other way could we imagine their controlling specificity. If as pro-poisons they are to be of any advantage to their possessors in the digestion struggle of cell with cell they should be found where required at the point of splitting of the molecule, they should be easily detachable from the molecule, they should be perfectly harmless when unattacked by consuming enemies, and they should be ready to produce deadly results on release. These conditions seem to be all present if the facts are fairly interpreted. In singular confirmation of our interpretation stands the exceedingly remarkable fact that our skins and nerve-sheaths—the tissues most exposed to parasitic attack and the tissues that shield the most vulnerable portions of the body from parasitic attack—are the very tissues that contain the largest proportions of these amino-acid pro-poisons of any other part of the body. The hair and claws, that share with the skin the rôle of defense in the lower animals, share also in this identical protection. It has been pointed out by Partier that "oxidases are concentrated in the epidermal and exposed structures of the organism (where they can oxidize the sulphur of the cystin when attacked). He is of the opinion, therefore, that their physiological rôle both in animals and plants is one of defense against invasion by micro-organisms."[57] If used as a defense in these tissues why may they not be deemed of use in defense in the other molecules of the body? As will appear later, they can become efficient agents in destroying aggression by digestion. In order to understand something about how they act we must consider how they are attacked. In all digesting it has been found that three substances are always concerned. In stomach digesting we have: (*a*) the protein, as meat, fish, egg, etc., to be digested; (*b*) the hydrochloric acid that converts the protein into an electrolyte by neutralizing part or all of the alkalinity of the protein, without which neutralizing it cannot be digested; (*c*) the enzyme called pepsin that in some manner directs the hydrogen and hydroxyl ions so as to split the protein molecule. The conditions of intracellular digestion differ in some particulars

from stomach digestion. Ehrlich's work has given us facts that clear up this form of digestion very much. He has shown us that there are here likewise three substances concerned. These are: (*a*) the protein to be digested, such as other cells, bacteria, protozoa, or, as in anaphylactic, precipitin, and cytolytic work, such antigens as serum, egg-white, gliadin, etc.; (*b*) the substances that convert the protein that has to be digested into an electrolyte and that go by the names of antibodies, interbodies, immune bodies, and amboceptors; (*c*) the enzymes variously known as addiment, complement, alexin, etc., that direct the hydrogen and hydroxyl ions to the point of scission in the alien protein. Intracellular digestion seems usually to resemble trypsin rather than pepsin digestion in that the protein to be digested is converted into a basic and not an acid electrolyte. The point of greatest logical importance for the purpose of this discussion is the fact that "it is the amboceptor alone that gives the specific nature to the reaction."[58] Much confusion has arisen in the minds of many by not separating this function of the amboceptor from the functions of the complement (enzyme). Through Ehrlich and Morgenroth's work we have learned that the "body in an immune serum which we term the amboceptor can in one and the same animal be shown experimentally to be made up of a host of different kinds of amboceptors."[59] Arrhenius tells us that "Ehrlich supposes that all possible antibodies (amboceptors) exist in normal sera."[60] If every possible amboceptor or antibody for all the millions of various kinds of alien proteins exists in normal blood, as Ehrlich declares, and if every one of these millions is specific for the particular protein introduced, it logically follows that either the amboceptors are combinations of a few elementary substances capable of being linked together into these millions of intricate fitting specific forms, or every injection of protein into an animal's veins results in a miracle more wonderful than any that credulity ever believed. If, like the letters of the alphabet in a printer's case of type, a few substances are linkable into these myriads of combinations, then the matter is comprehensible, but otherwise not. A printer can copy any one of millions of unlike printed pages, matching them with exactitude, and only use the twenty-six letters of the alphabet, a few spaces and a few stops. Now we come face to face with another most remarkable fact. Recent biochemical research has demonstrated the fact that blood serum and cell proteins are composed of just the kind of substances that are capable of building themselves together in this specific manner. These substances are the amino-acids and their polypeptid combinations. Their linkages can be infinite. Nothing else known in organisms can be suspected of having such qualities as will meet the requirements of Ehrlich's amboceptors. A study of alien proteins shows that they are built just as they should be to be able to produce the millions of specific amboceptors needed to convert them into electrolytes. We learn from Mann and others that these molecules are at one and the same time polyacid bases and polybasic acids.[61] They will not digest until either the basic or else the acid charges are suppressed and they have thus become electrolytes. Taking egg-albumin as a sample of all proteins we discover that it is a 35 acid base, *i. e.*, has 35 carboxyl bonds to bind before it will leave perfectly free its amino-bonds for hydrolysis.[62] When we stop to consider the fact that no two proteins have the same ratio nor the same distribution of their amino-acids, we are forced to conclude that the distribution of the 35 or more uncondensed carboxyl bonds must vary in their distribution upon the molecules of different proteins. It is entirely unlikely, in view of such facts, that the distribution upon the molecules of an eagle's albumin will be just the same as upon those of a hen's albumin. We would also expect the difference to be greater in an amphibian's egg than between any two bird's eggs. Each will have a distribution giving a mosaic or pattern of its own. In neutralizing these respective mosaics of, say, the albumins of hen, eagle, and crocodile, the linked amino-acids that neutralize them must form a cast-like reverse image. A printer's form of type produces a printed page on paper that is a mirror image of his metal type. The cast of egg-albumin (its antibody) which the blood produces is a minute representative of a printed page, while the protein represents the metal types that are copied. In intracellular digestion the flow of the protoplasmic stream around the alien protein molecules, by giving up the required amino-acid side-chains that fitted the mosaic, would build the cast into specificity, although the materials used would be wholly unspecific. Let an excess be formed and let them racemise, by the formation of anti-antibodies—forms that are actually produced—and all the conditions of immune sera would exist. By having antibodies and anti-antibodies conjugated, as in the molecules of racemic acid, a supply of antibodies could be maintained in the circulation for a long time. The linking together of the amino-acids to form antibodies (polypeptids) would occur through reversed enzyme action, as in the building of proteins. The known fact that our cells use glycocoll—an amino-acid—for the purpose of closing the carboxyl bonds of benzoic and salicylic acids, thus producing hippuric and salicyluric acids, is evidence that it is a habit of the body to dispose of such bonds in this manner. If single carboxyl bonds are conjugated in this way why should not a group of 35 or more such bonds on a molecule receive similar treatment? Since most cells contain all known physiological amino-acids there can be no theoretic objection urged against the acceptance of such a view as a good working hypothesis, and thus looking upon the amboceptors as linked polypeptids of definite patterns. This would give us a reasonable explanation of the specificity of precipitins, hemolysins, cytolysins, bacteriolysins, and anaphylaxis, corresponding exactly with the known chemical facts. It introduces nothing mysterious or unusual, but deals only with conclusions that are verifiable if true and refutable if false. It already links every phase of immunochemistry into a coherent and harmonious whole. It can add greatly to the heuristic value of Ehrlich's "*Seitenkettenthcorie*" (side-chain theory), but by transferring the chains to the protein molecules instead of the cells. The cells, as such, are complex machines and not chemical entities, as some have been led to believe. They are immensely larger than molecules. Professor Adami, in his new work on pathology, presents a view of this kind.

If anaphylaxis is due to an effort of the cells to digest more alien protein than they can care for the toxic products of, we must infer that some damage is done to the cells even in the sensitizing stage. The abnormal strain should be expected to leave some more or less permanent effect. A cut

will leave a scar for life, and if healing is delayed will shed serum for a long time. Any slight injury to the lachrymal glands will on the slightest provocation cause an involuntary flow of tears, the easy repetition of which may persist for years. Catarrhal discharges follow bacterial invasions of mucous membranes, and when the enemy is not wholly dislodged will become chronic. We ought, therefore, to expect that anaphylaxis will leave more or less permanent effects upon the cells. In the forced overproduction of receptor side-chains for the construction of antibodies the current of the cell's life must be strained and altered, sometimes seriously. Analogy would lead us to expect a continuance of the production of such antibodies even after the protein that evoked them had all disappeared. If only a few of the wrongly linked amino-acids of the alien protein could not be dislodged from connection with cell receptors and could not be destroyed we should expect a long continued flow of cell receptors making in this way a fruitless effort at removing them. Weigert refers to this habit of excessive production as a biological law. Ehrlich approves of this view, but Arrhenius asserts that as a law it has no scientific standing.[64]. Such a habit, however, under the conditions named would have great selective value and has the support of analogy. The long continuance of quick anaphylactic response to alien proteins and the speedy occurrence of severe shock are evidences of a persisting abnormal condition of easily evoked irritability. The presence in the circulation of ready-formed antibodies, due to the flow of protective receptors from points of slight injury upon the cell molecules, enables the cell to ward off the more easily further injury of the same kind when a fresh supply of alien protein enters the blood. But a counter selection from the other side undoes all this. The same law of natural selection that gave the cells their antibodies gave the alien proteins their power to thwart these antibodies. Given more alien proteins than there are antibodies and complements to digest them and there is once more trouble for the irritated cells. Given the speedy digestion of these proteins and the rapidly released pro-poison acts as another stroke of fitness for the invader. It is check and counter-check at every turn along the road of progress. As soon as the antibodies convert the alien protein molecules into electrolytes, and the complement adheres, the amino-acid pro-poisons are set free in their nascency, ready to link themselves to the cell receptors. Here are discernible the tactics of war, the tactics, too, of natural selection. On one side we can see the means of protection and on the other methods of overcoming that protection, as the next move in a desperate game. The antibody is protective, but an overmultiplication of antigen (bacteria, protozoa, alien protein, etc.) more than counterbalances. The complement also protects by digesting the antigen, but this releases the unassimilable excess of pro-poison amino-acids, thus overcoming the benefit. The oxidizing enzymes seek to destroy the blockade of unassimilable material only to release the active poisons which the latter carries. This they destroy unless in excess, in which case the victory goes to the invader. But there is a leading trick in the game. It is discoverable by a study of the precipitin reaction. In order to obtain any sort of conception of how specific precipitins might be produced we are compelled to assume that *pari passu* with the evolution of species in plants and animals there has been a continuous shifting of the places where the pro-poison amino-acids are anchored upon the protein molecules. Let the cells acquire the ability of saving themselves from injury by becoming able to split the alien molecule without disturbing the pro-poisons, except when able to destroy them, and they will have gained a decided advantage in the struggle for existence. When the bacteria or other producers of alien proteins follow this up by acquiring a rearrangement of their amino-acids that places the pro-poisons in the new place of scission, the advantage the cell secured by its change is lost, and the alien protein is victor. Now let the cell vary once more in the place it selects to split the protein, and once more the bacterium must readapt itself or become extinct. By some such zigzag rhythm of change, giving an advantage first to one side and then to the other, we could have produced protein molecules, the mosaic patterns of the amino-acids of which would differ in all species, but through successive imperceptible degrees. In other words, we would have molecules that in precipitating would shade away from each other as the species shade. They would show the exact kind of precipitive specificity that alien proteins show. We see it to be a fact that their amino-acids do shift their places as race characters shift, do occupy different positions as race characters change, and that the pro-poisons always turn up, as seen by the results of digestion, in the places where they can get their death blows in early. No game of checkers could display more perfectly the moves of skilful play. What wonder that this is so when the stakes are speedy extinction from the earth for failure and a new lease of life for success. This shifting form of the game seems to be perpetual. From the lowest *Protista* to the highest *Metazoa* the same pro-poisons appear to be in use varying in quantities and distribution. Only a small amount of chemical research work has yet been done in this direction, but as far as it goes the evidence indicates that tyrosin, tryptophan, and cystin are present in the proteins of all sorts of organisms. We learn from Abderhalden that tyrosin is "the mother substance of the phenols,"[65] so that when an overworked cell tries to destroy the tyrosin by digestion there is suddenly let loose upon its protoplasm a dose of undiluted carbolic acid or of paracresol. In its deaminization, as well as in the deaminization of all amino-acids, anhydrous ammonia is freed in the same way. The lecithin of the semi-permeable membrane of the cell has a solvent effect on this ammonia and there is a tendency to produce a cytolytic soap through such solution. The presence of lipase will cause hydrolyzation of the lecithin in the presence of the ammonia, thus injuring or destroying the membrane. Such a weakening of the cell-wall would affect respiration and so cripple the defenses of the cell in the presence of a reducing agent. Accustomed as we are to the high degree of resistance displayed by our skins and mucous membranes toward chemical agents, it is difficult for us to imagine the fearful toxicity of the toxins as being due to minute amounts of reducing substances in the toxins and in ordinary proteins. Jacques Loeb tells us that "recent experiments by Castle and Elvolve have shown that substances which have a high reducing power are especially toxic,"[66] and they suspect that this is the secret of toxin poisonousness. That exceedingly minute amounts of protein do kill under anaphylactic conditions is an established fact. That these under or-

dinary conditions are perfectly harmless is known to everybody. It is not, therefore, necessary to here prove the deadliness, but to show the probable characteristic in the food to which the destructiveness that actually occurs is responsible. The amino-acids, as such, are evidently all quite harmless. Rosenau and Anderson showed that tyrosin could not produce anaphylaxis.[67] There is an immense difference between a suddenly released chemically active radical in the midst of the cell's protoplasm and an inactive crystalline mass of molecules of the same substance in the circulation. This every chemist is fully aware of. The difference is of a kind with the difference between grasping a bar of iron when red hot and grasping the same iron when cold. But it is probably not the pro-poison amino-acid radical that is the chief source of the mischief, but its still more active smaller chemical fragments. This is very evident in the case of cystin, the chief sulphur carrier of our bodies. Nothing could be more harmless than a mass of cystin, but imagine its being broken up by our cells in close proximity to the nucleus, particularly under the conditions which anaphylaxis most likely produces. Exhausted by the overtask of disposing of more alien protein than it is in the habit of having to deal with, injured in its semi-permeable membrane by the ammonia so that its supply of oxygen is seriously impaired, struggling in an effort of trying to oxidize the unusual mass of unusable material that can only be gotten rid of in that way, and with less than sufficient oxygen for normal conditions, where does it find itself if suddenly compelled to meet a freshly released quantity of nascent, electrolytic sulphur from broken up cystin? The food current flow is from the membrane to the nucleus, so that normally that sulphur could not be expected to escape reaching the same.[68]. In the absence of free oxygen what ordinarily would any chemist expect that sulphur in that place to do? Recall the intense reducing power that nascent sulphur possesses. Think of its oxygen-hunger where the only available oxygen is locked up in loose bonds with the phosphorus of the nucleic acid. Think of this nucleic acid being the key to the citadel of cell-life. In nuclein we find the chemical substance of the cell chromosomes now generally identified as the basis of heredity in all forms of living things. Think of this nuclein in nerve-structure as being our holy of holies of the soul, the parting of the ways between the living and the dead. Think of these holding their share of this cystin and seeking to get rid of it. What more natural from a chemical viewpoint than that that sulphur would seize the oxygen of the nucleic acid and convert itself into sulphurous acid. This we can readily imagine would start a reversal of the ordinary processes of life. The sulphurous acid would seize more oxygen and convert itself into sulphuric acid. Let enough of this be formed to produce the slightest possible acidity within the cell and then—goodbye to the life of that cell. Instantly by its own enzymes it would change into a digesting mass to disappear soon within the circulation in solution. It would melt away like snow before the sun. We do not know how much acid would be needed to produce such a result, but that it would most likely result as an effect of autolysis if enough acid was produced is an established fact. That in all serious infections evidences of the beginnings of autolysis are discovered is also an established fact.[69] Is it not a singular coincidence that the very results we anticipate from the facts are the exact results that are found. The nuclei of the phagocytes in such conditions have been found to show signs of great injury. The lobes increase in number, become more prominent, as if inflamed, and finally "break down or are used up in the blood."[70]. Let us add still another to the list of these remarkable coincidences. The earliest manifestation of anaphylactic shock is the rush to the lungs of the leucocytes that get the first dose of the foreign protein. This is a movement of obvious selective value, and it will not astonish anyone who has experienced the effects of breathing the fumes of burning sulphur. The instinctive gasp for breath and rush for a supply of fresh air is not unlike the actions of sufferers from anaphylactic dyspnea. Von Pirquet tells us that in the blood, after anaphylaxis, "a large number of transition-forms and large mononuclear cells at the end of the leucopenia suggest a destruction of leucocytes."[71] Before closing, in order to complete our picture as far as known facts are at present able to guide us, we must remember that under the conditions which have been described the cystin is fortified with released tryptophan. Mann says that tryptophan "has very strong reducing powers, as the chlorides of gold, platinum, and palladium are reduced" by it "in a few seconds."[72] It is certainly not difficult to see what short shrift such a substance would be likely to make in the breaking up of a cell nucleus, after learning that it can rend the salts of the noble metals asunder with apparently as much ease as the same result is obtained by an electric furnace.

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191 DEAN STREET.

THE TREATMENT OF EPILEPSY.*

BY EDWARD LIVINGSTON HUNT, M.D.,

NEW YORK,

INSTRUCTOR IN NEUROLOGY, COLUMBIA UNIVERSITY; CONSULTING NEUROLOGIST LINCOLN HOSPITAL; ATTENDING NEUROLOGIST, NEW YORK CITY HOME FOR AGED; NEUROLOGIST WORKHOUSE AND PENITENTIARY; ASSISTANT VANDERBILT CLINIC.

THE treatment of epilepsy is either surgical or medical. It is surgical, however, only when there is undisputed evidence of the presence in a given part of the brain or skull of a definite or removable source of irritation. If the epilepsy is due to the presence of a new growth, to a depressed piece of bone, or to a fracture the treatment is surgical. If, on the other hand, there is no local disease of the brain, no signs of injury to the skull, and no indications of the presence of tumor or abscess the treatment is medical. Without definite indications simple trephining does little good; the removal of a part of the cortex does harm. As only a small fraction of the cases of epilepsy require surgical measures, and as a very large proportion require medical treatment, I am going to pass over any further consideration of the surgical side of the subject and devote the paper especially to the medical treatment.

*Read before the City Hospital Alumni Association, April 19, 1911.

We have to go back almost five hundred years to find the first reports of the treatment of epilepsy. In 1536 the "Cronikles of Scotland" contain an article written by Hector Boethius, in which he describes castration as a method of cure. Even in those distant and dark ages the Scot was canny. He did not know how to castrate his epileptic women, so he incarcerated them. The followers of Æsculapius believed that venery cured epilepsy. Sinabaldi in 1643 advocated coitus as a cure for severe forms of the disease. Pliny advised the stones taken from the claws of young swallows. Antheus believed that the convulsions should be relieved by giving to the patient a dish of human brains. Another one of the ancients, Tralliarius by name, was fertile in resources. He advised the liver of a small weasel freed from bile to be taken three successive days on a fasting stomach. Still a different cure which he suggested was a preparation made from the skull of an ass. Celsus had a remedy different from any of the others. It was the warm blood of a recently slain gladiator. Speaking of it he said: "The atrocity of the disease renders more supportable the atrocity of the remedy." It is said that Abraham Boerhaave, a nephew of the celebrated Boerhaave, used it with much success in the poorhouse at Haarlem in Holland.

In the medical treatment of epilepsy are two important factors: One is the etiology, the other the epileptic habit. Every effort should be made to discover, if possible, the cause of the attacks and to differentiate the organic from the toxic and the idiopathic from either. By the epileptic habit I have reference to the tendency which the disease manifests to perpetuate itself. Each attack renders easier the next. The physician, therefore, should so apply, and so direct his treatment as to break up this tendency. The different means which he has at his disposal to treat epilepsy are numerous. The treatment, therefore, has to be considered from several points of view. I shall take it up under three headings: Hygienic, dietetic, and medicinal.

The hygienic treatment is very important; in many instances it outranks the others. It should begin with a complete history and complete physical examination; it should end with a complete régime. There is no malady the treatment of which requires more care, more skill, and more exactness than epilepsy. The physician should study the heredity, the disposition, and the temperament of his patient. He should familiarize himself with all the physical abnormalities; he should correct all the reflex sources of irritation. Eye-strain, nasal polypi, carious teeth, adenoids, a tight prepuce, pelvic disorders, intestinal worms, and flat feet must be looked for and if found promptly corrected. Any one o fthem may, in a constitution as unstable

as is that of the epileptic, serve to accentuate and augment the disorder. The next step should be to obtain control of the patient. To treat an epileptic successfully means to control him. The best way to control him is to treat him by the colony system, a system which gives the best results.

We now come to two entirely different problems—colony treatment and home treatment. The most successful colony in this country is the Craig Colony, at Sonyea, Livingston County, N. Y., where several thousand epileptics live. The Craig Colony is far too small and inadequate for its present demands. It is always full. The patient, who to-day applies for admission will probably become a member only after several months of waiting. There is no greater need in the State of New York than an endowment for a newer and larger colony for epileptics. The rich men of to-day who are seeking methods of distributing their wealth and of benefiting the unfortunate can find a noble, a real, and a lasting use in the founding of an epileptic colony. It is a charity which would not only aid the sick and brighten the lives of hundreds, but be of untold benefit to this and future generations. The ideal colony should be an estate in which the larger part of the inhabitants consist of epileptics, of which those less affected should be trained to care for the others. The estate should be extensive; it should have a farm, a garden, training schools, and cottages. The patients, to a great extent, should aid in producing what they consume. The general plan should be cooperative. In such an establishment employment more or less congenial can be found for every inhabitant. There should be rules, but few restrictions. There should be no walls and no locked doors. Everyone should be taught to respect the rights of every other member. The patients should, not only be allowed but encouraged to go about. Their interests should be fostered; their tastes cultivated; their idiosyncrasies ignored. It should be a busy community, divided into many departments, over each of which a strong hand and a pleasing personality should preside. It is always of great benefit to the epileptic to realize that he is one of a community the members of which in no sense differ from himself.

The colony tract should be large and removed from the noise and tumult of the cities, a place where the epileptic may enjoy an abundance of light and of air, together with a feeling of freedom. The patients should live in detached cottages; in this way the mild and severe cases need not come in contact. There should be schools, where those able to, may learn; there should be trade and manual training schools, work and carpenter shops, etc. Those patients for whom the outdoor life is most needed should be employed in the garden and farm. Amusements of all kinds should be provided—croquet, tennis, golf, games, concerts, and plays. The patients should be kept busy, profitably employed, and agreeably amused. The result of the colony treatment is very satisfactory; the patients love the sense of independence and isolation; they gain assurance and hope. They no longer feel that they belong to a class apart.

There are, however, many epileptics, who must live at home, who must even attend to their regular business. These, in order to do well, must be under the constant care of a physician. They must live a regular life. The only way to bring this about is to write out for them a regular plan of life. The epileptic requires a strict régime. It must cover every point in detail. Nothing must be left to chance. The day must be occupied. Plenty of outdoor life with two long walks, a cold shower in the morning, a series of occupations and another series of diversions must all be provided for and specified—each one according to the practical requirements of his own case. The patient should be encouraged to read; if possible, to study. He must do manual work. Gardening, farming, carpentering, keeping chickens, raising dogs, are all occupations which keep the epileptic interested and at the same time afford him fresh air. The man who has to live in town can shorten his hours of application and devote an hour to walking, or in bad weather to a gymnasium. In summer he can live six months in the country, where he can add golfing, croquet, and perhaps tennis, and yet be near enough to town to attend to his business. The hour for retiring and the hour for meals must be rigidly adhered to. The patient must be impressed with the importance of attention to the bowels. The bowels must be regulated; unfailing and incessant attention is here required. An overloaded colon, either from its mechanical position or its possibilities of toxic absorption, will frequently superinduce a series of attacks.

You will notice that in one of the above mentioned four rules of diet it is stated that these patients must eat slowly and rise from table hungry. The reasons for giving this so great prominence and again emphasizing it are twofold. In the first place it is characteristic of the epileptic to display little judgment. He is not a man of any discernment whatsoever, and least of all where his appetite is concerned. He will sit at table and literally devour everything put before him and then clamor for more. In the second place it is equally characteristic of these patients to eat their food rapidly and without masticating. It is by no means an unusual sight to see an epileptic take an entire slice of bread, a large piece of meat or a whole potato at one mouthful. A moment later and he swallows it. The food in this way reaches the stomach unprepared, and may very readily precipitate an attack of indigestion or induce a series of convulsions. A large appetite is symptomatic of the disease, and I believe that abnormal attacks of voracity are often the forerunners of a series of attacks. Another very important rule is that the heaviest meal should be eaten at noon. This avoids the important digestive work being done at night. The digestive tract of the epileptic is peculiarly sensitive; it takes very little to throw it out of gear, and once out it takes a long time to get it back in working order. Eating irregularly and constant nibbling between meals always is disastrous. There is no one factor which is more apt to disturb the unstable equilibrium of these patients than a disordered digestive apparatus. An infringement of the rules for diet can often be pointed to as the exciting cause of a series of attacks. As far as drinking is concerned, there is, of course, no time at which an epileptic can take the liberty of drinking even the smallest amount of alcohol.

The home surroundings of these patients must be made as attractive as possible. They are apt to consider themselves as persons apart; their egotism is very great, and they are constantly on the lookout for slights and petty insults. The result is that not only is it difficult to live with them, but that as a rule family life is detrimental to them. The least untoward circumstance, the slightest source of

irritation, may at any time disturb this very unstable and poorly balanced temperament so as to bring about a series of attacks. Another important point in the home treatment of these patients is that every effort must be made to avoid having their life appear too unusual or different. It is always detrimental to the epileptic to feel that he lives a life apart. Persistency in the régime, persistency in the hygiene, and persistency in the diet are factors essential to a successful outcome. It is always difficult for these patients to realize that because they are a little better they cannot take liberties. The epileptic is apt to go to extremes, so that when he has begun to improve he is just as much, if not more, in need of medical advice than when he is not doing well. It is the constant and close observance of a strict régime that will favor his recovery.

The second part of the treatment is the diet. Here two objects are in view: First, to eat nothing that will disturb an unstable equilibrium; and, secondly, to modify the diet so far as possible in order to permit the minimum dose of bromide. The way to attain the first object is to give the patient food in which the purin bodies are absent or nearly so, and at the same time a diet in which there is no indigestible matter left in the intestinal tract to serve as a source of irritation. The way to attain the second object is to restrict the consumption of salt. It should be kept in mind, however, that no two cases are alike and that exceptions will have to be made. A weak and anemic patient will require meat, and should have it; a hard-working epileptic will need it. The following four rules should be enforced in regard to the diet. (1) He should eat slowly and rise from table hungry. (2) The heaviest meal should be at noon, the lightest at night, and under no circumstances should he eat between meals. (3) He must not eat anything fried, no indigestible dishes, no liver, sweetbread, hot breads, veal, pork, candy, cake, pastry, and no fruits or vegetables containing indigestible seeds. (4) He must drink only milk or water.

It would seem that this plan would greatly restrict the diet and afford the patient meals neither suitable nor palatable. These two objections can be overcome. The epileptic can be taught to live comfortably on cereals, milk, fish, eggs, butter, bread, and potatoes. He can still eat many of the vegetables and fruits. He must not have vegetables and fruits containing seeds; on the other hand, tomatoes can be passed through a collender and string beans can be mashed. He may not have berries, but there are oranges and peaches, pears, and ripe apples. There are all the stewed fruits. He may not have the coarse fiber of celery or cabbage, but there are lettuce, spinach, and squash. He may have a ripe melon or grapes from which the seeds and skin have been removed. He may not eat corn on the cob with its indigestible envelope, but this can be prepared in a pudding. He may not have the raw banana abounding in granules of starch, but this by baking can be made both digestible and palatable. The absence of salt seems at first an insurmountable obstacle. This, too, can be overcome. It is surprising how many patients can easily adapt themselves to a very marked reduction of salt. Again an intelligent housewife can take the salt away, and in its place substitute cinnamon or vanilla, so as to leave the dish by no means uninviting. Condiments are better omitted, but a simple spice or the addition of a vanilla bean is far better than too much salt. Still another way to help the patient is to let him take the bromide as a salt. The exact dose can be measured, placed in a salt shaker, and can then be shaken over his vegetables. Meat he may have. Many need it. It must be well cooked, never fried, and slowly masticated.

The third part of the treatment is the medical. This consists of (1) the treatment during attacks, (2) the treatment between attacks, and (3) the treatment of status epilepticus. The treatment during an attack is simple. Prevention and expectancy describe it. Prevent the patient from injuring himself and await the completion of the fit. Something soft, preferably a piece of india rubber, should be placed between the teeth to prevent an injury to the tongue. There is always danger from suffocation if the attack occurs at night, and from drowning if it occurs in the bath. This latter may seem improbable, but it so happens that I lost a patient while she was bathing. She was alone, had an attack, and was drowned. When the attack is over the patient should be placed upon a sofa or a bed and allowed to sleep. The prevention of an immediate attack is at times possible but of questionable value. A pearl of nitrite of amyl crushed in a handkerchief, sometimes friction, or a slap on the face may arrest an impending attack. Another way to avert attacks is to apply around the limb in which the convulsive movements originate a tight ligature. This method is very ancient; it was frequently employed by physicians of the sixteenth and seventeenth centuries. The originator of it was Pelops, the master of Galen, who believed that following the aura a vapor ascended the limb to the brain.

This brings one to the consideration of the drugs which may be used in the treatment of epilepsy. There is no specific drug for epilepsy. Of all, bromide ranks first, but it is *not* a specific. It does not cure; it does ameliorate. It renders the seizures less frequent and less severe. To attain the best results it must be begun early, continued long, and never stopped abruptly. The use of bromide in epilepsy dates back more than half a century. In one of Gowers' articles occurs this interesting little paragraph: "Bromide of potassium was introduced into the British Pharmacopœia in 1835, but was removed as useless in 1851. Six years later, or, to be exact, in 1857, Sir Charles Locock advocated its use in epilepsy occurring at the menstrual periods. It was four years later, in 1861, that Sir Samuel Wilks testified to its value in ordinary epilepsy. Then, in 1862, Dr. Goddard Rogers published some cases successfully treated by bromide of ammonium, and in 1863 Dr. Ramskill reported a single case treated by bromide of potassium at the Queen Square Hospital. In 1864 Dr. McDonnell advocated its use. Thereafter it became general, so that to Locock and McDonnell should the credit be given." The bromides should never be considered as the cure for the disease, only as an adjuvant. They should never be given with the object of controlling the attacks, only as an *aid* in so doing. They should never be given indiscriminately. It should be borne in mind that a prolonged or excessive use of bromide may give rise to symptoms which are in themselves more detrimental than the disease. A daily dosage of more than sixty grains is excessive and apt to do harm. It is far better for the patient to suffer from epilepsy than bromism.

I have previously said that the most efficacious way to restrict the consumption of bromide is to

restrict the consumption of salt. On the importance of this point all authorities are not united. Many do approve it. It should always be borne in mind that by too great a restriction of salt one may err. Weyse, the German observer, has studied this question at some length. He believes that the symptoms of bromism have been erroneously ascribed to an overdose of bromide, that they are in reality due to chloride hunger. His proof lies in the fact that he has relieved the symptoms of bromism by the administration of the chlorides. To my mind a patient on a salt-free diet should be carefully watched; on the other hand, I do believe that a restriction of salt means a restriction of bromide. One of the secrets of bromide administration is that once having begun the administration of bromide it must never be stopped abruptly. A sudden decrease of bromide means a sudden increase of epilepsy. Bromide should be given over a long period of time—a very long period of time. As the length of time increases the efficacy of the drug increases. The hour of administration is important; the best results come when the drug is given three or four hours before the expected attack. If the seizures are nocturnal the bromide should be given a little before retiring; if the seizures are diurnal the bromide should be given on rising. The question is often asked: which preparation is the best? I should say that each case is a law unto itself. It is best to try the different preparations and then select the one which gives the best all-around results, not necessarily that one which results in the fewest attacks, but the one which attacks the patient in the fewest ways. As a rule the sodium salt is the most effective as it is the least depressant; the strontium is the least effective, but also the least apt to produce an acne. The bromides give better results when used in combination. Two bromides are better than one. The great disadvantages of bromide are the depression (both mental and physical), the loss of memory, and the rash. A marked loss of memory is oftener due to bromide than to epilepsy. The rash can often be held at bay by the free use of hot baths and, as Echeverria suggested in 1870, by the addition of a few drops of arsenic.

There are many other ways of giving the bromides and many different preparations have been devised. Then, too, the bromides may be given in various and sundry combinations, both with each other and in conjunction with other drugs such as digitalis for those cases that have low pressure or weak heart muscle, and with nux vomica for those who have stomachic disturbances, etc. A well-known treatment is a combination of opium and bromide. This is known as the Flechsig treatment; it consists in keeping the patient well under the influence of the opium for some weeks, then suddenly withdrawing it and substituting large doses of bromide. This Flechsig treatment has been recommended by Peterson in old and obstinate cases, where all other means have failed. Codeine has been tried in conjunction with bromide and is in certain cases of value.

Next to bromide the drug which has powers of most value is borax It may be given in twenty-grain doses three times a day, or if used in combination with bromide in larger dosage. To Gowers is due the credit of introducing borax. Another drug which has been tried is nitroglycerine, where there is the added element of contracted arteries or high blood-pressure. Horse nettle was introduced by Napier; the tincture of simulo has been used. Then there is antipyrine, acetanilid, and phenacetin. Their use is laregly empirical. With their administration the tendency to cardiac depression should always be borne in mind. These are all poor substitutes for the bromides. Chloral and chloroform should be mentioned. Their value is more in acute conditions than in the routine of regular treatment. Calcium lactate has been mentioned by an English observer. He has reported several cases as being helped by twenty grains three times a day. Later observers have verified this. Dr. Starr, who is with us to-night, has tried it. He will, I hope, later on tell us how he regards it. The use of belladonna in epilepsy dates from the seventeenth century. It was recommended by Mardorf, in 1891, and later was a favorite remedy of Trousseau. Since the advent of bromide its use has become less general. It is of most avail in cases of petit mal and those complicated with nocturnal incontinence. The best results are obtained where it is given in conjunction with the bromides. The best preparation is the tincture in doses of from five to ten minims. Digitalis is useful. The best results are obtained by combining it with bromide. As far back as 1640 Parkinson advocated its use, as we see from reading this extract on foxglove from his "Theatre of Plants": It hath beene of later experience found also to be effectuall against the Falling-sickness, that divers have been cured thereby; for after the taking of the decoction of two handfulls thereof, with foure ounces of Pollipody, of the oakbruised made in Ale, that they have been troubled with that disease 26 yeares, and have fallen once in a weeke or two or three times in a moneth, have not fallen once in 14 or 15 moneths, that is until the writing hereof, which I think may be said to be an absolute cure, not to be presumed that after so long stay it should returne againe."

Let me sum up the drug question for you and try to put the conclusion in a few wrds.

Bromide is the drug *par excellence* for use in epilepsy. It should be tried in different combinations and with different preparations. If, after repeated trials, it is found that none of the preparations prove effective, the physician should then go through the list of available remedies, trying each in turn. Resort to opium should not be had unless all else fails. As to the use of drugs other than those I have mentioned, the physician should be as free and ready to use them as in any other condition. The epileptic often suffers from anemia and then should have iron; he often suffers from irregular and intermittent cardiac action and then should have digitalis or strophanthin; he often suffers from lowered resistance and a general run-down condition and then should have strychnine.

Status.—Status is a temporary state, which occurs in the course of the disease. It has been called the climax of epilepsy. A satisfactory definition is difficult. It is a condition in which the attacks occur wth so great frequency that there is no return to consciousness between them, but coma and exhaustion are continuous. The treatment of status involves the treatment of threatened status, or status itself, and of the stuporous stage. The treatment of threatened status is simply the treatment of an exaggerated and accentuated epilepsy. When it is seen that the attacks are becoming more and more frequent and increasingly violent it is then time to realize that danger is impending and that status threatens. There is but one course to pursue,

and that is to increase the bromides, hoping in this way to avert the threatened catastrophe. Chloral and opium may be added and the whole given by rectum. If, however, the increased administration of the bromides fails to bring the necessary reduction and the attacks increase, the convulsive stage has been reached. It is then that the threatened condition has merged into the real. The patient in the convulsive stage requires heroic treatment. The attacks now follow each other without intermission; the last convulsion, with its attendant exhaustion, has not passed before the next announces itself. In this stage the physician must rely entirely upon rectal medication. His sheet anchor now is chloral. It may be augmented with opium or bromide. Thirty grains of chloral with a dram of morphine solution (U. S. P.) is a safe dose. Chloroform may be resorted to as a more immediate remedy. From then on the treatment should be guided by the condition of the temperature, pulse, and respiration. As there is generally difficulty in swallowing it is best to stop the administration of nourishment. The condition of the heart must now be closely watched and the tendency to overdosage guarded against. The condition rapidly merges into the stage of coma and exhaustion. Here the treatment should be supportive and directed to the maintenance of the heart action. The patient is exhausted, vitality is lowered, and every possible means should be resorted to: strychnia, digitalis, whiskey, and the injection of salt solution. Oxygen and faradization of the phrenic nerve may be resorted to.

In the treatment of epilepsy cures are rare, but many practitioners can cite examples. I think it is best to start out with the idea not of curing but of relieving and of reducing the number and severity of the attacks. The idea that I have hoped to convey is that the treatment of epilepsy is a problem of no mean size. He who undertakes to care for an epileptic must realize that he has a problem which will require all the skill, all the tact, all the perseverance, and all the knowledge which he can possibly acquire. He must be prepared for relapses and disappointments. In almost every case, however, he will be rewarded by seeing a considerable improvement. The criticism will no doubt be made that I have outlined a treatment suitable only for the man of independent means and not for the worker, the city dweller, or the submerged element. This criticism at first sight may appear true. A close inspection, however, will show that the treatment of epilepsy can be modified to conform to all but the most ignorant. The lowest order should not attempt to stay at home. For them the competition and the stress of life are too great. Their place is in the colony. The man of moderate means can follow his calling in a smaller town, the man with no especial equipment can keep a country store or do gardening. In this way he can have the benefits of the outdoor life, the exercise, and the careful régime.

In conclusion it may be stated that it is neither the quantity nor the quality of the bromide that is going to help the patient. It really matters very little whether one gives him the warm blood of the gladiator or the warm blood of the ox. The main object should be to find the cause of the epilepsy and remove that. If on the other hand no cause exists, if there is no new growth, no depressed fracture, which surgery can reach, if there is no toxic factor which a temperate life can remedy, if there is no organic disease which medicine can alleviate, then the treatment must be one founded on common sense. The aids which one will then have to call in will be hygiene, diet, and lastly drugs.

54 West Fiftieth Street.

FACT AND FANCY ABOUT THE HOOKWORM.*

By HENRY J. NICHOLS,

CAPTAIN, MEDICAL CORPS, U. S. ARMY.

The modern "world movement," recently so brilliantly outlined by our distinguished ex-President, is particularly noticeable in medicine. As physicians we are interested not only in our own specialties or in local medical conditions, but we have some real curiosity and knowledge about sleeping sickness in Africa, pneumonic plague in China, and especially about various health movements in our own country and dependencies. The modern physician can say "Nihil morbi est alienum a me" with some real meaning, because never before have we penetrated so far into the subtle processes of disease and never before have we looked out on such a wide horizon in the geographical distribution of disease.

It is because of this cosmopolitan spirit in our profession that I venture to present this evening some features of hookworm infection. The hookworm does not prevail to any appreciable extent in New York State, and from its nature cannot gain much of a foothold here. Imported cases, of course, occur and it is, of course, desirable that such cases be recognized. In 1897 Dr. Mohlau of Buffalo recorded a severe case in an Italian laborer, and Captain Siler, U. S. Army, has recently found 85 per cent. of Southern born recruits more or less infected at Fort Slocum, N. Y. Occasionally, too, these imported cases may give rise to an indigenous infection. Dr. Mohlau mentions two cases of this kind, one in an adult and one in a child, who were probably infected in a brickyard where Italians worked. In 1910 Brooks recorded a case in an American 55 years old, who had never been out of New York and Pennsylvania, and who was probably infected while working in trenches at Brewster, N. Y. This case went through three hospitals with a diagnosis of pernicious anemia; his hemoglobin was 25 per cent., his eosinophiles 21 per cent., and a considerable number of parasites were recovered. But the cases which are infected in this latitude are rare and must necessarily be rare. Hence there is no danger that this infection will become widespread in this or other Northern States.

As Boycott has clearly pointed out, three conditions are necessary for the spread of hookworm disease: (1) a certain degree of temperature about $68° = 90°$, (2) a certain degree of moisture, (3) fecal contamination of the ground; and these conditions are found only in tropical and subtropical regions. When the temperature here is suitable for the hatching out and development of the embryo hookworm, the weather is usually too dry; and while the sanitary arrangements, especially in the country districts of New York State, are probably not ideal, they are not to be classed with those in the Tropics. In one town of 6,000 inhabitants in the Philippines we found that 45 per cent. of the houses had no provision whatever for the disposal of excreta and that only 6 per cent. had an arrange-

*Read before the Academy of Medicine, Syracuse, N. Y., May 2, 1911. Published with permission of the Surgeon-General U. S. Army.

ment which was at all satisfactory. In six Southern States Stiles found that of 1,700 farmhouses occupied by whites 35 per cent. had no privy, and of 1,600 houses occupied by negroes, 80 per cent. had no privy—with an average of 57 per cent. of households whose wastes were necessarily deposited on top of the ground. In England and Northern Europe the disease is found only among mine workers and only in particular mines where the temperature, moisture, and habits of the men are such as to allow the parasite to go through its extracorporeal cycle. In 1903 Dr. Wainwright and I examined the stools of 400 miners from many mines in the heart of the anthracite coal region and found only one case of infection, which was probably an importation.

If, therefore, from the standpoint of actual experience the Northern practitioner must look on the hookworm as more or less of a curiosity, what should be his attitude from the standpoint of scientific and patriotic interest? This question can best be answered by reviewing our own ample experience, as a country, with hookworm infection.

In the year following the Spanish War a devastating hurricane visited Porto Rico, and Captain Bailey K. Ashford of the Army Medical Corps was directed to establish a field hospital at Ponce to care for the victims who could not be accommodated in the hospitals of the city. Captain Ashford says. "Fully three-fourths of those admitted were suffering from anemia, which was usually attributed to faulty diet. Later, as generous food with iron and arsenic failed to cure, the condition was attributed to malaria, climate, lack of hygiene, etc., all of which proved upon investigation to be inadequate causes." Some physicians declared the condition to be pernicious anemia and, with this idea in mind, Ashford examined the blood. He was struck with the high percentage of eosinophiles and, remembering the association of trichinosis and eosinophilia, he began to examine the feces for parasites and immediately found eggs which he identified as those of the hookworm. This was a fairly simple procedure, but it meant much for the 600,000 rural inhabitants of Porto Rico. As a result of the subsequent work of Ashford and his associates, it was shown that 90 per cent. of the rural population was infected with hookworm and that at least 50 per cent. were damaged by the infection, having a hemoglobin content of 50 per cent. or less. Out of 4,500 cases of anemia only 6 were due to other causes than the hookworm. The number of parasites in these cases ran into the hundreds and thousands. Thirty per cent. of all deaths were due to the hookworm. But since these facts were established 300,000 persons have been treated, a great majority of them successfully, and the yearly death rate has fallen by 5 per 1,000. It may be accepted as solid fact that hookworm disease is a serious matter in Porto Rico and that much may be expected from treatment and measures to prevent infection in that island.

As a contrast let us look at the situation in the Philippines. It was, of course, a natural result of the success of the hookworm campaign in Porto Rico that health officers should take up the question of a similar campaign in the Philippines. Thus the Director of Health stated in his report for 1908: "This office is convinced that the proverbial reputation for indolence gained by natives of tropical countries is due, in a large measure, to hookworm disease," and again, "it is against this condition that special efforts are to be directed and from which the greatest measure of success is to be expected."

Is this fact or fancy? In 1909 a party of which I was a member made a medical survey of a Filipino town of 6,000 inhabitants. Among other examinations were those of 1,000 persons of all ages for hookworm ova. Only 11.6 per cent. were found to harbor the parasite, and among those infected we were unable to find a single instance of anemia or to observe that they had more of the proverbial laziness than those noninfected. Dr. Garrison of the Navy, who was in charge of this work, summarized it by saying: "The absence of clinical manifestations, the small number of worms found in infected cases, and the low percentage infected indicate that the hookworm plays a very small part in the sanitary conditions encountered in this typical Filipino town." Dr. Rissler has since then reported the results of nearly 10,000 examinations in three other parts of the islands. In one place he found 11 per cent., in another 8 per cent., and in a third 45 per cent. infected. He says: "Cases exhibiting typical symptoms of uncinariasis are rare. A few persons have complained of discomfort in the abdominal region, which has been relieved entirely by treatment which resulted in the expulsion of hookworms. Several cases in the Santa Isabel hacienda were picked out by the manager as being typically lazy, but upon examination they were not found to harbor the parasite. The absence of clinical symptoms was probably due to the paucity of the infecting worms. In most cases only five or ten were expelled after treatment, in others only two or three." Everyone who has had actual experience with cases in the Philippines has come to the same conclusion, namely, that, while a number of persons carry the parasite, genuine cases of hookworm disease are not numerous. I have seen several such cases both in white soldiers and in natives with parasite counts in the neighborhood of 100, but in the majority of persons examined, whether clinically or at autopsy, the count has been nearer 10. The facts of the case are that cholera, malaria, dysentery, beriberi, tuberculosis, leprosy, and smallpox are much more important diseases in the Philippines than hookworm disease and that much more is to be expected from measures against them than from measures against the hookworm, as, indeed, has since been stated by the Director of Health.

What is the reason for such a difference in regard to the same infection between Porto Rico and the Philippines? It is largely a question of degree; a question of the number of parasites. As Ashford says: "The essential feature is the number of worms contained in an individual more than all other modifying factors put together." If a person harbors 5 or 10 hookworms, by a careful search ova can be found and the person can be said to be infected, but he will not suffer from anemia or any other symptoms. As Manson says: "there may be dozens of ankylostomes in the intestine without appreciable anemia, or, indeed, symptoms of any description whatever." On the other hand, if an individual harbors many parasites, such as fifty, a hundred, or more, anemia and its sequelæ will develop. Boycott has well emphasized this point by calling his recent lectures "ankylostome infection" rather than "ankylostome disease." It is not neces-

sary for our purpose to go further into an explanation of the difference in degree of infection between Porto Rico and the Philippines except to emphasize the fact that heavy infections are usually the result of repeated infections. In this connection it should be remembered that for each adult worm in the intestine a separate embryo must enter the body usually through the skin.The hookworm is not like the malaria plasmodium and the ameba, which multiply tremendously after introduction. This is an elementary fact, but it is lost sight of at times, as by a physician in charge of some of the hookworm work in the Philippines who thought that, even if a person had only a few parasites at a given time, he might, in a few months, have many hundreds. This is impossible. Constant reinfection, therefore, through exposure of the feet or hands to contaminated ground is most favorable to heavy infection and real damage.

What, now, is the condition in our Southern States? Stiles has been foremost in urging the importance of hookworm infection in the South and he has shown that the negro is probably the reservoir of the parasite and the chief contaminator of the soil. The most prevalent parasite is *Necator americanus,* which the negro probably brought over from Africa in the slave days, as it has been found among the natives in several parts of Africa. Is the condition in our Southern States like that in Porto Rico or like that in the Philippines or intermediate between the two? The boards of health of the Southern States, in conjunction with the Rockefeller Commission, have begun to make systematic examinations, and from their work it is becoming evident that the condition is an intermediate one. In certain parts of North and South Carolina, Georgia, Alabama, and Mississippi, along the coast, the general infection has been found to be high, 40-80 per cent., approximating the condition in Porto Rico. In this area a good deal of real damage must and does occur and much may be expected from treatment and from prophylactic measures. In other areas of the same States, toward the mountains, the infection is low, under 20 per cent., a condition more like that in the Philippines, and in this area it may reasonably be expected that the hookworm is of much less importance than several other disease-producing parasites. To have much real hookworm disease it is necessary that the general level of infection should be high. For example, at the Dolcoath mine in Wales, Boycott found 95 per cent. infected and only 5 per cent. sick; in the Grenville mines 12½ per cent. of 800 men were infected and none were sick. As I have tried to show the essential point is the degree of infection, which is or should be a familiar conception in medicine. All of us at one time or another have an occasional organism in our blood streams, but we are not on this account put down as suffering from septicemia. In the surgically clean wound which heals by first intention a certain number of organisms can be found by section of the scar, but we do not call this abscess formation.

This distinction between hookworm infection and hookworm disease may be difficult for the lay mind to grasp, but there is no reason why it should not be thoroughly understood by the profession because it is of fundamental importance, clinically. From the standpoint of spread of the disease light infections must be reckoned with, but from the standpoint of a diagnosis and treatment of a given patient, light infections are practically negligible. It is needless to say that this distinction has been entirely lost sight of by the laity and by many physicians in regard to the condition in the Southern States. All cases of infection have been lumped together and all sorts of peculiar symptoms have been attributed to this parasite. It has even been asserted that the only trouble with the "poor white trash" is that they have hookworms. In short, there is plenty of evidence that enthusiasm for something new has in many instances outrun scientific candor and sound clinical conclusions. The chief reason is that the agitation about the hookworm has been based largely on the mere finding of ova in the feces without regard to any correlation between the presence of parasite and any tangible evidence of disease. Thus, whole schools, teachers and all, have been reported as infected without any information as to whether these persons incidentally carried a few negligible parasites in their intestines or whether the parasites had been or were, at the time, present in sufficient numbers to cause damage. We have seen something of light infections from the South in the Army. Many recruits carry a certain number of worms, but as is stated in the Surgeon-General's report the height and weight of these men is above that of all recruits taken together, and clinical symptoms referable to the hookworm are rare. It would be ungracious and unfair to try to minimize the efforts of those who are working against the hookworm where it is doing real damage. But it is equally poor clinical medicine, poor ethics and poor policy to ascribe to the hookworm damage which either does not exist or is due to other causes. There are plenty of real ailments against which to work without wasting time on windmills and I am convinced that in many parts of the South, malaria, typhoid fever, and dysentery are doing more real damage than the hookworm and that the most important result of efforts against the hookworm, along the line of the proper disposal of excreta, will be the indirect effect on the reduction of typhoid fever and dysentery, and that the general stimulus toward cleaning up things may have the same effect in regard to malaria.

In his letter of invitation Dr, Steensland mentioned a desire to have a paper especially on the clinical aspect of hookworm disease and this has been rather a roundabout way to arrive at this aspect, but I felt that I could not do better than give this view of hookworm infection as a background for proper clinical work, because these general views have a direct application in a given case. For example, not long ago we were consulted by an officer who had been in the Philippines and Africa under field conditions. He was suffering from insomnia and thought he might have hookworms. Examination of the blood was negative, while examination of his stool showed a few hookworm eggs, and after a course of thymol eight worms were obtained. No more eggs were found and the symptoms did not abate. As a matter of fact, we knew from other examinations that we were dealing with diabetes and pursued the hookworms simply to satisfy the patient. If a patient is anemic or has palpitation, dizziness, and shortness of breath and edema, the proper rule of clinical medicine is a thorough physical examination and a blood examination as well as an examination of the stool. If the heart is sound, if no malarial organisms are

found, and if an eosinophilia is found, the stools can be examined with intelligence, and if eggs are found in abundance or the use of thymol results in the expulsion of an appreciable number of worms it may be safe to diagnose hookworm disease. On the other hand I have seen an eosinophilia over 30 per cent. as a result of a severe skin infection with fungi, while the stool was clear of all parasites. Other intestinal parasites, too, cause eosinophilia.

In regard to the many bizarre symptoms that have been ascribed to the hookworm, a remark by Dr. Byrd, Assistant Health Officer of Florida, is apropos. "The safest rule to follow is: In all cases of anemia that cannot be otherwise satisfactorily accountd for, examine for hookworms. Don't be thrown off guard looking for dryness of hair and skin which may be as moist as your own; protrusion of the abdomen which may be straight as a bean pole; history of ground itch which you may or may not get; or any other of the hundred and one symptoms with which the literature is teaming, but examine the stool at once for eggs and settle the question." And it may be added, after eggs are found, be sure from blood examination, count of parasites, or improvement of symptoms after treatment that the real trouble is the hookworm before closing the case.

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RECENT REPAIR OF THE CERVIX.

By GRANT GOULD SPEER, M.D.,
LOS ANGELES, CAL.

So much has been and is still being written about the recent repair of the perineum that it brings out in sharp contrast the paucity of literature on the closely related operation, the recent repair of the lacerated cervix. Such complete papers as have been written, though based upon successful personal experience, in some cases citing a definite number of operations and their results, have not established this practice as one in obstetrical routine. In view of the long list of sequelæ following the neglect of this most common accident, we feel there must be and is a remedy to be invoked without waiting months or years before the injury is repaired; and that these papers, few as they are, have not had the effect they should have had in causing attention to be given the cervix immediately after childbirth.

The following statistics are not claimed to be complete, as in the last year a new interest appears to have been aroused in this work, and probably there is much to be gathered and much to be reported.

De Neen[1], quoting from Mundé, says that of 2,500 women giving birth to one or more children, 25 per cent. had well marked laceration of cervix, and 50 per cent. of these needed treatment: from Goodell, one in six suffering from uterine disease had ununited laceration of the cervix; and from Ashton, 50 per cent. of lacerations heal spontaneously.

Edward S. Gushee[2], reports for the Lying-in-Hospital, New York City, 1909, in 1,000 cases, 807 lacerated, or 80.7 per cent.; 154 intact; 39 unobserved. Immediate repair, 11, or 1.123 per cent., in all except one for profuse hemorrhage. Two died from hemorrhage.

Stricker Coles[3], Jefferson Maternity Hospital, 1906, reports 2,200 confinements; immediate repair was made in 181, or 1 in 12. All recovered. In 2 cases there was nonunion; in 20 cases, union was fair; in 159, union was good.

Edward McGuire[4] in 1905 reported 28 cases; 23, union good. In two cases infection occurred. All the patients were operated on at home.

I have a record of 22 cases, of which three were septic; one of these began labor with chills and fever; one had a rise of temperature one hour after delivery, and one had fever, due to exposures incident to delivery and after care. All three were curretted with the stitches in situ. In two the results were good; the third had had a recent syphilis and suffered two subsequent miscarriages requiring curettage. Suffering from pelvic trouble, she applied to another physician, who performed a more or less extensive operative repair. Three of the operations were partial failures. The first is narrated above. The second appeared to heal well, but in about two years presented a keloid growth where a small tear had apparently been neglected; this was removed by a simple V-incision. The third was an extensive unilateral tear through the whole of the cervix into the wall of the vagina. This healed through the greater part of its length, but left considerable scar at the external os, followed by subinvolution of the uterus, which will probably require a future trachelorrhaphy. Of deaths there were none. At least five of the women have since given birth to as many healthy children.

By recent repair of the cervix we mean a repair in the puerperium; that is, a repair instituted at any time after the expulsion of the placenta up to the fifteenth day. The reasons for a repair at this time are immediate and remote. The most obvious of the immediate reasons are, in the order of importance: hemorrhage, sepsis, subinvolution, and after-pains. The most prolific cause of post-partum hemorrhage is a gross tear of the cervix. The writer holds this to be true so firmly that he doubts the existence of the so-called atony of the uterus, in which, fully emptied and untorn, the organ refuses to contract. If existence of atony be granted it must be in uterii rapidly emptied by force, in premature labors, and in patients of hemophiliac tendencies.

The most obvious cause of hemorrhage following laceration is the involvement of the cervical portion of the uterine artery, which no doubt is of rather unusual occurrence. The next that attracts our attention is the tearing through the muscular fibres of the cervix. These in the gravid uterus run transversely, interlacing before and behind; and as most lacerations are lateral, rarely ever anterior or posterior, it will be seen that these muscular fibres are torn through at what may be termed the belly of the muscle. These two lateral muscular walls, reinforced at the inner and outer os, form the

point toward which all the contracting forces of the uterus are directed. As the fibres of the uterus contract from above downward, the motion ends in the cervix, where the contraction is sustained by the intrinsic nerve-supply that controls the sphincter action of the internal and external os. But if one or both are torn through there is nothing to sustain the completed contraction of the uterus; it is rendered futile and the wave of contraction again takes place, or the uterus remains uncontracted—the so-called partial or complete atony. The paralyzing effect upon the intrinsic nerves of the cervix might here demand our attention were it not that in all labors the cervix receives great punishment followed by no paralysis and no atony. In hemorrhage only such lacerations are taken into consideration as destroy the muscular fibres of the cervix. But in view of infection, it is apparent that each individual crack may be the focus for the reception of septic material, the importance of these smaller injuries increasing with their number and extent. The futility of repairing the smaller ones is apparent, the dressing of which is left to the secretions applied by nature, and only those demand attention that by their size leave large uncovered surfaces. Subinvolution may occur from other causes than the one under discussion; but it is apparent that a laceration of any size in the cervix may interfere with the lymphatic, blood, and nerve-supply, and thus retard the absorption of the redundant uterine tissue. This includes for consideration the congestion and resulting edema that follow any injury, and especially that of a mucus-covered organ like the uterus. After-pains do not seem to be well understood, but are generally ascribed to the retention of blood or secretions in the body of the uterus. These pains seem to occur more often in the multipara than in the primipara. It might then be logically inferred that the inability of the uterus to keep its cavity clear of debris by properly contracting, if this be the cause of after-pains, is due to previous injuries to the cervix.

The remote effects of a laceration at childbirth are too many and too well recognized to be mentioned specifically at this time, but, briefly stated, are those which may be corrected by a well-directed trachelorrhaphy that reduces an hypertrophied, everted, and eroded cervix, presenting masses of scar tissue. to its normal size and shape.

In lacerations of the cervix we may have hemorrhage, the inclination of the empty uterus to dilate, and we have assumed the after-pains; but in many cases there may be no symptoms to be discovered short of a physical examination, the simplest of which is by means of the aseptic finger. When the placenta is expelled, the uterus may be induced by proper stimulation to contract. At this time the cervix forms a well marked ring or fold around the now large os, around which the finger may be swept to find if this ring has a well rounded border and is perfect on all sides. If the finger slips through this fold or encounters a softened or roughened spot it may be considered that a laceration has occurred. But a digital examination is not always sufficient to discover a laceration. It is often necessary to expose the cervix with a speculum, wipe away the secretions, and after drawing one part after another from out of the folds of the vagina, carefully inspect the whole circumference of the cervix. It has been laid down that laceration of one-half inch or more should be repaired, but a better rule is to repair even lesser ones if they involve the tissue sufficiently to threaten the formation of scar tissue, *e. g.*, when the tear is ragged or through the circular fibres on the edge of the os.

Many of these lacerations would recover without assistance; the lochia bathes them in an emollient dressing and the clinging walls of the vagina holds the severed parts together. So will many rents of the perineum recover if kept clean and the patient quiet. But in this day of exact surgery we do not think kindly of one who does not attend to the perineum, and why should we excuse one who neglects the cervix?

The recent repair of the cervix may be immediate or postponed. The immediate is performed as a continuation of the delivery following the expulsion of the placenta; the postponed may take place as late as the fifteenth day. There are minor objections to both of these periods as being the extreme. If done in all cases immediately, the patient and attendant are both weary; there is rather an excess of blood; the parts are all relaxed, and it is often night, when the light is bad. If left alone until the fifteenth day the processes of healing have begun, the granulations have to be cut away, and the operation takes on the character of the secondary trachelorrhaphy, though not so difficult on patient or operator. Done at this late day it keeps the patient in bed long after she might be up and about, and deprives her of the early benefit such an operation insures to the involuting uterus.

The writer's first cases, about six years ago, were all done by election immediately after expulsion of the placenta. The results generally were good in that they were nearly perfect; but there is apt to be a fault at the edge of the os. By this is meant that healing was good until the inner end of the incision, which showed a little notch caused, perhaps, by a turning in of the soft mucous membrane, thus preventing healing at that point.

Further experience seems to point to a compromise between the postponed operation, of the fifteenth day, and the immediate, directly following the expulsion of the placenta. A colleague of mine, who is doing this operation frequently, but whose statistics are not at hand, is very successful in selecting the seventh day, when he does the operation without an anesthetic. The writer prefers a much shorter time to elapse, say, within 24 to 36 hours, after the patient has rested and suitable light and preparations can be obtained.

The technique is very simple. The patient is placed in a lithotomy position, a Sims speculum is introduced and drawn down until the cervix is exposed, and the edge of the cervix on either side of laceration is grasped by mouse-toothed hemostatic forceps or small tenacula. If the tear is recent and straight the forceps, one on each side, are brought down exactly together and directly opposite one another, which will bring the edges of the tear in exact apposition. A rather large, full curved cervix needle, carrying a silkworm-gut ligature, is carried well up the tear towards the vaginal fornix and passed through all coats of the uterus on one side of the tear and back through the other; the two ends of the ligature are held temporarily in a hemostat; another is placed below this in the same manner and so continued until the last one is placed exactly through the two corners grasped by the tenacula. Two to four ligatures are usually sufficient. After all are in place, the upper one is tied first, then the others in the order of their insertion, great care being taken that there is no infolding of the mucous membrane anywhere along the line of suture, and that the corners of the tear come exactly

together to prevent a fault or notch occurring here through not healing. The ligatures are now all brought into a bundle and tied together, and the ends are cut off about an inch and a half from the uterus. Each laceration found is repaired in the same manner. The uterus is allowed to recede, care being taken that it assumes a normal position high up in the pelvis. No dressing is applied except the vulva pad. The patient is allowed to continue her lying-in period, and if the operation is performed early she is allowed to get up on the tenth or twelfth day, as though no repair had been attempted. The sutures are allowed to remain one month, and are then removed at home or at office, as is found most convenient.

In case the tear is ragged, or the torn surface has a glazed or granular condition, as in the postponed operation, the opposed surfaces to be united must be carefully trimmed or freshened with the scissors. The tissues at this time are very soft and this is easily accomplished. In fact, old lacerations may be repaired at this time. The writer has attempted this but once, and that with perfect success. A multipara, fourth child, showed a marked tendency to heavy hemorrhage as soon as the placenta had been delivered. An examination next morning showed a very small tear, but situated at the bottom of an old unilateral tear of the right side, which carried it close up to the circulatory artery and had invaded some of the larger branches. On the fourth day both sides of the old tear were freshened from the edge of the cervix down to the new wound, and the parts were brought together with silkworm gut, as described. Four weeks later the sutures were removed and revealed an os that, aside from a fine linear scar and stitch marks, was nullipara in appearance. The contraindications to this operation are in those cases in which the cervix has received severe punishment and there has been a great loss of tissue that prevents the apposition of the parts, or in which the vitality of the tissue has been so lowered that necrosis is threatened.

The most important objections raised against this operation are the danger of sepsis and the possible loosening of the stitches through involution of the uterus. Hirst[5] has pointed out that there is little danger of infection after the fifth day. In my 22 cases all the operations were done at home and two, at least, of the three infections occurred in spite of, and were not the result of, the operation. In none of the cases where the stitches were properly placed was there any loosening. The involution and contraction of the cervix appeared to take place symmetrically and the stitches when taken out appeared very much the same as in a secondary operation performed a year or more after delivery. In no case was there absolutely nonunion, and even in those cases in which the results were not perfect, there was less eversion of the cervix and thickness of scar tissue than one would expect from the extent of the injury if left to nature. Taken in all their aspects, the results of this operation have been most gratifying to the patient and operator. When one is familiar with technique the end-results should show a less number of failures than in repair of the perineum under the same conditions.

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SOME PERSONAL REMINISCENCES OF LORD LISTER.*

By L. L. HILL, M.D., LL.D.,

MONTGOMERY, ALA.

An ever increasing admiration for my venerated master caused me several years ago to write some personal reminiscences of Lord Lister, which I have been told would be of interest to this association, and thinking perhaps, to use the eloquent language of Edmund Owen, some stray thought may be set free—as when a flint strikes steel—which falling upon the mental tinder of some younger man may cause the springing up in him of a flame to illuminate his studious path and help him onward. Having finished my studies in New York and Philadelphia, I had a great desire to visit London and see Mr. Lister, with whose work I was familiar and whose great name was then claimed by England, but has since become a common heritage. On the first day of September, 1883, I boarded a ship at New York for Liverpool. The day was bright, the air balmy, and the ocean spread out before us like a quiet greenish mirror, bounded to the eye only by a constantly receding horizon. For the first few days the ocean seemed to be the home of halcyon tranquillity—"a sabbath of repose." The very winds seemed quietly to give the waves a kiss of peace, and, with a playful finger, to toy with the locks of the voyagers, and then, with a friendly hand, to press upon the canvas of the ship, as if to aid the struggling steam to put her quickly and safely into port. On the morning of the fourth day out our ship began to rock uncomfortably. Æolus had struck his trident upon a small cave of the winds and a brisk breeze had started. Mercury was falling rapidly; orders were given to furl the sails and lash them securely to the yardarms. Clouds were gathering and forming like men-of-war in battle array; the zigzag lightning ran from one to another, as if they were fiery chains to bind them together in solid phalanx; a lurid hue lit up the sky as if a volcano struggled within its bosom, and the very ocean trembled and the air quivered under the rumbling thunder. Our noble ship had shrunk into a cork; a sharp narrow wave would lift her amidship and she would seem in danger of breaking in two, and her propeller would vainly beat the air or struggle with the waves, wholly submerged. The billows broke over the ship's deck, carrying away the balustrade and life boats. Often she was clear under the waves, but she would bravely rise again, as if resolved never to go down with her precious living freight. Virgil must have been an old sea dog as well as one of the greatest epic poets, as his description of the storm upon the Trojans was fully realized: "For, now in a trough of the sea, we seemed to be at the bottom of the ocean, and again, upon one of its alpine waves, we seemed entangled with the stars, and day and night commingled for several days." It is said that no evil is so great that it has not some mitigating good mingled with it, as is said in Don Juan:

"Fright cured the qualms
Of all the luckless landsmen's seasick maws."

Byron never wrote truer words, for it is a sovereign remedy. We had three clergymen on board, who did their whole duty, as they saw it, for the safety of the ship. When the ship struggled with

*Read before the Medical Association of the State of Alabama, April 19, 1911.

a power which seemed to lift the ocean from its bottom and wash the stars with its briny spray, they did the loudest praying I ever heard. When the hurricane would catch the ship in its spiral whirl and apparently lift it from the bosom of the ocean, when its propeller and rudder were useless things, and then, as a discarded toy, dashed it back upon the rolling billows, they sandwiched their prayers with the cheerful strain of "Nearer, My God, to Thee." Finally the barometer gave token of an abatement of the storm; the wind gradually subsided; the clouds faded away; the glorious sun uncovered his bright face until "twilight pulled the curtain down and pinned it with a star," and hope revived and made happy every heart, and the ship docked in Liverpool on the fifteenth day.

I proceeded at once to London and matriculated the following morning at King's College, and hastened to the hospital, where Mr. Lister was scheduled to hold a clinic. As I passed up the magnificent stairway and entered the operating room my eyes soon rested upon the bas-relief of Sir William Fergusson. I thought of his thirty-four years of active service in the hospital and of his lamentable death, of Bright's disease, in 1877. I could see the great Scotchman, the most marvelous operator of his time, remove the upper jaw, lithotomize, perform his wonderful plastic work, and divide the levator palati and palatopharyngeus muscles as a preliminary to his successful staphylorrhaphy. This same delicacy of touch enabled him to become a great violinist. Like Billroth, Mikulicz, and Rokitansky, he was a lover of all music, from the hand organ to "Tristan und Isolde"; a worshipper of Wagner, Beethoven, and Liszt, "of every eagle that soars in the heaven of sound. Fergusson was an uninteresting lecturer, not well informed about the works of others, and his ideas of pathology were archaic. On one occasion, while lecturing upon caries and necrosis, a student reminded him that his views differed from those of Niemeyer. Fergusson replied: "Sir, Nehemiah was a gentleman who wrote one of the books in the Old Testament, but I have yet to learn that he had views on caries and necrosis." I thought of Soelberg Wells as having been a teacher in the college, and that it was here that Sir Thomas Watson electrified his class with his lectures upon the practice of medicine. Mr. Lister soon appeared, accompanied by his assistant, Mr. Watson Cheyne, whom he brought from Edinburgh in 1877, when he came as the successor to Sir William Fergusson. In the august presence of this great man, who "had divided the history of surgery into two great eras, before Lister and after Lister"; who made the surgery of the past compare with the surgery of the present like the Indian dugout with the *Deutschland,* or the love warblings of the golden oriole with the symphonies of Mendelssohn's wedding march; I was awed into a feeling of suffocated excitement. He was then in the meridian splendor of a fully developed and glorious manhood. Unlike our American professors, he took a seat. He commenced lecturing upon the aseptic and antiseptic treatment of wounds, the chart and compass of all surgical advancement. It occurred to me that I had never seen so thoughtful a face, a more kindly expression, nor a sweeter smile to mirror a great inward soul. He spoke in a conversational tone, with great fluency, and he had a lucidity of statement unequaled by even Mr. Erichsen. As an operator he was cleanly, bold, courageous, self-possessed, but not given to rashness. He wore no operating overalls and had no rubber gloves, but his work was the signboard upon the great surgical highway that pointed to the asepsis of to-day. He taught us avoidance of irritation by antisepsis, for which he used oil silk protective, and the destruction of the microorganisms with carbolic acid before they reached the wound I saw him refuse to amputate in a compound dislocation of the ankle joint with extensive laceration and in a compound comminuted fracture of the leg. I remembered what Gross had taught me, and I thought of what Syme had said, and yet I saw him save both limbs. I saw him operate for malunited and ununited fractures, wire the patella, excise the wrist for caries, resect the knee-joint, and almost do a Halstead in a mammary carcinoma. His article on amputation in Holmes' "System of Surgery" is a classic, and Lister's method of bloodless operating antedates Esmarch's bandage. I had the honor of being one of the students that cheered him in 1883 when he returned from Windsor Castle with a baronetcy, and I rejoiced when he became a peer in 1897. Lister's pioneer work in practical surgery, which entitled him to everlasting fame, has been completely overshadowed by the enormous benefit to suffering humanity from his revolution in the treatment of wounds.

Joseph Lister was born in England, April 5, 1827. His father and grandfather were wine merchants in London. The father, J. J. Lister, was of an eminently scientific turn of mind. He perfected the compound microscope, and "Lister's law of the aplanatic foci remains the guiding principle as the pillar and source of all the microscopy of the age." The year of the birth of his son, in connection with Hodgkin, he determined the diameter of the red blood corpuscles and their tendency to run into rouleaux. The son, Joseph Lister, was graduated in the literary department of the University College in 1847, and five years afterward qualified in medicine. Saturated with scientific heredity and a student and admirer of the great physiologist, Sharpey, it is not surprising that the spirit of investigation and experimentation was early infused into his mind, and that his first paper, the year of his graduation, was upon the identity of the muscle of the iris and involuntary muscular fiber. Entering the University College Hospital, he became dresser for Sir John Erichsen, whose house surgeon was Sir Henry Thompson. Having served his time, and upon the advice of his former teacher and friend, Sharpey, he went to Edinburgh, "to take six weeks of Syme's clinic," but remained six years, married Mr. Syme's daughter, and laid the foundation of a reputation that will "reach the uttermost shores of time." Lord Lister manifested the greatest admiration for his illustrious father-in-law, and frequently during his lectures quoted Mr. Syme's, and would sometimes exhibit pathological specimen that had been collected by the great surgeon. We learn from Sir Hector Cameron, who was Lister's house surgeon at the Glasgow Royal Infirmary in 1861, that he had seen as many as five cases of amputation of the leg die of pyemia in that institution in one week. This made a profound impression upon Lister, who had just been called to the chair of surgery in the University of Glasgow, at the early age of thirty-four, and he immediately went to work to investigate the cause. He taught "that the cause of suppuration in wounds was the decomposition of blood and serum retained within them, brought about in some way through the influence of the atmosphere." Soon after this Pasteur's work on fermentation and putrefaction ar-

rested his attention, and in 1867 Lord Lister struck his level and laid down the great principle of the modern treatment of wounds, and, were it not for him, "the dust of antique time would lie unswept, and mountainous error be too highly heaped for truth to overpeer." In his address before the British Medical Association he stated that septic properties depended upon minute organisms, and that suppuration might be avoided by using some agent capable of destroying them, and recommended carbolic acid. He called the microorganisms which produce suppuration "dust particles," and believed that air infection was the great source of danger, and his carbolic spray was the outcome. He soon discovered that they were omnipresent, and that the greatest danger was actual contact infection, and recommended cleansing of the surgeon's and assistant's hands, patient's body, instruments, threads, and dressings. He saturated a piece of lint with pure carbolic acid and mopped the wound out, afterward covering it with the same material and holding it in position with pieces of tin. The tin was daily removed and the dressings painted with pure acid. He treated abscesses by mixing pure carbolic acid with pus, which formed a paste. He filled the wound with paste and covered it with tin. He next used as a dressing for all wounds antiseptic putty, made of carbolic acid, linseed oil, and carbonate of lime. The putty was found unwieldy and he used "antiseptic lac plaster," which is made by melting shellac and mixing it with carbolic acid. Its adhesiveness was highly objectionable, and he overcame it by painting the calico, saturated with shellac and carbolic acid, with "a solution of india rubber and benzine." The benzine was soon evaporated and the india rubber prevented the dressing from sticking. To prevent the irritation of the acid, he covered the line of incision with an oiled silk protective, which had previously been dipped in a solution of carbolic acid. We learn from Sir Hector Cameron that this was Lister's dressing when he returned to Edinburgh in 1869 as a successor to Mr. Syme. In the Lister number of the *British Medical Journal* Mr. Cheyne also has an article, in which he states that Lord Lister in 1873 substituted carbolic gauze for lac plaster and introduced his spray. In 1890, when he discovered that the dust did not contain pathogenic microorganisms, he discarded the carbolic spray, washed the wound with a weak solution of bichloride of mercury, and substituted the double cyanide of mercury and zinc for the carbolic gauze. He used carbolic acid for disinfection of the skin and instruments. Just prior to his discovery, from 1864 to 1867, his mortality in major amputations was 50 per cent. From 1867 to 1869 his mortality in the same class of cases was 15 per cent. In the face of these decisive and incontrovertible statistics, Spence, Billroth, and other leading surgeons ignored his teaching and continued to empty their wards with a death rate four times greater than his, until Professor Ogston of Edinburgh accepted it in its entirety, and he was soon afterward followed by Macewen of Glasgow.

At the age of eighty-four, poised and balanced, Lord Lister has reached the realization of hope and desire .the ultima thule of human endeavors, and the completion of a work that seemingly would exhaust the brain of a god. A son of a member of the Society of Friends, he is the antipode of his twin brother in science, the polemical, pugnacious, and unpeaceful Pasteur. When taunted and told at the British Medical Association at Plymouth in 1871 that "as his solutions became weaker and weaker his faith appeared to grow stronger and stronger," he did not swerve; he did not turn; but "intrepidly walked the highway of the right." Never aggressive; never palestric nor unpeaceful, but always kind and always considerate, he would say to his students, "Gentlemen, I commend these facts to your candid and impartial judgment, beseeching you to form your own opinions regarding them. You are as competent as you will be to draw logical inferences from established data." By his great generalizations he has placed every organ in the body under the domain of surgical sway, made possible the wonderful clinics of the Mayos, Murphy, Deaver, Ochsner, Robert Jones, and others. He has given an opportunity to this great discoverer, who has honored us with his presence here today, "who has sailed the unknown seas and found continents of surgical truths," whose name will live in connection with the surgery of the blood-vessels as long as surgery is taught as a science and practised as an art—Rudolph Matas. Lord Lister has relegated diseases like hospital gangrene to the past, and to victims, "oft in the morn and liquid dew of youth," listlessly looking a last good-bye to their loved ones he has given a chance, and glorified surgery. He has made civilized man his debtor, brought joy and gladness alike to the hovel of the poor and the palace of the rich, to the Coburg of Windsor Castle and the degraded occupant of White Chapel. When Baron Lister shall be no more, when he shall have "left the shore touched by the mysterious sea that never yet has borne on any wave the image of a homeward sail," the great surrogate of truth and justice will decree as his legacy to his profession the magnificent achievements of the present and the marvelous possibilities of the future. As over John Hunter, the organ in Westminster Abbey, where death is associated with public veneration and imperishable renown, will proclaim the chorus from Handel's Funeral Anthem:

"His body is buried in peace:
But his name liveth evermore."

Acute Influenzal Arthritis.—Ghedini reports a case of multiple arthritis in which the joints most markedly affected were the sternoclavicular and temporomandibular. These were red, painful, and swollen. Influenza bacilli were isolated from the blood. There were hardly any catarrhal manifestations. The disease ran a mild course, and recovery was complete in four weeks.—*Gazzetta degli Ospedali.*

The Method of Larat in the Treatment of Post-Diphtheritic Paralysis of the Palate.—G. Fumarola gives the histories of five cases treated with excellent results by the method of Larat for electrical treatment of postdiphtheritic paralysis of the palate. This form of paralysis is less frequent than before the use of antitoxin, yet it occurs in about one-half of the cases of paralysis. It is the result of the penetration of the toxin along the peripheral nerves backward toward the medulla. There is a degeneration of the radicular and bulbar nuclei. It occurs only in cases of pharyngeal diphtheria, showing that it is directly related to the location of the membrane. It occurs one or two weeks after the disappearance of the membrane. In the method of Larat faradism is applied by means of an electrode placed in a basin of water in which the child immerses the hands, while the other electrode is placed at the nape of the neck. The application causes no pain or apprehension to the child, as is the case when the current is applied directly to the palate.—*Il Policlinico.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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ATHLETICS AND ENDURANCE.

THE advantage of avoiding athletics seems to be the lesson to be drawn from a remarkable test of endurance and strength in Kankakee, Ill., in 1907, described by Dr. C. F. Langworthy, of the U. S. Agricultural Department, in *Science* of May 5, 1911. The contestants were to walk ten miles, each carrying a sack of sand weighing 100 pounds—not so very severe a test, by the way, as soldiers in war not infrequently cover more than 20 miles with a 75-pound load. Forty-eight started over a course which required 12 laps to make the distance; 4 dropped out in the first lap, 19 in the second, 3 in the third, 3 in the fourth, 4 in the fifth, 2 in the sixth, 2 in the seventh, and 5 in the eighth, ninth, tenth, eleventh, and twelfth, only 6 finishing. Langworthy communicated with the contestants to find out whether their habitual diet had any bearing on the result and found nothing noteworthy as to the kind of foods. The surprising thing elicited from four of the winners was the vigor resulting from the ordinary muscular labor of the daily employments, each stating that his work involved muscular activity, but only one stated what it was—"shipping clerk in a retail grocery." We can presume that none of them was accustomed to severe muscular strains or the test would have been child's play. One of the clerks, aged 24, stated that he was fond of athletics and walked to and from work, 1¼ miles, 4 times daily, and had had training in the National Guard, but he omitted mention of any athletics permissible for a busy grocery clerk. The second, aged 40, had not engaged in athletics since he was 18. The third, aged 52, had not engaged regularly in any athletic exercises. The fourth, aged 21, was not fond of athletics and did not keep in training. This last man said he ate a medium amount, whatever that might mean, and the other three were "hearty eaters"—facts we would call to the attention of those dietetic faddists who have been apparently trying to prove that the less one eats the more strength and endurance he has. The really important lesson is the fact that men 40 to 52 years of age retained strength and endurance more than necessary for soldiers in war, and did it without athletics or training of any kind, but merely by their daily labor, which we presume was never excessive in length or amount or it would have been given as the reason for success. This test should be seriously considered by those athletic enthusiasts of our army and navy who seem to think that marching ability is not possible without strenuous training. So many contend that such exercises reduce endurance that we would suggest, in the interests of military efficiency, that the matter be tried out. Let two or three regiments be given only as light drills and exercises as the grocery clerk, and be never fatigued. Let two or three others be given a severe course of training with frequent practice marches heavily loaded. Then after a year, say, compare their ability to cover 200 miles. The Kankakee test would indicate that the former would be the better marchers.

It is to be regretted we did not learn how many of the failures in the test were "trained" men who had run the athletic pace which kills. It would also have shed some light on the canteen controversy to have learned whether there were any beer drinkers among the winners or losers. So far as the evidence goes it seems that men have better health, strength, and endurance if they indulge moderately all natural appetites, starve none of them, nor indulge them to excess. The strenuous athletic life is apparently giving way to a common sense life, but it doesn't give way very quickly.

A NEGLECTED OPPORTUNITY.

FOR almost twenty years immigrants from all parts of Europe have been pouring into this country under conditions and supervision by governmental authorities which should readily lend themselves to the collection of a vast amount of important anthropometric data. It would seem, with almost 1,000,000 new arrivals every year, that in the course of a decade the biometrician could have at his command a sufficiently large number of observations to be of great use to the trained anthropologist of the next generation. The study of the racial type which is now evolving in America could thus be put on an accurate scientific basis and the data collected to-day would be available to the student of eugenics and heredity in the future. The exact measurement of the skull and body and the recording of the color of eyes and hair and the degree of blondness, or the contrary, of every arriving immigrant would go largely toward establishing the physical pedigree of the future race. If these data were collected now and handed down as a gift to posterity, it would go far toward placing the study of eugenics upon an exact scientific basis, for the value of this kind of investigation has been clearly established. In the *Popular Science Monthly*, for August, J. Arthur Harris concludes a very appreciative article on Francis Galton with the statement that "Galton and his school have shown that in our strenuous modern life the statistician can point to some factors which tend to conserve and to others which tend to destroy the type of men which have made a high civilization possible, and they have told us in ringing words that it is the duty of the man of science to apply the most rigorously exact methods to the investigation of all those factors which tend to improve or impair the racial qualities of the generations yet unborn."

At the instigation of the immigration commission appointed during the Roosevelt administration, Prof. Boaz collected quite a large amount of data relative to the head forms of immigrants and their posterity, but the work thus barely commenced has been allowed to drop. We see no reason why it should not be taken up again by the officers of the Public Health and Marine-Hospital Service. As they already number the medical examination of immigrants among their duties it would be a natural step for them to establish a school for biometricians at Ellis Island and by the data thus collected the study of racial conservation would be advanced without in any way interfering with the more pressing present duty of preserving the public health.

NUCLEIN METABOLISM.

Our knowledge of metabolism appears to be undergoing a steady increase, provided we distinguish carefully between facts and hypotheses. If we attempt to account for the exact sources of blood and tissue albumins, body fats, and animal sugars and starches, we become involved in hopeless controversies. On the other hand, if we proceed from one series of known facts to new facts, the advance in knowledge is so remarkable that we feel assured of the ultimate solution of all metabolic problems. This steady increase in our knowledge is well shown by Stephan, who read a paper last March before the Verein der Aerzte Wiesbaden (*Berliner klinische Wochenschrift,* May 8) on nuclein metabolism. The subject is an important one because of the relationship of nuclein to uric acid. Endogenous uric acid is derived from the metabolism of the organ cells, exogenous uric acid from the nucleins and purin bases of the diet. Uric acid has been oxidized to urea by alkaline solutions of hydrogen peroxide and has been decomposed by radium emanations into ammonia and carbonic acid.

Nuclein occurs in the nuclei of cells as nucleoproteins, which consist of nucleinic acid and two albumin components, one of which splits up readily, the other with difficulty. Nucleinic acid is a tetrametaphosphoric acid in which each phosphorus atom is associated with a carbohydrate (hexose). When nucleoproteins of the diet reach the stomach they are split into albumins and nuclein. The latter is now attacked by trypsin and decomposed into nucleinic acid and cleavage products with a change of nature from the colloid to the dialysable, soluble, and absorbable state. Behind the intestinal epithelia the nucleinic acid is attacked by powerful ferments, which have the power to change it to uric acid. Some of it, however, must go to rebuild the nucleoproteins of the organ cells. The proximal cleavage products are oxypurins. The enzymes which convert nucleinic acid to the latter and uric acid are respectively nuclease, which first breaks up the acid molecule; purindesamidase, which forms oxy- and diozypurins (xanthin) with liberation of ammonia; xanthinoxydase, which changes oxypurin to xanthin and uric acid, and uricöoxydase which changes uric acid to allantoin (this transformation has not yet been proved to take place in man).

Stephan's paper was well discussed. Pfeiffer stated that the existence of uric acid in considerable amounts in healthy blood had now been proven. The percentage is increased by acids (HCl) and diminished by alkalies. Weintraud appeared to admit that the difference in this respect between gouty and healthy blood was probably one of degree, although it may be shown some day that uric acid in gouty blood is bound in a peculiar manner. The advances in our knowledge in this field show that the semi-empirical remedies for gout and allied conditions—diet, oxidation, and alkalies—have a rational basis. To these has recently been added radium emanations, which, as we have seen, are able to break up uric acid into its elements.

NATIONAL INSURANCE LEGISLATION IN GERMANY.

While the British government is seeking to rush through the House of Commons its elaborate program of national insurance, the German Reichstag is debating over the proper revision and extension of the German system of State insurance, whose apparently successful operation has stimulated the efforts of Chancellor Lloyd George and his associates. It would appear as if the fears of the British profession regarding their own hardships under the proposed law are justified by the experience of their colleagues under the law now in force in Germany. Not only have the complaints and petitions of the German profession been disregarded, but in addition the benefits of the proposed law are to be extended so as to include a larger number of people. The income limit for those eligible to the benefits of health insurance is to be raised from 2,000 to 2,500 marks; while children will be insured under the new law. Both of these provisions will tend materially to decrease the income of physicians.

It would seem as if imposing schemes of social betterment cannot be inaugurated without working some hardships to special classes, and perhaps members of the medical profession will be compelled to submit to the curtailment of their own revenues, though it is fairly safe to predict that this will result ultimately in lowering the standards and diminishing the ardor of medical men.

In spite of the fact that the new German legislation, as related by our Berlin correspondent, ignores the just demands of those who bear the brunt of battle against the foes of health, a brief review of some of the provisions of the new law indicates its wide and beneficent scope: the granting of invalidity insurance to all of the working classes, urban and rural, including those changing their place of employment at frequent intervals no less than those permanently employed in one locality; including teachers, domestics, and those employed in dramatic and musical organizations. The maternity benefit, which is such a striking feature of the proposed British law has also been included in the proposed new German legislation, while the annuities for widows and orphans and the endowments for the latter testify to the growing paternalism and philanthropy of the State.

SANATORIUM TREATMENT FOR PULMONARY TUBERCULOSIS.

The national insurance scheme of Mr. Lloyd George includes the treatment of pulmonary tuberculosis on an unprecedented scale. It certainly appears, from the manner in which he proposes to deal with the disease, that he cannot have sought the advice of experts on the subject. According to reports which have reached this country, the British Chancellor of the Exchequer seems to hold the view that sanatoria are the only effective means of coping with the disease. That such a view is in a high degree fallacious is obvious to all those who have kept in touch with the most recent opinions delivered on the matter. In truth, it is now fully recognized that sanatorium treatment of consumptives has its very definite limitations and it is not even certain that, in some respects at least, the benefits of sanatorium treatment have not been greatly exaggerated, and that home treatment, when the conditions are favorable and even when they are not altogether so, may not in many cases be productive of better results, at least so far as the so-called economic cure is concerned.

At the meeting of the American Climatological Association, held recently in Montreal, the question of the treatment of pulmonary tuberculosis was threshed out in a fairly thorough manner, and incidentally some doubt was cast on the success of sanatorium treatment. In the first instance, in the case of working people sanatorium treatment cannot, as a rule, be carried out properly. Wage-earners with limited means cannot afford to stay in a sanatorium sufficiently long to effect a cure. Further, in the early stages of the disease, the only period in which a cure can be looked for with any degree of certainty, treatment so far as the working classes is concerned is either lacking owing to a diagnosis not having been made, or the sufferer refuses to leave his family to go to a sanatorium in the country. At the Montreal meeting the various methods employed for treating tuberculosis were discussed and the general sentiment of the meeting appeared to be that dispensaries, sanatoria, and hospitals were all essential in the crusade against tuberculosis.

There are two points, however, which stand out conspicuously when discussing the treatment of tuberculosis with a view to its ultimate eradication, and these are that in order to cure the disease the patient must be properly treated in the incipient stage, and that in order to prevent the spread of the disease those in an advanced stage must be isolated. For the treatment of incipient cases dispensaries and sanatoria both appear to be needed, while in the case of those suffering from tuberculosis in an advanced stage the main object is to prevent infection being spread, and this can be effected by the establishment of isolation hospitals near all towns. The total abolition of pulmonary tuberculosis will tax to the utmost the brains and energies of the most able and earnest medical authorities of every country, and the problem will not be solved by the establishment of sanatoria alone, however numerous and well equipped they may be.

Source of Urobilin.

Urobilinuria has long been known to signify hepatic insufficiency, since urobilin should be destroyed by the normal action of the liver. This knowledge, however, is of little practical value because urobilinuria occurs under the most varied conditions, trivial as well as severe. To understand the phenomenon we should be able to trace urobilin back to its ultimate sources, and this has hitherto been impracticable. At a recent session of the Verein für innere Medizin und Kinderheilkunde, Berlin (*Muenchener meizinische Wochenschrift,* June 20), Brugsch announced that thanks to Ehrlich's dimethylamidobenzaldehyde the various steps in the formation of urobilin could be successfully traced. Urobilinuria is invariably associated with urobilin in the feces. The more urobilin in the urine the greater the content of the substance in the feces. The amount in the latter naturally varies with the amount present in fresh bile, and the amount formed in the intestine from biliary coloring matters. The liver in disposing of used up blood corpuscles forms urobilin from hematin, and urobilin is therefore spoken of as blood slag or cinders. There may be more blood slag at one time than another, since more blood may require destruction. As a matter of fact, however, urobilin is more or less an incidental stage in the promotion of biluribin, and its presence in excess simply indicates that the liver has for some reason failed to convert it. In all diffuse affections of the liver it appears in the intestine in large amounts and thus gives rise to urobilinuria. The practical significance of urobilinuria as an exponent of the action of the liver is marred, however, by the fact that urobilin may appear in the feces in large amounts as a result of the action of putrefactive bacteria on the biliary coloring matters. Not over 25 per cent. of the latter escapes by the rectum. It is now well known that certain saprophytes, and even pathogenic bacteria have a special property of forming urobilin from the coloring matters, and this test may be employed in laboratory work for differentiation. From all that has been said, therefore, it does not seem at all likely that urobilinuria will ever possess any exact significance in the estimation of the work of the liver. But if increased intestinal putrefaction can be excluded the symptom possesses relative value.

Diathermy.

Diathermy, otherwise known as thermopenetration, the warming of internal organs between the electrodes of an alternating induced current, is a therapeutic resource of such promise that it was made the subject of a symposium at the recent meeting of the German Congress for Internal Medicine (*Münchener medizinische Wochenschrift,* May 16). Rautenberg spoke straightway of the diseases seemingly benefited by the current. In heart disease with dropsy the latter was seen to disappear with profuse diuresis, while the heart seemed sensibilized to the action of digitalis. Attacks of angina pectoris became fewer and sometimes disappeared. In bronchitis and bronchopneumonia expectoration was facilitated, while pleural exudates were absorbed. The temperature of organs between the electrodes may rise as high as 41° C. When thermopenetration is applied over the larynx the mirror shows after twenty minutes a reddening of

the vocal cords with hoarseness. The sense of increased warmth is pleasant. Stein stated that the most important indications for thermopenetration were acute gonorrheal rheumatism, acute gout, and ordinary acute rheumatism. The tissues were also sensibilised to the action of radium emanations. The method was not applicable to the abdominal viscera. According to Schittenhelm the general body temperature of a hound may be greatly elevated by an hour's exposure. Bennecke praised thermopenetration for gonorrheal rheumatism. Pleuritic and pericardial murmurs appearing after the use of the remedy do not signify that exudates have been absorbed, but are due to direct heat injury of the serosæ. Reicher thought that diathermy of the bone marrow should influence favorably certain blood diseases of myelogenous origin. Warburg was somewhat sceptical as to the character of the results reported but found the resource of value in neuralgia. Stein spoke of the value of diathermy in lupus vulgaris. In addition to his paper read at the meeting of the internists, Stein also appeared before the German Surgical Society and informed that body that the term diathermy signified only a variation of the high frequency current, the vibrations not being deadened, as in the latter. The alternations occur at the rate of a million per second. This current, in its passage through the body, heats the viscera, and with sufficient dosage is able to destroy the latter. A special apparatus and technique are required to control the current and render it free from danger. The author has treated seventy cases of bone and joint disease, and has obtained striking results in acute gonorrheal arthritis and acute gout, chronic gout, simple chronic rheumatism, and acute periostitis.

News of the Week.

Vital Statistics.—For the week ending August 5 the Department of Health of New York City announces that the death rate is the lowest on record for that week since the formation of the Greater City in 1898. The death rate of 14.10 is 15 per cent. lower than the lowest corresponding week for the past thirteen years and 23 per cent. lower than for the corresponding week of last year. The infant mortality under one year of age was 156 per 1,000 in the week as against 235 per 1,000 for the corresponding week of last year, a decrease of 32 per cent. The infant death rate from diarrheal diseases was almost 50 per cent. less during the week than for the corresponding week of 1910

Scores Antivivisection.—King Frederick of Denmark refused to give his patronage to the International Animal Protection and Anti-Vivisecting Congress, which has been in session in Copenhagen, upon the ground that he could not bestow his support upon a body which was opposed to scientific methods of research. Thereupon the members of the Cabinet likewise refused to become patrons of the congress.

Pellagra in Kentucky.—Following the discovery of seventeen cases of pellagra in the Eastern Kentucky Insane Asylum, upwards of one hundred cases have been found in Bell and Whitely counties. The State Board of Health has called a meeting, which will be held on August 9, to which experts from the government and the Rockefeller Institute have been invited.

Find Pasteurization Necessary.—Commissioner Lederle of the New York City Health Department has come out with the statement that it is utterly impossible to have 44,000 farms, in seven States, sending 2,000,000 quarts of milk daily to the city properly and adequately inspected, and that as an assurance of a pure milk supply inspection has failed. The department has therefore issued a formal order that beginning on January 1 next practically all milk for general use in the city must be pasteurized in a manner to be indicated by the Board of Health. Two classes of milk will be exempt from pasteurization, the "certified" milk and that which is used for cooking purposes exclusively.

Anti-Smokers Incorporate.—The Non-Smokers Protective League of America, having its principal office in New York City, has filed papers of incorporation with the Secretary of New York State. The league will attempt to encourage and insist on the enforcement of laws, ordinances, and regulations restricting smoking. Dr. Harvey W. Wiley of Washington, David Starr Jordan of Leland Stanford University, and a number of individuals prominent in educational work are among the directors.

Degrees for Americans.—At the centenary celebration of the University of Breslau which took place on August 3, honorary degrees were conferred upon Dr. Nicholas Murray Butler of Columbia University, Dr. Charles W. Eliot of Harvard, Dr. Theobald Smith of Cornell and Harvard, and Dr. Benjamin Wisner Bacon of Yale.

The International Stomatological Congress was held last week in Paris. Among those who read papers were Drs. Richter of Milwaukee, Cryer of Philadelphia, Bogue of New York, and Talbot of Philadelphia.

New Hospital for Boston.—The construction of the Peter Bent Brigham Hospital has been begun. This institution will consist of fourteen buildings which will cost $5,000,000 and will be closely associated with the Harvard Medical School. Dr. Herbert B. Howard will be the Resident Physician, Dr. Harvey W. Cushing of Johns Hopkins Hospital, Baltimore, will be Surgeon-in-Chief, and Dr. Henry A. Christian, Dean of the Harvard Medical School, will be Physician-in-Chief.

Fire in an Insane Asylum.—Eight lives were lost in a fire that partly destroyed one of the main buildings of the Insane Asylum at Hamilton, Ontario.

An Opportunity to Study Baby Saving.—The Committee for the Reduction of Infant Mortality of the New York Milk Committee has extended an invitation to 3,500 students, mostly teachers, now attending the summer schools at New York University, and also to 3,000 mayors, health officers, and other city officials in every part of the United States to spend a day in studying the methods employed in this city for caring for babies during the hot season.

Will Not Take the Mayor's Money.—A hearing was recently held in New York City on a bill providing for the payment of the bills of the surgeons who attended Mayor Gaynor after he was shot last summer. The Mayor said that he had never asked that the bill be drawn, but that the surgeons had absolutely refused to render him a bill and would never be paid unless by the city. The bill also provides for the payment of the surgeons' bills in the event of any similar accident to any city employee.

Changes in the Medical Staff of the Department of Charities.—Dr. Walter Conley has been

appointed deputy superintendent of the Metropolitan Hospital on Blackwells Island to succeed Dr. William H. Polglase who has been put in charge of the Cumberland Street Hospital in Brooklyn. Dr. John T. Fitzgerald, formerly medical superintendent in Brooklyn, has been made general superintendent of the Public Charities Commission Hospitals at a salary of $6,000. Dr. J. F. Scofield becomes a deputy superintendent of the Coney Island Hospital.

Ambulance Accident.—In a collision between a Bellevue ambulance and a street car last week, Dr. Cody, the ambulance surgeon, was seriously injured and the ambulance badly damaged while the patient escaped uninjured.

Dr. James V. May of Binghamton, N. Y., has been appointed by the Superintendent of State Prisons medical superintendent of Mattewan State Hospital for the Criminal Insane *vice* Dr. Robert B. Lamb, resigned.

Pennsylvania State Board of Medical Examiners.—At the June examination held by this board 395 candidates presented themselves, of whom 377 passed and 18 failed, a percentage of failure of only 4.55.

Medical Registration in Barbados.—The Legislature of Barbados, B. W. I., has recently revised the Medical Registration Act of that colony. Eligibility for registration on the part of an American graduate (in any State) desiring to practise in that colony, is based on the applicant's presenting the New York State Board License, and certifying to the medical assessors the fact of being a registered practitioner in New York. A New York physician visited Barbados in the spring of 1910 and there registered, his license being the first presented from this State.

Bequests to Charity.—The will of the late Simon E. Bernheim gives $2,500 to each of the following institutions: Hebrew Orphan Asylum, Montefiore Home, Mount Sinai Hospital, Home for Aged and Infirm Hebrews, and the German Hospital.

The will of the late E. C. Whitney of New York contains a bequest of $5,000 to endow a bed in the Orthopedic Hospital.

Obituary Notes.—Dr. Milton A. Piper of Philadelphia, a graduate of Princeton University in 1869 and of Jefferson Medical College in 1871, died on July 27, aged 56 years.

Dr. William Burd Evans of Philadelphia, a graduate of the Maryland Medical College in 1902, died on July 28, aged 33 years.

Dr. Fred Albert of Mason City, Iowa, a graduate of the University of Iowa College of Medicine in 1906, assistant in bacteriology and pathology in the college, and associate bacteriologist to the Iowa State Board of Health, a member of the Iowa State and Cerro-Gordo County medical societies, and the Austin Flint-Cedar Valley Medical Association, and president of the Iowa State Association of Health Officers, died at his home of typhoid fever on July 21, aged 30 years.

Dr. Hubbard Linley of Atchison, Kan., a graduate of the University of Nebraska College of Medicine in 1893, a member of the American Medical Association, the Kansas State and Atchison County medical societies, the Tri-State Medical Society, and the Medical Society of Illinois and Iowa, and surgeon to St. Francis' Hospital, Atchison, died suddenly in his office on July 14, aged 51 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

COMING MEETING OF THE MEDICAL ASSOCIATION AT BIRMINGHAM—CONFERENCE OF THE NATIONAL ASSOCIATION FOR PREVENTION OF CONSUMPTION—CANCER RESEARCH.

London, July 21, 1911.

So many doctors are now "out of town" or "abroad" that there seems a determination to make the most of the magnificent summer weather we are enjoying—such a contrast to that of last year. Some who do not like early holidays will begin next week with the Birmingham meeting, and after that take their trips. You know that the British Medical Association occupies most of next week with its annual meeting, and that it will be at Birmingham. In a sense the meeting begins to-day, for the representatives of the branches and the council meet this morning and dine together this evening. To-morrow the "representative meeting" will receive the report of council and discuss other matters concerning what may be termed the domestic affairs of the association, and which are not supposed to interest others than members. This meeting, which we familiarly call the "caucus," does, however, practically determine the policy to be adopted, and matters of public interest often occupy it. This year the insurance bill will no doubt be freely discussed. You see, the arrangement is well adapted to keep the power in the hands of the few—the council and its most active members—for only those delegates who are its supporters are likely to take a week-end extra at the meeting place, and the caucus can carry almost any resolutions the wire pullers desire. It is an improvement on the management of old time, when these wire pullers dined together after the general meeting, and sometimes, as at Brighton, actually reversed the decision. But the name representative must be accepted *cum grano salis*.

The real general meeting will open on Tuesday, when the president will deliver an address. The rest of the week will be occupied by the sections in which a full number of papers and discussions are in store. There is to be, as usual, an exhibition of drugs, foods, instruments, etc., as well as various amusements, excursions, and the other attractions which form the popular background of these scientific-medical assemblies.

Wednesday, yesterday, and to-day, the National Association for Prevention of Consumption has been discussing—a little prematurely, perhaps—the best ways of employing the money to be granted by the insurance bill for dealing with tuberculosis. The discussion is carried on in five sections: (1) Education, (2) machinery of detection, (3) treatment, (4) after-care, (5) administrative and financial aspects of the bill. An exhibition has been opened simultaneously of charts, models, and other material which has been on tour in various parts of the country.

At the opening meeting a message from the King as patron of the association was received, congratulating all taking part in the conference and saying, "I sympathize deeply with the work, so farreaching in its influence on the future of the human race."

An address was delivered by Mr. John Burns, who quoted a number of statistics in support of an optimistic conclusion that tuberculosis is a declining disease, and its annihilation will be effected in this generation. Coincidentally, he said the drink

bill of the people had diminished by 25 per cent. per head. He mentioned this because Brouardel had said, "The public house is the purveyor of consumption," a view supported by Niven of Manchester and other authorities. Referring to the Royal Commission's report, he said he had a "milk bill ready" if it could be an agreed one, but if not it would not be got through Parliament this session.

Prof. Sims Woodhead pleaded for the teaching of hygiene in schools. No doubt bad housing, poverty, malnutrition, fatigue, want of fresh air, and uncleanliness were all factors in predisposing to the disease. All were important. If one were got rid of another might remain, *e.g.* poverty without alcoholism was less dangerous than with it.

Dr. Shrubshall read a paper on the place of the school in the campaign, in which he gave an account of the teaching and enforcement of personal hygiene in schools. The most effective guard against consumption, and, indeed, all other infectious diseases, was to cut down the means of dissemination. This really meant cleanliness in all things. A child taught to be clean would continue the habit afterward, and school was the training ground for a national health conscience.

Sir William Younger said exhibitions and caravans preached the gospel of fresh air, sunshine, and healthy surroundings. They showed healthy people how to arm themselves against the insidious foe, and taught sufferers how to live. They also showed how the question of housing was bound up with prevention.

Dr. Philip of the Edinburgh Royal Infirmary opened the second part of the conference—the machinery of detection—with the statement that tuberculosis in the adult was generally developed from the disease in the child. Every intelligent person was of detective value, and school was a training ground for scholars to become detectives. He urged that a case discovered should lead to attention to the whole family. Compulsory notification was adopted by seventy-four local authorities in Scotland in 1910, but in 1907 in only eight. The tuberculosis dispensaries lately set up in London he considered of the utmost value, and linking them up in a central council was a statesmanlike policy.

Dr. Cecil Wall of the London Hospital took up the question of out-patients, and said if the insurance bill became law hospitals would be affected gravely. At the London at least a third of the present patients would be taken away. If it passed unaltered the only persons unprovided with free medical attendance would be children under school age, unemployed persons from fourteen to sixteen years old, unemployed women, and persons over seventy. As to the insured, out-patient department, general and special, would retain only consultative functions.

Dr. Halliday Sutherland said the tuberculin dispensaries made a triple attack on the disease: treatment from the center, selection for open air methods, and search for early and undiagnosed cases.

Dr. J. Niven, medical health officer for Manchester, described the work carried on in that city, and offered valuable suggestions in connection with notification and the insurance bill.

Yesterday the subject of treatment occupied the whole day. Sir Douglas Powell opened the proceedings. He said there were two groups of cases—the annual new ones, and the residual ones of the population. The more successfully they dealt with the former the fewer would go to swell the latter, as death was always busy in removing these. It might be that immunity, acquired and hereditary, would lessen the proclivity to the disease among survivors.

Sir William Osler warned against the notion that everyone with a little deviation from normal health was tuberculous. If tuberculin was made a final test of correct diagnosis figures as to treatment would be useless, for improvement was seen under any or no treatment. Probably not 10 per cent. should go to a sanatorium, and they must elaborate home treatment. He pleaded for the association of tuberculin dispensaries with general hospitals, and dreaded the growth of a group of men whose whole work was in the dispensaries, for they must necessarily become narrow. Undoubtedly tuberculin was an efficacious remedy in suitable cases, and in a few years they would know definitely which were such.

Dr. Arthur Latham said the public had not grasped the facts about sanatorium treatment; that in many cases it must be useless, in a few actually harmful, and in many it need not be carried out in an institution. In the majority of these the treatment was inefficient, namely, fresh air and free feeding. The cardinal factor was constant, skilled regulation of the amount of rest and exercise prescribed from day to day for each individual patient.

Dr. Paterson, superintendent of the Friendly Sanatorium, urged the importance of teaching the patients. How his patients appreciated this was proved, he said, by the fact that they bought sputum flasks when they left at 4 shillings each, and some stole the flasks of other patients. Unless they meant to follow out the treatment they had had they would not part with money or break commandments.

Dr. Edward Squire spoke of the insurance bill, and said its provisions were futile for checking the disease. There was no power to remove a patient who was dangerous to family and others. Home treatment meant more than prescribing drugs or injecting tuberculin. It included care for the contacts.

Dr. Sykes, medical health officer, advocated the cooperation between philanthropic and municipal agencies in the first stage, especially in persons under sixteen, for whose benefit the children's act might be utilized.

Prof. Ralph Williams of the University of Sheffield told of the open air school established there. Of ninety-eight children in it forty-four were cured, fifty-one improved, only three in the same state as before admission. The drawback of these schools was that after a few weeks or months the children went back to the other schools and lost what they had gained.

Dr. A. M. Williamson, medical health officer for Edinburgh, said that there 59 per cent. of cases were in two-roomed houses, and 93 per cent. in houses with four or fewer rooms. Segregation of advanced cases was useless without notification. He urged attractive hospital accommodation for these in combination with shelters and pavilions in the open air.

Dr. Woods Hutchinson, New York, said the sanatorium represented the one-hundred-ton gun in the campaign. But campaigns were not to be won by one-hundred-ton guns. It was not necessary to build institutions to last one hundred and fifty years when they hoped to wipe out the disease in thirty years, and they had no desire to immortalize the disease. In New York ten thousand died of

consumption every year, and twenty-two thousand new cases were recorded. This showed each advanced case infected two others. If he had to choose between segregation of early or advanced cases he would select the latter.

Other speakers discussed various points as to segregation, notification, and the difficulties that would certainly be raised by the public in regard to these measures. Education was therefore much insisted on, so was cooperation between the existing authorities and those proposed to be set up under the insurance scheme.

To-day the conference concludes with a discussion on the administrative and financial aspects of the bill.

A large number of visitors attended the "annual viewday" at the sanatorium connected with the Brompton Hospital, which contains one hundred and fifty beds, and is always full. The institution has been at work about seven years for treatment by open air combined with carefully graduated exercise, or work. About three hundred ex-patients attended, and their appearance gave evidence of the success of the system.

Yesterday the Imperial Cancer Research Fund's annual meeting was held in the Royal College of Surgeons. The results of experiment and observation were stated in the report, and in speeches by Sir William Church and Sir H. Morris.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

NEW GERMAN NATIONAL INSURANCE LEGISLATION—HARDSHIPS OF THE MEDICAL PROFESSION UNDER THE OPERATION OF THE STATE INSURANCE LAWS—BROADENING OF THE SCOPE OF THE NEW LAWS—ANNUITIES FOR WIDOWS AND ORPHANS.

BERLIN, June 15, 1911.

DURING the past few weeks the interest of the entire German profession has been centered on the Reichstag, where the prolonged debate on the Government's insurance scheme is drawing to a close. This law with its 1,700 paragraphs constitutes the most extensive law that has ever been placed upon the statute books. Considering the many millions of people who are subject to the benefits of this law, it is the medical profession that is at this moment most concerned in the fate of this legislation. What would be the outcome of the passage of this law? One can definitely state the outcome only so far as the doctors are concerned. The medical profession shows evidence of its own disillusion regarding its status under former operations of the State insurance measure. For years the profession has written memorials and petitioned the Government as regards its hardships under this law, and has sought to have its demands satisfied by a revision of this law. And now it is our lot to behold that no one has cared an iota about the wishes of the doctors, for the fate of insurance legislation has been determined largely by political motives rather than the interests of the people. So far as the medical profession is concerned not only are the former abuses undisturbed, but an additional hardship is added, namely, the income limit for those eligible to the benefits of health insurance has been raised from 2,000 to 2,500 marks. As a result of this change there will be admitted to the ranks of beneficiaries a large number who have hitherto stood in close and profitable relationship with their private physicians.

The proposed insurance law affects three former kinds of insurance—the sickness, accident, and invalidity insurance. In addition there is now to be included the insurance of surviving widows and orphans. The main work will be carried out by the insurance offices that will be established by the minor government authorities and the local boards. There will be two large groups of compulsory invalidity insurance. The first of these comprises the general group to which the local and the rural forms belong. The rural insurance includes the farmhands and the forest laborers, the domestics, those who are not employed long in one place, and those employed in work about the house. To the second group belong the special classes of compulsory insurance, the fraternal bodies, the workmen's compensation insurance, and the miner's mutual benefit societies associated with both the mining and smelting industries. While formerly the provisions of the State insurance law applied only to certain designated industries, the new statutes will apply to all persons employed in subordinate and dependent positions. There will now be included all the agricultural and forestry employees, all domestics, peddlers, home-workers, druggists' assistants and apprentices, teachers and governesses, and those employed in the dramatic and musical industries.

If a person happens to be a member of the sick fund and increases his income beyond the limit of 2,500 marks, he nevertheless has the right to continue his membership. The trials of the medical profession under the operation of this law will be discussed more at length in my next letter. A new provision is that of a maternity benefit. Every insured woman in the event of childbirth will be entitled to financial assistance for a period of several weeks.

Under the new law, as under the old, two-thirds of the premiums are to be paid by the employers, while one-third is to be paid by the employees. While formerly the directors of the insurance company have been elected by the employees, under the newly proposed law the conditions are reversed and this choice is to be exercised by the employers alone.

In the provisions relating to casualty insurance the benefits of the latter are to be extended to those earning as high an income as 5,000 marks; under the former law the limit having been fixed at 3,000 marks. Two forms of indemnity have been introduced: preliminary and permanent benefits. Within a period of two years following an accident a preliminary settlement may be made, but this may be changed at any time. At the end of two years the permanent benefit must be decided upon, but this may be adjusted anew every year. In the system of invalidity insurance a section has been introduced providing for the insurance of children. Another innovation is the eligibility of women to positions on the boards of directors and committees of the insurance organizations. The new provisions made for the benefit of widows and orphans comprise annuities for widows and orphans and endowments for the latter. These endowments, however, are not to be in the form of annuities but are to be made in one payment. Even though the sums allotted are small, nevertheless this provision represents a decided step in advance. The date proposed for the setting in force of the new law is January 1, 1912.

Progress of Medical Science.

Boston Medical and Surgical Journal.

July 27, 1911.

"On Stiff and Painful Shoulders," as Explained by Subacromial Bursitis and Partial Rupture of the Tendon of the Supraspinatus. E. A. Codman.
Experimental Pneumectomy; the Application of Data so Obtained to the Surgery of the Human Thorax. W. C. Quinby and G. W. Morse.
Interlobar Exudates. A. K. Stone.
The Hemolytic Skin Reaction in Carcinoma. E. H. Risley.
The Chemical and Microscopic Findings with Reference to the Gastrointestinal Tract in Pernicious Anemia. A. E. Austin.
The Diagnosis and Treatment of Breast Abscess. W. P. Coues.

"Stiff and Painful Shoulders."—E. A. Codman states that these are so common and cause so much disability among the working classes that they deserve much more attention than has hitherto been given them. The intense pain which many cases suffer and the long duration of the condition make the question one of great importance, although the eventual outcome is quite sure to be favorable. It is the author's belief that the primary and important lesion in most cases is a slight tear of the fibers of the tendon of the supraspinatus just at its insertion in the greater tuberosity; that this lesion causes an irregularity on the base on the subacromial bursa, and hence a bursitis, which, either by inhibition due to pain in the early cases, or adhesions in the old cases, prevents the tuberosity from passing beneath the acromion and the coracoacromial ligament.

Experimental Pneumectomy.—W. C. Quinby and G. W. Morse, having shown that experimentally a lung may be excised with safety, and having examined the physiological factors which underlie such successful removal, discuss the application of such data to the human being. At the outset they find that any operation which includes the resection of any considerable amount of lung tissue must be planned with full recognition of the fact that, because of its firmer structure, the human mediastinum cannot be displaced nearly to the extent possible in the dog. The very important factor of obliteration of the remaining space in the thorax must thus be met almost wholly by resection of ribs. But such resection must be relatively limited in its extent, else support of the vital organs contained in the thorax is lost. Therefore, successful excision of lung tissue in man has been limited to one lobe at the most, and in such conditions as localized bronchiectasis a number of cures have followed this operation.

Interlobar Exudates.—A. K. Stone states that the signs of an encapsulated interlobar exudate of considerable size are: a zone of dullness, more or less high pitched and tympanitic in character, with presence of bronchovesicular breathing over the dull area, often accompanied with friction sounds, if the condition is acute; below the dull zone the resonance and respiratory sounds are more nearly normal; on the left the tympanitic area of the stomach (Traube's space) is retained and on full inspiration the more normal area below the zone of dulness increases in size; the dull triangle, the paravertebral triangle, in the opposite thoracic cavity is not present, as is usual in large, free exudates. If the exudate is on the right side the heart is apt to be extremely displaced to the left (A. Fraenkel); if on the left, the displacement is not so marked as with free fluid (Stone); the radiograph will show a shadow extending from the apex of the heart toward the head of the humerus, or from the sternal junction of the fourth rib on the right outward to the head of the humerus; the fluoroscope will show the same shadow band and also the diaphragm in motion. Small collections of pus are to be found by careful percussion and the presence of tender spots.

The Hemolytic Skin Reaction in Carcinoma.—E. H. Risley presents an analysis of a series of 100 cases in which the skin reaction test used by Elsberg for the diagnosis of carcinoma was done. The author concludes that the test is only suggestive and is rendered practically valueless as a diagnostic aid because of the fact that there are undoubtedly present in the blood of many patients other lysins of unknown nature which bring about hemolysis of varying degrees. This applies to the non-malignant cases giving a positive reaction.

The Gastrointestinal Tract in Pernicious Anemia.—A. E. Austin states that practically the only feature which remains constant in the feces of all pernicious anemias is the markedly increased amount of stercobilin. Another feature which marks these cases, in distinction to other anemias, and which also signifies the increased amount of stercobilin, is the rapidity with which the antecedent or mother substance, the so-called urobilinogen, is converted into the active pigment; ordinarily it takes twenty-four hours for corrosive sublimate to effect this conversion in a normal stool, but here the change takes place in a few hours, and even without the aid of the chemical when the stool is placed in the sunlight open to the air the change takes place with remarkable rapidity.

Breast Abscess.—W. P. Coues offers the following "don'ts" in connection with the treatment of breast abscess. (1) Do not open any but the most superficial breast abscess without gas or ether. You will hurt the patient and not do a thorough piece of work. (2) Do not drain any but the most superficial abscess with gauze or rubber tissue. Use a soft fenestrated rubber tube, and leave it in till all deep pus is out of the breast. (3) Do not irrigate a breast abscess. You will spread pus and organisms about inside the breast and do more harm than good. (4) Do not use peroxide of hydrogen in a breast abscess, as it will act in the same way and tend to spread infection rather than to lessen it.

New York Medical Journal.

July 29, 1911.

Prostatic Suggestions. V. C. Pedersen.
The Largest Volunteer Life Saving Corps in the World. J. Sobel.
The Routine Examination of Milk. J. A. Roddy.
A Case of Infestation with *Necator Americanus* in a Native of Madras, India. R. C. Rosenberger and W. Brinton.
Hospitals for Inebriates. T. D. Crothers.
Overdoing in the Prophylaxis and Early Diagnosis of Pulmonary Tuberculosis. C. Rayevsky.
The Prevention of Myopia in School Children. W. H. Bates.
Resistance of the Street Virus to Antiformin. F. Proescher.

Prostatic Suggestions.—V. C. Pedersen states that the proper time for operation in cases of enlarged prostate is when the bladder mucosa is in good condition and the prostate has begun to obstruct the outflow of urine. Delay until the mucosa is greatly injured will mean hazard and likelihood that the injury wil be permanent and beyond repair. When the mucosa of the bladder has begun to suffer it is often because the obstruction by the prostate and the cystitis have reached a degree which soon leads to serious effects upon the kidneys and ureters above. The mere removal of an enlarged and obstructing prostate may be mechanically possible and performed without death, but if a bladder is left behind so badly damaged from chronic cystitis as to render functional restoration impossible and as to leave the symptoms proceeding from the bladder virtually unchanged, then the operation has failed of its ideal success. If the prostate is merely enlarged, obstructs none or very little, and the bladder is in good condition operation is not justifiable. If the bladder is greatly changed from inflammation beyond recovery, and if the catheter may be successfully passed, in most cases office irrigation is preferable and more conservative than operation. Such a bladder is a contraindication to operation.

The Little Mothers' Leagues.—J. Sobel describes the leagues organized among school girls in the tenement-house districts of New York City. The members of the leagues receive lectures and demonstrations on the summer care of babies.

Routine Examination of Milk.—J. A. Roddy suggests

the adoption of simpler methods than now prevail in the routine inspection of a city's milk supply.

Necator Americanus.—R. C. Rosenberger and W. Brinton report the case of a native of Madras, who, although in this country only six years, gave evidence of infestation with *Necator americanus*.

Hospitals for Inebriates.—T. D. Crothers states that the success of the new movement in New York for the establishment of a hospital for inebriates is no experiment or theory. There must be a rare combination of the best methods of the prison, the reformatory, the insane hospital, the sanatorium, and the home, applied with skill and fine discretion. There must be a military plan of responsibility and obligations with rewards and merits, built up and fostered along certain lines that are stimulating and educational.

Overdoing in Tuberculosis.—C. Rayevsky comments on the frequency with which a diagnosis of tuberculosis is made without justification.

Myopia in School Children.—W. H. Bates has found that school children do not focus their eyes accurately on writing on the blackboard, or pictures, maps, persons, or other new or strange distant objects. They become myopic when they do not learn to adjust their eyes properly for distant vision. Myopia is prevented by teaching school children to focus their eyes accurately for distant objects. The Snellen test card is found to be the best object to use for exercises in distant vision. It is placed permanently in each class room where all the pupils can see it from their seats. They are encouraged to read daily the smallest letters they can see, with each eye separately, covering the other eye with the palm of the hand in such a way as to avoid pressure on the eyeball.

Street Virus and Antiformin.—F. Proescher has already reported the discovery of an antiformin-resistant microorganism in the brain of animals infected with street virus. In a recent series of experiments the author has been able to produce hydrophobia by dissolving the brain containing the above microorganism in 20 per cent. antiformin solution and injecting the sediment in animals, thus confirming his original observation.

Journal of the American Medical Association.

July 29, 1911.

Viscosity of the Blood. R. Burton-Opitz.
The Perpendicular Pelvis in the Human Female as an Index of Retarded Development in Its Soft Parts. F. H. Martin.
An Index to the General Blood-Pressure: The Venous Pulse and Blanching of the Retinal Vessels Induced by Pressure on the Eye-Ball M. Black.
Rectal Prolapse. L. L. McArthur.
Woody Phlegmon of the Neck (Reclus). C. A. Powers.
Brain Tumor. Report of Nine Cases. S. Voorhees.
Subhyaloid and Vitreous Hemorrhages. H. Woods.
An Esophageal Dilator and an Esophageal Sound. W. Lerche.
A Method of Fixation of Vein to Facilitate the Introduction of a Needle for Intravenous Injections. J. J. Watson.
Spontaneous Rupture of the Superior Vena Cava Within the Pericardium. E. E. Sherrard and C. A. Smalley.
Tuberculosis in the Southwest. E. S. Bullock in Collaboration with LeR. S. Peters.
Three Unusual Bronchoscopic Cases: (a) Tumor in the Bronchus; (b) Tracheal Stenosis; (c) Tracheal Scleroma. E. Mayer.
Placenta Previa: A Warning. J. F. Baldwin.
A Modification of Sluder's Method of Tonsillectomy. L. C. Rood.
Chalk Paste. A Substitute for Bismuth Paste. J. R. Mitchell.
Comparative Value of Some Urethral and Other Germicides. J. B. Clark and L. A. Wylie.
Hints for Radiographers. M. A. Walker.

Viscosity of the Blood.—R. Burton-Opitz states that experiments show unmistakably that the blood-flow changes in harmony with the viscosity and, while the latter may play a very important part under certain conditions, too much clinical importance has been attached to it. It is only when special dynamic conditions exist that it becomes important; ordinarily the effect of the viscous resistance is readily neutralized and it is only when the vasomotor nervous mechanism is rendered more or less sluggish by disease or otherwise that the changes are not equalized and overcome.

Perpendicular Pelvis.—F. H. Martin states that the perpendicular pelvis is one of the peculiarities of skeletal defects noted by him in a previous paper and continued observation has only strengthened his belief in its importance as pointing to coincidental visceral and muscular irregularities.

Venous Retinal Pulse.—M. Black calls attention to the blanching of the retinal vessels caused by pressure on the eye-ball, together with production of the venous pulse, as an index to the general blood-pressure.

Rectal Prolapse.—By L. L. McArthur. See MEDICAL RECORD, July 8, 1911, page 99.

Woody Phlegmon of the Neck.—C. A. Powers reports three cases of this condition and states that the theory of Reclus that it is a form of anatomical reaction of the tissues to the presence of pathogenic organisms or fungi may at this time be accepted in place of a more definite explanation. The general tendency of the disease is toward recovery.

Brain Tumor.—S. Voorhees reports nine cases of this condition, noting some of the earliest symptoms, such as temporary amaurosis, deafness in one ear, loss of sense of direction, etc.

Subhyaloid and Vitreous Hemorrhages.—H. Woods reports five cases that have come under his observation. He finds from the consideration of the whole evidence collected that many individuals recover after having been totally blind from this cause, without the eyes showing evidence of the cause of the condition after recovery.

Esophageal Dilator and Esophageal Sound.—W. Lerche describes these two instruments which he has recently devised.

Intravenous Injection.—J. J. Watson describes his method of fixation of a vein by means of a medium-sized sewing needle passed through the skin and upper quadrant of the vein at right angles to its axis. The hollow needle is then introduced into the vein, while the latter is being lifted by means of the transfixing needle with a hemostat attached.

Rupture of Vena Cava.—E. E. Sherrard and C. A. Smalley report a case of spontaneous rupture of the vena cava within the pericardium.

Tuberculosis in the Southwest.—E. S. Bullock and LeR. S. Peters discuss the advantages of climatic treatment, especially of altitude.

Bronchoscopy.—E. Mayer reports three unusual bronchoscopic cases: one of them, a case of papillomatous growth at the bifurcation of the trachea, completely relieved by removal; the other two, of narrowing of the trachea by diphtheritic stenosis and scleroma.

Placenta Previa—A Warning.—J. F. Baldwin refers to the possibility of concealed hemorrhage going on after the leg has been brought down by the Braxton-Hicks method.

Tonsillectomy.—L. C. Rood describes his modification of Sluder's operation; namely, the use of the ordinary tonsil snare, passed over the tonsil external to the already applied guillotine.

Chalk Paste.—J. R. Mitchell recommends the use of this as a substitute for Beck's bismuth paste.

Urethral Germicides.—J. B. Clark and L. A. Wylie report the results of their experiments, which would indicate that the germicidal power of silver nitrate is not exceeded by that of other silver preparations.

Hints for Radiographers.—M. A. Walker suggests, when a second radiograph of the same part is required, that it can be made on the same plate by the use of a lead screen covering half the plate at a time and making the second exposure on the previously unused plate. This is more economical and convenient than using separate plates.

The Lancet.

July 22, 1911.

Cardiovascular Degeneration. J. M. Bruce.
On the Differential Diagnosis of Over-Distension of the Lung and Pneumothorax. H. Walsham.
The Permanence of the Cure of Syphilis by 606. J. McIntosh and P. Fildes.
Acute Dilatation of the Stomach. An Account of Six Addditional Cases, and a Consideration of the Cause of the Coexisting Duodenal Obstruction. C. R. Box and C. Wallace.
On the Occurrence of General Subcutaneous Nonrenal Edema as a Familial Affection. F. H. Edgeworth.
Sarcoma of the Penis. H. M. Galt.
A Case of Anterior Dislocation of the Semilunar Carpal Bone. W. R. Bristow.
A Case of Plus-Pressure Anesthesia for Exploratory Thoracotomy. F. H. Wallace.
Infarct of the Transverse Colon. H. T. Gillett.
Cases of (1) Chronic Pancreatitis, and (2) Carcinoma of the Pancreas. G. Y. Thomson.
Feeding Experiments in Fowl Spirochetosis. A. Balfour.
A Fatal Case of Phlegmonous Inflammation of the Duodenum Following Impaction of a Fish Bone. G. Taylor.

Cardiovascular Degeneration.—J. M. Bruce describes the manner in which intellectual and emotional stresses wear out the cardiovascular system. Between the thirty-third and fifty-fifth years of life women fall victims to disease of the cerebral arteries in greater proportion than men. In cardiovascular degeneration the physical signs are of more individual value diagnostically than the symptoms. A diastolic aortic murmur in this condition should lead one to suspect syphilis, while the presence of a mitral murmur indicates metabolic or gouty disease, in which it is relatively common. Enlargement of the heart without murmur of any kind, but with feeble cardiac sounds and a thickened radial, should make one inquire after physical strain. The management of the case consists in retaining the control one has gained of the cause of the disease, and in resisting as long as possible the growing dangers for which one must be prepared.

Over-Distension of the Lung and Pneumothorax.—H. Walsham states that these conditions can be differentiated from each other by the fact that in *x*-ray examination in the latter the shadow of the collapsed lung can always be seen while in the former it is never so seen.

Salvarsan.—J. McIntosh and P. Fildes state that the intravenous injections, so far as is known at the present time, have fulfilled all that has been claimed for this form of treatment. They appear to be very admirably suited to the treatment of syphilis. Forms of application other than the intravenous are relatively unsuitable.

Acute Dilatation of the Stomach.—C. R. Box and C. Wallace report a series of cases to support their contention that the pressure exerted on the duodenum by the dilated stomach is an important factor in the production of obstructive symptoms. The compression must of necessity be greater before the abdominal cavity is opened, owing to the resistance and counter-pressure exercised by the abdominal muscles. For this reason experiments on the cadaver with the stomach exposed only reproduce in an imperfect manner the conditions present during life. Beyond reiterating the importance of combining lavage with the prone position, the authors state that they have nothing to add as regards treatment.

Nonrenal Edema as a Familial Affection.—F. H. Edgeworth records his observation of six children born to healthy parents who developed a subcutaneous edema at ages varying from 1 to 15 weeks. In one case it was slight and confined to the face, and the child recovered; in the other five death ensued after a period of from 1 to 16 weeks. In three, at least, of the cases no albumin was present in the urine. In the two cases examined post mortem no evidence of nephritis was found. If the possibility of inborn variations in the permeability of capillary walls, and in their liability to damage by circulating poisons, were admitted, it would afford an explanation of those cases of general dropsy of the fetus where no anatomical defects in the placenta and fetal organs are present, of the cases of hereditary trophedema (Milroy's disease), of the susceptibility of certain individuals to erythemata and urticaria on the slightest toxemia, as well as of the history of the children whose cases the author reports.

Sarcoma of the Penis.—H. M. Galt, in reporting a case of the condition, states his belief that it is not as rare as present statistics appear to indicate.

Anterior Dislocation of the Semilunar Carpal Bone.—W. R. Bristow, in reporting a case of this condition, notes that the dislocation of a single carpal bone is a somewhat rare occurrence. Codman and Chase have collected 12 cases of dislocation of the semilunar bone, and in almost all of these cases there has been fracture of the scaphoid as well. In the only two cases in which this dislocation occurred, and in which the scaphoid was intact, the radius or ulna was fractured. In the present case, although a series of photographs and stereoscopic views were taken, there was no sign of fracture of the scaphoid or of the radius or ulna.

Plus-Pressure Anesthesia.—F. H. Wallace describes his apparatus as used for this purpose in a case of exploratory thoracotomy.

Infarct of Transverse Colon.—H. T. Gillett reports a case of this condition and states that two types of cases have been described by Kussmaul and Gerhardt: 1. Sudden abdominal pain followed by nausea or vomiting and also diarrhea, which is at first mucous and watery and at last bloody. Gerhardt states that the blood is bright red when the inferior mesenteric is obstructed, but that in obstruction of the superior vessel it is darker. Kemp states that it is generally dark. In the present case it was bright red in the actions on the third day of the illness. 2. The second type of case simulates acute intestinal obstruction, with distended painful abdomen and sometimes feculent vomiting. The mortality is very high, 92 per cent., in Jackson's, Porter's, and Quimby's cases. Death occurs within three days as a rule; the longer duration, six days in this case, may have been because the colon was affected and the obstruction was not complete.

Chronic Pancreatitis and Carcinoma of the Pancreas.—G. Y. Thomson reports three cases of the former and three of the latter condition and notes the following points: 1. The results of cholecystenterostomy in cases of chronic interstitial pancreatitis compressing the bile-duct are excellent; 2, the difficulty of diagnosis between the two conditions even when a laparotomy is performed, and hence the advisability of cholecystenterostomy in doubtful cases; 3, the mortality in cases of carcinoma, though temporary relief may be afforded by operation.

Fowl Spirochetosis.—A. Balfour concludes from his experiments that spirochetal infection in fowls can take place per os.

Phlegmonous Inflammation of Duodenum.—G. Taylor and C. E. Lakin report a case which had a twofold interest in that, first, the duodenum is an uncommon site for the penetration of a fish bone; and, secondly, in that the condition produced by the latter—phlegmonous duodenitis—is a very rare condition whatever be its cause. In MacCallum's collected series of cases of phlegmonous enteritis many showed absolutely no sign of any breach of the mucous membrane, whereby the organism could have gained access, but, inasmuch as certain of the cases have followed traumatism, he suggests that the injury may have produced a point of lowered resistance into which organisms are carried by the blood stream, and he comments upon the relative freedom from bacteria of the uppermost part of the alimentary tube. In most of the cases of phlegmonous enteritis recorded streptococci have been obtained, and in one case in addition a *Staphylococcus albus* was also found. In the present case the colon bacillus was the organism isolated in pure culture, and this suggests that the infection came from within the bowel; and the fact that the patient had had so-called "bilious attacks" before suggests that the duodenum was

not sterile. The presence of the fish bone *in situ*, however, seems to prove conclusively that in this case the infection came from inside the duodenum and was not blood-borne.

British Medical Journal.

July 22, 1911.

Some Latter-Day Intrusions of the Surgeon on the Abdomen. C. P. Childe.
Primary Sarcoma of the Vermiform Appendix. G. Wright.
The Importance of Drainage in Septic Conditions of the Uterus. J. T. Maclachlan.
Adenopapilloma of the Rectum. R. Parker.
Surgical Interference in Cancer. (An Experimental Study.) A Paine and G. W. Nicholson.
On the Influence of Calcareous Drinking Water in Health and Disease. P. G. Lewis.
Congenital Deficiency of Speech Areas. (Congenital Aphasia.) A. E. Tait.

Surgery of the Abdomen.—C. P. Childe states that surgery, being the simpler science, has naturally outstripped medicine in the treatment of disease generally, and in the present stage of the evolution of the science of healing the treatment of the abdomen is almost exclusively surgical. All must recognize, however, that, at best, surgery, notwithstanding all its modern refinements of technique, is a somewhat crude method of treating disease; and there are not wanting signs that many abdominal diseases, especially those of microbic origin, may in the not distant future revert to the province of the physician and be cured by methods less drastic and more scientific than the knife; and it is probably not a vain prophecy that future generations of medical men, with their hypodermic syringes in their pockets, will marvel at the barbarous methods that have been employed of treating abdominal disease early in the twentieth century.

Primary Sarcoma of the Appendix.—G. Wright notes that, although cases of primary malignant disease of the vermiform appendix have been recorded frequently of recent years, the great majority are examples of carcinoma. Harte, writing in 1908, collected 120 cases, 114 being carcinomata and only 6 sarcomata. The author has been able to find records of two other cases, which, with his own, bring the total up to 9.

Uterine Drainage.—J. T. Maclachlan advocates in cases of postpartum sepsis in which there is a purulent discharge from the uterus the insertion into the latter of a glass drainage tube, which is to be kept there until the discharge ceases.

Adenopapilloma of the Rectum.—R. Parker reports a case of this condition. The growth when removed measured 2 by 3¾ inches.

Surgical Interference in Cancer.—A. Paine and G. W. Nicholson, as the result of their experimental investigation carried out on mice, conclude that incomplete removal of a carcinoma is often followed by a rapid recurrence of greater virulence than that of the original tumor, and that this increase in the virulence is mainly due to the remaining fragments having a very rich blood supply.

Influence of Calcareous Drinking Water.—P. G. Lewis states that there is no evidence that hard water has any bad effect in health or disease.

Congenital Deficiency of Speech Areas.—A. E. Tait notes that congenital cases must be due (1) to lesions—intrauterine or at time of birth—or (2) developmental defects. One or more of the speech areas subsequently to be trained for speech are destroyed or defective. "Congenital deficiency of speech areas" would be a clearer description of the condition, since aphasia carries with it the association of more or less established function of the speech areas, and some subsequent thrombosis embolism, tumor, hemorrhage, meningitis, etc. Congenital cases appear more likely to be bilateral and developmental in origin.

Münchener medizinische Wochenschrift.

July 11 *and* 18, 1911.

Trypsin Treatment of Surgical Tuberculosis.—Brandes writes at length on this subject and covers what has been done in the past as well as his own exhaustive studies at Kiel. He entertains favorable expectations of the method in conservative surgery and cautions against expecting too much from a simple enzyme treatment. The liquefaction is always remarkable, typical in fact. Trypsin is inferior to iodoform-glycerine in bone tuberculosis. Iodoform poisoning often shows the rapidity of the action. It must be remembered that iodoform-glycerine is a resource of very great efficacy, one which is not readily surpassed. Bätzner, one of the first sponsors of the treatment, has recently announced that he finds some trypsins much superior to others.

Subperiosteal Diaphysis Resection in Acute Suppurative Osteitis of the Fibula.—Sulzer states that his method is indicated for the following reasons: 1. If the general condition is severely compromised, it effects rapid evacuation of the pus and diminishes the danger of sepsis. 2. It serves to delimit diffuse suppuration of the fibula, both in subperiostal detachment and when foci exist in the compact bone or marrow. No technique is given because the operation itself is by no means new, being found in standard works on surgery, and was in fact one of Ollier's brilliant pioneer contributions to bone surgery.

The Trachoma-like Disease of the Newly Born.—Wolfrum covers the evolution of our knowledge of this disease, which has interested alike ophthalmologists, microbiologists, and urologists. His article is mainly retrospective and critical with his own personal experience. In Leipzig sporadic trachoma is by no means a rarity, and it develops in subjects who have neither been abroad nor been in contact with suspects. These trachoma subjects may all have had some disease of the sexual organs. In one instance a servant girl had marked trachoma, and she had been taking care of a nursling who had an affection of the eye. Now that attention is directed to such associations we should make some progress. One such case means much. Unfortunately it was impossible to fill out the details of the case. It is, of course, unknown whether she had the so-called inclusion catarrh of the conjunctiva which is believed to stand in some definite relationship with the gonococcus or a frank blenorrhea neonatorum. It may be imagined that a subject with so-called inclusion catarrh of the urethra simulating gonorrhea affects his own conjunctiva and in time develops a true trachoma. Or a pregnant woman with inclusion catarrh of the vagina infects her newly born child with blenorrhea neonatorum. There is no longer doubt that the latter condition may occur with nothing but inclusions in the pus, just as it occurs with both inclusions and gonococci. It is anatomically impossible for an infant to exhibit a condition like true trachoma in the adult, and the rapidly destructive consequences in the child would also give trachoma no opportunity to develop.

Inversion of the Vermiform Appendix.—Langemak reports a case of isolated and complete inversion of the appendix, one of the rarest of affections. Only 15 have hitherto been placed on record. There is almost always an accompanying invagination. The patient was a boy aged 4, whose symptoms pointed to an acute appendicitis. Laparotomy revealed absence of appendix, but corresponding to the site of the latter a funnel-shaped depression. A certain degree of disinvagination was effected by manipulation, after which ordinary appendectomy was possible. An abscess which had formed beneath Poupart's ligament was evacuated. The termination of the case was successful.

Eye Affections in Acne Rosacea.—Three ophthalmologists have reported cases of this association. Hilbert adds a fourth report and advises an examination of the eyes in every case of rosacea. The eye affection does not apparently conform to any known type, at least no diag-

nosis is given. The symptoms comprised lacrymation, reddened conjunctivæ, ciliary injection; chief of all and most characteristic were the corneal lesions. These were symmetrical. On both sides in the horizontal meridian sprang from the thickened limbus a narrow tuft of fine blood-vessels, which ran inward and downward, diverging like a broom. The pupils were very narrow, the vision 5/5 on both sides. The affection was painful. After peritomy on the inner aspects of both corneæ and instillation of homatropin, the pain and lacrymation subsided, but no further improvement resulted until the skin affection was much improved by a dermatologist.

Anesthesia of the Brachial Plexus for Surgical Operations on the Upper Extremities.—Hirschel has recently used this resource in three cases, securing complete anesthesia of the entire arm. The practice is, of course, by no means new, but heretofore results have not been wholly satisfactory. The author's technique secures better access to the plexus and better avoidance of blood-vessels. Novocain was used in 2 per cent. solution. The first case required operation on the elbow joint for a bullet removal. The second was one of tuberculosis of the same joint, while the third was one of osteomyelitis of the ulna. There were some of the common objections to major anesthetics. The entire technique is too extensive for reproduction.

Deutsche medizinische Wochenschrift.

July 13 and 20, 1911.

Diagnostic Significance of Urinary Pepsin in Gastric Diseases.—Scholz states that determination of urinary pepsin might be made useful for recognizing stomach disease as follows: If in clinically doubtful cases of gastric cancer urinary pepsin is present in normal or excessive quantity while the stomach pepsin in a trial meal is devoid of action, and the same result occurs after a bouillon meal, the evidence points to cancer.

Pulmonary Tuberculosis Appearing as a Cardiac Affection.—Rotky refers naturally to the simulation of cardiovascular murmurs by pulmonary murmurs and *vice versa*. A case is given as follows: In May, 1911, a woman aged 55 years was admitted to von Jaksh's clinic who had been in good health until a few months before, when she began to cough violently. It ceased as promptly, after which her legs swelled. She had had climacteric for six years. Uroscopy showed albumin. Respiration 38, chiefly costal. Heart dullness much increased and all valves show murmurs. Pulse 108. Increased arterial tension. Coarse moist râles over lungs, and bronchial breathing over one apex. The woman had beginning cataract and various signs of arteriosclerosis. There were also notable pallor and enlarged supraclavicular and axillary glands. The diagnosis was mitral insufficiency and stenosis, dilated heart, visceral stasis, etc., from cardiac insufficiency, including nephritis. The other symptoms, such as lymphnodes, anemia, etc., suggested metastatic cancer. Nowhere was there evidence of tubercle. Autopsy showed extensive bronchiectasis on both sides, total adhesion pleurisy and enlarged tracheobronchial glands. Tuberculous foci in throat and intestine. There were excentric hypertrophy of the right ventricle and the lesions of heart stasis. Comment is hardly necessary. The individual lesions were recognized, but their significance and correlation wrongly appreciated.

Anaphylactic Intoxication.—Biedl and Kraus state that ox-blood serum, rabbit-blood serum, and Friedberger's anaphylatoxin cause poisonings which differ from anaphylaxis. In these poisonings we miss the bronchospasm caused in guinea-pigs, while the lungs, unlike those of true anaphylaxis, respond to artificial respiration. In dogs, in contrast to the phenomena of anaphylaxis, we see no sinking of blood-pressure while the blood coagulates. There are various other differences in the two kinds of poisoning.

Lefthandedness.—Liepmann concludes a serial on left culture, the final paragraphs of which, as well as the entire article, consider its association with the superiority of one hemisphere and with the function of speech. Naturally a vast amount of different facts have to be collected and analyzed. Ambidexters should be studied, both the natural kind and those who have become so by art or education. Cerebral affections in ambidexters should be studied. The material can naturally be secured from school children. The born lefthanded have not been much studied among the intellectual classes, and the significance of lefthandedness in the mentally defective cannot therefore be fully appreciated.

Use of Salvarsan.—Hoffmann and Jaffe state the drug continues to act as an excellent antisyphilitic and is almost always well borne even in repeated intravenous injections. In very rare instances collapse symptoms appear immediately upon injection. The skin becomes bluish red, the face swollen, there is cardiac weakness, etc., for which it is necessary to inject caffeine and camphor and have oxygen inhaled. These phenomena have never occurred after a first injection. A feeling of heat, with redness of the face, occurring even in the course of the injection is a common prodrome and may enable the operator to cut short the injection. The combined treatment (salvarsan and Hg) is especially recommended for abortive purposes.

X-Ray Treatment of Myoma.—Schmidt states that there are myoma cases and cases of marked menstrual hemorrhage which yield but little or not at all to the *x*-ray. These cases, however, are rare, and due probably to unusual resistance on the part of the ovary (they occur only in young women). There were four deaths in 400 cases, but two were not due directly to the rays. A third death occurred directly after the first series of rays from progressive heart failure; this in spite of the favorable effect on the hemorrhage. A fourth case was of the same type. These cases warn us to keep watch on the heart during *x*-ray treatment, even though it cannot be shown that the rays act directly and deleteriously on the heart.

Treatment of the Thyroid in Thyroidismus with X-Rays.—Simon reports two brilliant results of treating acute "iodine Basedow" with the *x*-rays. The thyroidism had been produced after minimal doses of iodine. The striking and indisputable character of the results lay in the prompt subsidence of the syndrome under the rays. The author recommends the method for acute thyroidism from any cause. It is evident that the rays directly depress the secretion of the glands, so that they may be useful in any condition where the secretory function is in excess, even when there is no acute thyroidism.

Inhalations of Ozone as a Specific Remedy in Whooping-Cough.—A. Varet advocates the use of ozone inhalations for the cure of whooping-cough, and thinks that for the poor hospitals should be established where the children can be kept isolated and given this treatment for whooping-cough. This would at once put an end to the deaths from this disease. The inhalations diminish at once the duration and severity of the paroxysms of cough and vomiting, and soon the child is able to sleep and eat, and regains his strength. The duration of the disease will then be from ten days to a month. The ozone apparatus may be attached to an ordinary current such as is used for an incandescent lamp. The sittings may be from every other day to twice a day, and should last ten to fifteen minutes, with the child 50 cm. from the instrument.—*Revue de Therapeutique Medico-Chirurgicale.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

By THE INSURANCE EDITOR.

METHODS IN EXAMINING.

THE examiner will execute his mission with greater facility and expedition and the quality of his work will redound more to his credit if he cultivates system and method in his examinations. While the examination blanks are framed to assist him in this respect, they must necessarily be compact, and on this account it is impossible to incorporate references to every conceivable contingency. It frequently happens that an important point develops in the case which is only referred to on the application in a general way, or perhaps not mentioned at all, and yet, in order to present a complete report, it is imperative that this point be described fully and in detail. The company must, therefore, rely upon the acuteness and observation of the examiner to ferret out complete information, whether asked for on the examination blank or not, and to give all particulars obtainable. It is not pleasant for an examiner to discover that he did not include certain facts in his report because they were not called for on the blank. The only way for him to cover every point and get a full, rounded report is to invariably follow some definite plan, calculated to accomplish this object with thoroughness and despatch. The following synopsis is one which will aid an examiner, and if this, or a modified form to suit the individual taste or the special blank of the company represented, is observed in every examination, the ground will be well covered, though even then some situation not included in this scheme will come up occasionally. In this skeleton sketch brevity has not been sacrificed for the discussion of details, especially as it is planned to take up each subject referred to later on.

HYGIENIC SURROUNDINGS.—Anything unhealthful or unsanitary in the house or immediate surroundings?

OCCUPATION.—Unhealthful or dangerous? Is it stated correctly in the application?

MORAL HAZARD.—Is the insurance speculative? What is the insurable interest of the beneficiary? Is the amount applied for warranted by the state of finances?

PERSONAL HISTORY.—*Note*—The examiner will not get explicit answers unless his questions are explicit, specific, and insistent, but always with patience and tact. General questions will only bring out generalities and evasions, especially when the applicant is disposed to keep back certain facts or underrate their importance. In order that the information gained from these questions may be complete, it should invariably comprise the name of the disease, number of attacks, the cause, duration, severity and remaining effects of each attack, and the date of the last attack.

Nervous System.—Any dizziness, fainting spells, unconsciousness, convulsions? If so, any suspicion of epilepsy? Also, any insomnia, insanity, apoplexy, paralysis? Any history of headaches, nervous prostration, neuralgia, tremor, sunstroke?

Circulatory System.—Any palpitation, heart trouble, varicose veins, pain in the region of the heart? Dropsy?

Respiratory System.—Chronic or persistent cough or hoarseness, spitting, or coughing of blood? (Always report spitting of blood no matter how trivial or what the alleged source may be.) Any bronchitis, pleurisy, pneumonia, consumption, asthma? Subject to frequent colds?

Digestive System.—Any dyspepsia, indigestion, biliousness? If so, always ask if there was any suspicion of appendicitis, gallstones, or renal colic, and report the answer, whether negative or affirmative. Any hematamesis, appendicitis, intestinal colic, diarrhea, hepatic colic, jaundice, disease of the liver, hemorrhoids, fistula, tape worm?

Genito-urinary System.—Any disease of the kidneys, pelvis of kidney, bladder, prostate, testicles? Any renal colic, dropsy, hematuria, frequent urination, stricture of the urethra, hydrocele?

Unclassified Diseases.—(So called in insurance medicine as a convenience.)

Malarial and Other Fevers.—If malarial, state whether intermittent or remittent. Any hematuria?

Rheumatism.—Articular or muscular? Number of attacks, parts affected in each? Date and duration of each? Heart involved?

Gout.—Very important to report number of attacks, parts affected, severity, and whether any symptoms between attacks.

Syphilis.—Date of initial lesion and secondaries? Any tertiaries? Date of last manifestation and treatment?

Abscess or Ulcer.—Full history. Any suspicion of tuberculosis, malignancy, or syphilis?

Skin.—Syphilis, tuberculosis, or malignancy? If erysipelas, number and dates of attacks?

Nose.—Chronic catarrh? Polypi?

Ear.—Full details of any discharge, whether acute or chronic.

Scrofula, Swelling or Suppuration of the Glands.—Tuberculosis, any suspicion of?

Surgical Operations.—Full details. Any suspicion of malignancy or tuberculosis?

HABITS.—Drugs? More difficult to get history than when alcohol used to excess, also more important.

Alcohol? Amount daily consumed, and the most used in any one day? Ever to excess? If so, frequency, duration of periods, and date of last excess? Ever take any cure? If so, date?

FAMILY HISTORY.—Fill out as required on blank. Give specific causes of death and omit terms such as "Don't know," "Natural causes," "Debility," "Childbirth," and "Change of life" whenever possible. Any tuberculosis in immediate household during past year? If any death from tuberculosis, give date.

PHYSICAL EXAMINATION.—For the physical examination, the applicant's chest and abdomen should be bared. This is easily accomplished by removal of coat, waistcoat, and suspenders, and then rolling up both shirts.

General Appearance.—Healthy or unhealthy? (Do not use the term "Fair.") If pale, state whether due to anemia or ill health, or solely to indoor occupation or natural color. Jaundice, marked sallowness, or evidence of dissipation?

Apparent Age.—As stated or older?

Race.—White or Caucasian? Negro? Indian? Do not answer by giving nationality.

Weight.—Ascertain by scales if near or beyond the limits set forth in table. If excessive, is it due to fat? If light, is applicant wiry or subject to some ailment or recent illness?

Measurements of Chest and Abdomen.—Ascertain by tape on bare skin. If abdominal measurement is excessive, is it due to fat or tumor?

Pulse.—Count before examining, as it may become rapid, intermittent, or irregular merely from excitement.

Arteries.—Thickening or atheroma? High tension? Take blood-pressure if apparatus is at hand. Possibility of aneurysm should not be forgotten.

Heart.—Size, sounds, position normal? Differentiate functional and organic murmurs.

Lungs.—Special attention should be given to apices, as any tuberculosis met with is usually in the initial stage. Note any huskiness of voice and the number of respirations.

Liver and Spleen.—Map out size and location. Any tenderness?

Hernia.—Reducible? Is it supported by proper fitting truss?

Thyroid Gland.—Small goiters often missed. Any exophthalmos or nervous symptoms?

Nervous System.—Test pupillary and patellar reflexes. Any tongue tremor? Is speech normal or hesitating? Are pupils equal in size and are they contracted or dilated? Have applicant walk and observe gait. If any tremor of hands, is it due to organic disease or to nervousness or illiteracy?

Eyes and Ears.—Any impairment of sight or hearing? Ordinary errors of refraction corrected by glasses not worth noticing. If any discharge from ear, is it serous, purulent, bloody, or offensive? Any tophi signifying gout?

Skin.—If any disease, parts affected and extent?

Mouth, Teeth, and Tongue.—Any signs of digestive disturbances, syphilis, or nervous disease?

Deformities.—Curvature of spine? If any, is it lateral of anteroposterior? Give accurate idea of deviation. If hip disease, are there any scars and how much shortening? Describe and give history of any other deformity.

Urine should be passed in clean vessel in presence of examiner.

Women.—All the questions in the blank referring to women should be asked, whether she is single or married. Corsets and all clothing except a thin waist should be removed from chest.

National Insurance Legislation in Germany.—(See pages 331 and 336.)

Some Chronic Diseases of the Lungs in Connection with Longevity, Excluding Tuberculosis.—Arnold Chaplin divides his subject into a consideration of (1) fibroid conditions of the lung; (2) chronic pleural effusions. Cases of fibroid conditions of the lung are often met with and it has been a matter of difficulty to arrive at a satisfactory basis when dealing with them from a life insurance point of view. As to etiology, the greater number of these cases owe their origin to acute pulmonary affections of early childhood. The next important point is the duration of the disease. Some high authorities have held that all fibroid diseases of the lung last a very long time, and are frequently found in old age. Chaplin does not think this is so, but regards from fifteen to twenty years as the average duration of a cirrhosis of the lung beginning in early life. The prognosis of cases beginning late in life is far worse. He sums up by stating that fibroid disease of the lung, unless very limited in extent, is unfavorable from a life insurance standpoint.

With regard to serous pleural effusions, Chaplin does not think that such are necessarily of tuberculous origin. The problem, however, when the exudate has become purulent and an operation has been required is different. The opinion is advanced that the fact that there has been a simple pleural effusion should offer no bar to acceptance by an insurance company, while the same may be said of empyema if occurring in early life, and if the resulting collapse of the lung is trifling; but empyemata taking place after the age of twenty or twenty-five are suitable only with a considerable extra premium and for a short term.—*Transactions of the Life Assurance Medical Officers' Association, London*, 1910.

The Correlation of Diseases; or, What Is Inherited?—G. A. Van Wagenen discusses the uncertainty of everything earthly and states that we live in an atmosphere of probabilities. Not only are we unable to tell when men will die, we cannot even tell what road they will take to the tomb. We turn with hope to the statistics only to recollect that medical statistics are based on uncertain data, family and personal records. Experience crystallizes these uncertainties into opinions and conclusions which we treat as facts. Our loss papers show that men do not die of the diseases we expected them to have and do not inherit the special diseases of their ancestors. What, then, is inherited? The correlation of forces is no longer recognized as a theory and is not limited to physical force. Recent studies seem to have demonstrated that the infinite variety of material objects about us are in essence but different combinations of the electrons and atoms of a single substance or matter. It is not claimed that all diseases are different manifestations of a single essence, but it is suggested that there is one underlying factor common to diseases which appear to be as different as the variations of force and substance. It is further suggested that this factor, which is inherited from our ancestors, and either increased or diminished by environment, is simply the increased or decreased vitality of the ultimate cells which compose our bodies. It is, in fact, weakened vitality, be it inherited or acquired, that renders a person susceptible to infection. In consequence, it behooves the physician to urge treatment of this condition rather than the one or two most troublesome symptoms of the disease. Thus to medical directors of an insurance company the general vitality of a family and the average ages reached, as well as the general character of the deaths, are more important than just what diseases prevailed. Van Wagenen's thirty years' work has convinced him that (1) Consumption and cancer very frequently occur in the same record as inheritance from the same parents. (2) Fistula in ano is frequent in those whose records are cancerous as well as in the tuberculous inheritance. (3) Hernia is frequent in families strongly either consumptive or cancerous. (4) It is very common to find deaths from both paralysis and phthisis associated in the same family record. (5) Bright's disease, paralysis, alcohol or morphine habit, epilepsy, and insanity are frequently an interchangeable inheritance from the same ancestors. (6) Insanity, epilepsy, etc., occur usually in very weak records. (7) Consumptive parents have a large proportion of dissipated children. (8) Both overweight and underweight predispose to diseases of degeneration. (9) It is common to find the parents of a living father or mother reach old age while those of the dead parent died early. (10) The family records of men who have themselves lived to be over seventy are singularly free from all the degenerative diseases either of the lungs, brain, heart, or kidneys. (11) It is also interesting to note how very common it is for an overweight to have at least one parent dead of heart disease, apoplexy, Bright's disease, or arteriosclerosis. Children inherit predisposition to disease in general and not particular disease, or they inherit magnificent vitality which enables them to withstand disease. If this be so it is the duty of the medical director to seek the germ of personal vitality in each case rather than to measure the size and strength of an applicant for insurance or to note what particular diseases his family were the victims of.—*Proceedings of the Twentieth Annual Meeting of the Association of Life Insurance Medical Directors of America.*

Some Medical and Insurance Problems Arising Out of Recent Industrial Legislation.—Sir Thomas Oliver

deals with the recently enacted Workmen's Compensation Act of Great Britain. A somewhat similar law exists in Germany but the organization differs from that of Great Britain in that in Germany there is no claim upon the employer's fund until the injured workman has been in receipt of sick insurance for thirteen weeks, and as the sick funds are largely controlled by the working men themselves they are not likely to allow their fellow-men to remain off work longer than they can help. In Great Britain, on the contrary, an injured workman off work for longer than a week can make a claim upon his employer and be in receipt of both his friendly society pay and his compensation as well. In Holland the law is very similar to that of Great Britain. In France there is a somewhat elaborately designed law of workmen's compensation for injury. The British law has worked well and there has been little litigation between employer and employee. The coal mining boards of directors prefer arbitration to litigation.—*Transactions of the Life Assurance Medical Officers' Association,* London, 1910.

Prevention of Early Consequences of Accidental Injury.—Grunewald says that bad consequences of injuries can be the better prevented the earlier the patient gets medical treatment. With the modern simplification of technique, it is not always necessary to send the patient to a hospital. The most important thing in treating injuries is asepsis. Alcohol disinfection of the hands is sufficient: the hands and forearms are washed for one or two minutes in warm soapsuds, no brush being used; the nails are then cleaned; then 90 per cent. alcohol is rubbed into the skin for five or six minutes. Other authors claim that alcohol alone is sufficient for disinfection. So far as disinfection of the wound and surrounding structures is concerned Grossich's method, consisting of covering the wound and skin with tincture of iodine, has proved quite trustworthy. No previous washing must be attempted, and any necessary shaving must be done dry. Iodine is to be applied to the needle punctures, if any suturing has been done. This method not only puts the physician working on the scene of accident or at the home of the patient on a par with one employing hospital technique, but it prevents any untoward consequences (cellulitis, tetanus, erysipelas) from small injuries.

So far as fractures are concerned, prolonged traction frequently results in weakened limb because of the heavy weights used in the old methods of treatment. Zuppinger has shown that little or no extra weight is necessary if the limbs are placed in such a position as would completely relax the muscles. Instead of complete extension, he uses semiflection, producing it by special apparatus. His methods diminish the time of convalescence. Extension by means of nails driven into fragments (methods of Codivilla and Steinmann) is useful, but is mostly applicable to hospital cases. Grunewald concludes with a plea for more general use of the *x*-rays in injuries of bones and joints, so that small injuries, dislocations, etc., can be more often recognized and untoward consequences prevented. He thinks that some portable *x*-ray apparatus should be widely used in country practice.—*Zeitschrift für Versicherungsmedizin,* May, 1911.

Traumatic Hemorrhage in the Region of the Conus Terminalis.—Hübler details a case of hemorrhage of this nature with a consequent partial disability due to the injury. More interesting, however, is the description of a traumatic neurosis following the disappearance of the consequences of the organic injury. The article must be read in the original, as it is not adapted for abstracting.—*Zeitschrift für Versicherungsmedizin,* May, 1911.

Medical Supervision of Laborers in Germany.—Holtzmann says that the government factory inspectors, who usually have had a technical or chemical training, have charge of the hygienic surroundings of laborers during working hours. In Bavaria, Baden, Würtemberg, and Alsace-Lorraine there are medical men employed in this work; elsewhere they are called in as consultants only. A few firms have private "factory physicians." The law in respect to factory hygiene in Germany is very general in terms, so that inspectors possess much independence in judging individual cases. The following are some of the provisions of the imperial labor law: Employment of children of the school age is forbidden. Children under sixteen years are forbidden to do night work. The employment of white and yellow phosphorus in the arts is forbidden. Female laborers cannot be employed in coke work, in ore mines, salt mines, or in any subterranean works of the same character. Employment of women and children is likewise forbidden in many chemical and other industries where the material used is of special danger to laborers. Holtzmann enumerates the individual industries under this heading. Only necessary labor is allowed on Sundays. For women and children ten hours make the maximum labor day. Special regulations exist in individual German States in reference to dangerous trades, such as lead industry, bristle and brush factories (anthrax!), etc. Raw bristles, etc., must be disinfected by boiling water, steam, or chemical means. Recent vaccination is required of laborers engaged in the feather industry and of those employed in rag-sorting works. Other sections of the labor law detail the minimum provision for ventilation, seating, water-closets, etc.

The German insurance law of 1883 provides for compulsory insurance against illness in the largest industrial branches. Insurance societies (*Kassen*) have been formed, their duty being as follows: (1) They must provide free medical attendance and free medicines, as well as such things as spectacles, trusses, etc. (2) The patient must be paid one-half his wages from the third day of illness on until twenty-six weeks have expired. (3) The same amount is paid to women for six weeks after childbirth. (4) In case of death twenty times the average amount of the daily wage, or at least fifty marks, is given to the family. Furthermore, the *Kassen* may extend voluntarily the above minimum provisions; they may support the patient for one year, instead of twenty-six weeks; may pay as much as two-thirds of the average daily wage; may pay for more expensive dental or orthopedic apparatus; may provide for free board and treatment in a hospital and still pay one-half the daily wage; may extend financial support during convalescence; may provide the services of a midwife and give financial support to pregnant women; may extend support to members of the laborer's family; may increase the amount paid in case of death, and pay money in case of death in the family. Two-thirds of the dues for such industrial insurance are paid by the laborers, one-third is paid by the employers. The laborer's dues must not be higher than 3 per cent. of the daily wage; the actual amount paid differs according to expenses of medical attendance, drugs, etc., in different places; university towns are usually cheapest in this respect.

The author then discusses first aid in case of accidents to laborers. Most factories have prominently placed instructions in first aid: bandages are provided; some industries have a special "ambulance corps" among the laborers; others provide private hospitals; still others keep all the necessary medical supplies for early and subsequent treatment of injured laborers. The author names the minimum requirements in this respect.—*Zeitschrift für Versicherungsmedizin,* January and February, 1911.

Tuberculosis Sanitorium.—The site for the tuberculosis sanatorium to be conducted by the Metropolitan Life Insurance Company in the neighborhood of Saratoga, has been extended to include land lying in the townships of Wilton and Corinth.

Book Reviews.

An Introduction to Dermatology. By Norman Walker, M.D., F.R.C.P.; Physician for Diseases of the Skin, The Royal Infirmary, Edinburgh, Fifth Edition. With 43 colored plates and 79 illustrations in the text. Price, $4.00. New York: William Wood & Co., 1911.

It is twelve years since the first edition of this work appeared, and the issuance of this fifth edition bears ample testimony to the popularity which this work has deservedly enjoyed. The large number of colored plates in addition to the numerous illustrations in the text impart to the volume the character of an atlas of dermatology in addition to its valuable features as a textbook. All of the more common diseases of the skin as well as the rare ones which are met with by the general practitioner are described, while those rare conditions which are of interest only to the specialist are omitted. The introductory section discusses briefly the subjects of structure, classification, diagnosis, and treatment, the last including the modern methods of *x*-ray treatment, phototherapy, and freezing. The following sections deal with the diseases of the skin under these headings: Anomalies of sensation; anomalies of secretion; anomalies of circulation; inflammations (traumatic, neurotic, and infective); new growths; malformations; saprophytes; and anomalies of pigmentation. This volume is replete with the essence of dermatology presented in a form available to the busy practitioner, without the mass of theoretical and controversial detail that fills the pages of the larger works. For this reason also it particularly suits the needs of the average student. From the artistic viewpoint this work maintains the high standard which has characterized former editions.

An Introduction to Bacteriological and Enzyme Chemistry. By Gilbert J. Fowler, D.Sc., F.I.C. Lecturer in Bacteriological Chemistry in the Public Health Department, Victoria University of Manchester; Examiner in Biological Chemistry to the Institute of Chemistry of Great Britain and Ireland. Price, $2.10. New York: Longmans, Green & Company; London: Edward Arnold, 1911.

The subject to which this attractive little volume is devoted requires for its adequate discussion incursions into nearly all the provinces of chemistry, and we accordingly find that the author has been obliged to give what is practically a résumé of the chief facts of organic chemistry together with frequent excursions into the fields of physical chemistry and physics. He has been remarkably successful in compressing a great deal of material into compact, but easily intelligible form, and his explanations of such rather difficult conceptions as the relations between optical activity and molecular structure, asymmetry of the carbon atom, and the chemistry of the sugars are models of brevity and clearness. As the book is intended to be of service also to general readers and to those without a complete laboratory training it includes sections on topics such as bacteriological technique which are not sufficiently full to be used as working guides but still are useful in enabling non-medical readers to follow the descriptions of the procedures and methods involved. Some idea of the general scope of the book may be gained from the following excerpts from the table of contents: Some leading conceptions in organic chemistry; the hydrolysis of starch by amylase; the formation of amylase in the living cell, the alcoholic fermentation of grape sugar; the acid fermentation of alcohols and carbohydrates, the fermentation of cellulose and allied bodies; miscellaneous fermentations; outlines of the chemistry of albumins or proteins; fermentation of indigo, tea, coffee, cocoa, and tobacco; bacteriological and enzyme chemistry in relation to agriculture; the chemistry of sewage purification, etc. A well-selected bibliography closes what is an unusually readable and useful work.

Analyse des Harns. Zum Gebrauch für Mediziner, Chemiker und Pharmazeuten, Zugleich Elfte Auflage von Neubauer-Huppert's Lehrbuch. Bearbeitet von A. Ellinger, Königsberg; F. Falk, Wien; L. J. Henderson, Boston; F. N. Schulz, Jena; K. Spiro, Strassburg, i. E.; und W. Wiechowski, Wien. Erste Häfte. Price M. 15. Wiesbaden, C. W. Kreidel, 1910.

The group of Hofmeister's pupils whose names appear on the title page of the present volume have collaborated in producing a new edition of what was originally the well known textbook of Neubauer and Vogel. Huppert prepared the eighth, ninth, and tenth editions, and the present is to be considered as the eleventh, though in so enlarged a form as to be hardly recognizable. The book is henceforth to be in two volumes, each almost as large as the single one of the tenth edition; and only the first has as yet appeared. It covers the description of the urine in general, its physical properties, chemical properties, and the organic and inorganic constituents normally present. The various topics are naturally treated with the utmost fullness, and the work represents the last word on the whole subject of urine and uranalysis.

Vaccine Therapy in General Practice. By George H. Sherman, M.D., Detroit, Mich. Published for the author, 1911.

This little book is written to interest the physician in the use of bacterial vaccines in every-day practice and incidentally to increase the sale of Dr. Sherman's vaccines. The first few chapters deal with the philosophy of vaccine therapy, early personal experiences, vaccines in every-day practice, and the general use of bacterial vaccines. Then follow chapters dealing with the use of vaccines in the different diseased conditions of the body, such as scarlet fever, typhoid fever, erysipelas, broncho and lobar pneumonia, bronchitis, chronic colds, tuberculous infections, rheumatism, infected wounds, and appendicitis. Dr. Sherman is an enthusiast in the treatment of disease with vaccines, and undoubtedly we all would be if we had obtained the results of which he tells. But unfortunately such is not the case. Although much has sometimes been accomplished with bacterial vaccines, most observers have been disappointed with the vaccine treatment as a whole.

Clinical Analytical Methods. By Karl M. Vogel, M.D. Price 20c. New York: Jas. T. Dougherty, 1911.

This pamphlet, which is intended for use on the laboratory table, contains working directions for carrying out the quantitative determinations required in doing metabolism work, data for making volumetric solutions, etc., arranged in convenient form for ready reference.

The Principles of Pathology. By J. George Adami, M.A., M.D., LL.D., F.R.S., Professor of Pathology in McGill University, and Pathologist in Chief to the Royal Victoria Hospital, Montreal; Late Fellow of Jesus College, Cambridge, England; and Albert G. Nichols, M.A., M.D., D.Sc., F.R.S. (Can.), Assistant Professor of Pathology and Lecturer in Medicine in McGill University; Out-patient Physician to the Montreal General Hospital; Assistant Physician and Pathologist to the Western Hospital. Volume II, Systemic Pathology. Second edition, revised and enlarged, with 301 engravings and 15 plates. Philadelphia and New York: Lea and Febiger, 1911.

It is possible to approach the subject of pathology in a number of different ways. It may be developed from the point of view of the student alone in a compact short textbook, without references, and giving only the main facts. Between this and Ziegler's well-known volumes, which contain enormous numbers of references and a great many remarkable illustrations, there lies a somewhat different field, that of full discussion with a moderate number of illustrations, chiefly photographic, and references only to the most important articles on any one subject. This is the aspect chosen by these writers. This second volume on Systemic Pathology offers less opportunity for originality and variety of treatment than did the first volume on General Pathology. It must necessarily be more diffuse because the lesions of each organ or each system must be taken up in turn. In order to remain within reasonable bounds, however, the utmost care must be employed in pruning the text free from every unnecessary word or discussion. Even with such care this volume runs to 1,160 pages, and unfortunately the heavy paper which has been used makes it a truly ponderous work. The changes from the first edition have been very considerable and apply chiefly to the introductory chapters on the disorders of the ductless glands and to that portion devoted to the nervous system. It is interesting to note in the former how fully the subject has been developed in a limited space. The embryology and physiology of the thyroid, parathyroids, and hypophysis are given in brief, and also an abstract of the more recent views on the relation of the presence or absence of the secretion of these glands to tetany, acromegaly, myxedema, etc. Considerable new matter on the chemistry of the urine has been added. No evidence of double authorship is apparent in the text, and it is evident that collaboration has been very complete. The photographs of gross specimens and patients are admirable. Some of the photomicrographs of tissues are good; others are flat and nerveless and should be replaced either by better photographs or by drawings. The volume remains one of the best in English of its type, though its very bulk must prevent its current use by students as a text. It is rather a book to be consulted at leisure.

INEBRIETY: A Clinical Treatise on the Etiology, Symptomology, Neurosis, Psychosis, and Treatment and the Medico-Legal Relations. By T. D. CROTHERS, M.D., Supt. Walnut Lodge Hospital, Hartford, Conn. Editor of the *Journal of Inebriety*, Author of Morphinism, and Narcomania, Drug Habits, and Their Treatment, etc., Recording Secretary of the American Medical Society for the Study of Alcohol and Other Narcotics, Member of the American Medical Association, The British Medical Association, Honorable Member of the British Society for the Study of Inebriety, etc., etc. Price $3.00. Cincinnati, Ohio: Harvey Publishing Company, 1911.

THIS book is a scientific treatise on the etiology, symptomology, and treatment of inebriety as a diseased condition. Dr. Crothers claims that the entire problem of inebriety is one of scientific, curative, and preventive medicine, which the trained physician is most competent to study and understand. The book is divided into thirty-two chapters. Each chapter treats of some particular phase of inebriety. Some small idea of the thoroughness with which the author handles his subject may be gained by looking over part of the table of contents: "General Symptomology and Development," "Periodic Inebriety and Its Symptomology," "Continuous Drinkers," "Inebriety in the Form of Moral Insanity," "General Causes and Favoring Conditions," "Special Causes of Inebriety," "Prognosis of Inebriety," "Delirium Tremens," "General Principles of Treatment," "Home and Office Treatment of Inebriates," "Institutional Treatment of Inebriates," and "Mental Therapeutics and Suggestion in the Treatment of Inebriety."

Dr. Crothers condemns the routine treatment of alcoholism with hypnotics as unscientific and unsafe. He recommends, instead, eliminative and hydrotherapeutic measures, combined with stimulation when needed. The use of hypnotics, in small doses, is reserved for exceptional cases. Particular stress is laid on the importance of making the patient realize the seriousness of alcoholism and the possible dangers to which it may lead. The author insists on the necessity of keeping the patient under continued medical supervision if truly gratifying results are to be attained.

The book is an excellent one and will prove generally valuable as all physicians have to meet this very trying problem.

DIE BEHANDLUNG DER FRAUENKRANKHEITEN. A Textbook for Practitioners. By Dr. J. VEIT, Professor and Director of the Gynecological Clinic of the University of Halle. With 39 illustrations, some in colors. Price, 12 marks. Berlin: S. Karger, 1911.

IN this work the subject of the treatment of the diseases of women is treated in a concise yet very complete manner by one of the best-known gynecologists of Germany. Although the book contains less than 250 pages, the writer has succeeded admirably in presenting a compendium of modern gynecologic practice free from all theoretical discussion, including with good sense only those procedures which have been satisfactorily demonstrated by his own clinical experience. The reaction from the extreme operative standpoint in gynecology has shown itself by the appearance within recent years of a number of excellent textbooks on what might be called the medical treatment of the diseases of women, and Veit's work in part is a worthy exponent of this class. One of its particular virtues lies in the fact that the conservative methods are satisfactorily defined, so that the reader, whether student or practitioner, has clearly presented to him the indications for operation at the proper time. Some of the particular features of interest in this work may profitably be referred to somewhat in detail.

The first portion of the book includes a description of gynecological methods and the technique of operative treatment. The second deals with the specific therapeutic measures demanded by the individual gynecological conditions. The description of the general methods is very satisfactory and complete, although in the discussion on the office treatment of uterine disease one might question the recommendation regarding intrauterine injections and irrigations; notwithstanding the assertion by the author that this is perfectly safe—it probably is not in the hands of the general practitioner, to whom this book is supposed to be addressed. The various operative procedures are briefly discussed, but the descriptions in certain places might be elaborated with advantage. The author favors the median longitudinal incision through the linea alba in celiotomy in preference to the Pfannenstiel incision, which is only recommended in a limited class of cases. One is rather surprised at the paucity of the methods presented for the treatment of perineal lacerations as compared with American textbooks, no mention being made of the Emmett, Lawson-Tait, or other operative procedures often employed. In the treatment of endometritis the uterine application of caustics, such as chloride of zinc, is recommended, and Veit does not advise curettage in any of the cases in which discharge is the principal symptom. In severe cases he claims that the endometrium must be completely destroyed by deep cauterization in order to effect a cure. It is hardly likely that these views will be accepted in this country without restriction. A very satisfactory discussion of the treatment of retroflexio uteri is presented, in which the author advises the Alexander-Adams operation for the uncomplicated cases, and favors ventrofixation for those that are not complicated by adhesions. On reading the description of the latter operation, this is found to be really a kind of suspension, as the round ligaments are brought forward and attached in a similar manner to that advocated by Gilliam. The treatment of pelvic tumors is very completely presented, and the author inclines most favorably to the early and extensive operation for uterine cancer, favoring the abdominal approach to the exclusion of the vaginal route. An interesting chapter deals with the subject of sexual neurasthenia, which cannot be satisfactorily summarized, and must be read to be appreciated. This remark also applies to the section on the treatment of parametritis.

Professor Veit's work constitutes an excellent and timely addition to gynecological textbook literature, and is deserving of general circulation. The book is carefully made up and the illustrations, although not numerous, are nevertheless sufficient for the purpose. The author must be congratulated on the successful manner in which he has met the problem of writing a textbook free from the presentation of confusing methods and ideas.

LES APPLICATIONS PRATIQUES DU LABORATOIRE À LA CLINIQUE. Principes—Techniques—Interpretations des resultats. Par le Dr. E. AGASSE-LAFONT, Ancien chef de clinique de la Faculté de Paris, chef de laboratoire à l'hôpital Saint-Antoine. Préface par M. le professeur G. HAYEM. 254 figures, dont 109 en couleurs; 1 planche hors texte en couleurs. Price, 10 francs. Paris: Vigot Frères, 1911.

DURING the last ten years an interesting development has taken place in the teaching of medicine. The introduction of laboratory methods, especially those which are too complicated for the practitioner to employ himself, has given rise to a very considerable body of teachers and investigators who devote themselves almost wholly to this laboratory diagnostic phase of medicine. In some institutions the matter has gone so far as to warrant the establishment of departments separated from the chair of medicine, for the teaching of so-called clinical diagnosis. Perhaps, however, the more frequent method is still to retain the subject under the general department of medicine. Each arrangement offers certain points of advantage and it seems probable that ultimately a clean cut separation will take place. The clinician is desperately struggling to hold this most fascinating side of medicine as he realizes more and more his therapeutic impotence in the passing of the center of popular interest to that eminently practical field, surgery. In response to demands for textbooks on laboratory diagnosis a number of excellent volumes are on the market, but the French have recently been especially industrious in this regard, ranging from complete treatises of large size on one subject, as for example the blood, down to small compends in which all the diagnostic methods are given in so compressed a form as to be quite useless to any but the beginner. The author has attempted to define his field in the title, showing that only laboratory methods which are of practical use to the clinician are included. A most striking feature is the excellence of the colored prints which are scattered throughout the book in large numbers. The figures of bacteria especially are well designed; the blood pictures also are very accurate in coloration; and the registration in the half tones is unusually good. Rather more stress is laid upon bacteriology than is usual in such texts, and a short chapter on the preservation of tissues is also appended. The rest of the volume follows the conventional ararngement of the subject, chapters being devoted to the blood, urine, sputum, exudates, and transudates. The cytological and bacteriological examination of spinal fluid is unusually well presented. The treatment on the whole is very well balanced, only tried methods are given, and, while certain pieces of standard apparatus, as for example the Fleischl hemoglobinometer, receive no mention, yet satisfactory descriptions of other simpler forms which are employed by the French are included. The student or physician who has not had a special laboratory training will surely find much in this short text which will help him in diagnosis.

Society Reports

BRITISH MEDICAL ASSOCIATION.

79th Annual Meeting, Held at Birmingham, July 25 to 28, 1911.

(Special Report to the MEDICAL RECORD.)

REPRESENTATIVE MEETING.

THE Representative Meeting, at which much business connected with the association is transacted but does not form part of the public proceedings, began on the 21st of July, and a considerable number of members assembled on that date. That, therefore, was the day on which the conference received an official welcome to the city by the Lord Mayor on behalf of the citizens.

On entering His Lordship's attention was called by a whimsical member to the fact that a great deal of gas was coming into the hall. This gave him a hint he did not lose, for in opening his speech he remarked that he hoped the member did not refer to what he was about to say, but only to subsequent speakers whose views might be known. He was pleased to welcome the association to the city which was its home, though it was twenty-one years since the last visit. Great changes had occurred since then. The death rate had fallen almost half, and the public health authorities had accomplished much. Birmingham people knew that no profession did more for the poor and that was no reason why greater demands should be made. They knew the many honorary services conferred and were glad that their association protested against abuse of hospitals and prevented the treatment of school children being thrust upon them. Their city would not be guilty of doing so, but engaged medical men for that work.

Professor Saundby welcomed the members on behalf of the local practitioners. Mr. J. Chamberlain was elected an honorary member of the association in recognition of his services in promoting tropical medicine and the foundation of the university of which he is chancellor.

GENERAL SESSIONS.

Tuesday, July 25—First Day.

On Tuesday, the 25th inst., the public business began by the Lord Mayor of Birmingham opening the annual exhibition, at which 104 stalls were arranged. He referred to the old story about throwing physic to the dogs and said this scene reminded him of Addison's remark that physic was nothing but a substitute for exercise and temperance.

Sir H. BUTLIN in supporting a vote of thanks referred to this and said in London they had a remarkable phenomenon—a Lord Mayor who did not drink and did not smoke. The annals of the city had been searched about a thousand years for another example, but in vain.

In the afternoon there was a large assembly when the annual meeting was formally declared open. Professor Saundby was formally installed as president, the retiring president, Sir H. Butlin, divesting himself of the chain of office and placing it around the neck of his successor. In the evening came the

Presidential Address.—Dr. ROBERT SAUNDBY delivered this before a brilliant gathering, a great number of members appearing in their academic robes. The assemblage took place in the University, at Bournbrook, about three miles outside the city of Birmingham. The address dealt in clear, decisive fashion with various medical matters, but its chief feature was a severe indictment of the system of contract practice which the government proposes to perpetuate and the declaration that if a fight should be forced on the profession they were not unprepared—an assertion which was received with enthusiastic applause. Small clubs in rural districts established by individual practitioners were often beneficial, as the doctor controlled the admission of members and he got a trifling payment when otherwise he would receive nothing. Clubs connected with collieries and other large works were mostly controlled by the management and their relations with the profession were satisfactory. But when friendly, insurance, and other medical aid societies came in and provided attendance they sought to make a profit out of this department. The General Medical Council had investigated the matter by a committee and the report proved great evils to exist. The council forbade the employment of unqualified assistants, which was an improvement, but the workmen's clubs had not increased their payments. The proposal of an enormous increase of the system under the control of friendly societies filled the profession with dismay. The proposal to attend a third of the population on such terms had caused a resistance which deserved the support and sympathy of the public. The only argument for it was cheapness, but if the health of the people was the greatest national asset the efficiency of medical treatment ought not to be tampered with. They were told that as the burden could not be imposed on the general taxpayer it must be put on the medical attendants. It seemed impossible for Parliament to sanction such manifest injustice. The National Deposit Friendly Society had for years conducted its business on the principle of paying the doctor for work done and was not dissatisfied with the result. The new bill was an adaptation of the German law of 1885. What was the effect there? The formation of a medical organization of more than 21,000 members to meet the question. A trade union it was, ready to use trade unionists' plans—a strike if need be. What had succeeded in Germany could be done here. The British Medical Association was founded with other objects, but had been compelled to create a department for defence. It now numbered 24,000. Without them the Insurance Bill must fail. There was no comparison between Germany in 1885 and this country in 1911. The voluntary principle had provided here a system of hospitals and dispensaries. The President pointed out some of the disadvantages that had been experienced in Germany and said it was commonly believed to have been a corrupting influence sapping the honesty and independence of the German people. The testimony of the ex-President of the Imperial Insurance Bureau at Breslau was enough to show this.

The President, after delivering his address, held a reception of visitors from the oversea dominions and dependencies. Then came the presentation of a certificate of honorary membership to Mr. Joseph Chamberlain as a recognition of the great statesman's services towards the advancement of tropical medicine. Mr. Neville Chamberlain appeared to accept the certificate on behalf of his father. Still later a smoking concert was given by the Birmingham District Practitioners' Union.

Wednesday, July 26—Second Day.

On this day the Sectional Proceedings began, and notwithstanding the late hours of the previous day the sixteen sections were opened by 10 o'clock. The "Daily Journal" of the meeting was in circulation—a good sized 8vo pamphlet, this day's issue reaching 100 pages, but several were occupied with a list of expected members. The Council held their meeting at 9.30. Outside the sections the principal incident of the day was the

Address in Medicine.—Dr. BYROM BRAMWELL, in this address, took for his subject "Mistakes"—not, as he explained, to imply that medical practitioners were more prone to errors than members of other professions, but because of the extreme complexity of the problems

they had to deal with and because, too, to solve them correctly was often a matter of life or death for their patients. Men of extensive experience were ready to admit they made mistakes. It could not be otherwise, considering the impossibility of any one completely mastering the whole of modern medical knowledge and remembering, too, the difficulties they often had in eliciting and observing the facts, and the circumstance that too often they had to rely to some extent on the statements of others, which were apt to be inaccurate and sometimes positively misleading. Mistakes due to erroneous deductions and illogical conclusions were very common; so were those caused by overlooking some fact or facts which proved to have great influence. Some of the differences arising in compensation cases were due to the doctors on one side attaching too much, and those on the other side too little value to the patients' statements and complaints. All hospital men, especially those who studied deeply nerve diseases would agree that since the Workmen's Compensation Act, cases in which nervous symptoms developed after injuries or supposed injuries had become more frequent and the duration of illness more prolonged. His experience was that in such cases the patient did not get well or got well with great difficulty as long as a question of compensation was pending. Personally he had no doubt that if the National Insurance Bill became law the same result would follow in many cases of ordinary illness and the attendance demanded by compulsorily insured patients would be found to be very much greater than had been calculated. Some people seemed to think it was very easy to detect malingering. It was not. Those who had experience among them would agree with him that nothing was more difficult. It was a practical question whether some conditions such as neurasthenia and hysteria ought to be admitted to insurance benefits, though their exclusion would certainly entail hardships on some genuine sufferers.

Thursday, July 27—Third Day.

This was an unusually busy day. Of course all the Sections were in full work. Outside them the day opened for many with the breakfast of the National Temperance League and closed with the annual dinner of the Association, at which Professor Saundby took the chair as President. Between these functions came the address in surgery and a special congregation of the university for conferring honorary degrees, followed by an inspection of the five new buildings. The recipients of the degrees were nine in number, and the ceremony had been anticipated with a good deal of interest because one of them was Mr. John Burns, president of the local government board. Of course, as far as he was concerned the occasion had nothing to do with the British Medical Association, but the degree was in recognition of the assistance he had given to the Birmingham authorities in extending the boundary of their city, and his town planning bill was held to be important from the point of view of public health. In presenting him Sir Oliver Lodge said the medical faculty had represented to the Senate that as head of the department concerned with the sanitary administration of the country he had constantly cooperated with the medical profession in their efforts to improve the public health and had given his powerful assistance to those municipalities which were trying to ameliorate the sanitary conditions of the areas under their control.

The vice-chancellor, who conferred the degrees on behalf of the chancellor, Mr. Joseph Chamberlain, who could not be present, cordially shook hands, as customary, with the newly made LL.D. The other gentlemen were already doctors (of medicine) and now had the Hon. LL.D. added; three of them were from abroad, viz.: Drs. Chittenden, Oppenheim, and P. Strassman. The others were Drs. Byrom Bramwell, F. H. Lovell, J. A. Macdonald, R. A. Reeve and Sims Woodhead.

The Address in Surgery was the other function of the middle part of the day. It was delivered by Prof. Jordan Lloyd of the university, senior surgeon to the Queen's Hospital. After thanking the Council for his appointment he referred to the recent decease of one of the greatest surgeons who had raised the fame of the Birmingham school and also to those who at previous meetings in the city had occupied the chair from which he spoke. He then passed in critical review the whole range of modern surgery with the clearness and caution of one who has taken part in its progress for some thirty years or more.

AMERICAN ORTHOPEDIC ASSOCIATION.

Twenty-fifth Annual Meeting Held in Cincinnati, May 15, 16 and 17, 1911.

Standardization in Orthopedic Instruction and Practice.—Dr. Albert H. Freiberg took this as the text of his president's address. He said that orthopedic surgery was the surgery of chronic conditions. For this reason changes for the better or the worse were the more difficult to appreciate. For instance, the great difference in opinion regarding the progress made in the correction of scoliosis was due more to the inequality of results than to variation in methods of mensuration and recording. He was therefore pleading for a recognition and determination of standard methods in both mensuration and treatment, and perhaps also in methods of instruction to patients. It would also be well to look for a plan by which every new method should be granted a careful trial by experienced reliable men. Such a trial should be thorough and should be made, if possible, with the cooperation of the proposer of the innovation. The result of it must then demand attention. This might be accomplished by the establishment of a standing committee, to whom such questions might be referred for a report at a later time. Perhaps another field of usefulness for such a committee would be in giving an expression of opinion as to the ideal preparation of the graduate who expected to specialize.

Results Obtained by the Use of Tuberculin in Joint Tuberculosis.—Dr. George B. Packard of Denver said that in many cases in which there had been discharging sinuses for a long time and in which, from the clinical symptoms, it was evident that there was mixed infection the results were excellent from the use of tuberculin without an autogenous vaccine. Though cultures were not made, it was probable that in these cases the active organism was the staphylococcus. If there was the slightest question as to the diagnosis the Moro or the v. Pirquet test was made, and always found positive. X-ray pictures and microscopic examination of material obtained by curettage confirmed the diagnosis also in a case in which the secondary infection was severe and the reaction marked from tuberculin alone, without an autogenous vaccine. He would not use tuberculin as a routine treatment in all cases of joint tuberculosis. When either children or adults were doing well and there was no evidence of the disease being active or progressive, and when the general condition was satisfactory he would not use it, but when the disease was progressive and painful, in spite of protection and other general measures, he considered tuberculin to be a valuable adjunct to the treatment.

The Use of Tuberculin in Orthopedic Surgery.—Dr. Walteer G. Stern of Cleveland said that the tuberculin reactions were acknowledged to be specific and could be of even greater value in orthopedic differential diagnosis than in medicine, since one was usually dealing with be-

ginning or early tuberculosis. The accuracy of the tuberculin reaction was as great, if not greater, than most biological tests, viz., Wassermann, Widal, etc. In suspected cases the cutaneous and the ophthalmic reactions were performed at one sitting. If both tests agreed the reaction was held to be positive or negative as the case might be. If the tests disagreed then the subcutaneous or the intracutaneous prick reaction was resorted to. Large doses given subcutaneously caused a focal reaction at the seat of the lesion; this focal reaction was dangerous and should not be resorted to unless all other means of diagnosis failed.

Spengler's I. K. Serum in Tuberculosis of the Joints.—Dr. JOHN L. PORTER of Chicago said that our knowledge in regard to calculating the dosage was inadequate. Better results could be obtained when the dosage had been perfected. The giving of but one dose in seven or eight days had been found to be more satisfactory than the more frequent doses. Under the management of the inexperienced the most common and the most detrimental error would be too large a dose. Marked disturbance of the patient's comfort was the best guide for a reduction of the dose. Too great a desire to hasten the cure would usually result disastrously. Contamination must be guarded against. The posterior exterior surface of the forearm while the arm was held in flexion was the most convenient and least painful site for the injection. Children seldom complained of the procedure if the solution was injected slowly. Tincture of digitalis and strophanthus should be administered throughout the entire treatment. Patients with severe or advanced heart lesions should not be treated with I. K. solution until complete compensation had been restored; and then only while in bed and with the greatest of care and careful dosage. Jumping to a tenfold dose was both dangerous and unnecessary, and it was seldom that patients would tolerate this increase. When rapid immunization was desired it was better to begin with a small dose of a higher dilution. Then after an interval of ten days this could be increased up to lysis. A relatively small daily liberation of antitoxic immune substance could be better calculated by the physiological blood force. He believed that I. K. serum had some curative properties and a constitutional effect on patients with tuberculous joints, and that it was worthy of further trial.

Joint Tuberculosis in Children.—Dr. LEONARD W. ELY of Denver stated that the orthopedic surgeon was responsible for part of the confusion that existed as to the treatment of joint tuberculosis. In the past there had been a tendency to dwell too much upon the non-essentials and to magnify our points of difference. Three reasons were given for the confusion, and three main rules of treatment upon which one might unite, based upon clinical experience and upon laboratory study: First, deprivation of function; second, avoidance of secondary infection; third, fresh air and good food. In addition the fact that radical operations were out of place in children's tuberculous joints was emphasized.

Dr. HERBERT H. GALLOWAY of Winnipeg asked what support there was in the experience of the members of the association for the contention that the focal reaction produced by the subcutaneous injection of old tuberculin was dangerous. He felt that it was exceedingly valuable in doubtful cases and had never regretted its use.

Dr. WILLIAM S. BAER of Baltimore said he did not like the use of the Calmette reaction because cases had been reported in which serious damage had been done to the eye by it, and it gave no information that the v. Pirquet did not afford. He used the latter first to see whether there was tuberculosis anywhere in the system and then employed the injection method if the v. Pirquet was positive, in order to get a local reaction.

Dr. JAMES K. YOUNG of Philadelphia remarked that under certain precautions there was no danger in the Calmette test. The eye should not have any disease in it at the time and should subsequently be protected.

Dr. EDWIN W. RYERSON of Chicago stated that the great value of the Calmette and v. Pirquet reactions was when they were negative. In response to Dr. Galloway's question he stated that he had seen a case in which, after the injection of one milligram of old tuberculin, a tuberculous peritonitis had occurred. It resulted in such speedy death that he thought that the injection had been instrumental in producing it.

Dr. SYDNEY M. CONE of Baltimore said that it was true that negative reactions were more valuable than positive. He preferred the v. Pirquet to the others.

Dr. G. G. DAVIS of Philadelphia did not believe in using the Calmette reaction and said that there was no more obstinate affection in childhood than tuberculous inflammation of the eye, and that when an inflammation was started in the eye of a tuberculous child no one knew when it would stop. The v. Pirquet test was absolutely without objection.

Dr. STERN in closing said that the chief objection seemed to be the Calmette reaction. If an old ulcer was lighted up after a Calmette injection nothing more had been obtained than a focal reaction which was not dangerous. He was glad that the combined reaction was coming into general use because the v. Pirquet alone was not accurate except in a negative sense. It should be checked up by the subcutaneous test or the Calmette reaction.

The Treatment of Hip Disease.—Dr. EDWARD H. BRADFORD of Boston said that hip disease practically considered might be regarded as a chronic carious process of the weight-bearing portion of the hip joint. It tended to deform, flexing, adducting, shortening the limb, with destruction of the head, widening of the acetabulum. Thorough treatment should overcome this tendency to distortion and resulting disability. The threatened deformities were most effectively combated by the employment of a traction during the deforming stages of the disease and an important desideratum in the treatment of hip disease was a practical method of the employment of traction.

The Conservative Treatment of Hip Disease: Exhibition of a New Splint.—Dr. JAMES K. YOUNG of Philadelphia stated that the treatment of hip-joint disease should be based upon the pathology as shown by the clinical symptoms confirmed always by the *x*-ray findings and where possible by exploratory puncture. Mechanical treatment to be thorough and efficient should combine absolute fixation of the pelvis and entire lower extremity, including the foot, combined with moderate traction. Reports of the results obtained by this combination treatment were given.

Dr. B. E. MCKENZIE of Toronto thought that Dr. Bradford could have used the Bradford frame to secure fixation and the prevention of deformity. Through its use one might bring down a femur that had risen up into the pelvis. He believed that the greatest force in the treatment of tuberculous bone disease was the proper use of the sun's rays. He had given up the use of a brace for any kind of hip disease except during the period of convalescence.

Dr. CLARENCE L. STARR of Toronto said that in his treatment by means of traction and extension he had encountered the difficulty of atrophy of the bone, and that he would like to know whether Dr. Bradford's apparatus did not produce this, as did plaster of Paris. His experience was that the atrophy was no worse in the patients subjected to treatment in bed than in those that had been allowed to be up and around, and that it disappeared to a great extent subsequently. He also wished

to know whether Dr. Bradford obtained correction of the flexion deformity with that apparatus.

Dr. Bradford thanked Dr. McKenzie for the reference to his frame, which he used in the acuter stages for a short time, but stated that the other method of treatment allowed the child to walk around. The trouble with Dr. Young's apparatus was that the child would not sit down well with it on. Dr. Bradford had given up perineal straps because either the child or the nurse could loosen them. An *x*-ray would show that there was not the amount of traction that there should be and the child could not move the upper part of the body freely. The speaker did not get much atrophy. The muscles, of course, did not develop as well as those of the leg in use; but they did increase somewhat with the splint on. He assured them that they could get as much abduction with his apparatus as they wished.

Dr. Young thought that the splint he had shown emphasized the combination of traction and fixation.

The Treatment of Flexion and Abduction Deformity of the Thigh by Changing the Angle of the Femoral Neck.—Dr. James Archer O'Reilly of St. Louis presented a paper with this title.

Dr. A. J. Steele of St. Louis said that he understood that Dr. O'Reilly exposed the greater trochanter; and then, with a chisel, passed through the trochanter into the leg, removing and reintroducing the chisel a sufficient number of times to produce a concave surface and making a sort of ball-and-socket joint.

Dr. Young remarked that this operation might be a very useful one, and that he would be pleased to try it when occasion offered. He had abandoned the operation of cuneiform osteotomy about the hip, because, unless a large foreign body was interposed ankylosis would occur sooner or later.

Dr. O'Reilly closing said that with this operation there was no break in the continuity of the bone. The two surfaces slipped over each other. In four cases in which he had had a flexion of ninety degrees he could straighten them down to twenty without difficulty. The *x*-ray showed no marked deformity or angle in the trochanter.

Cyst of the Upper End of the Femur, Simulating Hip Disease.—Dr. David Silver of Pittsburg reported the case of a boy, aged 5 years, who presented a limp, limitation of motion and trochanteric thickening, and atrophy of the thigh; a radiogram showed a cyst, with fracture of the inner wall of the neck. At operation a cavity found filled with sterile fluid and with no lining membrane was seen. At a second operation nearly two years later for the return of limp a dense lining membrane was present and examination showed changes characteristic of ostitis fibrosa.

Dr. Henry L. Taylor of Montclair, N. J., had operated on a case of cyst of the base of the back of the femur in which the symptoms were a little obscure, but entirely different from beginning hip disease. The *x*-ray cleared up the diagnosis, showing a spot about the size of a dime, with enlargement of the bone inward over this area. A later observation showed that the cyst was about to perforate. He cut out a piece the size of a nickel, and the boy was perfectly well three years after the operation.

Dr. G. G. Davis remarked that Dr. Silver had described the growth as ostitis fibrosa, but that there was nothing indicative of malignancy in that diagnosis. He had had a case of cyst of the end of the ulna, in which he found a small amount of granulation tissue, which, when submitted to the microscope, showed beautiful myeloid giant cells. Therefore, it could be called a giant-cell sarcoma; yet the amount of new growth was extremely small. It was a question whether these two classes were not simply slight variations of the same kind of growth, those in which there was much proliferation being called myeloid sarcoma, and the others ostitis fibrosa.

Dr. McKenzie reported that he had had a similar case in a woman forty years of age. The cyst contained serous fluid and had no lining membrane. No curetting was done. Two years and a half has elapsed since the operation, and there was no indication of a reappearance.

Dr. Baer thought that the treatment had to be followed out according to the pathology in each particular case. On the whole he wondered whether curettage was better in the long run. When there was any chance that the cyst was epitheliomatous in character amputation should be done, and no attempt made to save the member.

Dr. Alexander R. Colvin of St. Paul, Minn., had had two cases in which cysts not operated upon had practically obliterated themselves.

A Case of Coxa Vara with X-Ray Plates Made Before and After Operation Took Place.—Dr. John Ridlon of Chicago reported that symptoms were present before there was any shortening, and before the *x*-ray picture showed any bone changes. When first seen, the patient was ten years old and a big fat boy, of the female type, with undeveloped sexual organs. If rachitic infantile cases were excluded and only those from the age of ten years to fifteen or sixteen taken, Dr. Ridlon thought that none could be found that by the *x*-ray did not show slipping at the epiphyseal line. These cases occurred in immature individuals, usually fat children, with a retarded sexual development.

Dr. Bernard Bartow of Buffalo, N. Y., had had a case sent to the hospital to be treated for hip-joint lesion. After a week of rest in bed the symptoms cleared up considerably; and in two weeks they had quite disappeared, so far as the dilatation was concerned and some of the restraint of movement. When permitted to walk there was a slight recurrence; but six or eight weeks of rest again made a considerable improvement. The radiograph showed a change in the epiphyseal line indicating that there had been a process extending through the whole line of growing tissue. There was a slight suggestion of a bend at that point. If the patient had gone untreated with continued weight-bearing, the yielding of the neck of the bone at the line of the epiphyseal growing tissue would probably have been more marked.

Dr. Baer had had two cases similar to the one that Dr. Ridlon was speaking of. He saw each four weeks after the separation, and when it had partially reunited. He operated, driving a nail to fix the head onto the neck in a proper position. Both became absolutely well.

Dr. John Prentiss Lord of Omaha had treated a man fifty-two years old, with no history of trauma, who had a duplication of just these conditions. It appeared to be a typical history of coxa vara.

Dr. Joel E. Goldthwait of Boston had seen most of these cases make a comparatively good recovery; even though the anatomical condition was by no means perfect, the function was usually extremely good.

Dr. Cone remarked that Dr. Ridlon's case was particularly useful to him, as he had brought an *x*-ray plate without a diagnosis. The girl was eighteen years of age, and the only thing pointing to coxa vara was the fact that as a child she was rachitic.

Dr. Davis stated that in Madelung's disease there was softening of the lower end of the radius, giving the appearance of subluxation of the wrist. If this could occur in the wrist it was fair to assume that it could also in other parts of the body.

Dr. Stern reported that one of his patients, a fat boy eleven years old, was operated on for fracture of the femur at the neck a year ago. He was discharged from the hospital with a perfect union, and walked on his limb for nine months, when he suddenly took on an enormous increase in weight. Through the callus, at the seat of the fracture, one could see the fibers of bone

separating at the angle; so it was a local softening such as Dr. Ridlon had described.

Dr. Ralph R. Fitch of Rochester, N. Y., stated that a girl of thirteen years was sent to him for hip-joint disease, which she had had four months. On the way to the office she felt something slip, and the *x*-ray showed complete separation. He operated and put the leg up in a prolonged plaster spica. He does not know how long to keep it on.

Dr. Ryerson had operated on three of these cases because the epiphyseal part of the head had slipped underneath. The operative results were good.

Dr. Silver had had an interesting case in a girl of fifteen who presented symptoms of fracture of the neck of the femur. The *x*-ray showed a wearing away of the neck, the head being in the socket, and the trochanter elevated an inch and a half.

Dr. Ridlon, closing, said that the anatomical condition in all these cases was alike. The functional results were reasonably good. He did not know how long to keep these cases in the plaster splint.

Bilateral Congenital Dislocation of the Lower End of the Ulna (Candidate's Thesis).—Dr. S. Fosdick Jones of Denver reported a case in which the patient was a married woman, sixty years of age. Four years ago she noticed a small lump, about the size of a pea, on the inner side of the left arm. The mass got larger and became painful. The growth was removed, and the wound healed by primary union. She was told that the tumor had been found to be a neuroma springing from the sheath of the nerve. The pain continued, and motion at the left elbow became extremely painful. About six months later a plaster cast was applied, which she wore for four months. In 1909 a hard oval mass the size of a lemon was found on the inner side of the arm, an inch and a half above the condyle of the humerus. A diagnosis of sarcoma at the elbow was made, and the left arm was amputated two inches below the surgical neck of the humerus. The patient had an uninterrupted convalescence. The mass proved to be a small round-cell sarcoma.

Dr. Baer reported that he had had a case in which, after removal of a sarcoma, some means were taken to try to get the hand in a straight position. Three inches of the tibia of a dog were grafted into the lower end of the bone, the two operations being done at the same time. He saw the patient two years and a half afterward, and the position had deviated about ten degrees. The *x*-ray showed the engrafted bone of the dog still in place; but, following the operation, there had been a decrease of bone-marrow. She was able to earn her livelihood as a seamstress.

Dr. Jones, closing, said that he had received a letter on the second of May stating that the patient was getting neuralgic pain and was complaining of pain, probably from interthoracic metastasis.

A Report of the Prevalence of Infantile Paralysis in Missouri.—Dr. James Archer O'Reilly of St. Louis reported a pioneer investigation of the prevalence of anterior poliomyelitis in Missouri, giving the new cases for the years 1910 and 1911 and the cases for five years previous to that date. The information was obtained through two sets of circular letters. The replies indicated that the disease was sporadic over the entire State, but that the great majority of the cases were in the northwestern and western portions. The greater number of the patients lived in the country and away from railroads or electric lines. Comparing the cases in 1911 with those in the five years previous to 1910 it was seen that the disease was becoming much more prevalent, and that it amounted to an epidemic in 1910.

Dr. Robert B. Osgood of Boston stated that during the last year Dr. Lucas and he had been making some transmission experiments in regard to poliomyelitis at the Harvard Medical School. They were able to transmit the disease from the tonsils and adenoid tissue of monkeys as late as five months and a half after the attack was over. They also tried to transmit the disease from the nasopharyngeal mucosa of a monkey that had been kept alive by careful nursing, and found the germs present at the end of five and a half months. Later they obtained the tonsils and adenoid tissue removed from a little girl six months and ten days after having had a spastic paralysis from this disease. The preparation from these was injected in various amounts into three monkeys. One of these animals developed typical signs of the disease, accompanied with paralysis. This showed that human adenoid and tonsillar tissue could preserve the virus while no other symptoms of acute disease were present.

Dr. Robert W. Lovett of Boston stated that as soon as the community began to realize the statistics regarding infantile paralysis there would be a panic, and people would be afraid to send their children to the office of an orthopedic surgeon, where such cases were constantly coming and going. Orthopedists had better begin to treat the disease as infectious, so that they might be able to tell these people that they had taken proper precautions.

Dr. O'Reilly, closing, thought that his report showed a little smaller number of cases than probably did occur in Missouri. A number of cases were improperly diagnosed.

The Operative Treatment of Knee Derangement.—Dr. Nathaniel Allison of St. Louis said that some cases that presented the symptoms and signs of internal derangement at the knee showed nothing abnormal when the joint was opened, and that some cases had typical derangements in the knee, but did not present symptoms or signs tallying with any recognized picture. In these cases exploratory arthrotomy was advisable and useful. A careful, clean operative technique, however, was absolutely essential. Conservatism must have been responsible for many old chronic knees, which might have been saved for joint function by simple arthrotomy.

Dr. Cone remarked that in regard to the question of arthrotomy one should be guided a good deal by what was found to be the cause of the trouble at the joint. Different organisms produced different conditions of varying seriousness.

Dr. H. L. Taylor said that most authors claimed that imperfect extension was one of the cardinal signs of a chronic derangement of the semilunar cartilage, and that orthopedists had also been used to looking at tenderness over the semilunar cartilage as a sign of this condition. He had had a patient who had neither, and wished to ask whether cases in children were common, and whether cases with these symptoms were so.

Dr. Galloway said that it was well known that the peritoneum was exceedingly tolerant of infection, and also that the knee-joint would succumb to very slight infection. In opening the knee-joint there was absolutely no margin for accident or carelessness.

Dr. Goldthwait had never seen a case of semilunar derangement in which complete extension was limited and in which it was not possible to relieve the condition by manipulation, unless the anterior third of the cartilage had been turned on itself, so that the section of it lay directly between the condyles.

Dr. Osgood stated that a foreign body in the posterior portion would not be removed by means of an anterior incision unless one cut through the lateral ligaments. In such cases it was better to make a posterior incision.

Dr. Charles F. Painter of Boston said that there was a type of arthritis that was not dependent upon static condition, but was presumably the result of a low-grade infection of some sort. Exploratory arthrotomy should be

resorted to with extreme rarity. This was equally true of exploratory operations of the abdomen.

Dr. Stern said that lately a great many surgeons had been injecting a solution of formaldehyde and glycerin into the knee-joint, with the idea of preventing infection and rendering operations on the knee-joint less dangerous. He had had cases treated in this way in which severe infection had taken place, and did not think that the method rendered these operations less dangerous.

Dr. Bradford stated that a fool could open the abdominal cavity, but not the knee-joint, without disastrous results.

Dr. John J. Nutt, New York City, said that if a patient wearing a brace had apprehension the brace was not fitting properly.

Dr. Davis's experience with the use of formaldehyde and glycerin had been that unless the patient was anesthetized the injection was an exceedingly painful procedure. One might open the knee-joint to remove synovial fringes and fail to obtain motion again. In a great many of these apparently traumatic cases if the joint were opened a condition that he would term rheumatic supervened, and the patient was left with a more or less permanently crippled joint, in spite of the fact that primary union had occurred with no evidence of infection.

Dr. Allison, closing, said that he had meant to convey the impression that with the absolutely necessary careful technique the knee could be opened without any more fear on the part of the surgeon than he would feel in opening the abdomen. As to the comparison between brace treatment and operative treatment for displaced semilunar cartilage, he thought that if the patient could be relieved in three weeks' time by means of operation this was better than the wearing of a brace.

Prognosis in Chronic Arthritis.—Dr. Charles P. Painter stated that there were three types of chronic arthritis: infectious or rheumatoid, atrophic or neurogenous, and hypertrophic. In the first the prognosis was according to infection or ability to determine it; according to the stage at which the case was taken; according to possibilities for carrying out treatment; according to age, sex, etc.; according to possibilities of recurrence. In the second class the prognosis was according to the stages to which the disease had progressed; according to the stamina of the individual; according to the standards of the chronically disabled patient, and according to the likelihood of progressiveness. In the third class the prognosis was according to ultimate disability; according to the possibility of control of progress.

Dr. George R. Elliott of New York City said that the division of these cases into atrophic and hypertrophic seemed to him to have absolutely no basis to stand upon. The two processes went hand in hand in chronic bone disease. Sometimes one process was working and sometimes the other, and sometimes both together. Late studies on the subject had shown that the primary lesion was proliferative and not atrophic in the atrophic form, and that in the so-called hypertrophic type the intial lesion was atrophic. The classification in chronic arthritis, which was a secondary and not a primary condition, was bound to come along etiological lines.

Dr. Painter, closing, said that it had been necessary to have some basis of classification, and that it seemed best to stick to that broad, though perhaps incorrect, classification.

Tendon Transplantation and Silk Ligaments: A Few Practical Points in Technique.—Dr. E. W. Ryerson of Chicago reported that the preparation of the skin by the iodine method had been so entirely satisfactory that he warmly recommended it. If possible the skin incisions should be so placed that the line of suture would not lie directly over the insertion of the silk. Strong braided silk was much better than several strands of finer silk, which tended to cut through. The value of silk ligaments in suspending the foot at a right angle in cases of drop-foot had undoubtedly become firmly established. The method was safer, easier, and far more rational than the excision of a diamond-shaped piece of skin from the front of the joint. Plain corrosive-sublimate silk was apparently free from disadvantages. It seemed advisable to omit drainage entirely. After the cast had been applied a window was cut out over each incision, in order to allow the wound to dry and to facilitate dressing and the removal of the stiches, which should not be removed before the end of two weeks.

The Use of Intraarticular Silk Ligaments for Fixation of Loose Joints in the Residual Paralysis of Anterior Poliomyelitis.—This paper was written by Drs. Bernard Bartow and William Ward Plummer of Buffalo, and read by Dr. Bartow, who said that the intention, by this plan, was to secure closer approximation of the loose articular surfaces, and to limit motion in certain directions, by placing check ligaments within the joint. These excited reactive inflammation, followed by organization of exudates, as a further limiting process. Resistance was thereby supplied to diminish or prevent deflection of the limb from the weight-bearing axis.

The Treatment of Paralytic Outward Rotation of the Foot.—Dr. Gwilym G. Davis of Philadelphia said that in the treatment of infantile paralysis external rotation of the foot was often a troublesome feature. To overcome it the writer suggests in some cases the use of straps or bands passing from the pelvic band to an apparatus fastened to the foot. In other cases it was proposed to make an incision in the region of the greater trochanter, and, while the foot was rotated strongly inward, to sew, with silk sutures, the overlying fascia fast to the posterior edge of the greater trochanter beneath. In cases in which the tensor fascia femoris muscle was not paralyzed this muscle could be loosened and its lower end turned posteriorly and sewn posteriorly on the greater trochanter and upper portion of the shaft of the femur.

The Results of Muscle-Group Isolation in the Treatment of Spastic Paralyses.—Dr. Nathaniel Allison of St. Louis reported, regarding the effect of alcohol on the nerves injected, that experimental evidence indicated that below the point of injection there was degeneration of the nerve. There was no evidence to show that degeneration extended centrally to any appreciable extent from the point of injection. Regeneration started practically at the point of injection and extended peripherally along the course of the old nerve. The percentage of alcohol used must vary with the length of time in which it was desired to induce paralysis. Experience encouraged the belief that, with the careful selection of cases and with a clean and well-executed operation, muscle-group isolation and induced paralysis might be regarded as valuable therapeutic measures.

Dr. Davis stated that on the condyle of the femur or in certain places on the dorsum of the foot, where, in order to pass the drill obliquely, there would be too wide an incision, one could insert the drill and make an oblique hole, and then make another oblique hole in a contrary direction from the other side, meeting the first in the middle.

Dr. Bradford had seen cases in which the alcohol injections had been made as long as eight months previously, the results having been extremely satisfactory. Of course, the injection was only the beginning of the treatment, and the muscle training must come afterward.

Dr. Walter Truslow of Brooklyn said that very mild paralyses could be corrected by careful muscle education. Troubles of greater degree required braces and muscle education, and those of still greater degree required reinforcement in some way by means of silk ligaments, but also the use of braces and muscle education.

(To be continued.)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF IDAHO.

April 4 and 5, 1911.

ANATOMY.

1. Give the origin, insertion, and nerve-supply of the biceps flexor cubiti.
2. Describe the abdominal aorta and name its branches.
3. Locate the great sciatic nerve; give its divisions. What muscles does it supply?
4. Describe the shoulder joint.
5. Describe the spermatic cord.

HISTOLOGY.

1. Distinguish and give one location of each of the different muscular tissues.
2. Describe an Haversian system.
3. Describe blood.
4. Describe a neuron.
5. Describe and differentiate an artery and a vein.

PHYSIOLOGY.

1. Mention four forms of muscle stimuli. What do you mean by the elasticity of muscle?
2. Give the location of the respiratory center. What keeps this center active?
3. What is the function of an efferent or centrifugal nerve? Mention the divisions into which efferent nerves may be divided.
4. What is meant by reflex action? Mention the superficial reflexes, the deep reflexes.
5. What are the functions of the pneumogastric nerve?
6. What veins unite to form the portal vein? Name in exact rotation the vessels through which the blood passes from the time it leaves the portal vein until it reaches the heart.
7. What changes occur in the blood in its passage through the liver?
8. Name the refracting media of the eye and the effect that each has on the rays of light.
9. Define myopia, hypermetropia, and astigmatism. State the cause of each condition.
10. Name five special centers existing in the medulla oblongata.

MATERIA MEDICA AND THERAPEUTICS.

1. What is a Pharmacopœia? From what sources do we obtain the materia medica?
2. What is meant by an official remedy? (a) Give the official names of sweet-flag, black cohosh, mercury, corn silk, dogwood, lady's slipper, bitter apple, poke-root, hoarhound, and boneset.
3. What is salol, cresol? What are their action and uses?
4. What are synergist, analgesic, depilatories, sialagogues? Name an example of each.
5. What is an alkaloid? Name one each obtained from nux vomica, opium, ipecac, colchicum and ergot.
6. Explain the difference, if any, between resins and gum resins.
7. Coca, cacao, coccus. Define each and give the uses or properties of each.
8. Colocynth. Give (*a*) synonym, (*b*) its principal constituent, (*c*) its medical properties, (*d*) the U. S. P. dose.
9. From what plant is opium obtained? (*a*) Explain the method of obtaining it. (*b*) Name and give the medicinal action of its most important active principle; (*c*) also a salt of the latter having a different action.
10. Name two forms of crystals and give an example of each.

CHEMISTRY AND TOXICOLOGY.

1. What is the toxic principle of digitalis, aconite, nux vomica?
2. In what poisoning is alcohol a good antidote?
3. Name a poison for which lime or lime water is an antidote.
4. What antidote would you give in case of poisoning by oxalic acid?
5. What is the effect of an over dose of aconite?
6. Mention ten elements with their symbols.
7. How does the so-called aqua ammoniæ differ from the official spirits of ammonia? Give percentage strength of ammonia gas in each.
8. How do chemical compounds differ from mixtures? Give an example.
9. Mention the ingredients of a Seidlitz powder; what chemical reaction takes place while effervescing?
10. Give the chemical formula of morphine.

DIAGNOSIS.

1. Tabes dorsalis; tabulate the principal points of diagnosis.
2. State the principal diagnostic symptoms of scarlatina, diphtheria, variola, rubeola.
3. Give diagnosis of cirrhosis of the liver, atrophic and hypertrophic.
4. Differentiate chronic diffuse nephritis and chronic interstitial nephritis.
5. What is Cheyne Stokes respiration? Argyll Robertson's pupil? Widal's test? Wasserman's reaction? Koplik's spots?
6. Differentiate psoriasis and eczema squamosum.
7. Make a diagnosis of epidemic cerebrospinal meningitis.
8. Name and describe five pathogenic bacilli. State diagnostic value of each.
9. Differentiate diabetes insipidus from diabetes mellitus.
10. State briefly the principal diagnostic points of tetanus, Addison's disease, exophthalmic goiter, chorea.

PATHOLOGY.

1. Define pathology, pathognomonic, pathogenesis, pathophobia, hyperplasia.
2. In what neoplasms is there an increase of epithelial cells? glandular cells? connective tissues? muscle? nerve tissue?
3. What is nephroma? fibroma? lymphangioma? lipoma? chondroma?
4. Describe the condition in any one valvular heart lesion and the resulting changes.
5. Give changes in the blood in any one blood-disease.
6. Describe the lung changes in lobar pneumonia.
7. Mention the principal lesion in typhoid fever, rubeola, Graves' disease, Jacksonian epilepsy, cretinism.
8. Mention five diseases of unknown pathology.
9. Describe the pathology of hepatic cirrhosis.
10. Give the pathology of arteriosclerosis.

THEORY AND PRACTICE.

1. Give the urinary findings and treatment for chronic interstitial nephritis.
2. Give symptoms and treatment of a mitral insufficiency, briefly.
3. Differentiate renal and hepatic colic.
4. Etiology and symptomatology of locomotor ataxia.
5. Give the medical treatment of appendicitis.
6. Describe the general management of typhoid fever.
7. Give symptoms and treatment of cerebral apoplexy.
8. Give symptoms and treatment of exophthalmic goiter.
9. Give the etiology and symptomatology of lobar pneumonia.
10. Give the symptomatology and treatment of smallpox.

OBSTETRICS.

1. Describe the female pelvis, and name the organs contained therein.
2. (*a*) Describe the mechanical movements of the fœtus in vertex presentations; (*b*) in face presentations.
3. (*a*) Are face presentations safely delivered by the unaided efforts of nature; (*b*) under what conditions is early interference indicated?
4. What is the effect of premature rupture of the membranes?
5. Give differential diagnosis of extrauterine pregnancy.
6. Name the various causes of prolonged labor and outline the general treatment.
7. Describe the uterine changes that take place in utero-gestation.
8. What are the dangers of protracted labor to mother and child?
9. (*a*) Name causes of hydrocephalus; (*b*) what is the frequency of its occurrence?
10. What is subinvolution and how may you guard against the condition?

GYNECOLOGY.

1. Describe the clitoris.
2. Describe in full the mucous membrane of the body of the uterus.
3. Describe in full the arterial supply of the uterus and ovaries.
4. Describe in full the Fallopian tubes.
5. Describe in full the perineal body. What are its functions?
6. Give the etiology and symptoms of pudendal hematocele. How would you differentiate pudendal hematocele from hernia?

7. Mention the new growths occurring on the vulva. Give the etiology and appearance of condylomata.

8. What is the parovarium? Describe a parovarian cyst.

9. Give the etiology and symptoms of tubercular salpingitis. Upon what points would you base a diagnosis of tubercular salpingitis?

10. From what must you differentiate a large ovarian cyst? Make a differential diagnosis between a large ovarian cyst and a large fibroid tumor of uterus.

SURGERY.

1. Mention five instruments of accuracy used in diagnosing surgical disease.

2. Describe operating-room technique as to: surgeon, instruments, patient.

3. Write one page concerning surgery and the general practitioner.

4. Give treatment of strangulated hernia.

5. Differentiate pyuria of renal origin.

6. Discuss adenoids and adenoid operation.

7. Compound comminuted fracture of tibia with multiple fragments connected by lacerated periosteum, how treat?

8. Resection of rib, indications, technique, after-treatment.

9. Diagnosis and treatment of tuberculous joint, tuberculous anal fistula.

10. Discuss diagnosis and treatment of talipes.

HYGIENE.

1. Discuss the construction of a sanitary dwelling house, where a near substrata of clay could not be avoided.

2. What are the principal differences between soil air and the atmosphere?

3. Give a common plumbing test for sewer gas leakage, and just how to apply it.

4. Upon what must the prophylaxis of typhoid fever be based, and by what possible and even probable means may the bacillus be conveyed?

5. Name six efficient disinfectants which combine cheapness and utility.

6. Discuss the practical daily hygienic management of the sick room and patient in the following diseases: Scarlet fever, diphtheria, typhoid fever, tuberculosis.

7. (*a*) What is meant by the term, active acquired immunity, passive acquired immunity; (*b*) what conditions may influence natural immunity and susceptibility?

8. (*a*) What is the effect of sufficient physical exercise upon the healthy body; (*b*) of excessive continued effort?

9. What are the requirements to be met by underclothing, and the relative values of silk, cotton, wool, and linen used for that purpose?

10. What are the objections to rice as a sole article of food?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF IDAHO.

April 4 and 5, 1911.

ANATOMY.

1. BICEPS FLEXOR CUBITI. *Origin:* Apex of coracoid process and upper margin of glenoid cavity. *Insertion:* Back part of tuberosity of radius. *Nerve supply:* Musculocutaneous.

2. *The abdominal aorta* commences at the aortic opening in the diaphragm, opposite the twelfth dorsal vertebra, and descending to the left of the spinal column terminates on the body of the fourth lumbar vertebra, where it divides into the two common iliac arteries. *Branches:* Celiac axis (gastric, hepatic, and splenic), superior mesenteric, inferior mesenteric, suprarenals, renals, spermatic or ovarian, inferior phrenic, lumbar, and middle sacral.

3. *The great sciatic nerve* passes out of the pelvis through the great sacrosciatic foramen, below the pyriformis muscle: it extends down the back of the thigh, passing between the great trochanter of the femur and the tuberosity of the ischium; at the lower third of the thigh it divides into the internal and external popliteal nerves. It supplies the Biceps, Semitendinosus, Semimembranosus, and Adductor Magnus *muscles.*

4. See Cunningham's "Anatomy" (1909), page 276; or Gray's "Anatomy" (1910), page 301.

5. See Cunningham's "Anatomy" (1909), page 1168; or Gray's "Anatomy" (1910), page 1377.

HISTOLOGY.

1. *Voluntary* muscle is striated, has long narrow fibers with cross striations and many nuclei beneath the sarcolemma. It is found in the Biceps. *Involuntary* muscle is nonstriated, has spindle-shaped fibers, one nucleus centrally located, and no sarcolemma. It is found in the arteries. The great exception is cardiac muscle, which is involuntary and also striated.

2. See Cunningham's "Anatomy" (1909), page 72; or Gray's "Anatomy" (1910), pages 37 and 39.

3. The *physical properties of blood:* Fluid, somewhat viscid, red, specific gravity from 1055 to 1062, alkaline reaction, saltish taste, characteristic odor, variable temperature (average about 100° F.).

The *constituents of the blood* are plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (proteid, leuconuclein, lecithin, histon, etc.).

The *red* corpuscles are biconcave discs, about 1-3200 of an inch in diameter; they are non-nucleated and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin. The *white* blood cells are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes; (2) large mononuclear; (3) transitional; (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. There are also *platelets*, which are very small, colorless, irregular shaped bodies; they are about one-fourth the diameter of a red corpuscle. In number they vary from about 200,000 to more than 500,000 in each cubic millimeter of blood.

4. See Cunningham's "Anatomy" (1909), pages 22 and 448; or Gray's "Anatomy" (1910), pages 807 and 811.

5. See Cunningham's "Anatomy" (1909), pages 78 and 782; or Gray's "Anatomy" (1910), pages 575 and 708.

PHYSIOLOGY.

1. *Four forms of muscle stimuli:* Nervous, electrical, thermal, and chemical stimuli.

Elasticity of muscle is that property of muscle whereby it stretches when subjected to the influence of a weight, and then returns more or less perfectly to its original condition when the weight is removed.

2. The respiratory center is situated in the medulla oblongata, on both sides of the posterior aspect of the apex of the calamus scriptorius. The respiratory center is probably automatic; but its activity is excited by: irritation of cutaneous or pulmonary sensory nerves, by the accumulation of carbon dioxide in the blood, by the diminution of oxygen, or by the presence of heat.

3. The function of an efferent or centrifugal nerve is to carry nerve impulses from the center in brain or cord to the periphery. Efferent nerves are: Motor, secretory, vasomotor, inhibitory.

4. *Reflex actions* are involuntary or unconscious movements, due to suitable stimuli. They depend upon the integrity of the *reflex arc*, which is a complex made up of: (1) A surface capable of receiving an impression; (2) an afferent nerve: (3) a nerve cell capable of receiving and also of sending out impulses; (4) an efferent nerve, and (5) a surface capable of responding in some way to the impulse conveyed by the efferent nerve.

The superficial reflexes are: Abdominal, cremasteric, epigastric, gluteal, palmar, plantar, and scapular. *The deep reflexes* are: Ankle clonus, knee jerk, that of the tendo Achillis, elbow jerk, accommodation of the eye, and light or pupillary reflex.

5. *Functions of the pneumogastric nerve:* "Throughout its whole course the vagus contains both sensory and motor fibers. To summarize the many functions of this nerve . . . it may be said that it supplies (1) *motor* influence to the pharynx and esophagus, stomach, and intestines, to the larynx, trachea, bronchi, and lungs; (2) *sensory* and, in part (3), *vasomotor* influence to the same regions; (4) *inhibitory* influence to the *heart;* (5) *inhibitory* afferent impulses to the *vasomotor center;* (6) *excito-secretory* to the salivary glands: (7) *excito-motor* in coughing, vomiting, etc."—(Kirkes' *Physiology.*)

6. The portal vein is formed by the union of the splenic and superior mesenteric, the gastric and pyloric being tributaries. The blood passes from the portal vein through the interlobular veins, the intralobular capillaries, the intralobular veins, the sublobular veins, the hepatic veins, the inferior vena cava, and into the right auricle of the heart.

7. In its passage through the liver the blood loses plasma, proteids, fats, and salts; gains extractives and corpuscles.

8. *The refracting media of the eye* are: Cornea, aqueous humor, crystalline lens, and vitreous humor. "The refraction effected by the cornea is very great, owing to the passage of the light from the air into a comparatively dense medium, and is sufficient of itself to bring parallel rays of light to a focus about 10 mm. behind the retina. This would be the condition in an eye in which the lens was congenitally absent. Perfect vision requires, however, that the convergence of the light shall be great enough to allow the image to fall upon the retina. This is accomplished by the crytalline lens, a body denser than the cornea and possessing a higher refractive power. The biconvex lens focuses both parallel and divergent rays of light. The function of the crystalline lens is, therefore, to focus the rays of light with the formation of an image on the retina." (Brubaker.)

9. *Myopia* is a condition in which the antero-posterior diameter of the eye is abnormally long, and parallel rays are focused in front of the retina.

Hypermetropia is a condition in which the antero-posterior diameter of the eye is abnormally short, and parallel rays are focused behind the retina.

Astigmatism is a condition in which, owing to a greater curvature of the eye in one meridian than in others, the refractive power of the eye varies.

10. *Five special centers in the medulla:* (1) Respiratory, (2) vasomotor, (3) cardiac, (4) for mastication, (5) for deglutition.

MATERIA MEDICA AND THERAPEUTICS.

1. A *pharmacopœia* is a work containing: (1) directions for the preparation, etc., of medicines and (2) a list of accepted drugs and (3) established standards of strength and purity of the drugs contained therein. *Materia medica* may be obtained from animal, vegetable, mineral, and synthetic sources.

2. An *official remedy* is one recognized by the Pharmacopœia. The official name of sweet-flag is calamus; of black cohosh, is cimicifuga; of mercury, is hydrargyrum; of corn silk, is zea; dogwood *is not official;* lady's slipper is cypripedium; bitter apple is colocynth; poke-root is phytolacca; hoarhound is marrubium; boneset is eupatorium.

3. SALOL is phenyl salicylate; the salicylic ester of phenyl. *Physiological action:* Antiseptic, germicidal, anodyne, and antipyretic; it combines in most respects the actions of phenol and salicylic acid.

Therapeutic uses: As a disinfectant, in inflammation of the mouth and pharynx, in cystitis, as an intestinal antiseptic in typhoid fever, in muscular rheumatism, in intestinal indigestion and fermentation, in cholera.

CRESOL is a mixture of cresols obtained from coal tar, but freed from phenol, hydrocarbons, and water. It is a germicide and antiseptic.

4. *Synergist* is an agent which aids the action of another; example, the prescribing of two or more purgatives at one time. *Analgesic* is an agent which causes freedom from pain; as opium. *Depilatory* is an agent which will remove hair; as electricity. *Sialagogue* is an agent which promotes the flow of saliva; as pilocarpus.

5. An *alkaloid* is a basic, nitrogenous substance of alkaline reaction, and capable of acting with an acid to form a salt in the same way that ammonia does. The active principles of some drugs are alkaloids. An alkaloid of nux vomica is strychnine; of opium, is morphine; of ipecac, is cephaëline; of colchicum, is colchicine; of ergot, is cornutine.

6. *Resins* are natural or induced, solid or semi-solid exudations from plants, characterized by being insoluble in water, mostly soluble in alcohol, uncrystallizable, and softening and melting at a moderate heat. Chemically they are mixed products. Some of them are acids, and combine with alkalies, forming soaps, as in the case of common resin. They are commonly the oxidized terpenes of plants. When pure, they are usually transparent, hard, and brittle; when they contain water, are opaque and no longer hard and brittle. They are divided into three classes: (1) *Natural oleoresins* (oil and resin), generally obtained by incising the trunks of trees which contain them; ex., turpentine. (2) *Gum resins:* natural mixtures of gum and resin—usually exudations from plants; ex., myrrh. (3) *Balsams:* resinous substances which contain benzoic, cinnamic, or analogous acids; ex., balsam of tolu. (Stewart's *Pharmacy.*)

7. *Coca* is the dried leaves of the erythroxylon, coca which contains the alkaloid cocaine. It is used as a local anesthetic. *Cacao* (Theobroma cacao) is cocoa, used as a beverage; the oleum theobromatis or cacao-butter is used for suppositories. *Coccus* is cochineal, chiefly used as a coloring agent.

8. COLOCYNTH. *Synonym:* Bitter apple. *Principal constituent:* Colocynthin. *Medical properties:* a bitter, an intestinal and hepatic stimulant, a drastic cathartic, and diuretic. *U. S. P. dose,* 1 gram.

9. Opium is obtained from Papaver somniferum, by incising the unripe capsules. Its most important active principle is morphine, which is narcotic and analgesic. Apomorphine hydrochloride has a decided emetic action.

10. *Two forms of crystals:* (1) Cube, as sodium chloride; (2) right octahedron, as alum.

CHEMISTRY AND TOXICOLOGY.

1. The *toxic principle* of digitalis is digitoxin; of aconite, is aconitine; of nux vomica, is strychnine.

2. Alcohol is a good antidote for carbolic acid.

3 and 4. Lime or lime water is an antidote for oxalic acid or oxalates.

5. An *overdose of aconite* produces muscular weakness, shallow and irregular breathing, cold and clammy skin, lowered body temperature, numbness and tingling of extremities, impaired sensation, and finally paralysis of heart and respiration.

6. Hydrogen, H; oxygen, O; chlorine, Cl; mercury, Hg; arsenic, As; antimony, Sb; carbon, C; potassium, K; sodium, Na; silver, Ag.

7. *Aqua ammoniæ* is an aqueous solution of ammonia containing 10 per cent. of the gas.

Spirit of ammonia is a 10 per cent. solution of the gas in alcohol.

8. *Chemical compounds* are substances containing two or more elements, *chemically united,* and in *definite proportions.*

Mixtures contain elements or compounds in *no definite proportion,* and *without chemical union.*

9. *Scidlitz powder* contains sodium and potassium tartrate, about 120 grains, and sodium bicarbonate, 40 grains, in one paper, and 35 grains of tartaric acid in another paper. The chemical reaction on their mixture is:

$$2NaHCO_3 + KNaC_4H_4O_6 + H_2C_4H_4O_6 + [xH_2O] = [xH_2O] + Na_2C_4H_4O_6 + KNaC_4H_4O_6 + 2H_2O + 2CO_2$$

10. *Chemical formula of morphine:* $C_{17}H_{19}NO_3 + H_2O$.

DIAGNOSIS.

1. See French's "Practice of Medicine" (1910), page 1087; or Osler's "Practice of Medicine" (1909), page 893.

2. See French's "Practice of Medicine" (1910), pages 322, 191, 306, and 330; or Osler's "Practice of Medicine" (1909), pages 132, 200, 115, and 141.

3. See French's "Practice of Medicine" (1910), pages 847 and 850; or Osler's "Practice of Medicine" (1909), pages 560 and 561.

4. See French's "Practice of Medicine" (1910), pages 922 and 930; or Osler's "Practice of Medicine" (1909), pages 693 and 697.

5. *Cheyne-Stokes respiration* is a type of breathing in which the respiration gradually increases in depth up to a certain point, then decreases, then stops for about half a minute; then this cycle begins again.

Argyll-Robertson pupil is the condition in which the pupil reacts to accommodation but not to light.

Widal's test.—See French's "Practice of Medicine" (1910), page 1219.

Koplik's spots are small red spots with a bluish-white center, seen on the mucous membrane of the mouth early in measles, before the skin eruption.

6.

PSORIASIS.	SQUAMOUS ECZEMA.
1. Course chronic.	1. Course acute, subacute, or chronic.
2. Involves with predilection extensor surfaces.	2. Involves with predilection flexor surfaces.
3. Itching moderate or absent.	3. Itching present.
4. Patches sharply defined.	4. Patches fade into healthy skin.
5. Patches small and round.	5. Patches large and irregular.
6. Eruption always dry.	6. History of previous moisture.
7. Patches covered with profuse shining, silvery scales.	7. Patches covered with sparse, small yellowish scales.
8. Lesions remain unchanged from month to month.	8. More or less rapid changes in lesions.

(Schamberg.)

7. See French's "Practice of Medicine" (1910), page 146; or Osler's "Practice of Medicine" (1909), page 163.

8. *Bacillus tuberculosis, Bacillus anthracis, Bacillus ty-*

phosus, Bacillus influenzæ, and *Bacillus lepræ.* See French's "Practice of Medicine" (1910), pages 334, 402, 68, 132, and 409; or Osler's "Practice of Medicine" (1909), pages 285, 252, 59, 153, and 360.

9. See French's "Practice of Medicine" (1910), pages 973 and 978; or Osler's "Practice of Medicine" (1909), pages 419 and 425.

10. See French's "Practice of Medicine" (1910), pages 416, 551, 558, and 1156; or Osler's "Practice of Medicine" (1909), pages 260, 756, 766, and 1048.

PATHOLOGY.

1. *Pathology* is that branch of science which deals with disease (including its causes, manifestations, and results).

Pathognomonic means characteristic of a certain disease.

Pathogenesis is the mode of origin of a disease.

Pathophobia is a morbid fear of disease.

Hyperplasia is a pathological condition in which the cells of a part increase in number and so cause an increase in the size of that part.

2. There is an increase of epithelial cells in carcinoma; of glandular cells in adenoma; of connective tissues in sarcoma; of muscle cells in myoma; of nerve tissue in neuroma.

3. *Nephroma* is a tumor composed of kidney tissue.

Fibroma is a benign tumor composed chiefly of fibrous tissue.

Lymphangioma is a condition characterized by enlargement of lymphatic vessels.

Lipoma is a benign tumor composed of fatty tissue.

Chondroma is a benign tumor composed of cartilage.

4. See French's "Practice of Medicine" (1910), page 587; or Osler's "Practice of Medicine" (1900), page 804.

5. See French's "Practice of Medicine" (1910), page 519; or Osler's "Practice of Medicine" (1909), page 727.

6. See French's "Practice of Medicine" (1910), page 154; or Osler's "Practice of Medicine" (1909), page 170.

7. See French's "Practice of Medicine" (1910), pages 70, 326, 557, 1162, and 562; or Osler's "Practice of Medicine" (1909), pages 65, 141, 766, 1063, and 708.

8. *Five diseases of unknown pathology:* Muscular rheumatism, gout, diabetes mellitus, diabetes insipidus, and obesity.

9. See French's "Practice of Medicine" (1910), pages 843 and 849; or Osler's "Practice of Medicine" (1909), pages 557 and 561.

10. See French's "Practice of Medicine" (1910), page 641; or Osler's "Practice of Medicine" (1909), page 849.

THEORY AND PRACTICE.

1. See French's "Practice of Medicine" (1910), pages 927 and 932; or Osler's "Practice of Medicine" (1909), pages 697 and 700.

2. See French's "Practice of Medicine" (1910), pages 588 and 608; or Osler's "Practice of Medicine" (1909), pages 805 and 816.

3.

HEPATIC COLIC.	RENAL COLIC.
1. A history of having recovered gallstones from the feces at previous attacks.	1. Possible history of having passed calculi with the urine.
2. Attack begins some hours (two to four) after a full meal.	2. Not influenced by eating.
3. Paroxysmal pain, radiating to the scapula or right shoulder.	3. Pain radiates along the course of the ureter, and patient may feel the site of pain getting lower and lower as the stone passes toward the bladder.
4. Tenderness in the region of the gall-bladder and in the epigastrium at right of the median line.	4. Tenderness may be elicited along the course of the ureter, but is often absent.
5. Chill antedates the pain.	5. Chill less common.
6. Jaundice usually develops within the first twenty-four to forty-eight hours.	6. Absent.
7. Urine bile-stained.	7. May be bloody or contain calculi.
8. Calculi may be passed with the feces.	8. Absent.

(From Anders and Boston's *Medical Diagnosis.*)

4. See French's "Practice of Medicine" (1910) pages 1082 and 1083; or Osler's "Practice of Medicine" (1909), pages 886 and 889.

5. See French's "Practice of Medicine" (1910), page 816; or Osler's "Practice of Medicine" (1909), page 518.

6. See French's "Practice of Medicine" (1910), page 109; or Osler's "Practice of Medicine" (1909), page 99.

7. See French's "Practice of Medicine" (1910), pages 1108 and 1133; or Oslers "Practice of Medicine" (1909), pages 969 and 980.

8. See French's "Practice of Medicine" (1910), pages 558 and 560; or Osler's "Practice of Medicine" (1909), pages 766 and 767.

9. See French's "Practice of Medicine" (1910), pages 151 and 158; or Osler's "Practice of Medicine" (1909), pages 165 and 172.

10. See French's "Practice of Medicine" (1910), pages 301 and 309; or Osler's "Practice of Medicine" (1909), pages 115 and 122.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), pages 2 and 38; or Hirst's "Obstetrics" (1909), pages 17 and 46.

2. See Williams' "Obstetrics" (1909), pages 256 and 278; or Hirst's "Obstetrics" (1909), pages 396 and 410.

3. See Williams' "Obstetrics" (1909), page 280; or Hirst's "Obstetrics" (1909), page 414.

4, 6 and 8. See Williams' "Obstetrics" (1909), page 658; or Hirst's "Obstetrics" (1909), pages 570 and 440.

5. The following tables (from Dorland's *Obstetrics*) give the main points to be looked for in a *differential diagnosis of extrauterine pregnancy:*

From *cornual pregnancy:*

EXTRAUTERINE PREGNANCY.	CORNUAL PREGNANCY.
Rupture is most prone to take place at some period during the first three months.	Rupture usually occurs between the third and sixth months.
The tumor exists to one or the other side of the uterus, and is usually distinct.	There may be but one tumor, this being dependent upon the degree of bifurcation.
The tumor is exceedingly sensitive and semi-elastic.	The tumor is not so sensitive and presents the characteristics of a uterine tumor.
The round ligament may be felt attached to the uterus on the inner or uterine side of the gestation sac.	The round ligament is displaced outward and is attached to the external side of the gestation sac.
Examination of the removed specimen shows an absence of true decidual tissue.	True decidual tissue will be found surrounding the fetal membranes.
In interstitial pregnancy the gestation sac communicates with the uterine cavity by the orifice of the Fallopian tube.	The two halves of the uterus are united by a muscular band.

From *pyosalpinx:*

EXTRAUTERINE PREGNANCY.	PYOSALPINX WITH INDISTINCT HISTORY OF PREGNANCY.
The uterus is enlarged, with a soft cervix and the peculiar softening of the body that is present in pregnancy.	The uterus is probably not enlarged, the cervix is not soft, and there is not the elastic feel that is present in pregnancy.
There is a history of sterility, with the signs of endometritis or salpingitis.	There is a history of acute attacks of peritonitis occurring at intervals after an attack of gonorrhea.
The tumor is small, exceedingly sensitive, but, as a rule, not firmly bound down in the pelvic cavity.	The tumor is large, moderately sensitive, firmly bound down in the pelvis, and surrounded by a mass of exuded lymph.
Rupture is likely to occur at some time during the first three months.	The history may have covered a period of months without the symptoms of rupture.
The usual clinical manifestations of pregnancy will be present.	The clinical manifestations of pregnancy are absent or very indistinct.

From *intrauterine pregnancy with fibroid tumor:*

EXTRAUTERINE PREGNANCY (TUBAL VARIETY).	INTRAUTERINE PREGNANCY COMPLICATED WITH FIBROID TUMOR.
There is discovered to one side of the uterus a mass, rounded, exceedingly sensitive, and elastic or semi-fluctuating.	The mass may be rounded; more often it is nodulated, very hard, non-elastic and non-fluctuating, and not sensitive to the touch.
The uterus is enlarged, but not to a size proportionate to the period of gestation.	The size of the uterus corresponds to, or is even in excess of, the time of gestation.
The menstrual history is irregular, and there may be an early return of the show.	Menstruation is likely to be suppressed.
Rupture occurs at the usual time.	No signs of rupture follow.
Pain is an early and prominent symptom.	Pain develops only after the tumor has reached sufficient size to press upon the surrounding structures.

From *lateral flexion of a pregnant uterus:*

EXTRAUTERINE PREGNANCY.	INTRAUTERINE PREGNANCY WITH LATERAL FLEXION OF THE UTERUS.
The body and cervix of the enlarged uterus are generally in a straight vertical line.	The fundus lies to one side of the pelvis, with the cervix carried to the opposite side.
The extrauterine gestation sac is in close proximity to the body of the uterus.	A deep sulcus may be felt between the fundus and the cervix.
Anesthetization reveals the mass closely attached to the fundus and readily outlined.	Anesthetization reveals a normal condition of the appendage.
The size of the uterus is much below that indicated by the duration of the pregnancy.	The size of the uterus corresponds to the period of the gestation.
The menstrual history is irregular.	Menstruation is suppressed.
There is a history of severe abdominal pain and rectal tenesmus.	Usually there is no pain other than a backache; there is no rectal tenesmus.

7. See Williams' "Obstetrics" (1909), page 104; or Hirst's "Obstetrics" (1909), page 180.
9. See Williams' "Obstetrics" (1909), page 794; and Hirst's "Obstetrics" (1909), page 560.
10. See Williams' "Obstetrics" (1909), page 904; or Hirst's "Obstetrics" (1909), page 645.

GYNECOLOGY.

1. See Cunningham's "Anatomy" (1909), page 1197; or Gray's "Anatomy" (1910), page 1420.
2. See Cunningham's "Anatomy" (1909), page 1191; or Gray's "Anatomy" (1910), page 1412.
3. See Cunningham's "Anatomy" (1909), pages 1192 and 1185; or Gray's "Anatomy" (1910), pages 1412 and 1403.
4. See Cunningham's "Anatomy" (1909), page 1185; or Gray's "Anatomy" (1910), page 1403.
5. See Williams' "Obstetrics" (1909), page 247.

Functions of perineal body: It holds in position the lower end of the rectum, vagina, and urethra and enables them to perform the functions of defecation, coitus, parturition, and urination; it strengthens the pelvic floor.

6. *Pudendal hematocele* may be caused by trauma, a fall, varicose veins prior to labor, or pressure of the fetus (particularly of the head).

In pudendal hernia: There is a tumor which is soft, insensitive, and rounded; and which is apt to disappear with a gurgling sound on pressure or if the patient is put in the knee chest position; it is tympanic on percussion, and may give an impulse on coughing. In *pudendal hematocele:* There is generally a history of trauma, no impulse on coughing, no resonance on percussion, and it is not reducible.

7. *New growths occurring on the vulva* are: Lipoma, fibroma, angioma, papilloma, sarcoma, carcinoma. For *condylomata of vulva* see Rose and Carless' "Surgery" (1908), page 149.

8. See Williams' "Obstetrics" (1909), page 47; or Cunningham's "Anatomy" (1909), page 1187; or Gray's "Anatomy" (1910), page 1403. For *parovarian cysts*, see Rose and Carless' "Surgery" (1908), page 1295 and 223.

9. *Tubercular salpingitis* is secondary to tubercular infection elsewhere, generally tuberculosis of the endometrium. *Symptoms:* Mild fever, weakness, thickening of subperitoneal tissues; there is apt to be atresia of the tube and formation of pyosalpinx; it generally attacks both tubes. The *diagnosis* is made on history of tuberculosis and presence of tuberculosis in other organs, finding the tubercle bacilli in the leucorrheal discharge. Generally there are present ascites, scanty menstruation or amenorrhea and the tubercular nodules may be palpated.

10. Large ovarian cysts are to be differentiated from: Ascites, pregnancy, and large uterine tumors.

FIBROID TUMOR.	OVARIAN CYST.
1. Slow growth.	1. Usually more rapid growth.
2. Facial expression unchanged. Face may be full and flushed; later pale from hemorrhage.	2. Facies ovariana.
3. General health usually unimpaired except from loss of blood, if submucous or mural; may be painful.	3. General health early impaired from emaciation. Not painful.
4. Abdomen usually very asymmetrical from irregular shape of tumor.	4. Abdomen more symmetrical, especially when tumor is large.
5. Abdominal veins not usually enlarged.	5. Usually enlarged, especially in large polycysts.
6. Usual menorrhagia.	6. Menstruation unchanged or diminished.
7. Elasticity, not fluctuation. No percussion wave.	7. Fluctuation marked, Percussion wave marked.
8. Surface firm and usually lobulated.	8. Surface yielding; in monocysts, regular; in polycysts, irregular.
9. Vaginal touch and conjoined examination show tumor dense and firm, and, unless pedunculated, continuous with uterus. Uterus large and heavy.	9. Uterus normal, except displacement from pressure. Tumor compressible, fluctuating, detached from uterus.
10. Uterine cavity much elongated.	10. Not materially elongated. (This is a most important diagnostic point.)
11. Uterus moves with tumor.	11. Does not move with tumor.

SURGERY.

1. Microscope, steel tape measure, hematocytometer, cystoscope, *x*-rays.
2. See Rose and Carless' "Surgery" (1908), pages 268, etc.; or Da Costa's "Surgery" (1908), pages 57, etc.
4. See Rose and Carless' "Surgery" (1908), page 1103; or Da Costa's "Surgery" (1908), page 995.
5. In pyuria of renal origin the pus will be found very thoroughly mixed with the urine; whereas if the pus comes from the urethra it will be chiefly found in the first part of the urine voided; and if it comes from the bladder it will be chiefly found in the last part of the urine, and at the end of micturition.
6. See Rose and Carless' "Surgery" (1908), page 835.
7. See Rose and Carless' "Surgery" (1908), page 482; or Da Costa's "Surgery" (1908), page 464.
8. See Rose and Carless' "Surgery" (1908), page 928; or Da Costa's "Surgery" (1908), page 632.
9. See Rose and Carless' "Surgery" (1908), pages 655, 657, and 1134; or Da Costa's "Surgery" (1908), pages 550 and 1009.
10. See Rose and Carless' "Surgery" (1908), page 454; or Da Costa's "Surgery" (1908), page 662.

HYGIENE.

1. "Perfect dryness of foundation, walls, and roof, and exclusion of ground-air, are necessary conditions of house construction. The subsoil around the site, and, if there is much damp, also below it, should be drained, and, except where there is a rock foundation, the walls should be embedded in concrete, and under the whole house should be a layer of concrete 6 inches thick, having on the top a layer 1 inch thick of some impervious material, such as asphalt or cement. In order to prevent damp rising from the ground a *damp-proof course* should be inserted in the wall just above the ground level. Perforated slabs of glazed stoneware may be made to serve not only as a damp-proof course, but to ventilate the space under the floor. It is advisable to have a damp-proof course also where the rain-gutter joins the parapet, and in chimney-stacks just above the roof. Basement walls are liable to become wet when in contact with a damp soil even when there are drains and damp-proof courses. In this case 'a dry area' must be formed by digging out or by building a second thin wall outside and a few inches away from the main wall, or by

inserting slabs in a slanting position between the soil and the house wall, or the walls may be built hollow (with two damp courses) and joined together with iron ties or bonding bricks, or the hollow may be filled with asphalt. Walls exposed to driving rain or sea spray may be coated with slates, vitrified slabs, alkaline silicates, or cement; but such coating should continue down to the 'footings,' and should not be applied while the bricks are wet. The walls of a newly-built house are damp from the water used in mixing the mortar, and also that absorbed by the bricks. If salt-water, sea-sand, or refuse lime from soap works, containing glycerine, has been used in the mortar, it will never dry. Mortar should be composed of good lime combined with clean sharp sand, free from earthy matter (road scrapings or mold have sometimes been used by unscrupulous builders), or with crushed stone, slag, or well-burnt clay. Walls are sometimes built of concrete made with cement. For internal walls, where space is limited, coke-breeze with cement has been used. The settling of the walls sometimes breaks the drain passing underneath, if not properly protected by concrete or by the formation of an arched opening in the wall. It is usual to defer putting in drains until after the building has been carried up, with the view of allowing it to settle upon its foundations. If there be no cellars the flooring ought to be raised two feet above the ground, which should be covered with cement and the space ventilated to prevent growth of the fungus of 'dry-rot.' Walls and ceilings are usually covered with plaster, which should be of good materials ('jerry' builders have been known to use a mixture of lime and sifted mold or street refuse for this purpose). It should be finished with a smooth, non-porous surface. If a room is not to be papered the walls should be coated with some form of cement or distemper. (*Aids to Sanitary Science.*)

2. Soil air contains much the same ingredients as atmospheric air, but in the former there are more carbon dioxide and less oxygen; soil air also contains products of fermentation and decomposition (marsh gas, ammonium sulphide, sulphuretted hydrogen, etc.).

3. The *"smoke test"* consists in filling the system of plumbing with smoke, which will escape if a leak exists.

4. See French's "Practice of Medicine" (1910), page 107.

5. Steam under pressure, boiling water, quicklime, corrosive sublimate, formaldehyde, and tricresol.

6. See French's "Practice of Medicine" (1910), pages 324, 194, 109 and 397; or Osler's "Practice of Medicine" (1909), pages 138, 207, 99, and 353.

7. (*a*) *Immunity* is a state, natural or acquired, in which the body is resistant to disease. *Acquired* immunity is obtained by an individual in consequence of having suffered an attack of a pathogenic organism of normal or modified virulence, or of its toxin, and having overcome it (*active immunity*), or as a result of the injection of the serum of an animal which has acquired an active immunity against the organism in question (*passive immunity*). (From Stedman's *Medical Dictionary.*)

(*b*) See French's "Practice of Medicine" (1910), page 60.

8. (*a*) *Effect of Sufficient Physical Exercise.*—"(1) Increased force and frequency of the heart's action, and by consequence the increased circulation of the blood through all parts of the body. (2) The pulmonary circulation being quickened, more carbonic acid and moisture are eliminated. The amount of air inspired and expired is largely increased. (3) The action of the skin is heightened, and perspiration becomes marked. (4) The water and salts of the urine are decreased owing to the large cutaneous secretion, but the nitrogen eliminated remains about the same. (5) The voluntary muscles are brought into active play; the circulation of the blood through them is accelerated; waste products are rapidly carried away for excretion; while the material to replace waste is brought to them." (Parkes' *Hygiene.*)

(*b*) *Excessive continued effort may cause:* Overstrained heart; breathlessness, palpitation; small, frequent, and irregular pulse; cardiac pain; dilatation or hypertrophy of the heart rupture of blood-vessels; diseases of blood-vessels.

9. *Requirements of underclothing*: (1) To preserve the body temperature: (2) to allow evaporation from the skin to take place readily; (3) to protect the body from heat, cold, rain, and wind; (4) to allow muscular freedom; (5) to disguise the body as little as possible.

Silk is a good non-conductor of heat, is hygroscopic, and pleasing to wear, but is expensive. *Cotton* is cheap, durable, much less hygroscopic than wool or silk, is warm. *Wool* conducts heat badly, absorbs moisture readily and gives it off slowly, but it hardens and shrinks on washing. *Linen* is much like cotton, but more expensive; it is useful in hot climates, and for articles that need frequent washing.

10. Rice is too poor in proteids, fat, and mineral matters.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks ended July 29 and August 5, 1911:

	July 29		Aug. 5	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	398	161	506	163
Diphtheria	196	14	227	17
Measles	333	10	228	10
Scarlet Fever	78	5	65	3
Smallpox	..	..	..	..
Varicella	15		9	..
Typhoid Fever	110	10	164	16
Whooping Cough	66	17	49	12
Cerebrospinal Meningitis	1	1	5	5
Malarial Fever	..	..	....	....
Totals	1,197	218	1,253	226

Blood Pressure in Childhood.—W. Koupe studied this subject and found that in 144 normal children the blood pressure varied between 80 and 100. There is no marked difference in the blood pressure of the sexes. The blood pressure appears to rise after the seventh to the eighth year. The difference between the systolic and diastolic blood pressure is quite constant, and amounts to 8 to 9 mm.—*Monatschrift für Kinderheilkunde.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended August 5, 1911:

CHOLERA.

Places	Date	Cases	Deaths
Arabia: Hodeida	June 16–30	21	17
Among the civil and the military population.			
Austria-Hungary: Trieste	July 31	4	1
Ceylon: Colombo	June 16–30	5	2
France: Marseilles	July 20	4	..
Additional.			
Indo-China: Saigon	May 29–June 4	8	6
Java: Batavia	June 11–17	40	18
Surabaya	Apr. 10–May 6	33	22
Siam: Bangkok	June 4–10	259	259
Turkey: Constantinople	May 21–July 10	21	11
Including cases previously reported.			
Turkey in Asia: Basra	Oct. 20–Nov. 30	212	164
Year, 1910, revised			
Zongouldak	July 1	..	Present

YELLOW-FEVER.

Brazil: Manaos	July 1–15	..	2
July 29, 3 cases.			
Para	June 21–July 15	3	.

PLAGUE.

Brazil: Para	July 2–8	1	..
China: Canton	May 31	Present[1]	
Hongkong	June 11–17	30	23
Egypt: Alexandria	June 23–July 12	6	4
Port Said	June 30–July 12	2	1
India: Bombay	June 19–24	43	44
Kurrachi	June 18–24	10	13
Indo-China: Saigon	May 29–June 11	60	23
Persia: Buchir	May 31–June 3	16	13
Siam: Bangkok	June 4–10	14	14

SMALLPOX.

Brazil: Pernambuco	May 1–31	..	153
Rio de Janeiro	June 18–24	2	..
Canada: Halifax	July 16–22	1	..
Quebec	July 16–22	7	..
Ceylon: Colombo	June 11–17	2	2
China: Hongkong	June 11–17	2	2
German New Guinea: Friedrich Wilhelmshafen	May 8	1	..
From s. s. *Prinz Waldemar.*			
Germany	June 25–July 1	2	..
Additional.			
Germany	July 2–July 15	6	..
India: Bombay	June 19–24	14	13
Madras	June 18–24	5	2
Indo-China: Saigon	May 29–June 11	25	12
Italy: Naples	July 2–8	10	2
Mexico: Ciudad Juarez	July 9–22	2	..
Chihuahua	June 28–July 16	2	2
Mexico	Jan. 8–21	7	..
Reported out of date.			
San Luis Potosi	June 25–July 1	4	6
Russia: Libau	June 26–July 2	4	..
Moscow	June 25–July 1	19	6
Riga	July 2–8	2	..
St. Petersburg	June 25–July 1	29	1
Siam: Bangkok	June 4–10	16	16
Spain: Madrid	June 1–30	..	1
Turkey in Asia: Beirut	June 25–July 8	11	..
Uruguay: Montevideo	May 1–31	13	7
At sea	May 15	1	..
On s. s. *Narrung*, vessel quarantined at Adelaide, Melbourne, and Sydney.			

[1] Bulletin demographique et sanitaire suisse, July 6, 1911.

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Original Articles.

A MEANS OF CONTROLLING THE HEMORRHAGE FROM INOPERABLE NEOPLASMS OF THE BLADDER; WITH CASES ILLUSTRATING THE TRYPSIN AND HODENPYL SERUM THERAPY.*

BY L. BOLTON BANGS, M.D.,

NEW YORK.

THE chief source of misery to a patient with an inoperable neoplasm of the bladder is the recurring hemorrhage. It not only weakens him but it terrifies him and causes a psychic aggravation of the frequent and painful urination. Even before the acts of urination become painful he has learned to study the character of the urine, to estimate its blood contents, and to watch the shades of color with daily intensified interest, trying thus to determine the progress of his malady. If blood clots appear in the urine his agitation increases. He may pretend indifference, but it is perfectly evident what is upon his mind, and that he dreads to ask the question, "Have I cancer?" At this juncture, if the hemorrhage can be controlled or diminished and tactful explanations made, the patient's excitement will be averted and his happiness be restored for a time.

What local remedy is to be used? It should be one which the bladder will tolerate. For, if the mucous membrane be irritated the frequency of urination will be increased, while as each time that the bladder contracts it expresses from its neoplastic contents more blood the patient's sufferings will be aggravated. The application must not cauterize, lest sloughs should separate and cause copious bleeding, or by their irritating presence induce violent vesical tenesmus. It should, if possible, penetrate the substance of the tumor and constringe its soft tissues, and it must preserve as long as possible the sterility of the urine. In trying to find a remedy to meet these requirements various substances were tested, such as solutions of the vegetable and metallic astringents, including Squibb's compound alum powder, adrenalin, antipyrine, and creolin. Creolin, in my opinion, comes nearer to the ideal than any other subsance, but it has its limitations and there is an art in its use which must be acquired. It is a distillate from coal tar and was highly recommended by von Esmarch as an antiseptic with hemostatic properties.

Having had an opportunity of testing its properties in serious hemorrhage from a tuberculous ulcer in the urethra, and finding the statements of von Esmarch to be substantiated, it occurred to me to use creolin in suitable bladder cases. My experience with it in such cases has demonstrated its usefulness and has strengthened my confidence in it. Take in illustration the following cases, only the salient features of which, for brevity's sake, are given. The first was that of a man aged seventy-six, who came complaining of irritability of the bladder and of blood in his urine. His urine was rusty in color and contained many clots and the evidences of chronic nephritis were present. He was much agitated and his countenance showed great anxiety. Cystoscopic examination showed on the lower right segment of the bladder a sessile tumor of about the size of a plum, reddish in color, and with a cauliflower-like contour. Blood could be seen oozing from the depressions on its irregular surface. The bladder wall contiguous to and surrounding the tumor was intensely hyperemic. Its appearance and the symptoms warranted a diagnosis of epithelioma. The patient had marked arteriosclerosis with cardiac valvular lesions and was the subject of suffocative attacks, sometimes accompanied by a sense of impending death. With this history, together with the character of the tumor, it seemed unwise to subject one of his age to the risk of an operation, and in my opinion the best possible proccdure was to control the hemorrhage and to try to keep him comfortable.

The simple boric acid irrigation of the bladder used at first relieved the irritability somewhat, but aggravated the hemorrhage. Consequently I tried the experiment of using creolin, at first in a 1 per cent. solution; but this was soon found to be painful and irritating and was reduced to one of one-quarter of 1 per cent., which was tolerated and found to be efficient. Careful experiment showed that a prolonged application of the weaker solution was better than attempting the use of one which was immediately expelled. Subsequently, however, the patient's bladder became more tolerant, and a strength of one-half of 1 per cent. was frequently used. After 2 ounces of the creolin solution were introduced into the bladder the patient was kept quietly supine, and the solution was retained from twenty to thirty minutes. A gradual lengthening of the time of retention took place until he could retain it indefinitely. I then increased the temperature of the solution from 100° F. until 104° F. or 105° F. and even higher was tolerated, and apparently was more effective than the lower temperature. This was done in order to add the constringing effect of heat to that of the creolin. The patient received these treatments every day, at first an occasional intermission being made to note the result. After the fourth day there was no visible blood. It recurred on the sixth day, when treatment was resumed and repeated every second or third day thereafter for thirty-three days, when

*Read at a meeting of the Practitioners' Society of New York, February 3, 1911.

examination with the cystoscope was again made. The tumor had diminished in size, but its irregular contour remained, and blood issued from its surface. The hemorrhagic area which surrounded it had entirely disappeared, so that the small and delicate shadow which the tumor cast on the posterior wall of the bladder a little to the left of the right ureter was distinctly visible. Treatment with creolin was continued on each third or fourth day, and a little over three weeks (twenty-five days) later the patient was again cystoscoped. Again the tumor was seen to be reduced in size. It was cone-like, harder and firmer in appearance, and looked like a strawberry with its apex uppermost. There was no bleeding from its surface. The treatment was repeated every three or four days and two weeks later the cystoscope was again used. The tumor was still smaller and its color had changed from a reddish hue to yellowish white, while the mucous membrane of the bladder surrounding its site had become a glistening bluish white. For another period of three weeks the treatment was given each third day, when the patient was again examined with the cystoscope. There was no reduction in the size of the tumor, but its surface was firm and solid. The cotyledon-like depressions of the original growth were shallow and closer together and there was not the slightest appearance of blood-vessels in it. But a large vessel, tortuous and pulsating, could be seen leading along the posterior and the midwall of the bladder into the base of the tumor. Four more treatments at three-day intervals were given, after which the patient left for his home in a distant State (South Carolina). There was no blood in his urine, there was no irritability of his bladder, and with the exception of his cardiac attacks he was in good condition for a man of his age.

About a year and a half later he came again with a few small blood clots in the urine, which was otherwise clear. Cystoscopy showed the tumor to be of the same size as at the last record and covered with firm-looking yellowish-white epithelium. At one edge of it was a tiny bleeding point. The applications of hot creolin solution were made on five occasions, when the bleeding ceased entirely and he returned to his home. Two years and four months later he came for inspection. He was feeble, but there was no blood in his urine, either macroscopically or microscopically, and considering his age and cardiac infirmity he was in very comfortable condition. Five months later, in his eightieth year, he suddenly died from what was reported to me as "Bright's disease." Doubtless he succumbed to his cardiac lesions.

It will be observed that for a period of about four years this old man was kept comfortable, free from serious hemorrhage, and that for the last two years and over of his life there was no bleeding whatever. In view of all the conditions this case may be said to be brilliant and justifies the claim made for creolin. Doubtless the good result was aided by the facts that the patient had an unusually tolerant bladder, a resolute and philosophical temper, and was amenable to the measures used for his benefit. No other equally successful case has come under my observation, yet those which follow have interesting features and illustrate the usefulness of creolin. Take for example the case of a man aged fifty-six, who came saying that for eight or nine years he had had blood in his urine, but that sometimes he would go several months without passing any blood. There had been no pain or frequency of urination, but he thought that urination was easier when blood was present. Recently, however, a change had taken place; there was a constant desire to urinate, say every fifteen minutes, together with a sensation of scalding with each act. This frequency and pain, rather than the hemorrhage, led him to seek advice. The urine voided in my presence was claret-colored, and at the end he forced out a large clot. The creolin treatment was begun immediately. In twenty-four hours there was relief to the irritating and constant desire to urinate, but the urine was tinged with blood, which was of a dark color. The solutions were given daily for two weeks, their temperature being raised to 105° F., which caused some irritation of the bladder. Meantime a small fragment of tissue was found in the midst of a blood clot. This was sent to a laboratory, which reported that it had all the characteristics of papilloma, containing large epithelial cells like those of the bladder, infiltrated with leucocytes, and tissue cells in an advanced stage of fatty degeneration. Other fragments obtained from time to time were submitted to the laboratory, which reported that the cells were such as were seen in teased specimens of carcinoma or epithelioma. The treatment was continued off and on for several months, when, bleeding and irritability having ceased, the patient disappeared. I did not see him again for a period of about seven and a half years. He stated that three times in this long interval he had had a little blood in his urine which ceased spontaneously. At this time he was urinating every three hours in the day and not at all at night; but the urine was claret-colored. I tried antipyrine and adrenalin, but without effect. Then the hot creolin solutions were resumed and the bleeding ceased in three days. Again he dropped out of sight. One year and four months later he reappeared and submitted to cystoscopy. This revealed an egg-shaped tumor the size of a robbin's egg in the wall of the bladder, more to the right of the midline than to the left, and just above the right ureteral orifice, which was seen as a dimple beneath it. The outline of the tumor was regular and the surface roughened, its color pale and bloodless. There was a small reddened area on the left upper aspect of the tumor. The patient had had no blood in the urine since his last visit over a year ago. He was to report again in three months for further examination, but I did not see him until two years later, when he came stating that blood had appeared in his urine five or six times during the last six months. The hot creolin solutions were repeated once a week and the bleeding ceased promptly. But as it reappeared from time to time I insisted that he should go into hospital for more radical treatment. The patient was now more docile and consented. The bladder was opened suprapubically, and such diffused masses of epithelioma were found that removal was impossible. The wound united promptly, with the exception of a narrow sinus which had to be assisted by a few applications of silver nitrate. The blood in the urine was lessened but not stopped by the creolin applications and injections of trypsin were begun. These were made subcutaneously in the wall of the abdomen, but he complained of great pain at the time and of considerable pain following each injection. Notwithstanding these complaints the trypsin injections were given daily for over a month, *i.e.*, thirty-two

days. Instillations into the bladder of lotio pancreatis were substituted for the creolin, in the hope of obtaining some specific action upon the neoplasm. These did not control the bleeding nor have any other beneficial effect. A mawkish odor of the urine was noticed and the latter became muddy and reddish brown, with several clots. The hypodermatic injections of trypsin and the instillations of lotio pancreatis were carried out with fair regularity every other day for over two months without staying the progress of his malady, and after weakening slowly he died.

In the early stages of the history of this patient he was utterly unmanageable. He was very corpulent (with a wheezy voice), short of stature, and timid and apprehensive. An employee in one of the city departments, he was in constant dread lest he should lose his employment. Moreover, it was his conviction that the bleeding which had come at intervals during the eight or nine years prior to his coming to me and during his lapses of treatment had ceased spontaneously, and, therefore, he had convinced himself that treatment was not necessary. As a result of this state of mind he was fitful in his attendance and came at long intervals until toward the end of his malady. During his first visits to me, while blood in the urine and irritability of the bladder persisted, he was tolerably faithful and came nearly every day till relief was obtained. He then disappeared and was not seen for seven and a half years. It will be noted that in this interval he had blood in his urine only three times, but as this hemorrhage ceased spontaneously he did not come for treatment. Again, as soon as the bleeding and irritability were controlled he dropped out of sight and did not reappear until over a year later. At this time it was possible to make the cystoscopic examination already noted. After another interval (of two years) he stated that his urine had contained blood every five or six weeks during the last six months. Creolin solutions of one-half of 1 per cent. promptly reducing the amount of blood, he remained self-confident, but three months later he was alarmed about himself and consented to the operation, which was then too late.

In further illustration of the use of creolin and also as an example of the use of the Hodenpyl serum, take the following history of a male, aged sixty-eight, who first came directly under my care November 23, 1909. In February, 1908, he had experienced frequent and scalding urination with blood in his urine. His then attending physician, being an expert, had cystoscoped him under general anesthesia and found a large neoplasm occupying the base of the bladder and involving the right ureter. A year and a half later, his surgical attendant being out of practice for an indefinite time, he came under my care. The patient had been bleeding steadily every day for the previous six months, occasionally voiding very large clots, some of them so large as to obstruct urination until bladder tenesmus forced out the clot. He was weak and despondent, his countenance was anxious, and he looked exsanguinated. Although confined to his room, he insisted upon getting out of bed and being clothed every day, but the slightest effort caused dyspnea. The amount of blood which he passed was very large and the coagulation on the bottom of the vessel in which the urine had been saved was ⅛ to ¼ inch thick. Creolin solution, one-half of 1 per cent. was used and retained only twenty minutes daily from December 15 to December 27, when it was recorded, "the solution is retained half an hour, there are no clots and much less blood in the urine; patient's general condition improving." Two weeks later, January 11, 1910, the urine was macroscopically free from blood, and he held it for two and a half hours. His anxious gray look had disappeared and he was strong enough to go downstairs. I then cystoscoped him in the attempt to determine whether or not more radical measures should be used. The operation was done under chloroform anesthesia. It showed an irregular, soft tumor with a cauliflower-like appearance springing from the right side of the base of the bladder and covering approximately two-thirds of the right lateral wall of the viscus. In view of the patient's condition and of the size and distribution of the mass it was decided not to operate further, but to continue the creolin and to test the Hodenpyl serum, if this could be done without arousing the patient's suspicion as to the nature of his malady. The patient's strength had increased to such a degree and the bleeding from the tumor was so well controlled that he was able to go for a daily drive and at a moment when he was cheerful and hopeful he was told that injections of serum were to be given him in order to improve the state of his blood. This satisfied the patient and he contentedly agreed to the procedure. Dr. Hodenpyl held that injections of the ascitic serum under the skin or into the veins cause necrotization of cancer structure, and that the injections do no harm nor cause any secondary toxemia, but that moderate doses repeated for a long time were safer than large doses, because the latter cause such rapid disintegration of the neoplasm that the blood-vessels do not have time to contract and that dangerous, even fatal, hemorrhage may ensue. This had been his experience in external or visible tumors, and, therefore, his advice in regard to a tumor in which the changes were not visible was to use moderate doses subcutaneously (not intravenously) for a period of several months, even after the local malady had disappeared (I quote Dr. Hodenpyl's words).

Beginning on January 28 an injection of 50 c.c. of the ascitic serum into the subcutaneous tissues of the abdomen was made daily. No local or general reaction followed, but three days later, namely, on January 31, some change had evidently taken place. The residual urine, which had varied from one-half ounce to one and a half ounces, had increased to two and one-half ounces. There was great frequency of bloody micturition and so much difficulty in expelling the urine that a permanent indwelling catheter with siphon drainage was installed. Constant attention to the tube was required, as vesical tenesmus forced clots by the side of the catheter, and the drainage was interrupted by the clots.

February 1 the instillations of creolin solution were resumed and given twice daily. Six drams of the one-fourth of 1 per cent. strength were retained forty minutes. To rest the urethra the permanent catheter was removed at the end of twenty-four hours, but reintroduced on the following day, when the patient passed a comfortable day, with very little hemorrhage and only a few spasms. A week later, February 7, the record shows good nights, and very little blood in the urine. The patient went on in this way until the 17th, that is for ten days, being fairly comfortable, but with

occasional attacks of difficulty in voiding his urine, apparently due to an increase of the obstacle to the outflow. The catheter was used at intervals in order to relieve the urgency and to remove the residual urine, which seemed to be increasing in quantity. It was now necessary to introduce a greater length of the catheter before getting the residual urine, which had increased to four ounces, whereas formerly it was one or two ounces at the most. The increase in the length of the urethra and of the amount of the residual urine would seem to bear out Dr. Hodenpyl's statement that the first effect of the serum injection is an increase in the volume of the tumor, a sort of swelling which in the case of external tumors is distinctly visible. February 22 further change was taking place in the obstruction. The patient was able to void only two to four drams of urine at a time and the residual that day was five ounces. The catheter was, therefore, used more frequently and occasionally left in for a few hours in order to rest the patient by keeping the bladder empty. On February 24 there were frequent attacks of tenesmus, forcing out a bloody deposit, granular in nature, not at all like broken-down clots. The eye of the catheter was frequently clogged with blood clots and sloughing tissue. The latter caused frequent spasms, which were relieved by flushing the bladder with boric acid about every forty minutes.

Thirty days after beginning the serum decided difficulty was found in passing the catheter, which also had to be entered more deeply, the length of the urethra being now 12½ inches, whereas formerly it was but ten. The sensation given to the hand of the operator using the catheter is that the obstruction is of a rigid or firm nature in strong contrast to the soft or yielding feeling originally noted. Apparently a marked increase has taken place in the size of the tumor, for a few days later the urethral length was 13½ inches, the sense of obstruction just mentioned was intensified, and stiff, gum-elastic catheters became necessary. Dr. Hodenpyl inferred from this increased length of the urethra that the first effect of the serum, viz., an increase in the size of the neoplasm, had been obtained, and that disintegration with consequent contraction of the tumor might be expected.

The serum injections of 60 c.c. were given daily for fifty days, when it was noted that the patient had less scalding, and on the whole had improved very much. But although he voided more urine each time the interval remained from forty-five minutes to one hour. The creolin solution was continued on every reappearance of blood, and now apparently some retrogression of the tumor seemed to be taking place, for there was less difficulty in introducing the catheter, and no holding on withdrawing it. The catheter at 10½ inches now withdrew one-half ounce of residual urine, and at 13½ inches one-half ounce more. On the fifth day thereafter the catheter at 10½ inches withdrew three ounces of residual urine. The patient's general condition was also improved and he went out daily for a drive. For a period of fifteen days (from April 18 to May 3) there was so little blood in the urine that the creolin was omitted, but an accession of blood again required its use, with the usual result.

On May 25 the patient left for his home in the country in relatively good condition. His urinary intervals were from one to two hours and very little blood was passed. The creolin was to be used only when there was an accession of blood. Sometimes it was necessary to do this twice, and even three or four times in the twenty-four hours. The patient continued in about the same condition, creolin treatment being used whenever the blood appeared to be increasing in quantity. The urinary intervals varied from forty-five minutes to one and a half hours, scalding during the act being more or less present all the time. It was occasionally necessary to resort to suppositories of morphia in order to relieve the excessive irritability of the bladder. The serum, 50 c.c., was administered with daily regularity without any constitutional reaction that we could note. The general strength of the patient was maintained until the early part of August, when there was evidence of failure of strength. The amount of blood in the urine was controlled by the creolin, but the frequency of urination, accompanied each time by much scalding, increased to every fifteen or twenty minutes, with an hour's interval occasionally. The bladder became so irritable that it was impossible to use a permanent catheter, and I considered, with his attending physician, the question of making suprapubic drainage; but in view of the patient's extreme debility, and from the fact that he could be kept comfortable with morphia, this was thought inadvisable. Up to about the middle of August, when the supply of ascitic serum gave out, the injections of 50 c.c. had been given with daily regularity. It seemed to me, therefore, that the treatment thus faithfully tested had caused no betterment of the symptoms. Early in September the patient suddenly became uremic and died in coma. No autopsy was permitted.

The following case not only emphasizes the hemostatic value of the creolin solution, but strikingly illustrates the insidious way in which a neoplasm may develop while its presence in the bladder is unsuspected by the patient.

A man aged seventy-eight was placed under my care on February 22, 1910, by his family physician, Dr. Kinnicutt, to be treated for the involuntary escape of a few drops of urine. The patient stated that he had had this symptom for some months and at first had paid no attention to it, but lately the frequency and urgency of urination had increased so that he was compelled to urinate every hour. The urgency is now so sudden that it is impossible for him to reach the closet before the urine escapes. He gives no history of blood in his urine at any time, and he is not aware that the urine contains blood microscopically. Subsequent examination of the bladder and prostate reveals moderate enlargement of the latter and that he has one ounce of residual urine which is hazy and contains blood. The catheter when withdrawn is decidedly blood stained. After the examination free blood present in the urine made it evident that a more definite diagnosis must be made. Cystoscopy revealed a tumor of about the size of a butternut springing from the posterior margin of the prostate and from the contiguous portion of the base of the bladder. Its surface is irregular, it is bluish red in color, with a cauliflower appearance, and portions of it are covered with clotted blood. The creolin treatment was begun at once, and in two days the blood was controlled so that there was no free blood in the urine and no clots, but the microscope revealed the presence of blood discs. Scalding at every act of urination was now very pronounced. The Hodenpyl serum was now given by his family physician, but the old gentleman complained greatly of the pain,

so that only a small dose was administered, and this not daily. A second cystoscopic examination a month later confirmed the previous examination as to the location and size of the tumor, but the latter was now being covered with a grayish white pellicle similar in appearance to that reported in the first case in this paper. He complained bitterly of the serum punctures. At the end of the first week after the administration of the serum it was noticed that the catheter excited a small amount of terminal bleeding; otherwise the urine was macroscopically clear, although blood was always found with the microscope. Creolin solutions were continued at intervals whenever there seemed to be any spontaneous bleeding, but there was no improvement in his general condition. He gradually failed in strength and died uremic under the care of his family physician.

The following case is introduced not only in order to show the impossibility, under some conditions, of using the creolin solution, but because it has features which are clinically interesting. It also is in further illustration of the trypsin treatment, which at the time was being tested.

A man aged seventy-five, with marked arteriosclerosis and cardiovalvular lesions with anginal attacks, inducing syncope, came under my care March 14, 1907. He stated that for three or four years previously he had experienced slowness of his urinary stream, hesitancy in starting it, and a sense of irritation in the bladder. These symptoms persisted and gradually grew worse. At first there was no nocturnal urination, but now he was obliged to urinate twice at night. About a month before coming to me he noticed that blood came with urination. He thought the blood came during the middle of the act, not with the first gush or with the last of the urination. Since then, although he has had no more blood, he has been conscious of more irritation in the bladder. His urethral length at this time was 10 inches and the residual urine was one and one-half ounce. Under treatment the nocturnal urination was reduced to a single time, and the residuum to one ounce. At irregular intervals a little blood appeared in the urine. Cystoscopy two months later revealed a projecting middle lobe of the prostate and from its posterior border a fine line of hemorrhage. No neoplasm could be found on the most careful examination. The tendency to hemorrhage was entirely controlled by applications of a weak solution of nitrate of silver. The residual urine averaged one-half ounce and he was allowed to go to Great Britain, which he did in the middle of June, 1907. He returned to my care at the end of the following September. Having had a return of the irritation in his bladder he sought advice from a surgeon in England who subjected him to violent instrumental procedures, which prostrated him and sent him to bed with fever and also, apparently, cystitis. As soon as he was able he went to Edinburgh, where he saw Mr. Annandale, who examined him carefully, told him there was nothing serious the matter and that no operation was indicated. Since then he has had severe scalding or burning with each act of urination and more or less blood in the urine has been constant. He is weak, his cardiac attacks have increased in frequency and severity and his general condition is poor. The urine contained a large proportion of blood, and the examinations of the urine now revealed epithelial deposits of different kinds which were all suggestive of neoplasm. The solution of creolin of one-fourth of 1 per cent. was begun, but the mere introduction of the catheter aggravated the pain and increased the amount of blood. After three trials its use was abandoned. I gave him gallic acid and iodide of potassium internally, and sent him home to keep quiet. In three weeks he had gained in strength, his cardiac attacks were less frequent and there was a very decided diminution in the quantity of blood, which varied from day to day. After the quiet of the night the urine was clear, but the movements of the day caused the urine to become bloody again and it was now so dark with blood that I advised him to go into a hospital where he could have proper care and be cystoscoped. Cystoscopy showed distinctly a tumor occupying the anterior portion of the superior hemisphere of the bladder, extending across the midline to the right side and downward, covering the right lobe of the prostate, and extending to the situation of the ureter on the right side. In some places it had a well-defined cauliflower-like appearance, while in others the periphery of the growth was translucent. Filmy villi floated in the fluid contents of the bladder. Irregularly shaped, elongated clots could be seen in the tissues of the mass. After a careful examination by Dr. A. A. Smith of the patient's cardiac and circulatory conditions, radical operation was advised against and it was determined to test for his benefit the trypsin treatment. It was given daily. There was no complaint of pain after the injections, excepting when the quantity was increased too rapidly. He was kept in bed and the bleeding moderated to such a degree and his general condition so improved that three weeks later the patient was allowed to return to his home at Seymour, Conn., and placed under the care of Dr. Russell of New Haven. The latter continued the daily injections of trypsin.

On February 22, 1908, the following record was made by Dr. Russell. "The patient is in excellent condition, has gained in strength, color and in general good looks. The tolerance of the bladder has gradually increased until he retains his urine four to six hours at night, and he can hold from six to fourteen ounces of urine. On his return home there was some blood in the urine macroscopically, which gradually disappeared, and of late there has been none, excepting that under the microscope a few blood discs may be seen. Today the urine is pale lemon color, and no blood is visible to the naked eye. One ampoule of trypsin has been given daily with the exception of four days, when two ampoules were given, but the pain induced seemed too great, and one ampoule was resumed, which dose has been daily given up to the present. Besides this he has taken two holadin capsules three times a day persistently. There has been no nausea nor somnolence, and no fetid odor to the urine, nor other results which have been ascribed to this method." I again examined him with the cystoscope at his home in the country. The instrument caused considerable pain in the deep urethra and deep pressure on the posterior margin of the prostate caused the patient to wince and groan. The tumor mass, as described on December 12, seemed to have shrunken, *i.e.* the area that is occupied was the same, but there were no translucent villi floating in the fluid and no cauliflower-like projections from its surface. The mass seemed more concentrated, if that word may be used, that is to say, its volume projecting into the bladder was less. Its surface of a deep red hue was irregular and the growth extended from the right

side of the prostate laterally upward to the superior hemisphere of the bladder and plainly had not extended beyond the dimensions previously described.

Dr. Russell, under date of January 2, 1909, adds: "When he first came under my care all urine at the time of urniation had a very strong odor and contained a large proportion of blood, and the indications were that he probably could not survive more than a few weeks. The foul odor and the large amount of dark precipitate present daily in the urine, consisting principally of blood, rapidly lessened and soon disappeared after his arrival at home. The urine became light straw-colored, excepting occasionally when it became pink from minute traces of fresh blood. The pain on urination almost entirely disappeared and he improved in general appearance. From the first few days after he commenced treatment his severe symptoms showed much amelioration. As to the doses of injectio trypsin I commenced with one-half an ampoule and gradually increased to one and one-half ampoules at the end of about eight days. Afterward I used one ampoule for each and every injection, solely because the injection of a larger dose caused local discomfort and some irritation. No suppuration occurred after any injection, nor did the injections appear to produce any constitutional effects. The injections were made subcutaneously over the lower two-thirds of the abdomen and in the dorsal and lumbar regions, from the scapula to the brim of the pelvis. They should not be made deeply enough to enter any muscle, for when I did so twice much unnecessary pain was produced. No local anesthetic was necessary, as care was taken to inject slowly. These injections were made every day with one exception, in February, 1908, until September 18, when they were discontinued because diarrhea and vomiting, which began on September 11, had rapidly reduced his strength and he was on the latter date so weak that it was thought inadvisable to continue the injections."

It will be noted in this case that at the first cystoscopic examination in May, 1907, only a bleeding middle lobe of the prostate could be defined. At that time the cystoscopic view was clear and the examination could be sufficiently prolonged without pain to the patient. Therefore I am confident that if the neoplasm was present in the bladder it could have been plainly seen. The relation of the traumatism to which he was subjected in England to the sudden development of the neoplasm is interesting.

No autopsy being permitted, we remain in doubt whether or not there was a metastasis to the stomach and intestines; but the prolonged nausea and vomiting and finally a hemorrhage from the intestine would seem to suggest an invasion by the disease of the digestive organs.

To talk about the trypsin treatment of cancer at this late day may seem like the "threshing of old straw," but as we learn from accumulated experience, I beg leave to add my contribution. It will be remarked that in one case the method was faithfully and systematically carried out according to the directions of Dr. Saleeby, the disciple of Professor Beard, whose writings upon the subject had attracted the attention of the profession. In the other case the method was impossible because of the patient's constant complaint of pain following the injections. Nor did it, in this case, seem to me to be a fair test, because when it was begun the neoplasm had advanced to such proportions that the result was inevitable. In the one case, however, in which there was improvement in the patient's general and local condition, it is a question whether this improvement was not due to his quiet country life with its general strengthening of his resisting power, rather than to the administration of the trypsin. Furthermore, in spite of the continued administration of trypsin, the patient became more and more debilitated, finally cachectic, and died from symptoms suggestive of an invasion of the digestive tract. It seems to me that if the trypsin method had any virtue at all it would have been manifested not only in the amelioration of the patient's local symptoms but in an uninterrupted improvement of his general condition and finally a return to health. There was, it is to be admitted, a slight change for the better in the appearance of the tumor as seen by the cystoscope, but from time to time there were evidences in the urine of débris which could be attributed only to pathological changes in the tissue of the tumor. It is also to be noted that this patient came under observation relatively early; that the treatment was begun promptly and that notwithstanding this the malady pursued its usual course. Therefore, my own conviction is that the trypsin was ineffective and that the temporary improvement was due to the patient's temporary increase of resisting power.

Similar comment may be made upon the results of my experience with the ascitic serum or the Hodenpyl method. In one case it could not be carried out because of the old man's susceptibility to pain and because of the sudden termination of his life by the onset of uremia. In the other, however, a faithful and prolonged test was carried on until the supply of serum failed; but by this time it had become evident that the progress of the malady had not been stayed. The improvement in the patient's condition, in my opinion, was due entirely to the control of the escape of blood. During the whole course of his disease up to two weeks before death, the local effect of the creolin solution was imperative—not only to control the degree of bleeding, but also to save the patient from the psychic effect of the fear that he was bleeding to death. There is one prominent fact, however, interesting to note, that soon after beginning the serum and apparently under its influence a sudden change took place in the volume of the tumor. Of this the evidences are the steady increase in the length of the urethra, indicating that the catheter had to surmount a sudden enlargement of the obstructing mass; also a sudden increase in the amount of retained urine, indicating an increase in the obstruction; and the change in the sensations conveyed to the hand through the catheter, showing a change from a soft obstructing body to one of some density or rigidity. Although these cases exhibit the failure of the serum treatment of carcinoma, they substantiate the claim that in creolin we have a remedy which measurably controls the bleeding of the tumor, and in so far retards its fatal progress, while in no sense does it control invasion of the general economy.

In such a fatal disease it might be argued that it is useless to do anything. "Leave the patient to his fate!" But life is sweet, and if the patient can be made relatively comfortable and the fatal issue postponed every means for this purpose should be employed. But in the operable cases early removal with wide resection of the bladder wall should be done even if the result be a considerable loss of

bladder function. The sad commentary upon tumors of the bladder is, that often, before the patient presents himself for diagnosis, imperceptible metastases have taken place. In my experience the tumor and bladder wall have been resected as widely as seemed justifiable, with the immediate result of restoring to the patient a fair urinary function and measure of health; while yet, in less than six months, he has developed a fatal metastasis in the kidney of the corresponding side. Notwithstanding such experience, there are enough cases of permanent cure on record to warrant the opinion that early and wide removal is the best possible procedure for the patient.

40 East Forty-first Street.

PARALYSIS OF THE UPPER EXTREMITY DUE TO NERVE INJURIES.

By NATHAN JACOBSON, M.D.,

SYRACUSE, N. Y.,

PROFESSOR OF SURGERY, COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY; SURGEON TO ST. JOSEPH'S HOSPITAL, SYRACUSE, N. Y.

It is not the purpose of this paper to consider all forms of nerve injuries which may produce partial or complete loss of function of the upper extremity, but rather to illustrate some usual and unusual conditions encountered by presenting the histories of a few cases. The most frequent cause of partial paralysis is probably injury to the musculospiral nerve. In cases of fracture of the shaft of the humerus because of the intimate relationship of this nerve to the bone it is apt to be damaged to a greater or less extent. It is possible that the nerve may be completely ruptured, but more frequently some of its fibers are torn or the nerve is caught between the fractured ends of the bone or in the callus as it forms, or is stretched over the callus if any marked bending should occur at the site of fracture. The nerve can also be injured at a point lower down, namely, in the lower third of the arm. Here it is not always associated with fracture. Injury to this nerve cannot always be recognized at the time of the receipt of the fracture, and indeed is usually not appreciated until repair of the bone has taken place. When the splints and dressings are then removed the characteristic wrist-drop and the inability to extend the fingers or supinate the hand are observed. Loss of sensation is likewise apparent over the lower half of the outer and anterior aspects of the arm and of the middle of the back of the forearm. The degree of damage done to the nerve will obviously determine the subsequent course of each case.

I desire to call attention to some of the features as I have seen them, inasmuch as they have differed somewhat from those outlined in the accepted works on fractures. Perhaps this can be made evident by the clinical pictures presented in two cases of injury to this nerve caused by fracture of the humerus.

Case I. Fracture of humerus with angulation; nerve not apparently damaged, but adherent to callus for distance of two inches; separation of nerve; prompt and complete recovery from paralysis.

This was the case of a young woman, 19 years of age, a telephone operator, who was brought to me by the late Dr. J. W. Eddy of Oswego on April 11, 1907. She had a negative family history and had always enjoyed excellent health. On February 5, 1907, she sustained a fracture of the humerus. Dr. Eddy informed me that he had at once suspected that damage had been done to the musculospiral nerve because of the apparent weakness of the wrist soon after the receipt of the injury. When he brought her to me she was unable to lift her hand or, indeed, move it in any way. The thumb was flexed and drawn under the fingers, from which position she was unable to withdraw it. She complained of numbness over the back of the hand and forearm. Upon examination of the arm a large callus was found. An *x*-ray picture, taken by Dr. C. E. Coon, showed angulation of the bone at the point of fracture and considerable callus.

I operated upon her April 13, 1907, making a curved incision over the humerus at the site of the deformity. I separated the fibers of the triceps muscle and had no difficulty in exposing the nerve. It was stretched over and was adherent to the callus for a distance of about two inches. It was readily separated and did not seem to be in the least damaged. The nerve was further freed for an inch above and another below the area of adhesion and a considerable portion of the callus removed. Rubber tissue drainage was introduced. As soon as the following day the patient appreciated some improvement. She was able to move the thumb almost as freely as the other fingers. The numbness had disappeared from the back of the hand. As I removed the splints in which the extremity had been placed it seemed that there was not the same degree of wrist-drop. For a few days she complained of pain along the line of the incision. In the course of three days there was further improvement in the extensor movements of the hand. Ten days after the operation we were able to note that when the arm and forearm were placed in certain positions she could hold the hand out straight. She remained in the hospital until April 28, 1907, when she returned to her home in Oswego. I did not see her again until June 11, 1908, at which time she stated to me that the improvement had been continuous from the time she left the hospital, and, in the course of three months, she was able to resume her work. At the date of this examination it was impossible to determine that there was the slightest impairment of motion or sensation in the extremity.

That such prompt restoration of sensation occurs where the nerve has not been visibly damaged will appear in the history of another case to be subsequently related. The prompt return of motion is also in keeping with what I have seen where no apparent injury has been done to the nerve structures. However, if thickening or other change in the nerve has occurred we have not observed the same prompt improvement. This is illustrated by a case recently admitted to my hospital service and operated upon by my associate, Dr. Coon, February 27, 1911. The nerve was found stretched over the callus and the bone united at an angle. The nerve was, furthermore, adherent to the bony structures and sharply constricted at one point, above which it was greatly enlarged, practically forming a neuroma, while below the point of constriction there was apparent atrophy. In this case the nerve was thoroughly freed and the wound closed with tissue drainage. Repair took place by primary union. Sensation promptly returned, but the motor function of the wrist and hand is coming back very slowly. He has still a very decided wrist-drop and can flex his fingers only to a limited extent. He has but slight grasping power of the hand, although he can pick up some things with his thumb and index finger. He remains in the hospital, being quite helpless.

Case II. Lacerated wound implicating the musculospiral nerve associated with scalp wound and injuries to the shoulder joint.

My next patient presented rather an interesting surgical problem. He was an Italian, 32 years of age, married, and a carpenter by occupation. He consulted me October 15, 1910. Five weeks previously, while driving an unmanageable horse, he was thrown out of a wagon and struck a tree. He sustained an injury to his head and right arm. He was attended by a physician at his home in Oswego. Since the receipt of the injury he had not been able to use the arm. When he came to me the right forearm and hand were bound up in splints. I found a scar in the occipital region 1½ inches in length, and another just above the flexure of the elbow on the radial side of the arm two inches in length. These scars had resulted from lacerated wounds. From the date of the injury he had been unable to raise the wrist and sensation had been greatly impaired in the forearm and hand. Upon examination I found a great deal of stiffness and fixation of the corresponding shoulder. There was no evidence of dislocation nor of fracture. Here was a man who had sustained an injury to his head, shoulder, and arm. None of the manifestations pointed to brain damage and we could readily exclude this area as being a factor in producing the paralysis of the forearm and hand. The question of a shoulder injury implicating a nerve had to be considered. Upon examination some fullness on the anterior surface of the right shoulder joint was apparent. The joint was broadened so that measurement from the mid-sternal line to the greater tuberosity of the humerus was ½ inch greater than on the opposite side. The joint motion was limited so that he was unable to carry the arm upward beyond an angle of 45 degrees from the body. An attempt to force the extremity beyond this point caused pain. The deltoid was slightly wasted, presumably from lack of use rather than because of an injury to the circumflex nerve. Sensation on the posterior aspect of the forearm was greatly diminished. There seemed to be an area of hyperesthesia on the inner surface, however. The posterior surface of the hand seemed greatly congested and was somewhat edematous. The conclusion seemed obvious that although there had been some injury to the soft structures surrounding the shoulder joint the paralytic manifestations were evidently due to musculospiral paralysis, and that the wound which he had received on the radial side of the arm just above the elbow joint was responsible for it. Subsequently I took the patient to Dr. J. H. Burch in order that he might test the electrical reaction of the affected area. He found that the sensation of the back of the hand was not entirely lost. On the left hand he could recognize the two points of the compass when separated by ½ cm., on the right only at a distance of 1½ cm. On the posterior surface of the right forearm he could distinguish the two points at a distance of 2 cm., while on the left he recognized them when the points were separated by but 2 cm. He seemed unable to compress the dynamometer with the right hand so that the pointer moved on the dial at all. With the left, however, he was able to move it to 90 degrees. In testing the galvanic reaction it was found that the left supinator longus reacted at 17 milliamperes, the right at 15. A corresponding difference existed in the extensor carpi radialis as well as the extensor communis digitorum and the triceps. The interossei also responded. In all of these muscles there was a corresponding difference in the faradic reaction. In no muscle was there any evidence of reaction of degeneration. In none was sensation or motion completely lost, but was simply modified. The conclusion was, therefore, reached that the musculospiral nerve had been damaged, but not severed. He was consequently referred to Dr. Kidder for electrical treatments. No improvement following their administration, the patient returned for surgical operation. It seemed wise to improve if possible the condition of the shoulder before operating on the nerve. For three weeks, therefore, Dr. J. J. Levy subjected the shoulder to treatment with dry heat, passive and resistive movements, and massage. These measures greatly improved the mobility of the shoulder.

On December 6, 1910, I operated upon him at St. Joseph's Hospital. Drs. Larkin, Flaherty, Blum, Muench, Palmer, and several other physicians were present. I made a horseshoe-shaped incision in the lower part of the arm with its convexity downward, the scar being placed in the center of this incision. After dissecting the flap-up and cutting away the subcutaneous tissue there was no difficulty in locating the inner border of the supinator longus muscle and separating it. The musculospiral nerve came promptly into view as the muscle was drawn aside. That it had been badly injured was at once evident. It had not been divided. The nerve was exposed for a distance of about 2½ inches; the lower inch had a diameter of ⅛ of an inch, and the upper portion was fully twice this size. For an inch and a quarter the nerve was very adherent and this was particularly the case at the point of nerve enlargement. The bleeding vessels were secured and, after thoroughly freeing the nerve, it was wrapped in eargyle membrane and buried in the muscular structures. The wound was closed with interrupted silkworm gut sutures and the extremity placed in a splint. Repair by first intention occurred. Two weeks after the operation he returned to his home in Oswego. There was at that time no material change in his condition. Sensation had not been greatly improved and there was no increase in the motor power. Dr. Kidder again took up the electrical treatment and this has been faithfully carried out. The following statement from the doctor, dated April 12, 1911, tells of his present condition: "He has been showing progressive improvement. He was able to go to work on the 27th ultimo, doing carpentry. His hand and arm were in such condition that he could handle boards and light tools and use a saw. He was, however, unable to exercise sufficient grasping force to hold a hammer in his right hand until to-day, when he used the hammer most of the day with this hand. When he first came under treatment the nutrition of the forearm was poor, and there was some circulatory stasis. At present the condition of nutrition and of the circulation is practically normal."

This case also illustrates the point that when there are visible changes in a nerve as the result of injury the restoration of function will be slow. However, the return of sensation and muscular power has been more rapid than I had predicted.

To what extent the functional activity of large nerve trunks can be interrupted by an injury which has produced no visible damage to the nerve structures is well illustrated by the case I am now to report.

Case III. Fracture of the neck of the scapula; displacement of the head of the bone; pressure upon and adhesions to the brachial plexus of nerves; complete paralysis of sensation and motion; operation; immediate improvement.

A lady, 62 years of age, was brought to me on March 8, 1911, by Dr. Bulger of Oswego. She was married; had several children and had always enjoyed good health. At the time of her injury, at Christmas, 1910, she was a robust woman. On that day she fell upon an icy sidewalk, striking her right shoulder. I am informed by the patient that she was told that she had sustained a dislocated shoulder and that an effort was made to reduce the dislocation. From the date of her injury she says that she has had no sensation in the right upper extremity and that there has been complete loss of motion so that she could not move even a finger. I was able to confirm her statements as to the complete loss of motion and sensation in every part of the extremity. There was no marked wasting of the muscles, although they were all flabby. The patient was in a very nervous condition and had suffered a great deal of pain in the arm with consequent loss of sleep. She was very despondent, being possessed of the fear that the extremity would be permanently useless. Examination showed the head of the humerus to be in proper place. I advised that an *x*-ray picture be taken. This was made by Dr Coon. He reported that the patient had sustained a fracture of the neck of the scapula, including the coracoid process, and that the head of the scapula, with its glenoid fossa, was twisted and carried forward. It was assumed that the paralysis had resulted from pressure of this misplaced bone upon the brachial plexus of nerves. The patient said that she had lost some fifty pounds in weight since the receipt of the injury, which she attributed entirely to her anxiety, sleeplessness, and generally nervous condition. An examination of the patient was made and no organic lesion found. On March 11, 1911, I operated upon her in the presence of Drs. Bulger and Flaherty and assisted by Drs. Coon and Demong. I made a "V"-shaped incision with the point directed inward and upward. The axillary space was opened. The pectoral muscles were exposed and both major and minor muscles divided. The brachial plexus was easily brought into view and carefully examined. No apparent damage had been done to it. It was exceedingly adherent, however, to the surrounding structures. This was particularly true of its relation to the scapula. I had no difficulty in freeing it from the clavicle to the humerus. The arm was moved in various directions and I found that in whatever position it was put the plexus remained free and was no longer being pressed upon. Rubber tissue was introduced for drainage and the wound closed by interrupted silkworm gut sutures. Aside from the occurrence of a very irritating urticaria, to which the patient said she had always been subject, no complications occurred and repair was prompt and uneventful. Within two days of the time of her operation sensation was absolutely restored so that the patient, while she was blindfolded, could definitely state which point on the arm, forearm, or hand was being pinched with a tissue forceps. She complained a great deal of pain in her arm. March 16, namely five days after operation, the patient was able to move her fingers and to carry her hand a slight distance outward as it lay upon the bed with the elbow supported. Two days later she was able to lift the arm from the bed and to move it to the right or the left. At the end of ten days she was up and about her room and as she carried her arm in a sling she kept up both active and passive movements of the extremity. Two weeks after the operation she had very free movement of her fingers and was able to lift her hand up quite readily as she sat in a chair. It is, of course, very early to predict the outcome of this case. However, it seems fair to assume that with such prompt evidence of returning sensation and motion we can look for complete restoration of function.

The case illustrates first how little is required to completely put an arm out of service and rob it of its sensation and motion. Without visible injury to any of the cords making up the brachial plexus the pressure upon it and the adhesions to the surrounding structures were evidently sufficient to deprive the patient of all power of feeling or motion. On the other hand it is evident that in this class of cases the return of sensation and motion is exceedingly prompt. I anticipate that the end-result will be the same as it was in the first case of musculospiral implication referred to in this paper, where in the course of a few months the patient had full use of the extremity.

When complete division of a nerve trunk has occurred the situation with which we are confronted is an entirely different one.

The case which I am about to report not only represents the clinical features dependent upon the nerve division but also portrays the course of events subsequent to the suture of the severed nerve and the reestablishment of its continuity and function.

Case IV. Complete division of the fifth cervical nerve; its secondary suture; slow restoration of motion and sensation.

A young man, 27 years of age, residing in Oswego, consulted me on October 10, 1909. He was unmarried and a boiler-maker by occupation. He presented a negative family history, had never been seriously sick, and denied ever having had any venereal disease. Eight weeks prior, while engaged in his occupation as a boiler-maker, he made a misstep and fell forward in such a manner as to permit the penetration of a piece of boiler plate into his neck. A lacerated wound was produced which subsequently became infected. Immediately upon the receipt of the injury he found his left arm motionless. Up to the time of my examination there had been no return of motion. He was unable to raise the arm or flex the forearm. He had slight motion is his little, ring, and middle fingers. In the neck there was a darkly discolored scar, four inches in length, of irregular outline, which extended upward and outward from the posterior attachment of the sternomastoid muscle to the clavicle. There was very evident wasting of the muscles of the left scapular region as well as those of the corresponding shoulder, arm, and forearm. In the course of the scar there were two very sensitive points separated from each other by a distance of over an inch. The patient was advised that an operation would be necessary, but he did not return for the same until October 27, 1909. At that time a further examination indicated that he had power to open and close his hand, but could neither pronate nor supinate it. With the extremity resting on the thigh he seemed to be able to rotate the forearm. Measurements taken at that time of the two extremities showed that three inches below the tip of the olecranon the

left forearm measured 9½ inches and the right 10¼. Three and a half inches below the acromion process the circumference of the left arm was 10 inches and the right 10½; 8 inches below this process the left arm measured 9 inches and the right 9¾. The circumference of the left shoulder was 15½ inches and the right 16.

I requested Dr. J. H. Burch of Syracuse to test the electrical sensibility and muscular reaction of the affected part. It appeared that there was an area of anesthesia extending downward on the chest to a point two inches below the clavicle. Its termination here was along a definite horizontal line. Posteriorly the anesthetic area reached down to a point two inches above the vertebral border of the scapula and from here downward and outward to the spine of the scapula and from the outer end of this prominence to the tip of the acromion process. Sensation of the arm was abolished anteriorly to a point 6¾ inches below the tip of the acromion, while posteriorly sensibility was modified but not lost. Neither the deltoid nor the trapezius muscles reacted to the faradic current. There was no reaction in the supra or infraspinatus muscles nor in the biceps or coracobrachialis muscles. There was some reaction in the teres minor, brachialis anticus, teres major, triceps, and pectoralis major and minor. In all of the muscles which failed to respond to the faradic current there was evident reaction of degeneration. The rhomboid muscles showed a sluggish faradic reaction, but no reaction of degeneratoin. The sternomastoid was normal in its response. After carefully reviewing the results of this examination we concluded that there had been a division of the fifth cervical nerve at or near the point where it joined the sixth nerve to make the first cord of the brachial plexus, namely very close to its emergence from the scaleni muscles. It was noted that pressure upon the lower one of the sensitive points in the scar produced a peculiar sensation which extended down the arm, while pressure upon the upper one caused pain which extended to the back of the shoulder.

On October 29, 1909, I operated upon this patient. There were present Drs. Coon, Larkin, Wiseman, Totman, Flaherty, Miller, Demong, and Buechler. I made an incision parallel to the posterior border of the sternomastoid muscle and freely separated the skin and subcutaneous fascia. The external jugular vein was found considerably enlarged and being directly in the line of operative procedure was doubly ligated and severed. The scar tissue was very dense, contained a number of enlarged glands, and was freely dissected away. The distal end of the fifth cervical nerve was found to be considerably enlarged and reddened. There was no difficulty in locating the proximal end of the nerve, which was found to be in a similar condition. Both nerve ends were freely exposed and sufficient tissue was cut away so that they could be readily brought together. By flexing the forearm and carrying the hand to the opposite shoulder additional relaxation of the parts was secured. The nerve ends were next united by six sutures of fine kangaroo tendon which were carried through the sheath of the nerve. The nerve ends were not freshened until the sutures were about to be tied. The reunited nerve was then buried in the scaleni muscles by three sutures. Additional retention sutures were placed above and below. The surface wound was closed with interrupted silkworm gut sutures and rubber tissue drainage introduced. The extremity was held in the flexed position mentioned by means of a Velpeau bandage. Upon the day following the operation the patient vomited continuously and an examination of the urine showed that this was probably due to acetone poisoning. There was no febrile reaction. The patient insisted that some sensation had returned to the extremity within twenty-four hours; that he could feel anything which might be drawn across the back of his hand and that he experienced a different sensation when he rubbed his fingers against each other than he had before. When the dressings were changed he complained of an intense pain in the back of his neck as if his neck would break. This continued for four days. The wound healed by first intention. On the sixth day the sutures were removed and the patient was allowed to be up and about. The extremity was held immovable by a Velpeau bandage until he left the hospital, November 14, 1909, when it was transferred to a sling. At that time there was very marked improvement in sensation and the anesthetic area was reduced two-thirds. Upon his return to Oswego Dr. Kidder began the use of electricity. This treatment has been carried out faithfully and has not been as yet entirely discontinued. He employed the galvanic current, using an ample and very wet sponge which he placed over the vertebræ at the back of the neck, while an electrode with a smaller sponge was applied to the electrosensitive points of the affected extremity. At first it required a very harsh current to secure a response. During the first six months he received daily treatments. After a time muscular contraction was secured on the make of the current. Sometimes it was necessary to produce a number of makes and breaks ranging from five to thirty before the contractions would commence. Apparently for weeks the treatment seemed to be fruitless in its result, but in the end the electrical responses rewarded the effort. At no treatment was the number of makes and breaks of the current less than 500. After the first evidence of improvement there was never a fortnight but that further improvement could be noted. The gain in the deltoid muscle was the first to be observed and was in the beginning most rapid, although last fall there seemed to be evident retrogression in this muscle. It was noticed that quite uniformly sensation would return before the underlying muscle showed any improvement. At times this sensitiveness would be so great as to interfere with a treatment. The patient was given a faradic battery which he used at home and in addition he used an arrangement of pulleys whereby he developed the muscular movements of his wrist, arm, and shoulder.

He returned to me for observation on different occasions. On December 15, 1909—one month after his return home—I found that he was able to close the hand more firmly. There was a slight decrease also in the extent of the anesthetic area. Four months later, namely six months after the performance of the operation, sensation was quite completely restored. At that time he was able to swing his arm forward and upward. The strength of the left hand had greatly increased. With the right he was able to compress the dynamometer to 90 degrees, with the left it measured 50. None of the movements of the arm, however, had been restored. On September 16, 1910, when he next visited me, there was very marked improvement. He was able to carry the arm upward and forward. He was no longer obliged to fling it about as if it were a flail but was able

to carry it toward the opposite shoulder by deliberate muscular movements.

A letter received from Dr. Kidder, dated April 12, 1911, states that he is still giving the patient one galvanic treatment a week. There has been, he writes, steady improvement in the muscular control and the improvement has been in the same definite ratio which has been evident during the past fifteen months. Sensation is normal except over the posterior surface of the thumb. For a time sensation was abnormally acute in places, but this is no longer the case. The deltoid muscle is now showing some sensitiveness to the current. It possesses some ability to contract voluntarily but will not as yet raise the arm. The posterior muscular fibers respond better than the anterior. The teres and subscapular muscles are not possessed of the normal innervation and do not voluntarily coordinate with the deltoid. Apparently the muscles which have been most tardy in showing improvement have been those supplied by the middle cord of the plexus. The general nutrition of the arm and shoulder is now good and the individual muscles stand out clearly defined. The patient can readily and forcefully flex his forearm on the arm and having so flexed it can hold it against a vigorous pull. He is working daily and has been for many months.

A few remarks might be in place as to the results attending nerve suture. If a nerve be repaired soon after its division has occurred the operation is called primary suture. If it be done at a later date it is spoken of as secondary suturing. It would be natural to assume that primary suture would be attended by better immediate and more satisfactory end-results. Experience, however, has not proven this to be true. If the muscular tone of the affected part has been maintained by the use of electricity, massage, passive movements, and similar measures there is practically no difference in the result to be secured whether the suture be done at once or at a subsequent period. Immediate suture has not the unqualified endorsement of surgeons with large experience in nerve surgery. Victor Horsley makes the statement that where clean division of a nerve has occurred and the wound has healed by first intention its suture should not be undertaken until at least eighteen months have elapsed and every effort has been made to secure restoration of function without operation. On the other hand, if suppuration has occurred in the wound and repair has been by granulation the spontaneous regeneration of the divided nerve is not to be expected. Such cases always require a secondary operation. In the return of functional activity after nerve suture much depends upon the degree of atrophy of the affected muscles. If this has advanced to a marked degree the period of recovery is always greatly prolonged. It is evident that after the operation of nerve suture healing by first intention is essential. It is equally important that the sutured nerve should not be subjected to the danger of adhesion formation. The cases embodied in this paper make it very clear that adhesions can completely deprive a nerve of its functional activity even when the vitality of the nerve has not been otherwise impaired. To avoid this complication the implantation of the nerve in a muscular bed or its envelopment in cargyle membrane seems to me most efficient. It is not within the province of this paper to discuss the various operative procedures of nerve splicing, grafting, or other measures to be resorted to when nerve ends cannot be approximated otherwise.

Our last case illustrates in a most emphatic manner the importance and great value of the after-treatment in these cases. Where a nerve has been simply stretched over or caught between fragments of bone or entangled in a callus or bound down by adhesions and where no visible damage to the nerve substance has occurred it can be readily seen from the cases presented in this paper that the return of functional activity is prompt and satisfactory without the energetic and long continued use of such therapeutic measures as electricity, massage, hydrotherapy, or the like. But when a nerve has been evidently damaged and most certainly when it has been completely severed the after-treatment is quite as important to the restoration of its function as is the surgical operation which seeks to remedy the local damage done. It must also be thoroughly understood that whether primary or secondary suture has been undertaken the long continued application of these measures will be found necessary. Many months may elapse without apparent improvement. The treatment must not be abandoned. The end result will well reward the effort.

Secondary suture has been performed as late as nine, eleven, and fourteen years after the receipt of the injury and marked benefit has attended the surgical treatment.

430 South Salina Street.

RECOLLECTIONS OF CHOLERA EPIDEMICS IN RUSSIA.

By G. A. FRIEDMAN, M.D.,

NEW YORK,

CHIEF OF THE INTERNAL MEDICAL DEPARTMENT OF THE MOUNT SINAI HOSPITAL DISPENSARY, VISITING PHYSICIAN TO THE BETH DAVID HOSPITAL.

So much has appeared about cholera in the lay press during the last few weeks, that it appeared to me of interest to jot down on paper some of my reminiscences of the three cholera epidemics in the fight against which I took an active part. It may be that some things I learned at the time may prove of use in any possible epidemic in this country. These epidemics took place in Russia in the years 1892, 1893, and 1894; in the two earlier years I was a medical student and worked in the region of the Kama and Volga Rivers, during the summer epidemics in that region; in 1894 I was in independent charge of the "cholera barracks" near St. Petersburg. My work consisted of treating cholera patients removed to the "cholera barracks," which were specially constructed isolation places, prepared before the outbreak of the epidemic; in addition, it was my duty to travel about and be on the lookout for any fresh outbreaks. In a word, I occupied the position of what in Russia is termed "sanitary physician."

In 1892, when first sent to the region of expected cholera, I traveled by rail, carrying with me two textbooks on cholera, those of Rossbach and Riedel; the journey lasted eight days and I had ample opportunity of reading these books twice, from cover to cover. On arrival, my chief instructed me to repair to the barracks that were situated on the banks of the Kama River, about three miles from town. There I found no patients whatever, and surprised to learn from a colleague, who reached his destination six weeks ahead of me, that he had drawn his salary during that period without having treated or seen a single cholera patient. At first my duty consisted in visiting the river steamboats

and hurriedly looking over the steerage passengers. After a few casual interrogations, I would sign the health list and let the boat proceed. There was no cholera in the town either, and meanwhile we treated the poor of the town for every possible affection with which they happened to be afflicted.

In the two weeks following my arrival we suddenly realized that the number of patients complaining of diarrhea gradually and steadily increased. There was no bacteriological work done, as it was extremely difficult in Russia to find enough doctors or students even to do the general medical work, and we registered these cases as those of simple diarrhea. When we communicated these facts to our experienced chief, he immediately removed from the city to the barracks. He called our attention to these diarrheas and made it plain that for him they were a sign that the enemy was before the gates. To our surprise he was attacked that same night with severe vomiting, profuse watery diarrhea, and cramps in the calves. Although I recognized in him the symptoms of cholera, after my book acquaintance with the disease, I called in two other colleagues from the town and they confirmed the diagnosis of Asiatic cholera. He went through a severe attack of the disease, yet recovered without any treatment whatever; he was a confirmed skeptic and "therapeutic nihilist," and steadfastly refused to subject himself to any procedure or take any drug suggested by his colleagues. After his recovery we discussed the problem of his being the first victim of the disease. He knew of no other source of infection except a waiter in the town club where he dined on that day. The waiter complained of suffering from diarrhea and was given some prescription by our chief. The latter thought it probable that the infection was transmitted to him by the dishes handled by this waiter, who was suffering from a light attack of the disease, similar to that seen by us. After this, patient after patient was sent us from the town or was taken by us off the steamers, so that my book knowledge of the disease was soon enriched by actual experience. I do not recall the actual figures, but am sure of having treated between one and two hundred patients suffering from cholera in our barracks alone. The first case, that of my chief, taught me early that during epidemics any light or severe case of diarrhea must be considered as suspicious, and in the next two epidemics such cases served for me as "barometers" of approaching outbreaks in any village under my observation.

In New York it may be advisable for all physicians to be on the lookout for just such cases of unexplained diarrhea, and, if more cases of cholera appear, these diarrheal patients should be reported to the Board of Health; especially, the physicians in the dispensaries should not treat such cases lightly. So far as actual facts are concerned, I have, of course, noted no increase in diarrheal diseases among the adults in the dispensary of the Mount Sinai Hospital and see no reason for any uneasiness at the present time.

As is well known, the comma bacilli enter the human body through the alimentary canal, and here the mouth plays an important rôle as the portal of entry. Persons suffering from chronic gastrointestinal disorders are, therefore, more predisposed to infection than normally digesting people; especially achylia gastrica and any hypoacidity are two important etiological factors in the development of the disease, for free hydrochloric acid is inimical to the bacilli. Fasting stomach, of course, in the absence of protective acid gastsic juice is likewise a favorable place for the growth of swallowed germs. This latter truth I experienced strongly enough on my own person in the third epidemic. It was on a Monday morning, when the number of cholera patients was always very large, because of the alcoholic excesses usual among Russians on Sundays. I was called by a nurse early in the morning to attend to a newly arrived moribund patient. I had no time to take breakfast. In the barrack I found the patient already in a hot bath; I bent over him and that moment he vomited, the vomitus striking me in the face. That night I fell ill with Asiatic cholera. As I was spared during the two preceding epidemics, when we were always careful to eat breakfast before starting our daily work, I am sure that the condition of my stomach at the time was the deciding factor in not helping me to escape the infection to which I was exposed. This experience may prove useful to such physicians as are now exposed to cholera in New York City and vicinity. Of course, "contagiousness" of cholera, in the sense of measles or scarlet fever, cannot be even considered by anyone who has had any experience with the disease. In further proof of the fact that mouth infection is the important one in cholera stands the frequent appearance of the disease among priests after funerals; usually their cleaner habits protect them but the custom of the Russian Orthodox Church requires that they partake of food and drink in the house of the relatives after the funeral is over. The priest thus becomes infected through the food prepared by the very hands that came into daily contact with the dejecta and the vomitus of the patient. Especially is the danger large when the peasants hide the true nature of the disease from the priest, as they frequently do. It must be understood by the American reader that during the frightful mortality of epidemics a great number of patients are not seen at all by the doctors, of whom there are always too few in Russia, and death certificates are an unknown luxury at such times. With the exception of the class of priests, cholera, just as typhus fever, is the disease of the "proletariat," for, of course, dirt and misery are the important etiological factors in the disease. So far as direct contagiousness of the disease is concerned, there is no question that a cholera patient under ideal conditions may remain in the general ward and be of no direct danger to others. Of course, most minute care must be taken to have the so-called "individual precautions" exercised in case of typhoid fever, for instance, carried out religiously in the case of cholera. But one danger remains in the presence of a cholera patient with other sick people: sickness and "run down" condition greatly diminish the resistance to infection with cholera, as is amply proved by the great number of cases among the overworked doctors and nurses in Russian epidemics.

Alcohol is a direct predisposing factor to cholera, even beside the anacid gastritis so frequent among drinkers. No other reason could explain the great number of Monday morning cholera cases even among casual drinkers. The drinking of raw water should be cautioned against during epidemics, as it is a frequent source of infection. I saw a remarkable case of "cholera sicca" in a laborer, fourteen hours after drinking some Volga water. He died in three hours after onset, having shown no vomiting, no diarrhea, but only very severe cramps

in the muscles. The people in America should be cautioned, in addition, of the danger of the various "soda fountain" drinks and the ice water.

A curious predisposing factor is the nervous fear of the disease, "cholerophobia." Every physician knows that even simple nervous excitement can produce diarrhea, that is, increased peristalis, and this seems to be sufficient to favor infection of the gastrointestinal tract. I well remember a merchant who disinfected all the money received by him by means of carbolic acid, washed his hands almost hourly, and was afraid to handle the newspapers, but fearfully asked news of the cholera situation from his neighbors. He was one of the first to be stricken with the disease. Cheerfulness is, therefore, not at all a bad prophylactic measure against cholera.

It is not my purpose to discuss the diagnosis of the disease, for there exist excellent treatises on the subject. It must be said that early in an epidemic, bacteriological examinations are of the utmost importance. Later, the clinical picture is striking: profuse diarrhea with "rice-water" stools, vomiting, muscular cramps, especially in the calves, hoarse voice, so-called "vox cholerica," and, finally, complete anuria. Cases occur, however, that never come to the "stage of manifestation," muscular cramps alone occurring. Such cases are usually fatal, as in the above-mentioned instance. Light forms of the disease show vomiting, diarrhea, and cramps in muscles but not of severe nature. Such cases are frequent in Russian epidemics and are there termed "cholerina," which must be distinguished from "cholera nostras." The so-called "cholera typhoid" is the one difficult form for diagnosis; it usually follows an attack of cholera and is accompanied by fever, while in cholera, of course, the temperature is always subnormal. Such cases sometimes extend over several months.

To mention a few experiences in the treatment of cholera, I would state that of the great number of methods suggested I have found in the algid cases hot baths to be of occasional use; they frequently lead to cessation of diarrhea and vomiting and relieve the cramps. The latter are also helped by rubbing the skin with brushes moistened with camphor or soap liniment. Most important is the treatment of cases of moderate diarrheas and of cholerina. We treated the former by administration of salol, giving about gr. viii three or four times a day. This and the usual antidiarrheal diet was frequently sufficient. In more severe cases, where nausea was marked but no vomiting, ipecac was given and vomiting was produced by giving much warm water and tickling the fauces. This treatment, of course, is more or less heroic and must be used with caution. If these methods did not relieve the diarrhea we gave constipating drugs, such as pure resublimated naphthalin, gr. ii-viii, or benzonapthol in the same dosage several times a day. Tannalbin was unknown at the time. I believe it should prove useful instead of the last two drugs mentioned. Calomel has seemed of use but in very rare cases, while it did harm very frequently.

I should like to warn against the use of opium in any case suspected of cholera. A Priessnitz compress continued through the night may be used instead to quiet peristalsis. Our patients were kept in bed when possible and were given to drink much strong Russian tea. Red wine, especially the French Bordeaux, may be added to the tea. In cases of cholerina, salol was begun as above, but if the symptoms did not respond to treatment, hot baths were begun. The duration of the bath was from 15 to 30 minutes, and the temperature as hot as could be stood by the patient. Injections or irrigations (Cantani's enteroclysmata) proved useless in my experience.

Of course, the existence of an efficient Board of Health, such as we have in New York City, minimizes the danger of a severe epidemic. Yet, if many cases are imported, regular and thorough inspection of lodging houses and the overcrowded tenements people by recent immigrants should be carried out. The press, of course, should be utilized to acquaint the mass of the people with the usual and simple methods of prophylaxis. Prevention prove an instructive example to the world of what can be done in an enlightened community by an enlightened set of officials.

123 East Ninety-fifth Street.

CHEMICAL AND BIOLOGICAL AIDS IN THE EARLY DIAGNOSIS OF GASTRIC CANCER.

By A. E. AUSTIN, M.D.,

BOSTON, MASS.

The difficulties of early diagnosis of gastric carcinoma before the presence of a palpable tumor have been almost insurmountable. The symptoms, too, even where the malignant process has begun are so similar in many respects to those of functional disturbances of the stomach that, when pain and vomiting are sufficiently advanced to permit us to suspect the presence of a growth, exploratory operation often finds the disease advanced far beyond the point where a radical removal is possible; hence in spite of the disappointments that chemical and biological examinations of gastric contents have afforded, we are constantly on the lookout for some means which will afford us the desired information at a period early enough to afford a radical cure by the aid of surgery. Such means will be briefly summarized in this short review with the latest verdict derived from the analysis of a large number of cases in which the true diagnosis has been established by operation or autposy.

Hydrochloric acid, organic acids, and blood.—Graham and Guthrie of the Mayo Clinic at St. Mary's Hospital, in 150 cases of gastric carcinoma, verified by operation, found free hydrochloric acid in 70 cases; free hydrochloric acid without blood, lactic acid, or food remnants was present in 46; blood was present in 80 cases, while blood and lactic acid were present in 20. Blood and food remnants were present in 15, and blood, lactic acid, and food remnants in 30. Food remnants were present in 62 and lactic acid in 64. The explanation of the difference in these instances from the usual classical description of the findings in gastric cancer consists in the fact that the patients are operated upon before reaching the stage where there is absolute loss of hydrochloric acid and extensive stasis.

Hemolysis.—Frye and Lefman found that the wash water from 14 cases out of 17 non-malignant gastric affections possessed hemolytic power, especially when the gastric content contained bile or trypsin; this difficulty may be overcome by quantitative determination of the hemolysis, which the authors did not carry out. Furthermore, by carefully washing out the fasting stomach in the early morning, according to Graefe and Roehmer, the wash

water can be obtained entirely free from bile coloring matter and hence from duodenal contents. The contents of a prolapsed stomach, however, form an exception to this rule and much more are the contents after a test breakfast liable to be bile stained and hence presumably contain duodenal contents (trypsin). These authors found in 26 cases of certain gastric cancer a positive hemolysis in 22, while in 60 non-carcinomatous gastric diseases and in healthy individuals a positive result occurred only once. Furthermore, they claim that a positive test may be found at such an early period that other physical signs may be wanting. Kuntz examined 27 cases and found hemolysis in all cases proven or suspected to be carcinomatous, while it failed in all cases which clinically showed no evidence of cancer. Sisto and Jona found in seven certain gastric carcinomata a positive result, while in two cases suspected of cancer, in four gall-bladder cancers, and in 16 benign gastric affections the test was negative.

Anaphylaxis.—Livierato has shown that, when neutralized normal gastric juice filtered through a Chamberlain filter is injected subdurally into animals which have been previously treated with extract of mammary cancer, no symptoms of anaphylaxis occur, nor does the juice in gastric ulcer produce any effect. But, if the juice of gastric cancer is injected, then marked signs of anaphylaxis occur (fall of temperature 1 to 1.4° C). Apart from the fact that the fall of temperature in those prepared animals, injected with normal gastric juice, did not vary so very widely from those injected with the contents of gastric cancer, a characteristic which is made much of by Pfeiffer and usually more significant than symptoms, the method would be found very inconvenient, as the material could not be readily obtained except in a large clinic unless a permanent preparation could be made; nor was the number of cases mentioned enough upon which one could base definite conclusions as to the consistency of this phenomenon.

Amino-acids.—Amerigo Barlocco has found that when gastric contents removed after a test breakfast are neutralized and neutralized casein added, upon being placed in a brood oven, a moderate increase of the amino nitrogen is found in both healthy individuals and persons suffering from benign stenosis (gastric) amounting to 0.4 to 0.515 per thousand parts. When, however, in five cases of gastric cancer, the amino nitrogen was determined in the same way, it amounted respectively to 0.8, 1.315, 0.9, 1.4, and 1.2 grams per liter; even when the stomach was thoroughly washed before the test breakfast was given the results were the same.

Urine pepsin.—Takeda found in six cases of achylia gastrica that pepsin was present in the urine when edestin was used for its determination. In nine gastric carcinomata, on the other hand, pepsin was absent in three instances; in two very small in amount, while in all the others it was present but in varying quantities. The amount of variations in the results obtained by various workers with this method, according to this author, may be due to the time of day at which the urine is collected. This can be overcome, if all workers would use for the test a portion of the whole day's urine. The presence of pepsin in the urine in gastric cancer seems to depend very largely on whether it (the cancer) is diffused or circumscribed; in the former case the ferment is usually absent. On account of this lack of uniformity the presence or absence of pepsin in the urine is not adapted to the early detection of gastric cancer. Ellenberger and Sholz have found that when the urine contains a marked amount of pepsin, while the gastric contents contain little or none, it points very strongly to a gastric carcinoma. On the contrary, a large proportion of the gastric achylias, with which the former may be confounded clinically, had pepsin neither in the gastric contents nor the urine. As can be well seen the marked confusion in the results of these authors mentioned is such that it will require the examination of a vast number of achylias and gastric carcinomata before the value of this test can be clearly shown or completely disproved. If it can only be made a routine in clinical laboratories, we shall soon obtain something definite on which we can work.

Peptid splitting ferment in the stomach.—Neubauer and Fischer have found that three sources of error may arise in the detection of this peptid splitting ferment in the gastric contents of carcinoma. First, tryptophan may be found in the gastric contents themselves; secondly, peptic splitting bacteria may make their way through into the stomach, or there may be present pancreatic juice containing trypsin, or blood may be present (inhibitory action). The splitting of an added glycyl-trytophan is a very reliable test for gastric carcinoma, if these sources of error can be excluded. In 26 normal individuals with gastric diseases other than carcinoma the test was always negative; while in 17 cases of positive carcinoma of which 5 were operated, or a post-mortem diagnosis made, it only failed twice, and in these only vomitus could be obtained. Lyle and Kober have made use of this test in a series of 21 cases and found it very valuable. In 11 cases which were operated upon it never failed, when present, to show the presence of cancer and, when absent, the case turned out to be cancer elsewhere or cholecystitis, which had been falsely diagnosed gastric cancer. As with the hemolysin test, the errors are usually due to the presence of trypsin in gastric contents due to regurgitation; the latter can be avoided much more readily if the test meal be given in the afternoon and the stomach washed out before it is given. A laxative given the night before also increases the certainty that the stomach is free from duodenal contents. Weinstein does not believe that it is necessary to test the stomach contents for tryptophan before the glycyl-tryptophan is added, since he claims to have found that the detection of tryptophan in the gastric contents is practically as effective an evidence of gastric cancer as the subsequent splitting of the peptid by the gastric contents. He further believes that a preliminary test should always be made for bile in the gastric contents; if bile is absent, the possibility is excluded that duodenal contents and hence trypsin have made their way into the stomach. The author has modified the test as follows: Four or five hours after a regular meal some stomach contents are obtained, filtered, and tested with bromine water for tryptophan. If the reaction is positive (violet color) one may conclude at once the probable presence of gastric carcinoma. If absent, some of the filtrate transferred to a stoppered bottle and treated with a little toluol is put into the thermostat and tested again for tryptophan, 24 to 48 hours later. Some of the deficiencies of this test which are pointed out by the author are its inconstancy; the

reaction may be present in one specimen of stomach contents and absent in another from the same patient; hence it is always desirable to test three or four specimens from the same patient at different times. A mixture of coloring matter or the presence of blood or coffee grounds interferes very decidedly with the performance of the test. When, however, the hemorrhage of the stomach is pronounced the case has advanced to a point where we do not need this test. Free hydrochloric acid interferes very decidedly with the activity of the cancer ferment or may destroy it altogether, forming a very serious obstacle to the employment of the tryptophan test. The only fortunate feature with reference to this obstacle is the frequent absence of free hydrochloric acid in the gastric contents of cancer.

Taken as a whole we find practically the same difficulty in all these tests, as far as certainty of diagnosis goes, apart from merely inhibitive influences like free hydrochloric acid and blood, and the presence of duodenal contents in the stomach. As long as the pyloric portion of the stomach and the duodenum are such near neighbors this interchange of contents will always prove fatal to absolute accuracy in diagnosis of malignant disease of the stomach by these means. When we consider how readily the duodenal contents can be drawn into the stomach by the slight efforts made at vomiting by the patient when the tube is introduced or the ease, according to both Einhorn and Boas, with which under certain conditions the end of the stomach tube may make its way even through the pylorus into the duodenum, we can clearly see what reservations must always be made in a diagnosis obtained in this way. Again, it is not certain that with duodenal contents in the stomach bile must always be present and, as is well known, the trypsin of the pancreatic juice and the cancerous enzyme do not differ markedly in their action. Furthermore, on account of the animal diastase in the stomach, derived from the saliva, and the alleged presence of a fat-splitting ferment in the same, we have actually no means of determining whether we are dealing with a secretion of a malignant growth or with pancreatic juice. Nor do I think it probable that merely washing out the stomach or giving a purgative will prove efficacious in resisting the encroachment of the duodenal contents on the stomach. In my own clinic I have made use of the tryptophan test, as modified by Weinstein, as a routine part of the examination of gastric contents, and have more faith in its absence as a means of excluding malignant disease of the stomach than in its presence as demonstrating this condition. In a series of twenty-two unpublished cases of my own it has been absent in twenty, though among them were included five achylias, and present in two; in one of these latter there were marked stasis and a palpable tumor, while in the other neither of these features was present, though other symptoms pointed strongly to malignant disease situated elsewhere than at the pylorus. Of course when the contents were bile-stained no effort was made to apply this test. The tryptophan test seems to me to be the most available of all these tests for a clinic, requiring the least in equipment and being the one most easily carried out; in the meantime only extensive applications will prove its diagnostic value.

The determination of the nitrogen content of stomach washings either by the Kjeldahl process or by the determination of the protein content with an Esbach tube has proved in my hands of very little value. At most it simply indicates a probable stasis with the presence of a large amount of mucus, which can come equally as well from an innocent gastritis as from that which is associated with gastric cancer. So far as we are able to determine the secretion of a malignant growth does not contain any peculiarity in its protein content by which it may be designated as such, and until such peculiarities are found we are obliged to rely wholly upon its contained ferment, which, as has been stated, does not differ from the proteolytic ferment of pancreatic juice.

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Boston, Mass.

SOME EXPERIENCES WITH "RUSSO'S TYPHOID FEVER TEST."

By F. W. ROLPH, A.M., M.D.,
TORONTO, ONT.,
ASSISTANT IN CHEMICAL PATHOLOGY AND CLINICAL MEDICINE, UNIVERSITY OF TORONTO,
AND
W. HARPER NELSON, M.B.,
TORONTO, ONT.,
LABORATORY INTERNE, TORONTO GENERAL HOSPITAL.

Early in 1905 Russo described in the *Riforma Medica* a new urinary test which gave a positive reaction in typhoid fever, measles, smallpox, and in some cases of severe tuberculosis. It is performed as follows: To 4 or 5 c.c. of the patient's urine add four drops of a 0.1 per cent. aqueous solution of methylene blue; mix well and examine against the light; a mint or emerald-green coloration is positive, whereas any blueish tinge renders the test negative. Russo reported the reaction as being unaffected by boiling or by the ingestion of such drugs as calomel, quinine, salol or caffeine, and also pointed out that the gradual resumption of the bluish tinge, as the patient advanced in the disease, was a valuable and favorable prognostic sign.

During the past year we have been employing this test, as a routine proceeding, on most of the cases entering the Toronto General Hospital, and can vouch as to its efficacy as a diagnostic aid in typhoid fever, if applied early enough in the disease. Un-

fortunately a great many of the enteric cases have been ill two weeks or more before entering the hospital, and their urines, showing as they did a returning bluish tinge, had to be discarded in our results. The following list of cases, all of which were found to be typhoid by positive agglutination tests, or by blood cultures, gives some idea as to comparative results between this reaction, and the ordinary laboratory methods. All tests were carried out within forty-eight hours after admission.

Patient	Probable Day of Illness	Russo	Diazo	Widal	Leucocyte Count
S. W.	10	pos.	pos.	neg.	6,800
M. J.	3	"	neg.	"	11,500
A. G.	7	"	pos.	pos.	7,200
N. G.	8	"	neg.	neg.	9,500
W. E.	9	"	"	pos.	7,400
G. S.	11	"	"	"	10,400
M. S.	6	"	"	neg.	5,200
B. B.	7	"	pos.	pos.	6,400
W. G.	12	"	neg	neg.	6,000
W. M	6	"	"	pos.	4,400
F. A.	10	"	pos.	neg.	5,600
R. S.	6	"	"	pos.	6,000
B. R.	7	"	neg.	neg.	5,600
H. C.*	3	neg.	"	"	5,600
K. K.†	10	"	"	"	6,200

*Typical symptoms, positive blood culture, widal negative until late in the disease.

†Unusual case with periods of subnormal temperature.

In addition to the above list we have obtained positive tests on many outside cases, but as complete contemporaneous laboratory examinations were not performed, they are not included here. We did not examine the urines of any measles or smallpox patients, but obtained a few positive results in tuberculosis. In non-typhoid patients we made a great many examinations, with invariably negative results, except in the above mentioned tuberculous cases. Especially did we concentrate our attention on conditions which are apt to resemble typhoid at the outset, viz.: Influenza, Endocarditis, and slight septic states, but in no case obtained the typical green color.

There is one important fallibility of the reaction, which at first bothered us a great deal, until one of us discovered the cause, viz., that urines containing bilirubin will give a reaction which differs so slightly from the typical green, that they cannot be used in employing the test. We thought then that perhaps the results in typhoid were due to the presence of small amounts of bile, but this could not be demonstrated in our positive typhoid urines. This difficulty undoubtedly militates against the success of the reaction.

To sum up, we may say: (1) This test is very simple and easily performed, but one should have seen the typical color once or twice to be sure of one's results. (2) Bile should be tested for, and in the event of its presence, the urine should be discarded. (3) The earlier in the disease the more likely and the more typical the reaction. This is very important, as it differs, in this respect, from other laboratory tests, except blood culture. (4) The slightest tinge of blue must call for a negative interpretation, though experience will often enable one to distinguish the returning blue tint of a convalescent typhoid patient, from that of a normal or non-typhoid urine. (5) The reason of the mint or emerald-green color is doubtful, but it is probably a reduction test, depending upon the presence of unknown bodies in the urine. (6) We did not find the gradually returning bluish tinge of much assistance in prognosis, as so many of the dangers of typhoid are, as it were, accidental, and not directly dependent upon the severity of the infection.

IS ALCOHOLISM A DISEASE?

By F. H. BARNES, M.D.,

STAMFORD, CONN.,

MEDICAL SUPERINTENDENT OF THE DR. BARNES' SANATORIUM.

The trend of opinion of the medical profession during the last decade has shaped itself to the idea that "alchoholism is a disease." Inebriates are pleased to accept this doctrine as a pallium for their shortcomings, and when advanced by respectable members of the profession this conception of alcoholism has weight. It proves an attractive field for less conscientious therapeutic promoters, lay and professional.

The late Mrs. Eddy, of Christian Science fame, certainly came nearer the truth when she applied her doctrine that "there is no such thing as disease" to the problem of alcoholism, and the fact that members of her cult were cured of their alcoholic habits by fervently believing that there is no disease goes far to demonstrate that, even with such undesirable means of suggestion, a "disease" can be eradicated which is no disease at all. I have called this suggestive method undesirable because it works upon the superstitions of people who have not learned to think for themselves. Now and then some hitherto unconverted infidel feels impelled to proclaim "I am saved," and, lo and behold, from that moment he is supposed to go forth and sin no more and drink no more. These successful "cures," even if they do not prove permanent, show the power of suggestion and persuasion. It is probable that in this way more persons have been cured of alcoholism than by all the medicine in the world, for the simple reason that in alcoholism we are not confronted by a disease curable by medicine alone.

It is quite feasible to compound drugs which have the effect of rendering the odor of alcohol a "stench in the nostrils," and while this effect lasts the patient is cured. But the effect is not permanent, and as the medicine soon palls upon those who have submitted to this kind of treatment it is discontinued if for no other reason than that they are only too pleased to quit a remedy that debars them from the use of their erstwhile favorite drinks. Thus in a short time they are back again to their old habits, perhaps even using a larger amount of alcohol than before, owing to the forced abstinence during the so-called cure.

It is a fact that no person ever has been permanently cured of alcoholism unless he was willing to be cured and morally strong enough to stay cured. Medicine is quite incapable of imparting to the individual the necessary will power to achieve this end. That this individual will power is an absolutely necessary factor in the problem is best illustrated by the so-called new year's resolution. Many are made every year and many have been broken. The number is probably equal, although there is no doubt that the majority of resolutions are made in good faith, but the will power is lacking to keep them. Nor is it altogether the fault of the resolution makers, it is the old surroundings, the old friends with whom they are unable or unwilling to part with that prove their undoing, especially in the absence of any moral suasion or support. That they themselves feel the necessity of such support is evidenced by the fact that they select the first day of the year for starting a new life, for if they were strong enough in themselves to abstain they could do so on any other day of the year whenever

they felt particularly keenly the disgrace and other evil consequences they had brought upon themselves and their friends. They could frame their resolutions any time, but knowing their own frailty in keeping them they trust to the elevating influence of the new year for support. They trust in vain. As the charm of the resolution wears off (in most cases already on the day it was made) they return to their former habits.

Comparatively few people have sufficient control of their will to break with evil habits and surroundings. They are not alcoholic patients but patient alcoholics, and it is the task of the medical profession to rouse their lethargy, not by filling them with medicine, but by inculcating moral force and will power which alone will enable them to resist temptation. It might be urged that, alcoholism not being a disease entity, it is not the physician's function to administer to its victims, but rather that of a mental healer, a clergyman, or a Christian Science practitioner. Some reflection, however, will show, as indeed experience has shown, that this is an erroneous view. Inebriates seldom have freiends of opposite proclivities to their own; here the uneven poles do not attract, but repel each other. Parents are out of the question, because parents who have not had sufficient authority over their children while growing are quite unable to control them after they have grown to be drunkards. Clergymen are not sufficiently in touch with the indulgent class to command their confidence, and the religious trend they are prone to infuse into their ministrations is an impediment to their success. Unfortunately they are not, as a rule, endowed with a practical knowledge of men and women of the world. Mental healers and Eddyites are on the wane and opportunities are more frequently presenting themselves for the legitimate psychotherapeutist to retrieve the honors which have been shared by religious paranoiacs and sane scoundrels. The physician alone is the one most capable to arouse the latent will of the alcoholic. He commands the situation by virtue of his training and experience.

It has been mentioned that old friends and surroundings form insurmountable obstacles to permanent improvement. A change of friends and locality alone would not suffice to ensure success, because an individual with weak will would succumb to the temptations of new friends and new surroundings. Well-meaning members of the laity lack the energy begotten of knowledge which carries the best influence for good. It is generally conceded that institutional treatment brings about the best results in the treatment of alcoholism, as it does in many other conditions of weakened will and mental enfeeblement. The constant guidance of an experienced physician, new and elevating environment, the various mechanical and hydrotherapeutic accessories all have their physical and psychical effect for good. The training he thus receives will be so strong and effective that it will never be forgotten or discarded. He must be made to understand that his own will power is needed to break the habit, and that no treatment can impart or increase the will power. Medicine in these cases is only useful to restore disturbed function.

Be it understood that when an alcoholic is simply physically restored and the individual then returns to the outer world, he will, by the very vigor he possesses, be inclined to partake of more alcoholic beverages than his impaired organism is able to bear. It is clear, therefore, that the strengthening of the will power is the only permanently effective factor in breaking the alcoholic habit. He must be taught that he is not to submit to coercion, that he must not say when the temptation to drink besets him "I *must* not," but "I *will* not," and by the exercise of such will power he will be physically and morally a stronger and better man. All this cannot be achieved by a course of medical treatment. Medicine can only benefit the physical condition and it is time, therefore, that it were universally recognized that alcoholism is not curable by drugs, but is a weak and mischievous habit that can only be broken by properly educating the will power in the right direction.

Allow me to cite a few cases in illustration of the effect exerted by the treatment I have outlined. They are not especially selected as being more than usually noteworthy, but are simple illustrations of every-day practice in the sanatoriums.

Case I.—Physician, entered my sanatorium for treatment in December, 1908. He had been in the habit of taking 15 grains of morphine, 30 grains of cocaine, and more than a pint of whiskey every day. We instituted the gradual reduction plan, removing the liquor first, then the cocaine, and last the morphine. At the end of three months he took no drugs of any sort and was rapidly getting into first-class condition. But this was only the first and smallest part of the treatment. The patient, after having been free from drugs for two weeks, wanted to go home, but we advised him in a friendly but decisive way to stay in the sanatorium for at least another three months. During that time we had many heart-to-heart talks, in which I convinced him that his future career and success, quite aside from his health, depended upon a process of self-education which would enable him to resist the temptation to all drugs and drinking. I appealed to his pride, to his obligations toward the profession. I showed him the financial aspect of the situation, and explained that he had but to will the one word *"no"* to turn the scales that held his future in his favor. He stayed not only three months, but also the rest of the summer. In the fall he went back to his medical practice, a mentally and physically recuperated, able man. I heard nothing from him until about a week ago, when I received a letter from him stating that he has never returned to his old habits and now holds a position in the medical department of a large railroad company. This case shows the whole problem in a nutshell. If he had been allowed to go home shortly after his drugs and alcohol had been removed I feel convinced that he would have drifted back into his old ways. Consequently, he would not have been able to attend to his medical practice, nor could he have obtained the responsible position he now holds.

Case II.—Mrs. L. was sent to me by her family physician in June, 1907, suffering from the drink habit. She was a woman of some position and felt the disgrace very keenly. After our first talk, in which I incorporated the responsibilities of her social position, the duties to her husband (a man of prominence) and his friends, to her children, and to the unborn child she at that time carried, she gave up the drink habit of her own volition and promised never to drink again in her life. She was rapidly improving physically under my treatment, but was tiring of the unaccustomed life in an institution, and, as I was convinced I could fully rely upon her promise, I advised her to go to the moun-

tains for a few months. She stayed there until the late fall and returned home an entirely new woman. A few weeks ago I met the physician who had sent her to me, and he told me that she had never again shown the slightest desire for alcohol, that she was the picture of health and the pride of her family.

Case III.—Mr. D., a prominent lawyer, came to our sanatorium in 1900 to be treated for alcoholism. All liquor was taken away from him during the first week. He was astounded and rejoiced at the result; a moral victory we took advantage of to compare his present joyful feeling with the wretched life he had led for years. We pointed out that when he returned to business he could always feel as well as now. He could attend to his professional duties more capably, to the benefit of his clients and his own pocketbook, and that this could be accomplished by strenuously setting his will against all pernicious habits, and in no other way. Last winter, over ten years later, I accidentally met him and his wife at the door of a New York theater. He called me by name, and in the presence of his wife told me how well and successfully my method had worked.

These cases might be multiplied almost indefinitely, but those mentioned will, I think, suffice. A physician of my acquaintance had a series of ten cases of alcoholism in the city of Hartford, Conn., treated along the lines suggested in this paper. These patients have been under his supervision to some extent for part of five years and not one of them has returned to their old habit.

Another physician has a series of twenty-five cases who were under his care during the past ten years. He used moral suasion to a great extent in their treatment and all of these patients have remained free from the drink habit.

One side of this question which should not be overlooked is the fact that for many years the disease excuse has been used by the laity in covering up their debauchery and we often hear the remark, "the poor fellow, he cannot help it, he is diseased, his grandparents were drunkards." While we must admit a neurotic influence in many families, there is no special reason why morphine, cocaine, sexual perversion, and all forms of dissipation should not fill the void and they often do. People turning to these habits as a solace for their craving for something which will help them through their morbid periods. In order to look at this question from a layman's standpoint I recently interrogated the manager of a café, in which the largest daily bar business in New York City is supposed to be done. My question to him was, "do you think alcoholism is a disease?" He replied (I quote his words), "*no,* not by any means; it is a habit." He also said "many men who have spent all their money on rum until they are financially in bad straits decide suddenly to cut it out, and do so without any help, afterward making good in the business world. They come to me and tell me that they are through with the stuff for good. It is a common thing to see men who have been steady drinkers for years cut it off without any help whatsoever."

I have on file several letters from judges of the city courts in various cities of New England, and they claim good results in curing these cases through the medium of a probation officer. The following is one of these letters:

"I am glad to know that the medical profession is taking up the question of drunkards, but I hope they will not make him out always a diseased individual. Of course, it is true, I suppose, that in some cases drunkenness is a disease, but the large majority of the chaps I am after are able-bodied loafers who hang around saloons and deliberately get drunk for the avowed purpose of being sent to jail, where they find very comfortable quarters, and in most of our Connecticut jails very little work. For what may be called a dipsomaniac a hospital for drunkards would be all right. The average fellow needs little or no medical treatment and will recover if the supply of whiskey is cut off and a supply of work substituted. For the younger victim I would have the law so fixed that if he showed a capacity for a trade he might be transferred to the reformatory and there learn a trade which would make him for life self-supporting."

We little know what can be done with persons utterly hopeless and forlorn, broken down in body and spirit. Instill into them the necessary strength of will and the battle is won. True, it is impossible to replace tissue destroyed by organic change, but where excesses have not made too far inroads upon vital organs the result of such treatment is the complete mental and physical rejuvenation of alcoholic patients with power added to their will never again to weaken.

PERIRECTAL ABSCESS.

By CHARLES J. DRUECK, M.D.,

CHICAGO, ILL.

The rectum, as a hollow tube, is held lightly in place in the pelvis by the connective tissues and muscles at points, above, below, in front, and behind, but on either side it is in relation with loose areolar and fatty tissues which are abundantly supplied with blood vessels and lymphatics and which are easily and frequently infected or inflamed. There is a continual variation of blood pressure in these tissues depending upon the condition of the bladder and rectum, whether full or empty, and even on the position of the abdominal organs. These alterations also have a marked effect on the development of infections. By the process of osmosis and through abrasions on the rectal wall the microorganisms and their toxins pass into the surrounding tissues and lymphatics.

It is a common thing in making rectal examinations to find sensitive points on one side or other of the rectum when there is no apparent intrarectal lesion. Sometimes it is difficult to differentiate between muscular rigidity and tissue congestion. In still other instances the invasion is greater and the infection is diffuse or circumscribed and usually ends in abscess. This fatty areolar tissue is the least resistant of the body tissues. The fat globules apparently making the best nutrient media for the microorganisms (the colon and tubercle bacilli and the pyogenic cocci) and they soon fill the acini instead of the fat cells. The position within the pelvis at which the abscess develops depends upon the course taken by the chain or system of lymphatics involved. The lymphatics in the skin about the anus are called the inferior hemorrhoidal lymphatics and travel along the perineum to the inguinal glands or else back behind the sacrum. The deeper lymphatics, called the superior hemorrhoidal, pass through the ischiorectal space to the hypogastric ganglia and connect with vessels supplying the gluteal tissues. These deep lymphatics pass to the

sacral and vertebral glands. Infectious toxins gathered up by any of these systems may be followed along the chain. When the glands retain the poison and become inflamed passage along that particular chain is blocked, but as the networks anastomose freely, not only with other branches of the same system, but also with deeper systems, the infection may be carried along other channels. In this manner two or more distinct abscesses may develop. This intimate relationship of the various lymphatics explains the occasional development of abscesses quite a distance from the anus following a very simple operation. Tuttle, speaking of this, calls attention to the fact that injuries of the anal canal may be followed by abscess of the ischiorectal fossa or in the cutaneous tissues of the buttock, while injuries deep in the rectum are likely to be followed by abscess in the retrorectal space or deep in the thigh. Thus, regardless of its situation, the abscess is always secondary to some lesion of the mucous membrane of the rectum or of the perineal skin, even though the abrasion cannot be found at the time of examination. The infection from these parts in being carried off results in either a breaking down of a gland or thrombosis of the lymph canal and thus develops an abscess. Singularly, these abscesses develop most frequently in healthy, robust, active men. Quenu considers this a lymphangitis. Where an abscess has existed several days prior to evacuation, a certain amount of adenitis necessarily develops in the neighboring glands and these may subsequently give rise to other abscesses. Microorganisms in these glands may remain virulent indefinitely.

The location of the abscess determines somewhat the severity of the pain. Abscesses situated near the anus, where there is considerable loose, areolar tissue which is easily distended, are much less painful than those situated where the sphincters are firmly bound by muscles and fasciae. The sphincter is also excited and its spasm increases the pain. When the abscess develops above the sphincter it frequently ruptures into the rectum and may present no external appearance. Digital examination, however, will demonstrate a globular mass indurated or fluctuating according to the extent of development. Bimanual palpation with one finger in the rectum and counter pressure on the perineum will be of much value in early diagnosis. Abscesses that originate below the levator ani muscle, which forms the physiological roof of the lower pelvis, empty either into the rectum or upon the skin and are only rarely fatal, although they may cause severe local and even systemic disturbance. Perirectal abscesses may be single or multiple and, when more than one, may connect, usually behind the rectum through the space between the levator ani and the sphincters. Even when they develop on one side and have existed for several days or open spontaneously, a second abscess frequently follows on the opposite side. The abscess is honeycomb in character, the fat cells being displaced, but the connective tissue reticulum remains. When operating it is essential to break down these pockets as otherwise the contained pus will burrow and infect new areas. Infection may, however, be carried up through the fossæ on both sides and two abscesses develop from one source. The process usually goes on faster on one side than on the other and the corresponding abscess may appear several days before the other. Such abscesses may not communicate.

Symptoms.—As a rule these abscesses develop acutely and with constitutional reaction, which in some instances is very serious. Locally, there is a vague feeling of soreness within the rectum which increases gradually to a dull ache and later a throbbing pain. Externally, there may be no signs at all if the infection is deeply seated, but if near the surface the signs of abscess will be seen, such as red or violet discoloration and swelling. A finger introduced into the rectum and pressed out and down will usually appreciate a circumscribed mass of induration or fluctuation. Defecation is extremely painful and dysuria may occur. In aggravated cases the swelling, tension, edema and redness about the anus appear erysipelatous and microscopical examination of the blood and excretions is necessary to differentiate. Sometimes the inflammatory reaction not only surrounds the anus, but involves the scrotum, perineum and thighs, but such is an extreme case. When the abscess is opened the pus is thick and cream colored, unless there has been extravasation of blood, when it may be brownish, and a clot may be expelled en masse or as debris. Shreds of necrotic tissue are frequently seen in the pus and indicate a septicemic character of the infection. The odor is foul and gangrenous, even though the abscess does not communicate with the rectum. The gush of gas when the abscess is opened is due to the pent-up condition of the pus and does not come from within the rectum, but is the result of bacterial life within the abscess. When the abscess is opened, either spontaneously or by the knife the constitutional symptoms immediately subside and often within twenty-four hours will have disappeared, but unless drainage is complete another abscess will form and the whole chain of symptoms recur. This quite frequently is the case if all the compartments are not broken down during the operation.

Treatment.—Palliative treatment or therapeutic measures are a waste of time, and local applications have been discarded because, while they give temporary relief and may even retard the progress somewhat, yet they never abort or prevent suppuration. We must never wait for suppuration, but drain freely and at the earliest moment, whenever we find well-defined induration, unless we think the condition is syphilitic. The incision should be wide enough to expose the whole field, permit the operator to see what he is doing and allow free and easy drainage. This operative technic is that followed by all surgeons and I need not go into details, but I have to offer a few suggestions regarding the postoperative treatment.

After the abscess cavities have been emptied and cleansed there is sometimes little or no hemorrhage, and in such cases no internal dressings, such as packings or tubes, are indicated, but the wound edges are best left free. A large, loose, absorbent perineal dressing answers all of the requirements. Occasionally a diffuse oozing persists and the wound should then be douched with equal parts of hot water and alcohol to induce coagulation. Should there be distinct hemorrhage which cannot be controlled by torsion or ligature, then packing is, of course, indicated, and if packing is used it should be removed in six hours to be replaced only if bleeding recurs. After six hours all of the dressings should be removed and the wound thoroughly douched with at least one gallon of normal salt solution at about 100° F. The index finger is passed into the wound to separate the surfaces and act as a guide for the douche tip to the deep recesses of the

cavity. This douching is repeated every six hours until the discharge ceases or the wound is very shallow. The wound must then be dressed twice daily until healing is complete. Dressing these cases but one each day is wholly inadequate because the wound surfaces become glued together and the discharges are retained under pressure and that means burrowing in another direction. I have discarded drainage tubes and gauze packings because when tubes are fastened into the wound by stitching them to the skin edge, you will find it impossible to handle the patient for cleansing the wound without painfully dragging on the stitch, and the squirming and twisting of the patient makes douching very unsatisfactory. If the tube is not fastened to the skin but is held by straps or bandages it almost invariably slips to one side or other and becomes an obstruction instead of a drain. And unless the tube is removed at each dressing and thoroughly sterilized before reinserting it becomes a bed of infecting microorganisms and retards healing more than it assists. Gauze drains are supposed to act by capillary action like a wick and if the secretions were as thin as water or light oil the gauze might serve its purpose. But the flakes of pus and fibrin in the discharges soon become matted in the mesh of the gauze and the dried serum glazes over the surface until in a few hours the gauze drain is really a loose, slimy plug in the wound. How often have we all seen the pus roll out of a wound when the gauze plug that was supposed to drain it was removed. While tubes and gauze may drain a perirectal abscess very satisfactorily for the first few hours after they have been placed *in situ*, yet their utility is so short lived and beset with so many disadvantages that I have discarded everything of that sort and rely on thoroughly separating the wound edges with my finger, using it to explore the depths of the cavity and to guide the douch tip. In this way it is easily possible to prevent superficial adhesions forming pockets which predispose to new abscesses. Because there is no foreign substance retained in the wound the divided nerve ends soon are covered over and in a few days the wound may be dressed or manipulated without causing pain.

Any deviation from the old-established proceedings must accomplish something worth while to recommend its adoption by the profession. By avoiding tubes and gauze drains in these perirectal abscesses the after-treatment is much simplified. The patient is not kept in bed until the cavity granulates to a shallow ulcer, but on the contrary is encouraged to get on his feet and walk about just as soon as he is able. I have several times had patients step to the lavatory, instead of using the bed pan, within a few days after the operation. Although I allow my patient to walk about to help himself, answer the calls of nature and thus relieve the monotony and backache of a prolonged stay in bed, I very emphatically impress upon him the dangers of sitting down, because while our patient is prone the wound edges tend to gape and when he is on his feet the surfaces are perpendicular, so that drainage is complete, but as soon as he rests upon his ischial tuberosities the lower skin edges are crowded together and the discharges are dammed back into nooks and corners. I, therefore, admonish him that rest in bed is essential, but he may be up and about each day for a little exercise. This is an important matter because these individuals are usually in otherwise good health and are frequently active, robust men. The frequently repeated douches in large volume not only flush out the septic discharges as rapidly as they collect, but they serve another no less important service. By the time a perirectal abscess has reached the surgeon a widespread lymphangitis and cellulitis has filled the pelvis and both lymphatic and venous circulations are much impeded. The douche here depletes the tissue through the wound the same as does the vaginal douche in periuterine congestions. In order to thoroughly reach all parts of the wound cavity it is necessary to make a digital examination at each treatment and thus notice early any points of local tenderness or induration, or any pockets we have overlooked in the operation. Another prolific source of danger in the after-treatment is the lower intestinal canal. After the customary purging prior to the operation it is the practice of some to confine the bowels for several days that the wound may be spared and the possibility of further infection. This, I believe, is an error, because no matter how well cleansed the digestive canal may be it still contains myriads of microorganisms and toxins, and as stasis is the first step toward toxemia it must be very evident that given a patient with a septic process in the pelvis it is essential that a positive current be kept up from the tissues into the bowels. To accomplish this I give my patient sufficient catharsis to produce two to four loose evacuations each day as long as he is under my care. The autointoxication that otherwise occurs after a few days is thus absolutely prevented. By this method of treatment I save two or three weeks in the time of convalescence and the patient improves so rapidly in general health that he is anxious to get about his duties. But it is fatal to success to let him slip out from under observation too soon. No one will dress the wound as carefully and conscientiously as is needed except the operator and I hold my patient down until cicatrization is nearly complete. In closing let me say that I consider the liberal, hot douche frequently repeated, and the free catharsis, fully as important as the operation itself. These procedures cannot be carried out except the wound be dressed wide open, and after a thorough trial I am convinced this method is superior to any in which an artificial drain is employed.

599 East Forty-Sixth Street.

ADENOIDS IN SCHOOL CHILDREN.

By PERCY R. WOOD, M.D.,

MARSHALLTOWN, IOWA.

Life's activities follow lines of least resistance. Energy, ambition, noble impulse, and high ideals all succumb to pain and ill health and are frequently usurped by idleness and vice. Inability to apply themselves comfortably drives multitudes of children from school and thus reduces the intellectual and moral index of communal and national life.

Statistics of school children indicate that from 20 to 30 per cent. suffer from adenoids. The greater number of these display no symptoms sufficiently definite to attract general attention. Examination of 13,458 of Chicago's public school children showed that 5,826 or about 42 per cent. had either adenoids or eyestrain.

The lymphatic structure of Luschka's tonsil, its anatomical relation to the respiratory current, and its contiguity with similar tissue in the nasal walls as well as its sensitiveness in the presence of the lymphatic temperament so expose it to irritation and

infection that it often fails to escape permanent hypertrophy during the eruptive fevers of childhood. Therefore, a larger percentage than generally imagined possess some enlargement of this gland which, if permanent, becomes a menace to hearing. Blake holds these growths responsible for 88 per cent. of deafness and Dench believes that one-half of the pathological changes occurring in the tympanum result from adenoids. Sohier Bryant claims that 98 per cent. of chronic middle-ear disease originates here, while Diemont finds that engorged and hypertrophied turbinals usually result from adenoids and should be removed with them. However not 30 per cent. of adenoid children present well-developed characteristics, and while some are physically and mentally deficient from this cause these are exceptions. The majority display no prominent symptoms and so evade detection until audition has been permanently injured. The gland in this latter class is comparatively little enlarged, and excepting a fringe occasionally overhanging the choanæ or a few strands stretching from the posterior lips of the Eustachian orifice, the vault appears normal to the novice, although the finger will appreciate a bed of soft tissue encroaching upon the retronasal space and quite obliterating the bursa and Rosenmueller's fossæ. There is slight retraction of the alæ nasi, an almost imperceptible nasal twang can be detected in the voice, and these children find it impossible to breathe through the nose. The tympanic membrance may be slightly retracted and somewhat reddened near the umbo and the hearing power is reduced.

Hearing is the most important function threatened, so that its conservation should dominate the thought of all who remove these growths, rather than the simple disposition of an obstruction or a foreign body. Patients should never be dismissed after such operations without careful examination of the anterior and posterior nares and the Eustachian tube, and a test of the hearing function, for seldom at such times are all these structures free from disease. Furthermore, the faucial tonsil almost never hypertrophies without a participation in the process of the pharyngeal, both being sections of Waldeyer's ring. Examination of the vault is therefore imperative in cases of enlarged tonsils and of the turbinals as well, for these latter, being associate bodies and largely of like structure, invariably participate in these inflammatory processes and become hypertrophied and engorged. I see many whose tonsils alone or in conjunction with adenoids have been removed, who still suffered with progressing deafness and tinnitus, due either to inadequate removal of the adenoids, to the too frequent mistake of removing the tonsils without recognizing the presence of the former, to failure to consider the etiological significance of diseased turbinals, or lastly to want of after-treatment applied to the Eustachian tube. Such errors have been the means of causing many to pass into adult life to seek assistance for their hearing when too late.

Finally this hypertrophied mass, in untreated cases, becomes fibrous and dense and takes on a submerged aspect, and although seemingly of little significance still exerts a malign influence over the hearing. The error is frequently made of treating these elderly individuals for defective hearing without removing the cause. Solis Cohen reports finding adenoids in persons of 70 years of age. Rankin of Marseilles at 60. I find them with great frequency in middle-ear deafness and chronic throat affections regardless of age, and no case of deafness can hope for permanent relief while a vestige of this pathological tissue remains. Nonappreciation of these facts has rendered of no avail many a well-intended operation, and has frustrated earnest efforts to relieve cases of catarrhal deafness and tinnitus.

Exploratory Puncture of the Posterior Vaginal Cul-de-Sac.—J. L. Faure says that puncture of the posterior cul-de-sac of the vagina is of great value in some abdominal conditions, and should be made more often than it is made. In case of a collection of fluid in the cul-de-sac, such as a hematoma, it is desirable to know whether the collection of fluid is infected or not, since the nature of the operation to be done will be determined by whether it is simple blood or has been infected and become purulent. If infected it must be removed by way of the vagina; if uninfected laparotomy may be performed. The puncture may be done with a Pravaz syringe in the dorso-sacral position and is very simple.—*La Gynécologie.*

The Advantages of Modern Lithotrity.—G. Luys describes the advantages which the modern operation of lithotrity has over hypogastric section. One objection urged against the former has been that it is an operation in the dark. This objection may be disposed of by the statement that cystoscopy permits adequate inspection of the work accomplished by the lithotrite. In the hands of the skillful this operation is not a difficult one. The steps in the operation are as follows: 1. Dilatation of the urethra if is this narrow or stenosed. 2. Preparation of the bladder; if this has a capacity less than 150 grams, it should be treated previously by means of lavage and instillations of nitrate of silver. 3. The urine should be examined for glucose and albumin and particularly for its content in urea. 4. By means of the cystoscope it is necessary to determine the nature, size, and location of the calculus. 5. On the eve of the operation a sound should be passed into the urethra, and the patient should be given a purge. The operation comprises three steps: a, the crushing of the stone with the lithotrite; b, the evacuation of the fragments with a syringe or an aspirator; and c, the examination of the interior of the bladder with the cystoscope, to determine whether all the fragments have been removed. The contraindications of lithotrity are as follows: If the calculus is too large, exceeding 7 cm. in length, one may experience great difficulty in crushing it. If the stone is too hard even for a large lithotrite, one should not persist in the crushing operation, but should proceed to hypogastric section.—*La Clinique.*

Salvarsan in Obstetrics.—J. Lemeland has made a study of all the cases reported as treated with salvarsan during pregnancy, as to the effect on the mother and on the fetus. Up to date there have been 39 cases of treatment during pregnancy reported, but of these seven were reported with no detail. In the case of the women treated it is shown that the effect of the drug is the same as in other patients, abortion is not produced, the patient bears the drug well, and there is no intoxication of the fetus. The Wassermann reaction is affected in the mother just as in other cases, while in the child it disappears more slowly than in the adult. Of the infants there were 30 living and two dead. In the direct treatment of the infants with hereditary syphilis, out of 66 treated there were 45 cures and 21 deaths. In 18 cases the treatment was given to the infant through the mother. Here we find 6 successes and 12 failures, with 3 deaths. The drug does not have the effect by passing into the milk, but by the development of antitoxins in the blood of the mother which passes to the infant. Serum from persons treated with the drug was injected into one infant with improvement followed by relapse. Thus we see that in congenital syphilis the drug has beneficial and curative effects.—*L'Obstétrique.*

MEDICAL RECORD.

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MISTAKES IN MEDICAL PRACTICE.

THAT an individual is taught by experience is another way of saying that he profits by the mistakes he makes. That medical practitioners are capable of making mistakes is a fact that furnishes a perennial topic of conversation for the laity who are usually shocked at the possibility of such an occurrence. This naturally accounts for the reticence which physicians display regarding their own shortcomings in this respect, which attitude is apparently counterbalanced by an undue willingness to discover the mistakes of others. One of the main causes of the unreliability of medical statistics is the paucity of the reports of failures as compared with the abundance of reports of successes. Such failures are inevitable in the efforts to further the progress of medical science; there can be no question that their value as recorded facts is equal to that of successes. Of greater value, however, than the reports of unsuccessful lines of treatment, would be the publication of the individual mistakes, whether of observation or of judgment, of which every practitioner accumulates a goodly store. Certainly such publication would be an inestimable boon to the younger men, who before they have the chance of feeling the sting of their own inevitable mistakes, may greatly profit by a perusal of those made by their older colleagues.

An illuminating philosophical analysis of the causes of mistakes in medical practice is presented in the Address in Medicine delivered by Byrom Bramwell at the recent meeting of the British Medical Association, and published in the *British Medical Journal* and the *Lancet*, July 29, 1911. The extensive experience of the Edinburgh clinician enables him to speak with authority on this subject and to illustrate his remarks with numerous examples from his own practice. At the outset he declares that it is not a question of who makes and who does not make mistakes; it is only a question of who makes the most mistakes and the biggest mistakes. Postmortem examinations reveal the frequency of these mistakes, which arise because of the extent and complexity of modern medicine and of the concrete problems with which the physician has to deal; the insufficiency of data; the difficulty in eliciting and observing the facts; the circumstance that one must frequently rely on the statements and observations of the patient or his friends, which statements are often inaccurate and misleading, and lastly because of the limitations of the human mind. There are bad mistakes, slight mistakes, mistakes of omission and those of commission, mistakes due to incomplete, inaccurate, or erroneous observation, and mistakes due to hasty or illogical conclusions.

Mistakes due to imperfect knowledge, to want of clinical experience, to erroneous observation, and to inability to observe correctly, are most common in the early years of one's practice. Bramwell illustrates this class of mistakes with the following examples: He had mistaken hemoptysis due to mitral stenosis for phthisis; and hemorrhagic smallpox for typhus fever; and he had failed to discover the cause of a fixed pain in the back in the pressure of an aortic aneurysm. It is pointed out in this connection that one must always give due weight to the patient's symptoms and complaints.

In the case of experienced practitioners, hurry, with its consequent incomplete examination of patients, and hasty conclusions are probably the most common causes of errors in diagnosis. Mistakes are frequently due to the fact that the information obtained from third parties is insufficient, inaccurate, and misleading. The importance is emphasized of verifying one's facts before giving an opinion. Mistakes due to erroneous deductions and illogical conclusions are very common. "Nor is this to be wondered at," says Bramwell, "when it is remembered that there is probably no faculty of the human mind which differs more in different individuals than the faculty of judgment—the power of seeing things in their correct proportion, the ability to weigh correctly all the facts of a case and to draw the correct and logical conclusion from them. Even those men in whom the judicial faculties are most highly cultivated often fail to draw the same conclusions from the same facts. How frequently we see the judges differing on points of law, and the opinions and decisions of the lower courts reversed in the Court of Appeal and in the House of Lords! Now, if this occurs in law, how much more likely is it to occur in medicine; for, in comparison with medicine, law may be almost regarded as a fixed science. Further, in medicine the facts on which our conclusions and opinions have to be based are, in many cases, very difficult to observe, and, in some cases, chiefly or entirely consist of the subjective sensations described by patients."

Mistakes in diagnosis frequently occur because either undue or insufficient importance is given to some symptom or physical sign which is present. Illustrations of this form of error are seen in the diagnosis of ulcer of the stomach when the gastric crises of tabes are present, and in overlooking the possibility of appendicitis as the underlying cause of hematemesis. Bramwell believes that there is a tendency to attach too much importance to some of the instrumental and other elaborate methods of diagnosis and to underestimate an all-around clinical experience and knowledge. Errors are often due to the fact that one's judgment is warped or biased

from some cause, such as anxiety or fear. For this reason the physician is incompetent to treat disease in himself or in members of his own family. Erroneous therapeutic conclusions, based on too limited a number of observations, are so common as to require no comment.

In concluding his address, Bramwell states that "the only way to avoid diagnostic mistakes is, *first*, to gather carefully and correctly the data—the facts on which the diagnosis has to be based—by exhaustive and accurate clinical observation and examination; *secondly*, after these data have been obtained, to weigh them impartially and judicially, taking all the facts into consideration, avoiding, so far as possible, preconceived opinions, giving due weight to the symptoms and sensations of the patient as well as to the physical signs; and, *thirdly*, to draw a logical and correct conclusion from the premises." This address deserves to be carefully read and digested by every practitioner, whether young or old.

MODERN TENDENCIES IN SURGERY.

One of the leading events at the recent meeting of the British Medical Association was the Address in Surgery by Professor Jordan Lloyd, surgeon to the Queen's Hospital of Birmingham (*British Medical Journal* and *Lancet*, July 29, 1911). Speaking from a wealth of surgical experience rarely surpassed in variety and extent, with the freshness of originality and the authority of a master, the orator was followed with close attention as he traversed this wide and well-trodden field, and indicated the conclusions of his independent judgment. He deplored the tendency to turn a surgical operation into a ritualistic function. In his view it needed but little ceremonial to make and keep one clean in body or in spirit; simplicity, sincerity and steadfastness being sufficient in both, and elaboration of ceremonial would but condone lack of dexterity or of resourcefulness. The advance in abdominal surgery had been gained only after a severe conflict with the elders, who asserted that the abdomen was a region into which the writs of ordinary surgical laws should not run, and in this combat Tait was the foremost protagonist.

With reference to kidney diseases that are amenable to surgical treatment, the speaker believed that most of these can be diagnosed by simple methods, by urinary investigation, by physical examination, by accurate history and finally by clinical common sense. It is only in exceptional cases that the cystoscope, the radiograph, and the ureteral catheter are wanted, but sometimes they may be wanted badly. Appendicitis was to be regarded as primarily due to mechanical obstruction of the appendical lumen, the appendix being essentially a part of the large intestine and subject to the same disturbances. If every case of appendicitis were operated on within twelve hours of its onset this disease would almost cease to be a mortal disorder. Twenty years ago appendicitis found no place in the Registrar-General's returns, whereas last year 432 cases were operated on at two Birmingham hospitals, and probably 40,000 cases of appendicitis occurred in England and Wales. The operative treatment of gastric disease was regarded by the speaker as the most striking example of modern surgical advance. Both suprapubic and perineal prostatectomy had their respective merits, the latter being preferable in the case of a slightly enlarged, tough organ in a stout patient.

The past three decades had beheld an enormous growth both in the extent and in the quality of hospital treatment. In 1872, when the speaker began his studies, 316 operations were performed in the two general hospitals of Birmingham; in 1910 the number was 4,472, although the service of beds had but slightly increased. Each surgeon was now doing more operative work than the united staffs of both hospitals had done thirty years ago. Probably 600,000 operations were performed in the public hospitals of the United Kingdom last year; these represented a huge amount of gratuitous work, the bulk of which was done by men with reputations already made, and the only public recognition was a perfunctory vote of thanks at an annual meeting of subscribers. The speaker believed that the time must come when most of this work would have to be paid for, presumably from public funds. Lastly, reference was made to the extravagant outlay on hospital construction and equipment. The craving to spend lavishly other people's money was a disease, and institutions might have to be erected for the persons so afflicted. Contrasting a great voluntary hospital with a modern municipal infirmary, the speaker pointed out that whereas the former cost $4,000 per bed for capital outlay and $10 per patient per week for maintenance, the latter cost $450 per bed and $3.62½ per week for each patient; and he believed that the sooner public hospitals became State supported, the better for patients, physicians, and the public alike.

The experience of English hospitals, judging from the above statement, would appear to be quite the opposite to that of American institutions, at any rate of some of the hospitals in New York City that are maintained by private organizations. These are doing the city's work at an expense much less than that which prevails in some of the city's own institutions.

Professor Lloyd's remarkable address touched upon some of the most fundamental problems in surgical practice and hospital management, and while some of the statements made will be certain to excite criticism and possibly controversy, nevertheless the oration as a whole points the way to surgical progress.

ESSENTIAL NARCOLEPSY; NARCOLEPTIC PETIT MAL.

That narcolepsy occurs in a form which is not only entirely independent of epilepsy and hysteria, but cannot even be brought into relationship with spasmophilia or with any form of neuropathic substratum, is a well-established fact. At a recent society meeting held at Breslau (*Berliner klinische Wochenschrift*, July 3) one case was reported in detail, while discussion brought out reference to two others. Aside from the paroxysms of the affection,

the most interesting feature was its complete nosological independence. While many nervous maladies present puzzling affinities with one or more other affections, the isolation of essential narcolepsy seems complete. All three cases occurred in young boys, but aside from the similarity of the clinical phenomena but little information is given concerning two of the cases. Bonhoeffer's case is given in detail. The boy was wholly normal, free from all evidences of degeneracy, psychopathy, and neuropathy, or of spasmophilia, and in particular it should be emphasized that no sleep disorders had been present. His ascendants and the other children in the family showed no anomalies of significance. The attacks bore some resemblance to epileptic petit mal, but the patient remained conscious and no depression, somnolence, or headache resulted. The extreme frequency of the attacks seemed characteristic, they amounting to over thirty a day at times. The child's walk was suddenly arrested, but he did not fall, even when his footing was hardly secure. He sometimes dropped objects held in the hand, but as a rule retained them. Occasionally his knees gave way, or he made a misstep. If the bladder was full a little urine might escape. There was never an aura or warning of any sort. Occasionally the patient could produce an attack artificially by making a sudden or violent movement. The seizures lasted but a few seconds, so that there was no opportunity for many tests. There was no history of fright or psychic trauma in this patient, but in the other boys the attacks began after a mild shock (collision with a bicycle; threatening action of a dog). Psychic excitement appeared to render the attacks a little worse. The seizures were absolutely refractory to bromides or any antihysterical remedies or procedures. Just before the earliest attack the patient showed a brief phase of depression, although his disposition was habitually cheerful. That a psychoneurosis should occur with absolutely no collateral evidence of nervousness is, of course, not to be expected. A latent taint, however slight, must be present. It is none the less true, however, that in these cases there was an absence of history and of stigmata pointing to psychopathy—something hardly conceivable of other psychoneuroses. The name narcolepsy seems poorly chosen for this affection, which indeed is very difficult to characterize in a word or two. Since the term was used originally to designate sudden attacks of somnolence in hysterical and other neurotic subjects, it would seem proper, if the condition under consideration is really to be conceived as narcolepsy, that it should at least be termed narcoleptic petit mal. Its marked resemblance to epileptic petit mal should sanction the use of such a term. Not only the sudden inhibition, but the pallor and pupillary change are common to both. The differences are, however, too striking to permit of confusion.

THE PARATYPHOID INFECTIONS.

Views as to what are generally known as the paratyphoid infections are somewhat vague. In most epidemics of typhoid fever there occur infections which are not of the true typhoid-fever type, that is, which do not react to the Widal test. These infections are of the *Bacillus paratyphosus* A or B class, but concerning these bacterial forms knowledge as yet is by no means accurate. As a rule such infections are lightly regarded by medical men, often diagnosed as intestinal grippe, and generally treated as of small account. T. A. Starkey, professor of hygiene at McGill University, some few years ago called attention to the prevalence, even preponderance, of typhoid-like infections in the epidemics of typhoid fever which have occurred not infrequently in Montreal and in other parts of the Province of Quebec. Starkey pointed out that during the epidemic of typhoid fever which prevailed in Montreal and vicinity in the winter and early spring of 1910 cases of typhoid-like infections were very numerous. At the recent meeting of the Canadian Medical Association, held in Montreal, a symposium on typhoid fever and water supplies took place in the section of preventive medicine. Starkey, who was chairman, again raised the question of the prevalence of typhoid-like infections in epidemics of enteric fever, and cited one epidemic which came under his observation in which the large majority of cases were those of typhoid-like infections. He further expressed the opinion that these infections were not looked upon in a sufficiently serious manner by physicians, and stated that he held the view that the typhoid-like infections should be considered under the general term enteric fever. With this view the members of the Canadian Medical Association present agreed.

In the *British Medical Journal,* June 3, 1911, is a letter from Col. R. H. Forth, R.A.M.C., relating to the same subject. Forth says there appears to be a tendency in Great Britain to apply the term "paratyphoid fever" to cases of infection by the microorganism known as *Bacillus paratyphosus* B, while there is a tendency to overlook the infection by the closely allied microorganism known as *Bacillus paratyphosus* A. Forth claims that there is a recognizable definite clinical entity caused by the latter bacillus. This clinical entity is a fever or pyrexia of the continued type, and because this fever is caused by the *Bacillus paratyphosus* A, Forth thinks to it should be applied the term paratyphoid fever. *Bacillus paratyphosus* B and *Bacillus suipestifer* do not really cause fever, he says, but explosive infections of the nature of an acute enteritis, commonly the outcome of what is called "food poisoning."

The Brainless Dog.

With improvements in technique, including anesthesia and asepsis, it has now become possible to maintain animals alive and in relative well being after removal or extensive modification of organs generally held to be of immediate vital significance. Pavloff's dogs which live for years in good health despite permanent gastric and esophageal fistulæ and stomach pouches, will at once suggest themselves to the reader in this connection, as well as animals which survive after wide removal of the stomach and intestine. Such survival may be aided by scientific feeding. The removal of the cerebral hemispheres in cold-blooded animals and certain

birds has long been practised in order to determine the significance of these structures to life, but our efforts in this direction in the higher animals were originally handicapped by the unfavorable results of the operation itself, due largely to the highly defective technique. At the Verein für innere Medizin und Kinderheilkunde of Berlin (*Münchener medizinische Wochenschrift,* June 27) Rothman exhibited a dog without a cerebrum which had survived first partial and then complete removal of the hemispheres since February, 1907. At that time the left hemisphere was removed, and about two years later its fellow. The animal was not a mere automaton, but presented the appearance of a normal dog, eating and running about. For a short time all functions were suspended, but it soon learned to walk, swallow, and lap milk. It can neither see, hear, nor smell in the full sense of the words, but is capable of sensorimotor acts, such as acoustic reflexes and snuffling. The sexual functions are abolished. The animal, a male, urinated at first in the manner of puppies and bitches, but soon made attempts to lift its leg during the act. There is marked defect in localizing all kinds of sensations—pain, pressure, touch, etc. A unique phenomenon appears to be spontaneous fits of rage, attended by baying. These are spoken of as impulsive, but they can also be induced by touching the animal. They can be arrested by gently scratching the animal's head, and they show a tendency to become less marked with time. This phenomenon may show that the irrational and purposeless barking of dogs, especially at night, is wholly unconnected with cerebration and is a mere low-level reflex.

A New Diagnostic Sign.

The external malleolar sign, as C. G. Craddock calls it, is an extension of one or more or all the toes, with or without spreading of them, when the external inframalleolar skin area is irritated. Craddock, who describes it in the *Interstate Medical Journal* for July, says it is diagnostic of organic disease in the spinocortical reflex paths. For several months he made examinations of the skin reflexes by irritation of the external inframalleolar area, and noted the following variations between the relations of external malleolar non-response and response: 1. In one case of left-sided cranial fracture, with no external malleolar response, there was for some days complete abolition of the right skin reflexes, with final return of the normal plantar, but never any malleolar response. 2. In a number of cases in which a response was obtained from the external malleolus normal response was obtained from the sole. 3. In a few cases, after persistence of external malleolar response and normal plantar response, plantar response became abnormal for a time, then disappeared, leaving the external malleolar response, which finally disappeared. 4. In other cases, with initial plantar and external malleolar response alike of extension, abnormal plantar response changed to normal plantar response, leaving malleolar response persistent. 5. In many cases in which plantar response was mixed, *i.e.* showing flexion and extension and varying strikingly with place or intensity of irritation and with voluntary jerks, external malleolar response removed any doubt of the nature of the plantar response. 6. In several cases of articular deformity limiting movements of the toes the absence or presence of external malleolar response was decisive for diagnosis. Craddock cites many cases which have come under his observation in order to show that irritation of the external inframalleolar area causes no reaction normally; that the external malleolar sign is usually present when the Babinski phenomenon is present; that it is often present when the Babinski phenomenon is absent; that it may come before, accompany the Babinski phenomenon, or outlast it; and finally, that its presence or absence is a great clinical aid in the interpretation of doubtful or occasional abnormal movements excited by irritation of the sole, and that it signifies disorder of an organic nature in the spinocortical reflex paths.

Carbohydrate Metabolism.

It is known or believed that a number of important organs are in some way actively concerned in the combustion of sugar—the liver, pancreas, muscles, suprarenal bodies, the central nervous system, etc. The claim made several years ago by Cohnheim that the pancreatic hormone could act only in association with some principle in the voluntary muscles was promptly disputed. The existence of so-called adrenalin diabetes was discovered, and while the mechanism is unknown, it has been ascertained that adrenalin and the pancreatic hormone are antagonists, the former producing glycosuria, or in other words interfering with sugar combustion, while the hormone promotes the latter. The two principles also behave antidotally to each other. At the recent meeting of the German Congress for Internal Medicine, Michaud read a paper on carbohydrate metabolism in dogs with an Eck's fistula (*Berliner klinische Wochenschrift,* June 5). When the liver is thereby eliminated no carbohydrate intolerance results. The animals eat grape sugar up to 150 grams without any increase in the normal percentage of sugar in the blood and without glycosuria. The pancreas is thus seen to be equal to the task of completely oxidizing the sugar. Adrenalin injections no longer produce glycosuria, showing that this substance normally produces the latter through some action upon the liver. It was admitted, however, that Eck's fistula does not absolutely cut out the liver from the circulation, even though this is practically the result.

Permanent Uncomplicated Astereognosis.

The highest interest is attached to injuries to the cerebral cortex in which with intact sensation and motion, and, in fact, all other cortical functions, the association of present sense impressions with the memory of past impressions is permanently disorganized. At a recent meeting of the Giessen Medical Society (*Deutsche medizinische Wochenschrift,* July 6) Hohlweg reported a case of trauma over the right parietal bone in a youth, the immediate effect of which was twenty-four hours of unconsciousness. It was said by bystanders that spasms of the left arm supervened at once upon the injury. These spasms persisted for fourteen days. The patient's cortical functions now became quite normal, save that he was unable to tell by the unassisted sense of touch the nature of objects held in the left hand. While tactile, thermal, and general sensibility were normal, the patient with the eyes closed was quite unable to distinguish with this hand between a watch chain, a piece of chalk, a matchbox, a key, etc. The case was, therefore, an example of pure astereognosis. The condition had persisted for five years unchanged.

News of the Week.

The Cholera Situation.—Reports come of a serious outbreak of cholera at Shanghai, China. The official cholera bulletin of Italy shows that the disease may be on the decrease in that country, there having been 1,039 cases with 380 deaths from August 1 to 5, and 781 cases with 294 deaths from August 5 to 10. Although there has been some alarm over suspected cases in Paris, the only point of real danger in France is Marseilles, where there were 16 deaths in the insane asylum in one day. The sanitary condition of other French ports is said to be satisfactory. The authorities of Vienna have been alarmed over the situation to the extent of prohibiting the importation or transit of any second-hand clothing or rags from Trieste, where 26 cases have been reported. While there have been no new cases in New York, vigilance has in no wise been relaxed. The disease has evidently been present for some time in Constantinople, as a despatch to *The Sun*, dated August 15, states that there were 113 cases there, with 64 deaths the day before.

Surgeon Injured in Ambulance Crash.—An Amsterdam avenue car in charge of an inexperienced motorman collided with an ambulance from the J. Hood Wright Hospital on August 12, very seriously injuring the surgeon, Dr. H. C. Cohen.

An Experiment in Caring for Employees.—The International Harvester Company is planning to install a scientific system of studying employees for evidences of incipient tuberculosis. At present the scheme is only in the experimental stage. The object is to find out what employees or number of employees are suffering from tuberculosis, and what remedies to adopt for their cure. If the plan is found to be practical an expert on tuberculosis will be stationed at each of the company's plants to render advice and assistance to those afflicted.

A Medal for Sir Patrick Manson.—It is proposed by a number of physicians especially interested in tropical medicine to raise by international subscription a fund for a gold medal to be presented to Sir Patrick Manson in recognition of his labors in behalf of this new branch of medicine. The medal will be in the form of a plaque 7 cm. (2.8 in.) long by 5 cm. (2 in.) wide, and will contain on one side a relief portrait of Sir Patrick, executed by Dr. Paul Richer of Paris; on the other a suitable inscription. Subscriptions may be sent to Dr. James Cantlie, 140 Harley street, London, or to MM. Anchin et Houzeau, Place de l'École de Médecine, Paris. Those who subscribe $5 will receive a copy of the medal in bronze, those who subscribe $10 will receive a silver copy. The American signers of the announcement are Drs. Calkins of New York, Novy of Ann Arbor, Stiles of Washington, Ward of Chicago, and Welch of Baltimore.

Bequests to Charity.—Among the fifty organizations and institutions that profited by the will of the late John Curley of Brooklyn are the following: Sisters of the Poor of St. Francis, $15,000; Hospital of the Holy Family of Brooklyn, $5,000; St. Mary's Hospital, $5,000; St. Catherine's Hospital Association, $10,000; the Little Sisters of the Poor, $2,500; the Seney Hospital, the Dominican Home, Brooklyn Bureau of Charities and the Long Island College Hospitals, each $1,000.

The will of Smith Ely, a former Mayor of New York, who died on July 1, leaves $1,000,000 to charitable institutions in and around New York. Among the bequests are the following: Fresh Air Home for Crippled Children at Sea Breeze, Coney Island, $50,000; West Side Day Nursery, $10,000; Orange Memorial Hospital at Orange, N. J., and the Overbrook Hospital at Summit, N. J., each $50,000, provided the sums left be used to endow in perpetuity as many beds in each of the institutions as the by-laws of the institution allow. The document also provides that, after all debts and legacies are paid, the Children's Aid Society and the New York Society for Improving the Condition of the Poor each receive $100,000, on condition that the sum named be made a special endowment fund, to be known as the Ambrose K. Ely Memorial.

Under will of the late Patrick Goodman St. Francis' Home for Chronic Incurables and St. Joseph's Home for Consumptives each receive $500; the Rosary Hill Home Cancer Hospital, $250.

By the will of the late Meyer Seidenbach of Philadelphia the sum of $1,000 is bequeathed to the Jewish Hospital and $500 to the German Hospital.

The Investigation at Quarantine.—Among the witnesses who appeared before Charles R. Bulger, the commissioner from Lake Ontario appointed by Governor Dix to hear complaints of the administration of the Health Office of the Port, have been Dr. William K. Polk, president of the New York Academy of Medicine and Dean of the Cornell Medical School; Dr. Simon Flexner, of the Rockefeller Institute for Medical Research; Dr. John W. Brannan, head of the Bellevue and the Allied Hospitals, and Dr. William P. Northrup, all of whom testified to the competency and efficiency of Dr. Alvah H. Doty, the Health Officer of the Port, and all of whom were more or less rudely heckled by a man in the employ of the *Jewish Morning Journal* who seems to be a valuable assistant to the commissioner.

The World's Opium Conference.—All the nations have agreed to the holding of an opium conference at The Hague on October 15. England held out for an agreement on the part of all the countries to submit statistics on opium, cocaine, and morphine, to which all have now acquiesced.

A New Hospital for New York City.—A charter for a Lutheran Hospital has recently been filed with the State Board of Charities, and $200,000 has been pledged toward the enterprise.

The American Association of Clinical Research announces that it will hold its third annual meeting on September 27 and 28, 1911, at 234 Berkeley street, Boston, Mass. Dr. Alvin Roy Peebles of Boulder, Col., is president of this association, and Dr. James Krauss of 419 Boylston street, Boston, is secretary.

Two Medical Societies Unite.—As a result of the meeting of the Southern Minnesota and the Minnesota Valley Medical Associations at Rochester on August 3, a new medical society embracing the greater part of southern Minnesota has been formed. One of the features of this meeting was the memoir of Dr. W. W. Mayo, by Dr. Charles Hill, a physician now in his eighty-fifth year, who was formerly associated with Dr. Mayo.

A New Hospital for Haverhill, Mass.—This city has voted to begin the erection of a contagious hospital which will cost $25,000, and has under consideration plans for a general hospital, to cost $100,000.

Tuberculosis Sanatorium for West Virginia.—

The State Board of Control has selected a site for a tuberculosis sanatorium, containing 550 acres, near Terra Alta. The Legislature at its last session appropriated $40,000 for the erection of a State sanatorium

Licenses to Practise Medicine in West Virginia.—The State Board of Health has issued certificates to 59 of the 70 applicants for license to practise medicine in West Virginia.

Mutton for Football Players.—Dr. D. W. Burbank of Leland Stanford University, in his search for a more nutritious proteid upon which to feed the football squad, has discovered that mutton contains a large proportion of proteid. He is fattening his own sheep, with which the bootball players of the university are to be fed this fall as an experiment.

The City Children's Hospital.—The following new appointments on the visiting staff of New York City's Children Hospitals and Schools have been made: Dr. Claude A. Frink, attending surgeon, and Dr. Cleaveland C. Kimball, M.D.

Dr. Harry S. Gradle has been elected Professor of Ophthalmology on the Faculty of the Chicago Eye, Ear, Nose, and Throat College.

Cholera in Italy.—Cholera is spreading in Italy and has extended to Genoa and Leghorn. The official report by the Italian government on the cholera situation shows that from July 27 to July 31, inclustive, there were throughout Italy a total of 802 cases and 319 deaths.

New Quarters for the New York Health Department.—The city has leased the Abingdon building at Centre and Walker Streets for ten years at an annual rental of $58,000 for the Board of Health. The department will move from its present quarters at Fifty-fifth Street and Sixth Avenue as soon as the Abingdon building is completed and will occupy the entire building which has a floor space of over 100,000 square feet.

Governor Dix Appoints Food Committee.—Governor Dix has appointed a committee consisting of eleven members, all of whom are to serve without compensation, which is authorized to inquire into the purity, prices, production, distribution, and consumption of foodstuffs and farm and dairy products and to recommend remedial legislation next year.

Medical Colleges Consolidate.—The trustees of the University of Nashville Medical School have given the new Medical Department of the University of Tennessee at Memphis all of the equipment of that school, its good-will, and the right to claim itself the successor of the Medical Department of the University of Nashville. Property valued at $75,000 has been secured by the University of Tennessee for the medical school.

Laboratory for the City of St. Paul.—A new laboratory to cost $40,000 will be added to the St. Paul city and county hospitals.

Sioux Valley Medical Association.—This association, which draws its members from four States, met at Sioux Falls on July 20. The election of officers resulted as follows: *President*, Dr. J. E. Garver, of Sioux City; *First Vice-President*, Dr. G. G. Cottam, Sioux Falls; *Second Vice-President*, Dr. C. O. Wright, Luverne; *Treasurer*, Dr. S. A. Brown of Sioux Falls; *Secretary*, Dr. G. S. Browning of Sioux City.

The Piedmont, Va., Medical Society.—The mont Medical Society, which held its regular quarterly meeting at Charlottesville, Va., on July 30, 1911, elected the following officers for the ensuing year: *President*, Dr. George W. Starke of Overton; *First Vice-President*, Dr. E. D. Davis of Standardsville; *Second Vice-President*, Dr. H. W. Porter of Louisa; *Secretary*, Dr. Frank C. Scott of Orange; and *Treasurer*, Dr. J. T. Walker of Barboursville.

Obituary Notes.—Dr. Rudolph Frederick Bauer died at Philadelphia on August 10 at the age of 50 years. He was graduated from Hahnemann Medical College of Philadelphia in the class of 1885, and from the medical department of the University of Pennsylvania in the class of 1894. He served for a time on the staff of Wills' Eye Hospital and in the ophthalmological department of the German Hospital. He was a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, and the American Medical Association.

Dr. Francis A. Howe of Newburyport, Mass., a graduate of the Medical School of Harvard University 1854, a member of the American Medical Association and the Massachusetts Medical Society, died after a long illness, on July 28, aged 84 years.

Dr. Lewis C. Sampson of St. Joseph, Mo., a graduate of the Ensworth Medical College in 1900, died July 23, aged 37 years.

Dr. Harry H. Hughes of Jackson, Miss., a graduate of the Medical Department of Tulane University in 1892, died after a brief illness on July 22, aged 43 years.

Dr. Oscar A. T. Haruff of Pueblo, Col., a graduate of the University of Colorado in 1903, died July 26, aged 32.

Dr. Gordon Byron Meldrum of Buffalo, Wyoming, a graduate of the Denver and Gross College of Medicine in 1899, died in Omaha, Neb., following an operation for appendicition on July 7, aged 37 years.

Dr. John F. Carey of Meadow, Wyoming, a graduate of the Jefferson Medical College, Philadelphia in 1867, and a member of the Wyoming State and Laramie County medical societies, died in Cheyenne on July 26, aged 69 years.

Dr. Stephen Pierson of Morristown, N. J., a graduate of the College of Physicians and Surgeons, New York City, in 1869; a Civil War veteran, who served with General Hooker in the Fredericksburg campaign and later was with General Sherman in the march to the sea; member of the New Jersey State Board of Education; member of the American Medical Association and the New Jersey State Medical Society, died on August 10, aged 67 years.

Dr. John H. Crippen of Waterloo, Iowa, a graduate of Hahnemann Medical College and Hospital of Chicago in 1872, a member of the American Medical Association and the Iowa State Medical Society, died on August 3, aged 59 years.

Dr. Henry C. A. Kirchner of St. Louis, Mo., a graduate of Washington University in 1878, died August 6, aged 61 years.

Dr. John A. Warren of Greenville, Ill., a graduate of Eclectic Medical Institute of Cincinnati in 1873, member of the Medical Society of the State of Illinois, died on July 28, aged 75.

Dr. Charles Eddy of Brooklyn, a graduate of Bellevue Hospital Medical College in 1873, died on August 10, aged 62 years.

Dr. John Randolph Quinn of Brooklyn, N. Y., died of apoplexy at his home in that city on August 10. He was born in Bangor, Me., in 1847, and was graduated from the Long Island College Hospital in 1872.

Obituary.

FRANK PIERCE FOSTER, M.D.

NEW YORK.

Dr. Frank P. Foster died at the residence of his son-in-law, Professor J. C. Smallwood, in Chadwick, N. J., on Sunday, August 13, from cancer of the larynx, from which he had suffered for nearly three years. He was born in Concord, N. H., November 26, 1841, and was educated in the public schools of that town. After graduating from the Concord High School he attended lectures for a time at the Harvard Medical School, but later came to New York, receiving his degree from the College of Physicians and Surgeons in 1862. After an interneship of two years at the New York Hospital he became an acting assistant surgeon in the U. S. Army, and at the close of the Civil War established himself in general practice in this city. He at first showed a leaning toward dermatology, but later directed more attention to gynecology, although at no time did he regard himself in the light of any other than a general practitioner. Prior to 1870 vaccination was done almost wholly with humanized virus, either arm to arm or with scabs softened in water. Observing the dangers of this practice Dr. Foster urged the exclusive use of bovine virus and with the assistance of the officials of the New York Dispensary obtained the general adoption of that method.

It was as an editor, however, that Dr. Foster was most widely known. His early training in English and the humanities in the Concord High School gave to his mind a literary bent which soon led him into medical journalism, first as a contributor of original communications and editorial articles to the Medical Record and other journals and later as editor of the *New York Medical Journal*. He was the dean of American medical journalists, the death of Dr. Shrady in 1907 having left him in that position. He became editor of the *New York Medical Journal* in January, 1880, serving in that capacity for over 31 years—a record of professional editorial headship surpassed in this country only by Shrady, who was editor of the Medical Record for 38 years, and by Isaac Minis Hays, who was editor of the *American Journal of the Medical Sciences* for 59 years. Dr. Foster was also editor of the monumental "Encyclopædic Medical Dictionary," the preparation and publication of the four volumes of which occupied his spare time for twelve years, of the "Reference Handbook of Practical Therapeutics" in two volumes, of "Appleton's Medical Dictionary," published in 1904, and of the medical terms in the "Standard Dictionary." For several years he was librarian of the New York Hospital Library, until that institution was discontinued and its books were transferred to the library of the New York Academy of Medicine. He was a member of the New York Academy of Medicine, of the New York County and State Medical Societies, of the American Medical Association, of the American Medical Editors' Association, of the New York Gynecological Society, and of the New York Dermatological Society; of the latter he was one of the founders and had served terms as secretary and president.

Frank Foster was a man of high ideals, firm in his convictions but open-minded and charitable toward others whose views were not as his; a man of culture, well read in the classics, a French and German scholar, and a writer of pure English; somewhat reserved not readily making new acquaintances, but genial and cordial in his bearing toward all; a pleasant companion and an entertaining conversationalist; of tender heart and kind disposition—a gentleman.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent)

CONGRESSES, BRITISH MEDICAL ASSOCIATION, ROYAL SANITARY, CANCER RESEARCH.—HOSPITALS AND INSURANCE BILL DEPUTATION.—LUNACY.—OBITUARY.

London, July 28, 1911.

This has been a week for congresses and conferences of all sorts. At Birmingham the British Medical Association has held its meeting, but I may pass by that, as you have special reporters there to inform you of the proceedings. The Congress of the Royal Sanitary Institute—its twenty-sixth annual meeting—was opened under the presidency of Lord Dunleath. The Lord Lieutenant (Earl of Aberdeen) attended, and opened the health exhibition, in which were displayed all sorts of sanitary materials.

Lord Dunleath devoted his presidential address to the subject of consumption, of which he attributed the diminished death rate to a great extent to the improvements of sanitary conditions. No mercy, he said, should be shown to a local authority which did not provide the prime requirements of pure air and water. Of the sixty or seventy thousand deaths a year, at least twelve thousand were those of children, and the sufferers at the moment of speaking were probably over half a million. There were two sources of infection—the affected person and the tuberculous cow. To protect from the first notification should be universal. The Edinburgh plan was a model one, the tuberculosis dispensary for directing home treatment, the isolation hospital for advanced cases, and the sanatorium for early cases. He regarded it as certain that a large number of diseased cows contribute to the general milk supplies—many are actually suffering from tuberculous udders, and give out poisonous milk, which is mixed with that of other cows and sold in our towns and cities. The local sanitary authorities must have a free hand and supervise the supply at every stage. Education in matters of diet and improved housing conditions were also measures by which progress might be made, and to the Irish crusade against consumption, led by Lady Aberdeen, the president paid a tribute which was warmly endorsed by the conference.

In the section dealing with preventive medicine, Sir T. L. Brunton was to deliver an address, but he was detained by illness, and Professor Letts read it for him. He reviewed the progress made, and said plague, leprosy, and typhus had been practically banished, but another "horrid disease," smallpox, he feared was "only dormant," and if the proportion of unvaccinated persons in a community became high an epidemic might break out. He pointed out that the law of health is that an unprotected person coming within range of infection will probably take it; but a vaccinated one, or, better, a revaccinated one, is immune. He hoped consumption in a few years would become as rare as leprosy. He had observed a connection between tuberculosis and insanity, and to find

out how to abolish one and not increase the other the nature of that connection must be discovered. Of late years fresh air had been regarded as a panacea for every disease, and the zeal of nurses had thrown open windows without care of cold draughts, the result being sometimes pneumonia and death. Even in phthisis it was desirable not to fall from the frying pan into the fire. Before building sanatoria all over the country, it should be asked whether the money might not be better spent. He thought more could be done for the health of the country by health visitors attached to hospitals and dispensaries, and in country districts under the medical officers of health.

The Lord Mayor of Belfast presided over a meeting of municipal representatives of sanitation, Sir William Byers over the section on the hygiene of childhood, at which Dr. Lindsay advocated the appointment of a minister of public health, and Lord Aberdeen spoke of the low infantile mortality in rural Ireland, for which he asserted Ireland might well be proud of her motherhood.

Yesterday at this congress the "State endowment of motherhood" was advocated by Dr. Eric Pritchard, who held that this was not so Utopian or extravagant as it might seem to some at first sight, for it was not easy to find any fundamental distinction between organized endowment of motherhood by the State and individual efforts for mother and child, such as lying-in institutions, nurseries, crêches, free meals, etc.

At the same meeting Dr. J. McCaw read a paper on measles in relation to child mortality and advocated notification. He was amazed that parents looked upon measles as trivial, as it killed more children than all other eruptive fevers combined.

A conference of medical officers was held at the same time, presided over by Sir C. Cameron. At this also compulsory notification was urged by Dr. Young, M. O. H. for Cheshire.

At the meeting of the Cancer Research Fund, briefly recorded last week, Dr. Bashford"s report showed that many disquieting statements were not correct. Parts of the body where increase appears must be considered in relation to other parts. Transference from the secondary to primary sites is illustrated by the relation revealed between cancer of liver, gall bladder, and alimentary tract. Increase in the breast in women and the tongue in man requires further study. The curve of incidence may differ for different organs. Progressive increase up to highest age-periods is characteristic of the face, lip, mouth, bladder, urethra, and breast only. Other organs show diminution in the highest age periods, but it is not determined how far this may be due to other causes of death being assigned in internal cancer of the aged. Variation in accordance with changes of certain customs must be admitted, especially such as cause local irritation.

But irritation as a causative factor is only to be admitted for certain forms in particular regions. Different animals and different tissues in them may have special irritants which should be studied. In man we must study this statistically. As to heredity Dr. Bashford warned against needless alarm, or the awakening of pessimistic anticipations of the outlook on future efforts to cope with the disease. It was impossible to explain the liability to transmission, but certainly it did not consist in the inheritance of a soil more suitable for the growth of cancer in general. It was not inheritance in that way, as shown by the fact that implantation in mice of a cancerous stock is not more successful than in other mice. Further, inheritance was only one factor, for in mice of the laboratory other chronic changes in the mammæ are frequent.

Sir Wm. Church, in moving the report, remarked that it was certain every tumor was genetically related to the animal in which it arose. The genesis and growth of cancer must be separately investigated. Variations in cultivated growths suggested similar variations in natural conditions and gave evidence that the cancer cell was a modification of the normal cell. Many experiments had been made in continuance of the work done on immunity but had given no evidence of power to produce it. Other investigators had described methods of obtaining immunity by sera and vaccines and some had been tried in this laboratory and as yet without success.

Sir H. Morris gave a warning as to the expenditure and said other bodies had rendered assistance to the Imperial Fund. He was glad to say the Walker prize for the best original work done during the past five years in any country in advancing the knowledge of cancer had been awarded to Dr. Bashford.

Mr. Lloyd George has received a deputation representing the various bodies concerned in the support of hospitals. Sir. A. Haworth, introducing the deputation, said it represented twenty hospitals which they felt would be injured by the Insurance Bill. Sir W. Corbett said at his hospital over £4,000 came yearly from the working classes' penny collections. Before the bill was proposed the collectors of Manchester Infirmary brought in about £18 per week. Since the bill was introduced the amount had sunk to £7. Mr. Holland said of the 222,000 outpatients of the London Hospital one-third would be affected. The Chancellor put off the deputation, as he did former ones, with statements which had little connection with the representations—such as that he had confidence in the common sense of his countrymen, doctors had often complained that hospitals injured them, he would like to know what would become of the millions from the Treasury, for he had not heard any one confess to getting some of it. He conceded the case of sick nurses on condition that the hospital paid their wages during sickness and provided medical aid. He has since placed on the paper a notice of the amendment he proposes to effect this.

The sixty-fifth annual report of the Commissioners in Lunacy was issued yesterday. It appears that in January this year there were 2,604 more certified cases than in the same month last year.

Dr. H. T. Bulstrode, Medical Inspector to the Local Government Board, has died suddenly. He visited Aldershot on official business on the 20th inst. and the next morning was found dead in his bed. The many reports he had to issue were invariably as able as the questions considered were important. That on pneumonic plague of last year is the most recent. He was President of the Epidemiological Section of the R. S. M. and Chairman of the Board of Hygiene in London University and held other honorary appointments.

Dr. John Beddoe, F.R.S., the distinguished anthropologist, died on the 19th inst. æt. 84. He served on the civil hospital staff in the Crimea. His "Races of Britain" will be known to you as an important work, and no doubt also some of his other works. He was M.D. Edin., 1853, F.R.C.P., 1873 and in 1891 Edinburgh made him LL.D.

Progress of Medical Science.

Boston Medical and Surgical Journal.

August 3, 1911.

Observations Regarding the Relative Frequency of the Different Diseases Prevalent in Boston and Its Vicinity. R. C. Cabot.
Prostatic Concretions and Calculi. F. B. Lund.
Remarks on the Classification of Diabetes. F. W. White.
The Result of Tonsillectomy. O. A. Lothrop.
A Report of Two Cases of Pneumococcus Meningitis. J. R. Wiseman.
Abdominal Pain from Antero-Posterior Curvature. M. H. Rogers.
Anterior Dislocation of the Hip. G. H. Monks.

Relative Frequency of Diseases in Boston and Its Vicinity.—R. C. Cabot concludes that in a hospital population of about 8,000 males over eighteen years old, all of whom were carefully questioned, 35 per cent. gave a history of gonorrhea, and 11 per cent. a history of syphilis, at some period of their lives. These histories and the resulting percentages are believed to represent approximately the truth about an average sample of Boston's adult males. The Americans, Irish, English, and Italians have about the same amount of both these venereal diseases. The Jews have about one-third as much syphilis and one-half as much gonorrhea as the other races. The history of an excessive consumption of alcohol was obtained in 32 per cent. of 8,356 patients questioned. The Jews show the smallest amount of alcoholism,—the "Americans" the highest percentage of total abstainers. About one-fourth of all the 7,186 adult males who were questioned gave a history of using an excess of tobacco. The Italians appear to use rather less than the other races but the racial differences are less marked as regards tobacco than as regards alcohol and venereal disease. The statistics relating to alcohol and tobacco are regarded as an indication of the habits of a fair sample of Boston's population. Acute nephritis, chlorosis, and sunstroke would appear (on the face of the records) to be decreasing. The decrease is shown by analysis, however, to be in all probability fallacious. Pyogenic infections are more than twice as numerous as any other known infection (tuberculosis included). Three Boston hospitals treated 6,892 cases of syphilis and only 4,819 of gonorrhea in the years 1903-1910 inclusive.

Prostatic Concretions and Calculi.—T. B. Lund on the basis of three cases which he reports states that prostatic concretions are frequently associated with infiltration of the prostate, which makes a small, fibrous organ feel larger than it really is by rectal examination and may lead to the suspicion of malignant disease. In removing large calculi from the prostate one should remember that they are surrounded by pus and inflammatory tissue and that special care must be taken to avoid injury to the rectum, the wall of which may be just right to perforate at the time of the operation.

The Classification of Diabetes.—F. W. White states that the "carbohydrate balance" in grams is one of the simplest and clearest guides in classifying diabetes, in comparing different cases, and in comparing stages in the progress of a single case. The "carbohydrate balance" is the difference between the amount of carbohydrate eaten and that lost in the urine; positive, if more is eaten than lost; negative, if more is lost than eaten. For example, if a patient eats 60 grams of carbohydrate and passes 30 in the urine, he has a positive balance of 30 grams; if he eats no carbohydrate and passes 30 grams, he has a negative balance of 30 grams.

The Results of Tonsillectomy.—O. A. Lothrop presents an analysis of sixty-one cases of enlarged tonsils operated upon by enucleation. In 91 per cent. there resulted decided improvement in breathing; in only 16 per cent. did the patient afterwards experience an attack of sore throat; in 10 per cent. dryness of the throat was afterwards complained of by the patient, and in 10 per cent. there was some injury to the upper part of one or both posterior pillars, but no impairment of voice thereby. Of 1,700 tonsillectomies performed in three years there were no fatalities from hemorrhage. The last was of any consequence in only two cases.

Pneumococcus Meningitis.—J. R. Wiseman reports two cases of this condition. He notes that the course of the disease is usually more rapid than that of any other form of meningitis, while treatment is of little avail.

Abdominal Pain from Spinal Curvatures.—M. H. Rogers reports two cases which illustrate the influence of antero-posterior curvature of the spine in the causation of abdominal pain.

Anterior Dislocation of the Hip.—G. H. Monks reports a case of this condition.

New York Medical Journal.

August 5, 1911.

Relation of the Tonsil Operation to the Soft Palate and Voice. G. Hudson-Makuen.
Reflex Affections of the Tonsil. R. B. Faulkner.
The Renal Function in Surgery with Particular Reference to Kidney Surgery. L. E. Schmidt.
Some Cases of Optic Neuritis, Benefited by Operation upon the Spenoidal Sinus and Posterior Ethmoidal Cells. H. Smith.
Diagnosis of Brain Tumors. J. E. Burns.
The Diagnosis of Incipient Pulmonary Tuberculosis. B. S. Horowicz.
Use and Abuse of Coffee. R. E. Coughlin.
Hysteria in a Girl of Seven Years. G. H. Nofer.

Tonsil, Soft Palate, and Voice.—G. Hudson-Makuen states that normal tonsils are in no way prejudicial to phonation, but, on the contrary, they may be helpful both in directing the action of the neighboring muscles and in modifying the resonance of the oral cavity. Hypertrophied tonsils, on the other hand, are distinctly prejudicial to phonation, because they interfere with the action of the muscles, they deflect the vibrating column of breath, and impair the normal resonance of the oral cavity. Degenerate tonsils are prejudicial to phonation primarily because they are prejudicial to health, and, secondly, because they interfere with the action of important vocal organs, by setting up a catarrhal condition in the oropharynx, which results in hypertrophy of the faucial pillars, the plica, and the capsule, and in numerous inflammatory adhesions binding all these parts together in one conglomerate mass. The tonsil that requires removal is always prejudicial to vocal excellence; but to do a little good in an operation one should take heed lest he do a great harm. To do a satisfactory tonsil operation is often quite as difficult as to do any other operation in the region of the throat, nose, or ear, and it requires quite as much skill The tonsil operation, therefore, is the one of all others that should be done by the specialist, and it should be done with great care and deliberation. The popular belief that the removal of tonsils is injurious to the voice is well founded, and it is due in large measure to careless or bad surgery.

Reflex Affections of the Tonsil.—R. B. Faulkner states that the faucial tonsils may provoke reflex neuroses in other organs, but they should be awarded much less of the credit which they now receive for provoking reflex diseases; and they should receive undoubtedly some credit which they do not now receive for being affected by diseases reflected from a distant part.

Functional Tests in Renal Surgery.—L. E. Schmidt discusses the value of the various functional tests in the early diagnosis of various surgical diseases of the kidney.

Optic Neuritis.—H. Smith reports three cases of optic neuritis benefited by operation upon the sphenoidal sinus and posterior ethmoidal cells.

Diagnosis of Brain Tumors.—J. E. Burns discusses this subject in connection with the report of a case of brain cyst.

Diagnosis of Tuberculosis.—B. S. Horowicz deals with the early diagnosis of pulmonary tuberculosis.

Use and Abuse of Coffee.—R. E. Coughlin concludes

that coffee may be used in moderation except by nervous patients and by children. The therapeutic value of coffee should not be lost sight of, particularly in shock and vomiting after operations or hemorrhage, when it is best given in dram doses, without milk or sugar, every fifteen minutes. The relation of coffee-drinking to functional heart cases is alluded to. In patients with arterial changes the use of coffee should be prohibited.

Hysteria.—G. H. Nofer reports a case of this condition in a girl of seven years.

Journal of the American Medical Association.

August 5, 1911.

Some American Medical Botanists. H. A. Kelly.
End-Results in Gall-Bladder Surgery. E. M. Stanton.
Factors Hostile to Success in Gall-Bladder Surgery. B. B. Davis.
Mercuric-Chloride Poisoning Associated with Secondary Hemorrhage from Vaginal Douche Given Seven Days After Delivery. J. M. Mabbott.
Goiter Among the Insane. A Study Based on an Examination of 4,184 Patients. A. Werelius and C. G. Rydin.
Tetany in Adults. H. C. Moffit.
A Review of 542 Cases of Prostatectomy. E. S. Judd.
Shortening of an Ocular Muscle by Tucking. H. W. Woodruff.
The Ocular Conjugate and Fusion Brain Centers. Only Two Axes of Ocular Rotations and Only Two Planes of Reference. G. C. Savage.
Changes Occurring in the Refraction of Corrected Ametropic Eyes. W. Zentmayer.
The Effect of the Ingestion of Alcohol on the Result of the Complement Fixation Test in Syphilis. A Preliminary Note. C. F. Craig and H. J. Nichols.
An Experimental Demonstration of the Virus of Measles in the Mixed Buccal and Nasal Secretions. J. Goldberger and J. F. Anderson.
Variola and Vaccination. H. W. Knight.
The Therapeutic Value of Sodium Cacodylate. S. L. Dawes.
A Case of Sporotrichosis. W. B. Steward.

Medical Botanists.—H. A. Kelly presents an account of many of the medical botanists of the early days in this country.

Gall-Bladder Surgery.—By E. M. Stanton. See MEDICAL RECORD, July 8, page 99.

Factors Hostile to Success in Gall-Bladder Surgery.—By B. B. Davis. See MEDICAL RECORD, July 8, page 99.

Mercuric Chloride Poisoning.—J. M. Mabbott reports a fatal case of this condition resulting from the administration to a patient seven days after delivery of a vaginal douche of two quarts of a 1 to 4,000 solution of bichloride of mercury.

Goiter Among the Insane.—A. Werelius and C. G. Rydin state that patients with dementia precox present the greatest percentage of goiters and also the greatest number of insane. As the catatonic form of dementia precox has been considered due to thyroid disturbance, one should look for the greatest number of goiters in this type. In fact, however, the authors found that hebephrenic forms had 93 per cent. of the goiters. Next to dementia precox came involutional melancholia and, next to it, the paranoiac state.

Tetany in Adults.—H. C. Moffitt reports six cases of this condition.

Prostatectomy.—E. S. Judd presents a review of 542 cases of prostatectomy performed at the St. Mary's Hospital. As a rule, the Rochester surgeons do not consider it advisable, if the symptoms are slight and only two or three ounces of residual urine are found, to operate. Within the last five years they have used the cystoscope to great advantage in 95 per cent. of the cases in determining the presence of stone and selecting the type of operation. The perineal operation is the one ordinarily chosen, but the cystoscope may show conditions calling for a suprapubic operation. The mortality is not especially affected by the type of procedure.

Shortening of an Ocular Muscle by Tucking.—H. W. Woodruff describes a tucking operation that he has devised, asserting that it is safe and effective, devoid of permanent noticeable deformity, and easy to perform under local anesthesia in any one over twelve years of age.

Ocular Conjugate and Fusion Brain Centers.—G. C. Savage presents his views as to the brain centers of the ocular muscles as modified by recent studies.

Changes in Refraction.—W. Zentmayer presents the following conclusions: Ametropia tends to change in degree even when the error is carefully and repeatedly corrected and the glasses are worn constantly. Almost every conceivable change may occur. The tendency is in the direction of an increase in the static refraction with an increase in the astigmatism. In compound hyperopic astigmatism the most frequent change is a decrease of the hyperopia with an increase in the astigmatism. In compound myopic astigmatism the most frequent change is an increase in the myopia with an increase in the astigmatism. There is no greater tendency for compound myopic astigmatism to change than there is for compound hyperopic astigmatism to change. Simple myopia (rare) is never a stable condition; it almost invariably increases in amount. Simple myopic astigmatism is the least, and simple hyperopic astigmatism the next least stable of astigmatic errors. Simple hyperopia sometimes remains constant, but is subject to undergo both an increase and a decrease. In compound astigmatism the static refraction may change without a change taking place in the astigmatism and *vice versa*. In mixed astigmatism the myopic meridian most frequently changes and shows an increase, although an increase of the hyperopic meridian with a decrease in the myopic meridian in the same eye probably occurs with the most frequency. Astigmatism is often acquired in hyperopic eyes, and as frequently in the third as in the fifth decade. Before the forty-fifth year the axis of the acquired astigmatism is as frequently with as against the rule, but after the forty-fifth year it is against the rule in 85 per cent. of patients. The total astigmatism may be lost, probably in any decade, but more commonly in the later decades, and at this time probably represents a transitional stage to an astigmatism against the rule. A change in the axis of astigmatism occurs in about 50 per cent. of the cases. The changes in the refraction occur with most frequency in the period of from twenty to forty-five years. After the forty-fifth year changes in the amount of hyperopia in compound hyperopic astigmatism occur much more frequently than do similar changes in compound myopic astigmatism. There is no greater tendency toward an increase in hyperopia between the fifty-fifth and sixty-fifth years than between the forty-fifth and fifty-fifth years.

Alcohol and the Wassermann Reaction.—C. F. Craig and H. J. Nichols state that no dependence can be placed on a negative Wassermann reaction in individuals who have, within twenty-four hours of the collection of blood, ingested considerable amounts of alcohol, while in some instances the drug may render the reaction negative for as long as three days.

Experimental Measles.—J. Goldberger and J. F. Anderson state that their experiments on monkeys clearly indicate that the mixed buccal and nasal secretions are certainly infective at the time of the first appearance of the eruption and again forty-eight hours later, and that the infective virus was susceptible of transfer from monkey to monkey by blood inoculation.

Vaccination.—H. W. Knight reports a series of cases illustrating the protective value of vaccination against variola.

Sodium Cacodylate.—S. L. Dawes reports the beneficial effects of this drug in the anemias of long standing, in pernicious anemia, in the neuroses accompanying anemia, in neuralgias and gastralgias, and in certain types of malaria. He believes that the drug is of little or no value in syphilis.

Sporotrichosis.—W. B. Steward reports a case of this condition.

The Lancet.

July 29, 1911.

The Present Position of the Medical Profession. K. Saundby.
Mistakes. B. Bramwell.
Address in Surgery. J. Lloyd.
Notes on the Extraction of Cataract. H. I. Eason.

The Appendix, Its Relation to the Causation and Surgical Treatment of Affections of the Adnexa. H. Macnaughton Jones.
Rubella or Measles? D. W. C. Hood.
A Successful Case of Ovariotomy and Cesarean Section Performed on the Same Subject at One Sitting. H. B. Mylvaganam.
A Fatal Case of Acute Mercurial Poisoning. A. W. Burton.

The Present Position of the Medical Profession.—By R. Saundby. See MEDICAL RECORD, August 12, page 347.

Mistakes.—By B. Bramwell. See page 380.

Address in Surgery.—By J. Lloyd. See page 381.

The Extraction of Cataract.—H. L. Eason believes that no single operation can be adopted for all cases as a matter of routine. In selected cases a simple extraction without iridectomy is the best. In cases where there is likely to be much soft material removal of the anterior lens capsule with forceps will give good results, and in skilled hands the older methods of extraction of cataract are quite as efficient as, and probably safer than, extraction in the capsule.

The Appendix and the Adnexa.—H. Macnaughton Jones states that the appendix should be examined in every case of celiotomy for adnexal disease. This applies equally to the left adnexa as to the right. When the abdomen is opened for a grave appendical trouble the adnexa should be examined. The appendix should be removed in every instance where any abnormality or disease is found or if it be of unusual length, also if from the character of the operation there is a probability of further adhesions forming which may involve the appendix. The severity of the operation, however, will always have to be taken into account, and the influence its prolongation may have in lessening the chances of the patient's recovery.

Rubella or Measles?—D. W. C. Hood states that under the genus measles he would class rubella, coming before one, as it undoubtedly does, under many forms, and until the bacteriologist supplies more definite information he will continue to believe that the balance of clinical evidence is in favor of German measles being only a variety of the common type.

Ovariotomy and Cesarean Section.—H. B. Mylvaganam reports the case of a patient in whom both of these operations were successfully performed at the same sitting.

Acute Mercurial Poisoning.—A. W. Burton reports a fatal case of this condition, following the ingestion of 744 grains of corrosive sublimate in the form of soluble tablets.

British Medical Journal.

July 29, 1911.

The Present Position of the Medical Profession. R. Saundby.
Mistakes. B. Bramwell.
Address in Surgery. J. Lloyd.

The Present Position of the Medical Profession.—By R. Saundby. See MEDICAL RECORD, August 12, page 347.

Mistakes.—By B. Bramwell. See page 380.

Address in Surgery.—By J. Lloyd. See page 381.

Berliner klinische Wochenschrift.

July 17 and 24, 1911.

Differential Diagnosis Between Benign and Malignant Hourglass Stomach.—Kretschmer reduces this entire subject to two postulates: 1. In the malign form there arises an extended defect which is horizontal-vertical in the shadow; while in the benign this defect is a more or less horizontal construction. 11. It is more essential for the benign form that the upper sac empties into the lower; while in the malignant form both pouches are filled either in the same degree, or at first the pouch having the deepest level fills at that point.

Pulmonary Embolism.—Ritzmann writes at length on this subject with especial reference to Trendelenburg's operation. In regard to the frequency of the accident 55 cases were found in 6,000 autopsies. It is understood that the emboli were of the main branch. All patients were over 30 years of age, and most were between 50 and 70. There were as many females as males. The causes were various—vitium cordis, myodegeneration, arteriosclerosis, anemia and cachexia, conditions causing phlebitis, injuries, and operations. No affection stood out in preponderance as a cause, but nearly all the affections were related to vascular disease of some sort. The author has been able to diagnosticate 6 cases during life. In 29 other cases seen before death embolus was not recognized. Death was sudden, and in some cases it followed operation. At other times the sudden death would occur in advanced or terminal stages of diseases of the cardiovascular system. We may make two groups, viz., the diagnosticated and undiagnosticated. In all of the former death soon followed the diagnosis. In but one would there have been a chance for operation. The history of the undiagnosticated cases shows that in many of them, had a diagnosis been made, there would have been room for operation. Cases sometimes occur, therefore, in which, while the general condition is fairly good, the embolic formation cannot be overlooked; yet it is in these very cases that death rapidly ensues. Even with heart remedies death may result in twenty minutes. Most patients tend to survive for from half an hour to 48 hours and these cases tend to present diagnostic insuperabilities. In the combined material the chances for a successful operation are almost *nil*. Despite the slight prospect of obtaining operative cures of this affection surgeons should not forget that at least three have reported successes and the possibility should never be forgotten.

The Duodenal Tube.—Gross of New York claims that he suggested this instrument in 1894—a thin gastric tube which if slightly modified could be made to serve as a duodenal tube. His actual instrument was not described until 1910. By its use he has studied extensively hyperchlorhydria in reference to compensatory or other secondary alterations in duodenal secretions. Trypsin was evidently killed as long as the gastric chyme entered the duodenum in large amounts. As the tube has an air bulb attached it is possible to pump out much of the chyme. Simple insufflation through the instrument is sufficient to excite the duodenal secretion. A solution of magnesium sulphate (4:150) thrown into the duodenum causes prompt defecation. The author has obtained the normal duodenal secretion of thirty subjects, obtaining an average of an ounce from each. It was clear, strongly alkaline, and contained the three enzymes in every case.

Cultivation of Tissues Outside the Organism.—Carrel has recently demonstrated this subject at Professor Bier's clinic, Berlin. He was led to investigate the latter some years ago through a study of cicatrization *in situ*. In 1907 Harrison had shown that the central nervous system of a frog embryo will put forth nerve fibers when immersed in coagulable lymph. Burrows amplified this class of experiment and secured results of the same sort from a variety of tissues. The culture of tissue in general *in vitro* has now become a common practice and this cultivation has opened a new department in biology. Both epithelium and connective tissue proliferate and karyokinesis occurs freely. The life of cultures can be extended through several generations. For culture material natural blood plasma, ovserum, and Ringer's solution are used. It is immaterial whether the plasma comes from a homologous or heterologous source as far as the individual is concerned, but the latter must represent the same species as that from which the cells proceed. The concentration of the culture fluids was tested and this was found to have much effect on the rapidity of growth, so that the plasma component *per se* is probably much less important than the molecular concentration of the culture fluid, and may come to be shown as unessential. The immediate practical application of the subject lies first in the direction of repair of wounds.

Elimination of Salvarsan. — Frenkel-Heiden and Navassart write provisionally on this subject without seemingly increasing our knowledge greatly. The elimination by the urine is first considered. When the drug is injected beneath the skin or into the muscles over a prolonged period it requires months for its full elimination. This means that arsenic is indefinitely stored in the tissues, and it appears that not all of this stored arsenic is eliminated. Thus while the kidney stops excreting it at a given period—say three weeks—the drug remains for months in the kidney, and its elimination is so minimal that even the most delicate tests fail to show it in the urine. When given by the intravenous method the drug is known to be excreted somewhat more promptly. Of much interest is the fact that at least as much arsenic escapes by the intestine as by the kidney. In some cases elimination by the intestine is much greater in proportion. But little is known of salvarsan in this connection, but it is commonly known that arsenic, however administered, is expelled in part by the feces.

Urogenital Apparatus in Scleroderma.—It is now known, as Ehrenberg states, that scleroderma is a general disease and moreover one which is able to attack any tissue or organ in the body. The name is, of course, a misnomer. In addition to all the skeletal and locomotor apparatus it may attack the viscera and mucosæ, the latter more infrequently than any other set of tissues. Still the skin bears the chief brunt of the disease. In a severe case cited by the author the mucosa of the mouth and throat was attacked as well as the vulva (the lesions resembling kraurosis vulvæ), the vagina, the vesical mucosa, and one ureter. The bladder and vagina were atrophied and retracted. The etiology here as elsewhere was quite obscure, and treatment was of no avail. The author once saw a case develop in pregnancy in a goitrous woman, but in the present patient the thyroid was normal. Since kraurosis vulvæ is also known as a unique affection the thought might impose itself that it is a local type of scleroderma. But despite the superficial resemblance the histological picture is quite different.

Tracheopathica Osteoplastica.—Haga of Tokio reports the forty-third recorded case of this affection, which represents a bony and cartilaginous deposit in the tracheal mucosa, his article constituting a complete monograph on the subject. The lesion is to be conceived as a neoplasm having no relation whatever to the normal tracheal rings. This is certain at least for the author's and other cases carefully studied. Virchow claimed that the normal cartilage constituted a mother structure from which the tumor proliferated and then separated.

Münchener medizinische Wochenschrift.

July 25, 1911.

Thyreoses.—Krecke attempts a classification of these affections in a serial article. He divides them into (*a*) thyreoses with preponderant cardiac disturbance, comprising the so-called goiter heart; (*b*) those with predominance of nerve disturbance; (*c*) those with marked involvement of nutrition, and finally the so-called iodine Graves' disease and conditions which resemble it. The heart thyreoses are not entirely synonymous with what we call Graves' disease. Rather is the goiter heart a syndrome *per se*. We get Graves' disease with normal heart. There is also a mechanical type of goiter heart which has nothing to do with the ordinary or toxic type. There may also be a factitious association of a thyreosis and a cardiac disturbance. In true thyreosis with cardiac expression there is no difficulty in diagnosis. We invariably find tachycardia, with or without secondary hypertrophy. A particular clinical variety appears at puberty, chiefly in girls. These often suffer from pseudo-chlorosis. The involvement of other organs need not be touched on here. It is often very difficult to differentiate the toxic thyroid heart from an organic lesion.

Prognosis of Psychoneuroses.—Römer first mentions essential or acquired neurasthenia, a condition free from any degenerative substratum which is also known as the constitutional form. Kräpelin and Cramer have dwelt particularly on the former. The two forms differ notably, but separation is by no means always easy. The acquired form is seldom seen in sanatoria, for doubtless a healthy subject is inured to bodily and mental strain; so that an unusual causal nexus is required to produce it, or perhaps a persistency in a given causal factor. Thus incessant work without sleep or recreation should surely in time produce a persistent state of exhaustion, which demands an adequate period of rest for recovery. In a case cited neurasthenia was produced in a robust man by protracted labor complicated with illness. The symptoms were headache, vertigo, insomnia, anorexia (with loss of weight), fatigue, inability to work, depression. He readily recovered his full working capacity after a complete rest. The author finds notes of but twelve such cases in his records. Recovery occurred in from one to four months. Associated with degenerative neurasthenia, the three forming a group, are cyclothymia and hysteria. Here the exhaustive state is habitual. Rapid exhaustibility is the rule here, which forms a great handicap in the struggle for existence. Every task is an effort. Peculiarities of temper are early in evidence—depression, anxiety, irritability. In some cases the affection is restricted largely to malaise, and neither hysteria, neurasthenia, nor cyclothymia is in evidence. Cyclothymia or periodical depression often seems to depend on the recurrence of a bodily ailment, as a dyspepsia. All these types of disease shade into one another, so that we see hybrids of hysteria and neurasthenia, neurasthenia and cyclothymia, etc. In any of these affections psychic symptoms may be prominent. Degenerative neurasthenia is very common, and the author has notes of 134 cases, as against 101 of hysteria and 65 of cyclothymia. Twenty-eight cases are put down as simple error of disposition. The recoveries are given as follows: Degenerative neurasthenia, 72.5; cyclothymia, 77.5; hysteria, 71.5—these percentages agreeing fairly well. The proportion of recoveries in disorder of disposition was considerably less—not much over one-half. Many of these patients were under treatment for many years. The relatively large proportion of recoveries is ascribed largely to psychotherapy.

Conservative Treatment of Furuncle.—Keppler of Professor Bier's clinic devotes much space to this subject. Only the worst class of cases is considered—furuncles of the upper lip such as threaten thrombophlebitis. In some of the cases the latter termination seemed to be impending. It is known that treatment by incisions often seems to precipitate a fatal ending. The treatment is precisely that also advocated for malignant pustule—both types of lesion resembling each other so closely as to merit a comon designation "anthrax," and in their nature these are not so entirely unrelated as has been assumed. As the long article is devoted wholly to answering Wrede's criticisms the technique is not given in detail, but we assume it to be that commonly taught as conservative management in general.

Local and General Changes Associated with Death from Burning.—Raysky notes that in this condition the toxins produced by the burned tissues are the cause of death, acting directly on the nerve centers. The changes in the heart, liver, and kidneys are accompanying phenomena, which have no proportionate relationship to the severity of the burn or to its fatal outcome.—*Virchow's Archives.*

Insurance Medicine.

Some Affections of the Liver and Bile Ducts in Relation to Life Insurance.—W. J. Fenton, in this paper, deals chiefly with hepatic cirrhosis and cholelithiasis. The relation of hepatic cirrhosis to life insurance must be mainly concerned with that stage of the disease which precedes the formation of ascites, when the diagnosis is uncertain and the amount of damage which has taken place within the liver is difficult to estimate. Of course, ascites alone is sufficient cause for rejection. Hereditary factors are unimportant. The part played by alcohol in the production of cirrhosis is somewhat uncertain. It is a powerful factor but not by any means an essential one. The constant toper is more likely to contract cirrhosis than the periodical drinker. An important feature is the frequent latency of cirrhosis. Dyspepsia is the earliest manifestation, but the most striking symptom is hematemesis, and years may elapse between this occurrence and the development of ascites. Melena may be also noticed at the same time as hematemesis, but it may occur independently and be due to causes acting in the intestine similar to those which produce hemorrhage of the stomach. A positive opinion cannot be given with regard to the significance of the occurrence of hematemesis or of the size of the liver as determined by palpation. When the applicant is young, the liver only slightly enlarged, and definite symptoms have not arisen, or perhaps slight coffee-ground hematemesis has occurred some years before, and there is assurance of improved habits, a short endowment with an addition might be considered, but when there is clear and definite evidence of cirrhotic degeneration, or when copious hematemesis has taken place, insurance upon any practicable terms is not possible.

In the case of cholelithiasis, in dealing with an applicant for insurance in whose past history there occurs an attack of biliary colic, there is certain information which it is essential to have, of which the more important aspects may be briefly summarized as follows: (1) How many attacks have occurred and how long were the intervals between them? (2) Was the attack followed by jaundice? If not, it should be regarded as of a more uncertain nature from the point of view under consideration than where jaundice has occurred, from the inference that the stone may still be in the gall-bladder or cystic duct. (3) Does careful palpation reveal any enlargement of liver or gall-bladder? (4) Is there reasonable ground to suppose that the applicant is able and willing to adopt a mode of life in accordance with the necessities of the case? Having obtained information upon these points the only conditions upon which an application for insurance could be considered would be a single attack of colic with or without jaundice, uncomplicated, there having been no recurrence after two to three years, in an applicant who otherwise would be acceptable at ordinary rates, with the reservation that, when jaundice has not occurred at a normal interval after the painful seizure, very careful examination of the hepatic region would be needful.—*Transactions of the Life Assurance Medical Officers' Association*, London, 1910.

Syphilis Versus Accident and Life Insurance.—S. G. Burnett notes the frequency of accident and death claims actually caused by syphilis, but attributed to other conditions. Syphilis is a widespread disease. It attacks the nervous system in one case in every ten of infection. The irreparable damage thus done to the nervous system impairs function and subjects the patient to various accidents in getting about and in performing ordinary duties, so that there is a rich and masked cause of assumed accidents and fatal organic tissue changes. A patient may intentionally or unintentionally describe a supposed accident so plausibly as to cause the unsuspecting physician to attribute a continued organic condition to the inferred accident and to affirm his claim for insurance as being just, or, be unable to disprove it. Add to true syphilis of the nervous system the parasyphilitic degenerations of the cord, and the field for acidental assumptions is great. And last, but not least, the syphilitic and parasyphilitic diseases of the brain which cause paralysis, insanity, and death, are a heavy toll in death policies, for the real cause of death is seldom if ever written in a certificate. Tuberculosis is of minor importance in losses compared with syphilis. The author illustrates his statements by citing a number of cases occurring in his practice. One of these was an individual who developed tabetic osteoarthropathy (Charcot's disease) of the right knee, following a slight blow received from a swinging door. Amputation of the leg above the knee was performed. This man carried large accident insurance and demanded it. Thirteen years after he had contracted syphilis a slight, apparently causeless enlargement of the right knee occurred. He then had the cardinal symptoms of Charcot's disease. In the meantime he had negotiated his policy and was accepted as a good risk because of the faulty examination or the faulty requirements for accuracy in examination. The policy was canceled. A second case reported is that of an individual who, ten years after syphilitic infection, developed tabes, and in the course of his work sustained a fracture of the femur. The deep reflexes and pain sense were absent, while tactile and muscle senses were defective. The friability of the diseased bone made the shaft unable to withstand the normal contractile power of the muscles in supporting the body weight. The patient made a good recovery from the fracture, but no payment was made on the policy because the fracture resulted from a disease voluntarily contracted prior to the life of the policy, and was present and not made known at the time of applying for and receiving the policy. A third case reported is that of an individual with syphilis of the spinal cord, who, as the result of injuries received from falling down stairs, was receiving for some time a payment of $50 per week on his accident policy. Upon discovery of the syphilitic condition payment was stopped and the policy canceled. Another case reported is that of an individual with syphilitic paraplegia, who sustained complete disability following an accident, and whose policy was paid in full. An instance is reported of a verdict of $35,000 being given the victim of an accident, and $10,000 accident and $10,000 old line insurance, for the victim died later from the progression of cord syphilis. The author details reports of cases of nervous diseases treated in his sanatorium during a period of six years, a total of 1,741 cases. Of these, 11.3 per cent. were caused by syphilis. The total amount of death claims paid was $104,000, and the total accident claims paid to avoid litigation was $4,625. The total average amount of each claim was $5,200. All the deaths were due to brain syphilis or paresis. There were sent to the asylum to die 26 cases of paresis, of which 21 carried life policies to the extent of a total of $100,000. There were 9 accident claims canceled or allowed to lapse. Of 89 cases of brain syphilis discharged, most of the patients seemed well, but carelessness of the after-care allowed most of them to lapse, the progressive nature of the disease making life uncertain and usually short. Of these 89 cases 60 carried policies to the total of $26,000. There were 24 accident policies canceled or allowed to lapse. A total insurance of $45,000 was carried by 10 of 23 cases of cerebrospinal syphilis; 11 cases carried accident policies, and weekly payments had been made to four of these. Six out of 12 cases of spinal syphilis carried a total life insurance of $31,000. Of 39 cases of tabes 15 carried a total life insurance of $69,000, 10 had accident policies, and 5 had drawn weekly payments for a time. With few exceptions the policies had

been negotiated after contracting the infection — in many of the cases being taken as a means of protecting the wives. It is noted that syphilitic and parasyphilitic nervous diseases occur at the ages of 20 to 40 years, usually at the ages of 25 to 35 years, but some few cases are seen prior to 20 and after 40 years of age. The author's statistics show two prominent age epochs of primary infection: first, 17 to 25 years of age; second, a later period, among married men, when the wives are in the climacteric age and thereafter. For 25 years the author has closely observed the financial status of "syphilis versus accident and life insurance." To present the facts obtained he has carefully itemized the essential features of each case as seen in his sanatorium work during the past six years. In that time $104,000 was paid in death claims and $4,625 in accident claims to avoid litigation; and he has rejuvenated and dropped temporarily 151 men back into the business sea there to shortly offer in solace, for tears long run dry, a policy compensation of $395,000, when they died — and 26 terminal paretics passed the asylum gates to await the collection toll of an even $100,000. Approximately the figures represent a half million dollar penalty for those who avoid the white plague in playing the game of life's expectancy, but who blindly incorporate the glimmer of the red. The question arises what would the penalty be if every physician in the United States could give accurate statistics for six years' work?—*The Medical Fortnightly*, June 10, 1911.

Traumatic Neurasthenia—An Outline.—G. Grahamsley Howitt defines neurasthenia as a functional disturbance of the nervous system characterized by weakness and irritability, lying between hysteria on the one hand and insanity on the other, occasionally overlapped by one or the other, far more frequently the former. Traumatic neurasthenia is that form of the disease which is associated with physical injury and shock, or with emotion and fright, most commonly with a combination of both. Symptoms are almost entirely subjective and principally referred to the nervous system. As the symptoms of neurasthenia are principally subjective, they lend themselves to malingering, although Howitt thinks malingering pure and simple is rare. What is common is for a patient to persist in the belief that he still has the symptoms with which he has become familiar, but which have really disappeared. The prognosis of traumatic neurasthenia is almost invariably good with regard to treatment. The abuse of the bromides is warned against. Too prolonged rest is not beneficial. As soon as possible some occupation, mental at any rate, should be found. Such patients are best treated away from home and sympathizing friends.—*Transactions of the Life Assurance Medical Officers' Association*, London, 1910.

Decreasing Death Rate Due to Certain "Causes of Death" Only.—Charles G. Reiter says that the object of this paper is to show that the decrease in the death rate is almost wholly confined to certain "causes of death," while an actual increase in the death rate has resulted from the diseases that attack principally older lives. The author has taken for the purpose of illustration the statistics of death, with the exception of those under one year of age, in New York City as shown by the annual report of the Board of Health for 1890, 1900, and 1905, and those among insured risks for the years 1891, 1901, and 1906. The New York City population table shows a total improvement in the mortality of 1905 over 1890 of 4,364 deaths per 1,000,000 living, and an improvement over 1900 of 1,540 per 1,000,000 living. An analysis of these figures, however, reveals the fact that this improvement is not contributed to uniformly by all diseases, but is accounted for by the improvement in the mortality caused principally by five groups, viz., miasmatic, malarial, diarrheal, tuberculous, and respiratory. In the diathetic, nervous, and circulatory diseases there were 4,016 deaths during 1905 for each 1,000,000 at risk as against 3,301 during 1890, an increase of 22 per cent. For the fifteen-year period from 1891 to 1906 the results upon insured industrial lives differ somewhat, inasmuch as those of only one group, developmental diseases, show an increase in the death rate; but even among these lives the decrease in the zymotic, tuberculous, and respiratory groups is most marked and shows 70 per cent. of the total decrease. For the five-year period from 1901 to 1906 the decrease in the death rate among insured industrial lives corresponds more closely to the death rate of New York City and is principally confined to miasmatic, diarrheal, and respiratory diseases. The tuberculous and diathetic groups show about the same death rate as in 1901. From the foregoing it would seem that we should not expect so rapid a decrease in the mortality rate in persons over one year of age in the future as in the past fifteen years, and the greatest decrease will probably be in the zymotic, constitutional, and respiratory groups of diseases, with the greatest increases among those affecting the nervous, digestive, circulatory, and urinary systems.—*Proceedings of the Twentieth Annual Meeting of the Association of Life Insurance Directors.*

Statistics of Suicide in the United States.—Frederick L. Hoffman states that the combined suicide rate of 100 American cities, which was 21.8 per 100,000 population in 1908 and 21 in 1909, fell to 19.7 in 1910. The rate for New York was 18.9. San Francisco has the highest suicide rate of any city in this country, the figures reaching a yearly average of 52 per 100,000 inhabitants for the period from 1900 to 1909, although in 1909 the rate fell to 42. Of six American cities in which suicide has been most frequent in the past ten years, five are Californian cities; these, in the order of their suicide rate, are San Francisco, San Diego, Sacramento, Los Angeles, and Oakland. Hoboken, with a suicide rate of 35, is third highest in the list of 100 cities. There was a general falling off in the number of suicides during 1910. Mr. Hoffman states that suicide is often caused by temporary mental irresponsibility, but it is also often the result of a suicide intent which has extended over a period of years. The increasing complexity of modern life favors mental and moral discontent, which is often assumed to be identical with mental irresponsibility. The more the underlying causes of suicides are considered the stronger becomes the conviction that many suicides are the result, not of a want of mental balance, but rather a deliberate conviction that continued existence would not be worth while. Perhaps no occupation emphasizes this conclusion more precisely than the frequency of suicide among bankers and brokers, where a long career of dissipation and fraud often makes suicide the only desirable alternative. Whatever may be said of suicide in the past, it is certainly relatively common among sane men and women to-day. The present decrease of suicides in American cities is only temporary. This is shown by the fact that, whereas in 1891 the rate was only 13½, during each five years since then the rate seems to have gone down and then to have gone up, but always ends by reaching a higher point at the end of each period. The smaller the city the lower the suicide rate tends to be. The suicide rate of a well-developed, prosperous country ought not to be more than 25 suicides per 100,000 population, according to German statistics. Suicides by male Germans seem to have reached their rate limit, having remained at 35 per 100,000 for a long time. But suicide among German women is constantly increasing. Only about 24 American men commit suicide in every 100,000, while only about 7.6 American women in every 100,000 commit suicide. A decided fall in the rate of business failures in 1892 corresponded to a similar fall in the suicide rate, followed by a rapid rise in both rates during the panic year of 1903. But the economic condition of the nation is of course only one of many factors which determine the degree of suicidal frequency.—*The Spectator.*

Book Reviews.

Prevention of Infectious Diseases. By Alvah H. Doty, M.D., Health Officer of the Port of New York. Price, $2.50 net. New York and London: D. Appleton and Company, 1911.

This little work is both timely and valuable. The views expressed are the result of the large personal experience and investigations of the author, who has shown how to protect the health of a large seaport and so, indirectly, of the whole country, with the least annoyance and expense to the public and to commerce. With regard to the transmission of infectious diseases, the author presents the latest knowledge and shows that the theory of "fomites transmission" is not now to be accepted as fully as it formerly was. The infectious diseases discussed in the volume are: Smallpox, yellow fever, typhus fever, cholera, and plague. There are also chapters on: Classification of infectious diseases, Marine sanitation, Disinfection, Disinfectants, the Thermometer, and the Mosquito. The book will prove entertaining and instructive to all who are interested in knowing how the health of our country is maintained and protected; and a wide circulation of the volume will do much to facilitate the duties of our health officers.

The Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School; and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume 1. General Medicine, edited by Frank Billings, M.S., M.D., head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Series, 1911. Price, $1.50. Chicago: The Year Book Publishers.

This volume is a synopsis of the literature of the past year dealing with some of the infectious diseases, diseases of the lungs and pleuræ, heart, blood-vessels, blood and blood-making organs, ductless glands, metabolic and kidney diseases. The use of a book of this nature affords the busy physician a very ready means of keeping himself informed in regard to the advances in medicine.

Alcoholic Fermentation. By Arthur Harden, Ph.D., D.Sc., F.R.S.; Head of the Biochemical Department, Lister Institute, Chelsea. Price $1.25. London, New York, Bombay, and Calcutta: Longmans, Green & Co., 1911.

The list of titles of the series of "Monographs on Biochemistry," edited by R. H. A. Plimmer and F. G. Hopkins, has now reached very considerable proportions, and the various volumes are being recognized as exceedingly valuable summaries of knowledge in their separate provinces. The present is both in its subject and in its execution fully equal in importance to the others of the series, and furnishes a complete résumé of what is known on the subject of alcoholic fermentation. The opening chapter is a most interesting historical introduction in which the work of the earlier investigators is reviewed, and in the remainder of the book the preparation of zymase and the technique of experimentation with this substance and the coenzyme of yeast juice are described at length. The interesting relationship of the phosphates to fermentation is discussed, as well as the action of inhibiting and accelerating agents, and the volume closes with a chapter on the general mechanism of fermentation as at present conceived. As in the other volumes of the series, an extensive bibliography is appended.

Biblisch-talmudische Medizin. Beiträge zur geschichte der Heilkunde und der Kultur überhaupt. Von Dr. Julius Preuss, Arzt in Berlin. Price M. 20. Berlin: S. Karger, 1911.

Although it is probably true that the author is correct in saying that the number of letters in the Bible is exceeded by the number of commentaries that have been written on it, it is probably also true that the medicine of the Old Testament and the Talmud has never before received such extensive and particualrly such philologically detailed discussion as in the present volume. Indeed, most medical readers would undoubtedly have forgiven Dr. Preuss had he been a little less meticulous in his argumentation on Hebrew roots, or at least had separated such discussions from the body of the text, so as to allow more uninterrupted enjoyment of the really interesting historical material presented. It must be regarded, however, as a great benefit to medical history to have had this work so thoroughly done by a competent philologist, and one may easily believe that it represents the labor of twenty years of research carried on in the leisure moments taken from the life of a general practitioner. It would be difficult to conceive of a more exhaustive treatment of the subject, and the book will be found an invaluable mine of information for all those interested in the subject.

A Textbook of Medical Diagnosis. By James M. Anders, M.D., Ph.D., L.D.; Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia; Officier de L'Instruction Publique, etc., etc., and L. Napoleon Boston, A.M., M.D.; Adjunct Professor of Medicine, Medico-Chirurgical College; Physician to the Philadelphia General Hospital; Pathologist to the Frankford Hospital. With 418 illustrations in the text and 25 plates, 17 of them in colors. Price $6.00. Philadelphia and London: W. B. Saunders Company, 1911.

Thanks to a steady improvement in the methods of laboratory and instrumental investigation, the diagnosis of medical conditions is approaching a period when it may almost be termed an exact science. This increase in accuracy is to be attained, however, only at the expense of the resort to more or less complicated procedures, and requires a mass of detailed information undreamt of a generation ago. It is not astonishing, therefore, to find that this newest and most comprehensive addition to the list of works on diagnosis is a volume of 1,200 closely printed pages, illustrated by nearly 450 figures, most of them original. The association in its authorship of a celebrated clinician and a well-known laboratory worker is most fortunate, and insures a well balanced treatment of problems that can be authoritatively discussed only by those having special knowledge and training in both of these fields. Careful examination of the book shows that the aims of the authors have been most fully realized, and that they have produced a textbook and work of reference that must long occupy a preeminent position in medical literature. The feature that is most likely first to impress the reader is the admirably systematic fashion in which the material is arranged. Every aspect of each condition excepting only the treatment, is presented in a definitely uniform manner, beginning with a brief description of the underlying pathological changes and frequently including descriptions of the clinical course of actual cases. The possible laboratory aids are given under the subheading "Laboratory Diagnosis," and the whole question of diagnosis is reviewed and the salient points emphasized in a paragraph, "Summary of Diagnostic Features." Abundant use is also made of elaborate differential tables in which the points of similarity and difference of clinically similar conditions are arranged in parallel columns. The illustrations are all exceedingly ingenious and instructive, and deserve especial commendation. It goes without saying that all of the modern methods, such as radiography of the gastrointestinal tract, bronchoscopy, esophagoscopy, opsonic and serum tests, etc., receive adequate description and illustration. The chemical procedures mentioned are apparently all such as may be carried out by the man in ordinary practice, and their significance is clearly indicated It would certainly require the closest scrutiny of the book to discover anything deserving criticism, and the reviewer can have nothing but praise for the work and congratulation for authors on the completion of a task of unusual magnitude and utility.

Studies in Cardiac Pathology. By George William Norris, A.B., M.D., Associate in Medicine at the University of Pennsylvania, Visiting Physician to the Episcopal Hospital of Philadelphia, Assistant Visiting Physician to the University and to the Philadelphia General Hospitals, Physician to the Medical Out-Patient Department of the Pennsylvania Hospital, Fellow of the College of Physicians of Philadelphia, etc. With 85 original illustrations. Price $5.00 net. Philadelphia and London: W. B Saunders Company, 1911.

This exquisitely illustrated series of studies in cardiac pathology is a credit to American authorship and American publishers. Even without the accompanying text the plates furnish a very complete and satisfactory atlas of cardiac disease. The lesions of the various valves are first taken in order, then follows pericarditis, then dilatations and hypertrophies, then aneurysms, and finally congenital lesions. Practically all the important cardiac conditions are illustrated. The individual histories are carefully abstracted and are very instructive. The current text is useful and sufficiently full. The bibliography is quite complete and the index excellent. Altogether it is a monograph of great importance to those interested in diseases of the heart.

Transactions of the American Pediatric Society. Twenty-second Session, held at the New Willard Hotel, Washington, D. C., May 3, 4, and 5, 1910. Edited by Linnæus Edford La Fétra, M.D. Volume XXII. Reprinted from Archives of Pediatrics, 1910-1911. New York: E. B. Treat & Co., 1911.

The high plane that has been established by pediatrics in America is illustrated by a glance at the table of contents of this book. The addresses which are reprinted from the *Archives of Pediatrics*, and which are familiar to those who have closely followed recent pediatric literature, include, among others, articles on the stomach contents and motility in breast and bottle-fed infants by Heiman; substitute feeding in premature infants, by Ladd; height, weight, and epiphyseal development, by Rotch; the new reflexes in meningitis, by Morse; the cytodiagnosis of tuberculous meningitis, by Dunn; retained intubation tube by Northrup; chronic rheumatoid arthritis, by Koplik; food reactions in the infant's stomach, by Cowie and Lyon; the nutrition of the feeble infant by Chapin; fat in the diet of infants, by Howland and Cooke; various phases of poliomyelitis, by Holt, Flexner, Snow, and Lange; amyotonia congenita, by Griffith; vaccines, by Hamill, Howland, and Hoobler; cold-air treatment, by Griffith, La Fétra, and others; acute pericarditis, by Bovaird; empyema, by Huber; and various obituaries, by Jacobi.

Formulaire, Consultations Médicales et Chirurgicales. Par MM. G. Lemoine, Professeur de Clinique Medicale; E. Gérard, Professeur de Pharmacie et de Pharmacologie; avec la collaboration de M. E. Doumer, Professeur de Physique Médicale, et J. Vanverts, Professeur Agrégé, Chirurgien des Hôpitaux à la Faculté de Médecine et de Pharmacie de Lille. Cinquième Edition, conforme au nouveau Codex, 1908. Price 7 francs. Paris: Vigot Frères, 1911.

This is a compact thin-paper volume of 1,000 pages, furnishing a complete *vade mecum* for the physician and surgeon. The first part discusses the art of prescribing and of administering drugs in various ways; and presents a succinct description of the materia medica with the inclusion of many useful prescriptions. The second part consists of an alphabetical index of diseases, with the outline of their treatment. The third section deals with surgical diseases, while the following section takes up the subject of skin and venereal diseases. There are also sections on dietetics, mineral waters, and sanatoria. This volume may be recommended as a useful mine of information.

Les Interventions Médicales d'Urgence. Par G. Lemoine, Professeur de Clinique Médicale à la Faculté de Médecine et de Pharmacie de Lille. Médecin de l'Hôpital Saint-Sauveur. Price 6 francs. Paris: Vigot Frères, 1911.

The scope of this volume of 369 pages is the discussion of those minor surgical procedures that are necessary in the work of the modern internist. These procedures include the technique of serotherapy and hypodermic injections, the diagnostic exploration of serous cavities, the application of setons, leeches, and the cautery, the performance of venesection, enteroclysis, etc. The greater part of the volume is devoted to a description of the indications and contraindications of the various surgical interventions of internal medicine. Thus, under phlebotomy are given its definition, history, indications, contraindications, physiological action, site of election, and operative technique. An important section of the book is that which deals with the various forms of lavage and hydrotherapy. The section on hypodermic medication is particularly complete. This volume presents a most useful contribution to medical literature.

The Anatomic Histological Processes of Bright's Disease and Their Relation to the Functional Changes. Lectures delivered in the Russell Sage Institute of Pathology, City Hospital, New York, during the winter of 1909, by Horst Oertel, Director of the Russell Sage Institute of Pathology. Illustrated. Price $5.00 net. Philadelphia and London: W. B. Saunders Company, 1910.

There has been a feeling abroad of late that the age of the old morphologist was passing rapidly, if it had not already gone, and that our modern era of pathology was that of the dog rather than of the human being. It is a pleasure, therefore, to welcome a purely anatomical study of Bright's disease, especially as it is the product of the Russell Sage Institute of Pathology of the City Hospital of New York, an institution whose accomplishments in the line of general pathology are well known. The modern physician is apt to listen with envy to the skilled Latin of his German colleagues, and, while our author is inclined to be hard on us by somewhat lengthy quotations from the old authors to which he does not always furnish a translation, the cynic will smile to see on page 21 that cynanche is spelt with an "s," thus following an old Greek form which obscures the canine ancestry of the word. The statement (page 5) that albuminous urine contains less urea than normal urine may be true, but often is not. This no doubt will be corrected in an ensuing edition, and such slight slips do not injure the splendid scientific attitude which dominates all of the discussion on the various phases of nephritis. The first lecture is a discussion on the history and classification of Bright's disease; the second is on the structure and function of a normal kidney; the third on the degenerative and exudative features of nephritis. The older ideas of Virchow, which have been replaced to a certain extent by those of Weigert, are very fully presented, including the later views of Ribbert. The writer has no uncertain ideas of his own concerning the various cellular changes which take place in the glomeruli and tubules in this phase of the disease. The subject is continued in the fourth lecture, while the fifth is devoted to productive nephritis, changes in other viscera, and edema. It is difficult to praise sufficiently the clear and satisfactory way in which the complex lesions are presented. The cuts form a prominent portion of the book; those in color are admirable. The photomicrographs, however, leave much to be desired; many of them show optical defects evidently due to imperfect illumination and use of lenses of too low an aperture. The centering of the illuminator is also often imperfect.

Chemistry of Food and Nutrition. By Henry C. Sherman, Ph.D., Professor in Columbia University. Price, $1.50 net. New York: The Macmillan Company, 1911.

It is natural that a chemist should be interested largely in the purely chemical aspect of food, and that a physician should be well equipped to handle the question of nutrition, but the two best books which we have on these subjects are those by this author and by Graham Lusk, neither of them physicians. This volume is somewhat simpler and less technical in its treatment of the subject than is Lusk's, being evidently intended chiefly for undergraduate students, and yet it contains, expressed in simple language, all of the useful knowledge on the subject of nutrition which may now be considered as beyond the need of further proof. Merely contentious matter has wisely been omitted. A sufficient bibliography is appended to each chapter. The printing, binding, and make-up of the book are admirable. Every physician, including him who talks learnedly of calories without any knowledge as to what a calorie is, will be benefited by a perusal of this excellent volume.

Yearbook of the United States Department of Agriculture. Washington: Government Printing Office, 1911.

The 1911 "Yearbook" contains the Report of the Secretary and a large variety of interesting essays on various cognate subjects. Among them may be mentioned particularly papers upon Second-Growth Sprout Forests; Nitrogen-Gathering Plants: The Game Market of To-day; Saving Forest Waste; Good Roads Movement; Insect Enemies of Tobacco; Cheese in Diet; Cooperation in Handling and Marketing Fruit; Camphor Cultivation in the United States. The articles seem to be quite up to the usual standard.

Cholera and Its Treatment. By Leonard Rogers, M.D., F.R.C.P., F.R.C.S., B.S., I.M.S., Physician Cholera Wards, Medical College Hospital, Calcutta; Professor of Pathology, Medical College, Calcutta; Fellow of the Calcutta University; Fellow of the Asiatic Society of Bengal; Corresponding Member of the Philippines Medical Society, the American Society of Tropical Medicine, the American Climatological Association, and the Société de Pathologie Exotique; Mary Kingsley Medallist for Research in Tropical Medicine. London: Henry Frowde, Oxford University Press, and Hodder & Stoughton, 1911.

The author goes very carefully into the history of the cholera epidemics and the lessons that were derived from them. In the opening paragraph on treatment Dr. Rogers says: "The mortality figures already given prove conclusively that no material advance in the treatment of the disease resulted from the greatly increased knowledge of the causation and pathology of cholera during the latter half of the nineteenth century." Therefore, in the chapter on treatment the author first considers the older Anglo-Indian writers and later discusses in detail the principles of modern therapy and the treatment of special indications. The book is extremely interesting from a historical and scientific viewpoint, but is of little practical value to the American physician, as cholera is so seldom met in this country.

The Fats. By J. B. Leathes, M.A., M.B., F.R.C.S., Professor of Pathological Chemistry in the University of Toronto. Monographs on Biochemistry edited by R. H. Aders Plimmer, D.Sc., and F. G. Hopkins, M.A., M.B., D.Sc., F.R.S. Price $1.25 net. London: Longmans, Green & Co, 1910.

The chemistry of the fats has been always somewhat unattractive, possibly because there are no convenient and simple methods for the isolation of the fats and fatty acids from their mixtures, nor for their quantitative determination, such as exist, for example, in the phenylhydrazin compounds of the sugars and the simple quantitative determinations of the latter, depending upon their reducing properties, as aldehydes or ketones. Nevertheless, the important relationships of the fats to metabolism, to the production of fatty acids in diabetic acidosis, to the myelin bodies, and so-called fatty degeneration of the tissues, in which the lecithin compounds play an important part, all these and many other factors have kept chemists hard at work on the character, nature, and estimation of fat. As an illustration it may be pointed out that one of the most frequently employed laboratory methods is the extraction of fat from feces, milk, etc. Despite, however, all the refinements, our present methods of quantitative fat analysis are insufficient, and even our knowledge of the composition of some of the more complex phosphorized fats is still very imperfect. Much that we do know concerning the fats has been collected in this monograph, which is one of the best of the series. The first portion is given up to the general composition, then follows extraction and estimation and the properties of the fats, a field in which the author himself has contributed a good deal by his own researches. An excellent and much too short section is devoted to the rôle of fats in body phenomena. A very satisfactory bibliography completes an extremely useful and compact presentation of a subject of the utmost importance to the biological chemist.

The Nature of Enzyme Action. By W. M. Bayliss, D.Sc., F.R.S., Assistant Professor of Physiology, University College, London. Second Edition. Monographs on Biochemistry edited by R. H. Aders Plimmer, D Sc., and F. G. Hopkins, M.A., M.B., D.Sc., F.R.S. Price $1 20 net. London: Longmans, Green & Co., 1911.

Our growing appreciation of the importance of enzymes in many of the metabolic processes of the body renders especially welcome this admirable monograph on the nature of enzyme action. While the text is not burdened with contradictory details and debatable matter it is sufficiently full to give a thorough survey of the field. A bibliography of some 270 titles affords the student an opportunity of continuing his reading on any one point on which he desires further information.

Der gegenwärtige Stand der Pathologie und Therapie der Gallensteinkrankheit. Von Dr. Ludwig Arnsperger, Privatdozent für Chirurgie an der Universität Heidelberg, I. Assistenzarzt der chirurgischen Klinik der Universität. Price, marks, 2.00. Halle a. S.: Carl Marhold, 1911.

This pamphlet of eighty pages forms part III of the third volume of a collection of short treatises on diseases of digestion and metabolism. It is devoted to the pathology and therapeutics of gallstones, and being written by a surgeon it naturally lays chief stress, and quite properly, upon surgical methods of treatment, though the details of operative technique are not given. The first portion, on the pathology, contains many clinical facts and yet covers on the whole all that we know of the origin of gallstones. Sufficient stress, however, is not laid on the fact that the gall-bladder is probably the depôt for typhoid bacilli in carriers, and the appearance of gallstones long after the patient has suffered from typhoid fever is also not sufficiently emphasized. There is a good clinical description of the attacks of colic and of the collateral symptoms, including those due to alterations in other organs than the gall-bladder. The medical treatment of gallstones by water cures, etc., is mentioned, but without much enthusiasm. The pamphlet forms a useful review of the subject.

Hypophysis, Akromegalie und Fettsucht. Von Prof. Dr. Bernh. Fischer, Direktor des Dr. Senckenbergischen Pathologisch-Anatomischen Instituts in Frankfurt a. M. Mit 2 Tafeln und 6 Abbildungen im Text. Price, marks, 6.60. Wiesbaden; J. F. Bergmann, 1910.

A great deal of interest is now centered about the anatomy and physiology of the hypophysis, since it has been found possible in a certain number of cases to relieve pressure symptoms due to new growths of this organ, and in some cases to extirpate the tumors. The matter, however, is not quite in satisfactory condition, especially as the mortality of such operations is still extremely high, though the course of the disease renders the sufferers willing to submit to any operation which offers hope of relief. In this very timely monograph the occurrence and nature of the tumors which are noted in connection with the syndrome of acromegaly are fully discussed, and the various theories as to the origin of the disease are detailed. The function of the different lobes and the result of the total extirpation of the organ also are considered at length. The relationship between imperfect development of the hypophysis or injury or pressure on the posterior lobe and lipomatosis is well given, though there is still much experimental work to be carried out to decide some of the obscure points, as, for example, why some forms of malignant tumors of the hypophysis do not cause acromegaly, while adenomatous growths do. The author considers that cases of acromegaly described as occurring without tumor of the hypophysis are doubtful.

Consultations et Thérapeutique Dentaires. Par Dr. J. Estfoule, de la Faculte de Médecine de Paris, et L. Dauzier, Chirurgien Dentiste de la Faculté de Médecine de Paris, Professeur à l'école dentaire de France. Price 4 francs. Paris: Vigot Frères, 1911.

This handbook of 255 pages presents in alphabetical order the treatment of the various dental disorders, including those conditions in and about the mouth that are associated with diseases of the teeth. The subjects of local anesthesia and of asepsis and antisepsis are covered in considerable detail. A large number of formulæ are given, including a great variety of dentifrices, pastes to be employed in the treatment of dental caries, etc. The dental practitioner will find this book an exceedingly useful one.

Health Hints and Health Talks. By E. R. Pritchard, Secretary of the Chicago Department of Health. Price 50 cents. Chicago: The Reilly & Britton Co., 1911.

The book is made up of a number of pithy utterances on the preservation of health. Some of the topics discussed are air and breathing, biliousness, cleanliness, consumption, contagion, outdoors, school children, water, breathing, hot weather hints, infection, overcrowding, ventilation, what to eat, eyesight, and care of infants. As a book for the masses this volume presents in a nutshell the main principles of up-to-date hygiene.

Die Blutdrucksteigerung; vom ätiologischen und therapeutischen Standpunkt. Als Preisaufgabe der Hufelandischen Gesellschaft zu Berlin mit dem Alvarengapreis gekrönt. Von Dr. med. Karl Hasebroek, Leit. Arzt des Hamburger medico-mechan zanderinstituts. Mit 3 abbildungen im text. Wiesbaden: J. F. Bergmann; New York: G. F. Stechert & Co., 1910.

In this essay, which was awarded the Alvarenga prize for 1910, the author discusses the physiological and clinical aspects of blood-pressure from the viewpoint of its teleological nature, or its functional adaptations to the needs of the economy. The technique of blood-pressure determination is not discussed. The author first takes up the subject of the etiological aspect of increased blood-pressure under the following headings: increased blood-pressure and experimental physiology; the peripheral resistance as related to the independent work of the blood-vessels; increased blood-pressure under the influence of circulatory changes, increased blood-pressure and cutaneous activity; also chapters on increased blood-pressure as relates to contracted kidney, affections of the hemopoietic organs, the functions of the central nervous system, the pulmonary activity, and arteriosclerosis. In the second section the author discusses the general and special therapeutic relations of increased blood-pressure.

Plaster of Paris, and How to Use It. By Martin W. Ware, M.D., New York, Adjunct Attending Surgeon, Mount Sinai Hospital; Surgeon to the Good Samaritan Dispensary; Instructor of Surgery, the New York Post-Graduate Medical School. Second Edition, Revised and Enlarged. Illustrated with 90 original drawings. Price $1.25. New York: Surgery Publishing Company, 1911.

The proper application of a plaster-of-Paris bandage is an art acquired only by the few who, like Dr. Ware, have had the opportunity of using it in thousands of cases. After describing the proper manufacture and preparation of the plaster bandage, the author considers its application to the various fractures and its use in orthopedic surgery. One chapter is given to the subject of molded splints. By means of the excellent illustrations one gets a very clear conception of the proper application of the plaster-of-Paris bandage in the treatment of the fractures and deformities of the body. This volume should certainly prove of value as a reference book.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Annual Meeting, Held in Birmingham, July 25-28, 1911.

(Special Report to the MEDICAL RECORD.)

(*Continued from page 348.*)

SECTION OF SURGERY.

First Day—Wednesday, July 26.

Treatment of General Septic Peritonitis.—Prof. RUTHERFORD MORISON of Newcastle-on-Tyne referred to the extent of peritoneal surface as almost equal to that of the skin. Death from extensive scalds was probably due to a cause similar to that causing death in diffuse peritonitis. General septic peritonitis was due to a gross lesion resulting in the wide invasion of pyogenic organisms, of which streptococci were the most virulent. Peritonitis might end by (1) resolution, (2) adhesions (fibrosis), (3) local abscess, or (4) diffuse destruction (gangrene). Beyond arresting the supply of germs from the primary focus, operation could deal only with the effects of inflammation. The condition of the circulation was the chief guide as to both the treatment and the prognosis; and it was more important to know how much peritoneum was red and sodden than to know which variety of organism was present. Whatever the germ, the prognosis was good if the pulse was of good volume and not over 100, and bad if there were cyanosis, cold extremities, and a pulse over 120. A sunken appearance and symptoms of shock were said to be due to toxemia—but what was toxemia? He preferred to ascribe those symptoms to disturbance of the balance between the somatic and splanchnic circulations. Peritonitis following germ infection was a protective reaction to be aided, if possible, though it was readily upset. The peritoneum had exceptional immunity to septic infection, and rougher surgery might be perpetrated with impunity inside the peritoneum than would be tolerated by any other portion of the organism. Other defensive aids were free secretion of fluid and plastic formation. The omentum also was often glued in such a position as to prove its value as a life-saving mechanism. Early recognition of the need for operation might be more important than the method of its performance. The speaker's statistics of 427 cases, with 18 deaths, in the Royal Victoria Infirmary, occurring in Newcastle during 1910, were given in the form of a summary. These statistics showed that operation should be done as soon as possible and done in a properly equipped hospital. As to operation, three initial points required attention: (1) The patient must be kept warm; (2) as little anesthetic as possible should be given—by preference chloroform to dull the laryngeal reflex—and then ether; (3) the less disturbance of viscera the better, no rough manipulation being permitted. The incision was made over the causative lesion if this was diagnosed; otherwise the umbilicus should be excised and the abdomen opened in its center; in either case the focus was to be dealt with according to surgical rules. For excluding an irremovable focus gauze tampons were sometimes indispensable, but if possible, gauze should be in contact with omentum and not small intestine. The best method of cleansing the peritoneum was by lavage with decinormal saline solution, at a temperature of 100° F.; but in most cases cleansing was not wanted; the use of dry mops was injurious. With regard to drainage, a good rule was, "When in doubt, drain." A temporary suprapubic glass tube was useful for washing out extravasations during repair of the infecting focus, and removed at the end of the operation. More permanent drainage was sometimes indicated, and the drain should then be pelvic only, and kept empty by Tait's syringe pump.

The "Fowler posture" was most useful, and so was the intravenous infusion of decinormal saline solution to which a small dose of adrenalin was added. A voluminous dressing of wool was applied to produce elastic compression and to retain heat. In the after treatment proctoclysis, stomach lavage, a single dose of morphine, purgation with caution, and digitalis, were all valuable in certain cases. Interference was often of doubtful benefit in cases of general septic peritonitis of more than three days' duration. In acute pneumococcal, gonococcal, post-operative, and puerperal peritonitis, operation was more likely to do more harm than good.

Professor Koch of Groningen held that operative treatment of diffuse peritonitis would always be indicated, so long as specific serum or vaccine treatment was not forthcoming. Moot questions were: (1) When should operation be performed, and (2) what was the best procedure? As to (1) operation could not be too soon, but might be too late if delayed. If appendical cases, which were generally dealt with early, were subtracted from the group, the mortality of the remainder reached a high figure. Thus in Rehn's statistics the death rate of the entire class was 50 per cent., but excluding appendicitis, the rate was 70 per cent. Krogin's figures were respectively 50 and 61 per cent. As to (2) the worst cases should not be narcotised, morphine and local anesthesia being employed; in milder cases he preferred narcosis. Incision over the focal lesion was the best site, the wound going straight through all the layers, the median incision being reserved when the origin of the peritonitis was not known. It was essential to deal effectively with the cause, *e.g.*, by removing a morbid appendix or closing a perforation. Evacuation of pools was effected by his special aspirator, and washing out could be done at the same time by a combined tube which was exhibited. Several incisions might be required to empty peritoneal recesses. Puncture and drainage of the distended gut were recommended, and appendicostomy was spoken of favorably. Drains were left in the peritoneum. In the after treatment persistent vomiting was best treated by continuous drainage of the stomach through a nasal tube, as advised by Westermann. Saline infusion with adrenalin added was of great value; and so was Fowler's position. Kaster's ventral position was always refused by his patients.

Mr. HERBERT PATERSON, London, thought that the Section were greatly indebted to Mr. Rutherford Morison for his masterly and lucid exposition. In discussing this subject it was fitting to remember how much the improvement in our results in recent years was due to the inspiration of our colleagues across the Atlantic. The Fowler position, the importance of rapidity in operating, and the method of continuous proctoclysis, had all been the result of the teaching of American surgeons. The whole operative treatment of diffuse peritonitis was admittedly summed up in Dr. Murphy's pithy remark, which could not be too often repeated, "Get in quick, and get out quicker." He was glad that Mr. Morison emphasized the axiom that operation was indicated in an overwhelming majority of cases. The Ochsner treatment had been misunderstood, and had sometimes been an excuse for delay in cases in which operation would probably have been better. He considered that pneumococcal peritonitis was often very difficult to diagnose, the signs being frequently but slightly marked; the temperature and pulse might be normal, and it was often very difficult to decide whether the patient had peritonitis at all. He agreed with Mr. Morison that operation was contraindicated in pneumococcal peritonitis, but he personally considered that in gonococcal peritonitis operation was indicated. He thought that it was a good working rule that unless one could make a good guess as to the cause of the peritonitis it

was better to postpone operation and treat the patient on the lines laid down by Ochsner. He considered rapidity in operating and avoidance of unnecessary exposure of viscera were the most important operation factors influencing the fate of the patient. Last year Dr. Crile had given the Section an admirable summary of his investigation on shock, and showed how important it was to avoid all possible cause of shock, either mental or physical. For this reason the speaker was an uncompromising opponent of washing out the peritoneal cavity in any shape or form, or under any circumstances. Fortunately, we had long passed the days when patients, after an operation for peritonitis, were placed in baths of antiseptics to flush out the abdominal cavities, or were put back into bed with tubes, Medusa-like, projecting from all parts of the abdomen, through which continuous irrigation was carried out, until the peritoneal cavity could no longer withstand such treatment and revenged itself by the removal of the patient from such misguided energy. He had followed up cases at the time when the fashion for washing out was at its height, and he was convinced that irrigation greatly increased shock, and the shock at operation was echoed in the tardiness of the patient's subsequent recovery. He believed that the peritoneum could deal with foreign matter better than the surgeon, and that as regards washing out, any possible gain was more than counterbalanced by the increased immediate risk. Subdiaphragmatic abscesses were rare if the Fowler position was adopted. Chloroform was absolutely contraindicated in these cases. The greatest advance was continuous proctoclysis, and to the use of ether as the anesthetic the improvement in results was mainly due. (The speaker showed his apparatus for continuous proctoclysis by the Murphy method.) In conclusion he referred to the administration of cathartics after operation. In bad cases his own practice was to commence the administration of small doses of calomel almost as soon as the patient was round from the anesthetic. He believed the evils attributed to peristalsis were exaggerated, and if such evils existed at all they were more than compensated for by the peritoneal drainage and removal of toxic products effected by the use of calomel.

Mr. G. P. Newbolt of Liverpool said that cases of appendicitis giving rise to general septic peritonitis were seen by the surgeons earlier now than even five years ago. Great confusion seemed to exist in the definition of general septic peritonitis, which in his judgment was an infection of the whole peritoneal cavity and not an infection limited to an area around an infected organ. He did not believe that any surgeon could save 96 per cent. of genuine cases of general septic peritonitis. The three factors contributing to success were speedy operation, skill in anesthesia, and efficient drainage with proctoclysis. There was frequently great difficulty in determining when to refuse to operate in these cases, as now and then the most desperate cases recovered after operation. Chloroform, to his mind, was a dangerous drug, and he much preferred ether. He administered a small dose of morphine (1/6 grain) after operation to allay restlessness. The formation of subdiaphragmatic abscess in those recovering from operation for this disease often proved extremely troublesome to deal with, and required careful watching for.

Mr. Grant Andrew of Glasgow said that, given a case of general septic peritonitis, from whatever cause, his practice was first to make a small suprapubic incision, about 1 to 1½ inches in length, opening the general peritoneal cavity. This at once gave valuable information as to whether free fluid was present in the cavity—its nature, its odor, its amount; and as to the condition of the serous lining of the bowel, its vascularity, its degree of distension, and the presence of newly formed adhesions. If in doubt as to the seat of the exciting cause this preliminary incision was of great value because from the nature and character of the free fluid alone a diagnosis could usually be made. Having proved that the fluid was free in the general peritoneal cavity a narrow strip of gauze, with string or tape attached, was passed right down to the pouch of Douglas, and there left meanwhile to act as a drain. The exciting cause was then dealt with. The speaker always, and in every circumstance, exposed the appendix by the gridiron method. This enabled him to close the wound entirely without the risk of hernia. The offending appendix, in this class of case usually gangrenous and possibly perforated with an extruded concretion lying in its immediate neighborhood, was removed in the usual fashion. The stump must be well buried. The bed of the appendix and the surrounding structures were swabbed with iodine, 4 per cent., mopped dry, and the gridiron wound, after similar treatment with iodine, was closed in layers. The upper part of the body was now slightly raised so that all intraabdominal fluid gravitated towards the pouch of Douglas. The gauze placed in the suprapublic wound was then removed and any pus which might have collected in the pouch or in the lower part of the pelvis was mopped out, syphoned out, or sucked out by a rubber tube and syringe. This wound was also closed after the edges had been disinfected with iodine. If the condition of the patient permitted, the Howard position was assumed immediately the patient was returned to bed and proctoclysis was commenced. No risk was run by primary and complete closure of the wound. The speaker believed the presence of packing and the use of a drain, either rubber or glass, was to exert a devitalizing influence on the bowel and to encourage the formation of a fecal fistula. Nothing was gained by leaving the wound open, and furthermore, if it was partially closed and a drainage tube was inserted at the angle of the wound, it was there a hernia would occur. Since September last he had operated upon seventeen cases which came under this category, *i.e.*, free pus in the general peritoneal cavity, without limiting adhesions, and not confined to the pelviperitoneum. The appendix was gangrenous in each case, and the primary cause of the peritonitis. In each case the same technique as above described was practised, both the appendical and the suprapublic wounds were closed. Recovery took place in every case save one, in which death occurred six hours after operation—a hopeless case. In eight out of the remaining sixteen cases primary union of both wounds occurred. In eight cases the wounds became infected in varying degrees, necessitating the removal of the lowermost surface stitch in three of the cases, and of all the surface stitches in another; as the incision was gridiron this did not weaken the cicatrix. In one case a pelvic collection formed which burst into the bowel and was discharged per rectum. In another, pain was complained of in the region of the liver, and with a remittent temperature a subdiaphragmatic collection was feared, but this gradually subsided and finally cleared up. In no case did a fecal fistula result. These records compared favorably with those from any other line of treatment, and proved that subsequent drainage was unnecessary if the exciting cause were removed.

Professor Gilbert Barling said that he was of the opinion that the term general septic peritonitis was often very loosely used, and that many people did not mean quite what they said. This led him to say that he was at variance with Mr. Grant Andrew when he referred to his series of cases where he had successful results following upon immediate closure of the abdominal wound in "general septic peritonitis." He did not think that what Mr. Grant Andrew called septic peritonitis was what he himself always was accustomed to regard as general septic peritonitis. What he (Mr. Barling) meant by that term was that the whole peritoneal cavity was infected right up

to the diaphragm, and he maintained that the vast majority of these cases would not recover, no matter what was done. Another point which he wished to make was as to the nature of the infection. He had great respect for any form of infection, but the one he feared most was streptococcal infection. If he understood Mr. Rutherford Morison aright in saying that it did not matter greatly what the kind of infection was, he felt compelled to disagree with that statement. He narrated a case where he had removed the appendix in a little lad and had regarded the case as one as nearly as possible certain to do well; but that boy died in thirty hours, and when the bacteriological report came it was found to be a streptococcal infection. He was convinced that there was greater danger from infection by that germ than any other. Of course, one did not know the germ till after cultivation; so that the treatment was not affected by the knowledge of the germ, but the prognosis was. As regards the question of incision, he emphatically supported Mr. Rutherford Morison's ideas, and thought no harm came of extensive incisions. It appeared to him that the spread of peritonitis was to a certain extent mechanical. The spread upwards from the appendix region was limited in the middle region of the abdomen by the transverse mesocolon. The mechanical arrangement of the peritoneum had a good deal to do with the spreading or limiting of septic peritonitis. He thought both swabbing and irrigation had their advantages, and one should not exclude the other. If one found a localized collection in the pelvis there seemed no reason why it should not be cleaned out as thoroughly as possible by swabbing. Similarly, if one had to deal with a recent duodenal or gastric perforation one could not possibly swab out all extravasated materials, and it was here that irrigation was most useful. On the question of the treatment of the appendix, he would like to see every case of appendix infection operated upon at once. That was to say that every case should be diagnosed immediately, and should be brought at once into an operating theater; but, unfortunately, delays often took place, the diagnosis was not always accurately made, the patient's friends did not always send for the physician; so it was necessary to take the world as we found it. To make a routine of operation in all these cases directly they were seen, on the second or third day, and to attempt to close the abdominal wound would be in many cases disastrous; while we might guess shrewdly as to the condition of affairs inside the abdominal cavity we could not tell for certain what it was like until we had opened. Sometimes the symptoms were intense in their severity, and the condition found in the appendix region was slight; sometimes the reverse was the case. It was, therefore, necessary that we should adopt no hard and fast line of treatment, but that we should take cases as we found them, and treat each on its own merits.

Dr. J. Crawford Renton of Glasgow said that he was in agreement with all that Mr. Rutherford Morison had said in his paper, and he spoke only to emphasize the importance of urgent cases being operated on without delay. The public was being educated now in many directions of late, particularly was it instructed in the dangers of tuberculosis. He would like to see information regarding urgent abdominal conditions spread more widely if it would tend, as he thought it would, to the more speedy bringing of such cases into the hands of the family doctor and then the surgeon. In speaking of the importance of getting the bowels to act as soon as possible he was accustomed to administer, as soon as the patient had recovered from the anesthetic, small doses of calomel every two or three hours for three to four days, and then to use an ordinary enema. In addition, decinormal saline injections were used. Pituitary gland tabloids he gave before as well as after the operation to counteract shock. The Fowler position should be adopted as soon as possible, and the patient brought into the hospital in that position. Postoperative vomiting was likely to be less if ether (after a few preliminary whiffs of chloroform) was used, and if it did occur it might be treated by stomach lavage which, with the Fowler position, never failed.

Mr. Garnett Wright of Salford said that while in general agreement with the previous speakers, he was at variance with them on the subject of removal of patients to hospitals and nursing homes if their own homes were at all reasonably good. While this did no harm in early cases, it was harmful in those cases which were on the borderland, ready and apt to become grave where the general circulation was beginning to fail. In such circumstances it was better to operate at home, in spite of the fact that the after treatment was more difficult, because these cases might become very much worse by the removal from home. He wished also to emphasize the importance of doing the minimum required to remedy the defect which had caused the peritonitis. In the majority of cases lavage and mopping were unnecessary, and might do harm by prolonging the operation and increasing shock. If these was extravasation of intestinal contents they should be got rid of and the best method was by lavage. In appendix cases no more mopping was required than is necessary to clear the field. After the removal of the appendix free drainage should be provided. In general, free drainage of the septic peritoneal cavity was of greatest value, and in desperate cases might sometimes be employed with success without dealing with the exciting cause. The chief improvement in after treatment had been the use of proctoclysis with continuous saline injection. It was difficult and required special apparatus and good nurses, and was unobtainable in private houses. Where it could be done, intermittent administration supplemented by subcutaneous injections might be employed. As regards the point raised by Mr. Gilbert Barling that all cases should not be operated upon immediately, and that sometimes a case proved worse than it looked, and *vice versa*, the latter statement was a potent argument in favor of operating as soon as possible.

Mr. C. P. Childe of Portsmouth was opposed to the administration of morphine, because it lessened peristalsis, and so conduced to flatulence.

Mr. Bishop of Manchester advocated the giving of pituitary extract to promote peristalsis after operation.

Mr. Bidwell of London also advocated the use of pituitary extract after operation. He was of opinion that it had considerable value in restoring the peristalsis. He was accustomed to give 1 c.c. every four hours for the first two or three days. One advantage of it was that it counteracted the disadvantages of morphine, so that he generally gave at least one dose of morphine (1/6th grain) to give the patient a quiet night. On the question of flushing and wiping out the peritoneal discharges he thought there was no hard and fast rule to be followed. If flushing was done it was absolutely necessary to provide free exit for the fluid. His next point was as to the great value in general septic peritonitis of the use of a rectal drain; an opening was made from within, through the pouch of Douglas, by means of a pair of strong curved forceps into the rectum, and a tube was passed through this opening and then through the anus and stitched to the skin of that region. This permitted closure of the suprapubic wound. The rectal tube he found was frequently removable in two or three days. It had been alleged that if the rectal drain were used it would be impossible to administer saline solution per rectum, but in his experience there was no interference with the administration of salines.

Mr. D. P. D. Wilkie of Edinburgh called attention to the importance of an immediate miscroscopic examination

of the peritoneal exudate at operations on cases of general peritonitis. Such examinaitons in a large number of cases revealed the fact that the particular type of bacterium causing the inflammation was of less importance than the reaction on the part of the patient. Presence of streptococci did not necessarily mean a bad prognosis, provided the cellular reaction was a vigorous one. The important point was the relative number of microorganisms free in the fluid to the number of phagocytic cells. If many of the bacteria were found free in the fluid the prognosis was as a rule a grave one. At post-mortem examinations in cases dying from general peritonitis the jejunum was frequently found greatly distended, whereas the ileum was found collapsed and adherent in the pelvis, and the patient had obviously died partly from a peritoneal, but also partly from an intestinal toxemia. After the operation of opening and draining the abdomen in such cases the inflamed intestines, coming together, adhered, peristalsis was interfered with, and pocketing of pus was very liable to occur. In order to favor peristalsis and free drainage, the speaker had advocated the pouring in of a few ounces of sterile vaseline oil to delay the formation of plastic adhesions. The experimental and clinical results which so far had followed the use of this method had been very encouraging. In the after treatment of desperate cases two methods had been found to be of considerable value: the one was the passage of a continuous oxygen current through the drainage tube in the pelvis. Oxygen was rapidly absorbed by the peritoneum, it excited an active hyperemia which tended to overcome the venous stasis associated with severe cases of peritonitis. In several cases a rapid and marked improvement in the patient's general condition had resulted from the employment of this method. The other method which he had tried in cases which appeared desperate, and after all the ordinary methods of after treatment had been employed, was the injection of blood serum withdrawn from the median basilic vein of another patient in the ward who had just recovered from an infection by the same bacterium. Sixty cubic centimeters of blood were withdrawn from the vein, the serum was allowed to separate, and was then injected into a vein of the patient whose condition appeared hopeless. Of seven patients treated in this way two recovered, and there was little doubt that their recovery was in large measure due to the antitoxin thus administered.

Mr. Bloomer of Stafford narrated the case of a boy whose abdomen he had opened four times within the space of seven months. The primary condition was gangrene of the small bowel, treated by resection and a Murphy button. Three months after recovery the bowel perforated, and was brought to the surface and fixed there one week. The third operation was done to effect lateral anastomosis. A month ago a fourth laparotomy had to be undertaken for the division of bands causing obstruction. The patient was now apparently well, but the button had not been recovered.

Second Day—July 27.

The Technique of Wound Treatment.—Mr. Alexis Thomson of Edinburgh, in opening this discussion, said the subject was a problem in bacteriology. The part played by the tissues, though important, was only secondary, and the first essential in treatment was to prevent the entrance of pathogenic organisms. The principles of Listerism were permanent; the means of carrying them out are always changing. He deprecated the attitude of adopting every new device simply because it was new, no less than the attitude of supposing present results incapable of improvement. The knowledge and skill required for practising Listerian principles were not an end in themselves, but means to an end. He urged that a surgeon should be a trained bacteriologist, and that a laboratory should be attached to every surgical clinic, so that everything in the operating theater could be readily subjected to culture and other tests. The speaker referred to the difficulties encountered in teaching hospitals where students and nurses had to be trained. He then reviewed the methods of sterilization and their reliability as regards instruments, dressings, clothing, and lightness. Finally he discussed the methods of dealing with the skin of the patient and the hands of the surgeon; the phagocytic power of the tissues, and to what extent this could be conserved or increased; and the use of vaccines and serums.

Mr. H. Paterson of London agreed that instruments could not be kept sterile during an operation unless reboiled or kept in antiseptic fluid. He objected to the use of catgut because it was liable to give way too soon; silk or linen was better, and the ability to use these with impunity was a test of the surgeon's technique. To sterilize the hands, his choice was for methylated spirit. Gloves should be dry sterlized, or the hands would not remain sterile. Alluding to an article by R. T. Morris of New York, on "The Iron Hand in the Rubber Glove," he did not find that gloves interfered with his work. In spite of the good results achieved by some non-glove surgeons, *e.g.* Mr. Stiles, he still thought gloves were an aid to asepsis. He regarded the iodine method as the best for the patient's skin. His plan was to rub the skin with acetone on two successive nights before operation, and then paint with the iodine solution (Liq. Iodi fort. ℥i, Sp. vini rect. ℥ii, Aq. destil. ℥i), a final coat being painted on just before the operation

Mr. Newbolt of Liverpool agreed with the necessity of not being satisfied with present results, however good. Gloves were invaluable. As the air was not sterile he advocated the use of antiseptics in conjunction with asepsis. He used equal parts of Tr. Iodi and Liq. Iodi as a paint for the patient's skin—in emergencies without shaving or any other preparation. Clean dissection and the avoidance of bruising often saved after trouble. In bowel, stomach, and mouth cases, careful preparation of the patient was essential. The successful wiring or plating of fractures was a good test of skin preparation and wound treatment.

Mr. Thomas S. Ellis of Gloucester said that the treatment of wounds was dependent not on bacteriology alone. In a cicatrising wound the contraction which was perpendicular to the surface had the effect of fixing the skin at the margin. If this was prevented and the neighboring skin kept movable the contraction which was parallel to the surface of the wound would have the effect of gently drawing true skin from the margin. The true skin might be developed to an extent far greater than was generally supposed. He showed photographs of a child in whom burning had destroyed the whole of the integument from a line just below the margin of the lower lip nearly to the sternum. The skin at the lower edge of the wound was persistently pulled outwards and upwards. By this maneuver so much skin was developed that the usual contraction was obviated and the child could now look upwards with perfect ease. Nothing in the way of skin grafting was done. The same principle was applied by him in dealing with the skin of amputation flaps, and the surgeon should not be satisfied until the skin was freely movable over the stump. This process was assisted by manipulation with a piece of rubber about the size of a sheet of note paper.

Mr. Leedham Green read a paper on "The Value of the Sterilization of the Skin by Iodine." Much had been written on the value of iodine as an agent for sterilizing the skin, but little experimental work had been published to support the claim that it was the most efficient method, and nothing comparing it with the best of the older

methods. In cultural tests made with small portions of ligature silk and glass beads infected with various organisms, tincture of iodine proved to have the greatest bactericidal power when prepared with 70 per cent. alcohol. Comparative tests with tincture of iodine (70 per cent. spirit), plain alcohol (70 per cent.) and an aqueous solution of iodine (same strength as the tincture) showed that while the last named possessed decided germicidal properties it was less potent than the 70 per cent. spirit, which in its turn was inferior to the tincture. Further it was shown that an alcoholic solution of perchloride of mercury (1 in 1000 of 70 per cent. spirit) was superior in bactericidal power to the tincture of iodine (70 per cent. spirit) and still more to the official tincture. Taking the average of a number of tests with different non-spore-bearing organisms: Sublimate spirit (70 per cent. alcohol) sterilized in 2½ minutes; tincture of iodine (70 per cent. alcohol) sterilized in 7 minutes; tincture of iodine P.B. sterilized in 10½ minutes; aqueous solution of sublimate sterilized never under 30 minutes. Comparative practical tests on the skin with plain alcohol, tincture of iodine, and sublimate alcohol showed the marked superiority of the two last named. These proved themselves to be powerful skin disinfectants. A true sterility was never obtained, but both methods always greatly reduced the infectivity of the area. In other respects the results were disappointing. In an unpleasant proportion of cases the skin proved to be still surgically infective. Neither of the two methods could be said in any way to guarantee sterility, for the skin, which had proved to be practically sterile directly after the process of disinfection, gradually became more and more infective as under the imbition of fluid the hardened epithelium became loosened.

Up to the present sublimate alcohol had given the better results. There was a slight superiority even when it was merely painted on the skin like the iodine. When it was freely rubbed on, as in the usual method of alcohol disinfection, the superiority was more marked and at times pronounced.

Mr. C. W. Cathcart of Edinburgh had found the following method simple and successful: Washing and shaving of the skin, then dehydrating with alcohol and painting with Tr. Iodi (B.P.), and covering with a sterile dressing. This was done the night before operation, and the skin was again painted with iodine just before operation. He sometimes used Lord Lister's method of soaking with 1—20 carbolic solution for twenty minutes. He believed that the hyperemia caused by iodine painting was an important factor in the good result. He has been quite satisfied with the iodine-spirit method of preparing and storing catgut. He objected to dry dressings on granulating wounds, and to the packing of sinuses with gauze, preferring moist dressings covered with waterproof in such cases.

Dr. Elder of Montreal drew attention to the experiments in Crile's Clinic. No operation could be aseptic. The air would infect, if nothing else. The whole benefit from iodine or alcohol depended upon the local hyperemia they produced. It was the biological action (as Mr. Cathcart has just pointed out) of these agents upon which we had to depend. The patient must rely upon the phagocytic action of his own blood—determined to that part by the iodine or alcohol—for his protection. Dehydration of the surface meant hyperemia deeper down, and it was this hyperemia which protected, and not the presence or absence of any chemical agent to any particular depth in the skin.

Mr. Cuthbert Wallace of London had not used any so-called antiseptic or chemical for ten years, and relied on soap and water for preparing the patient's skin. Instruments were boiled in water, laid on a dry towel, and rinsed from time to time during operation in sterilized saline solution. He used rubber gloves. In six hundred operations on clear cases, taking the radical cure of hernia as a type, suppuration occurred in less than 4 per cent. These results had been obtained in a teaching school (St. Thomas' Hospital) with all assistants constantly changing.

Lieut.-Col. H. Smith, Indian Medical Service, spoke of operative work in the tropics which had to be done in the open air—often dust laden. Instruments were kept in a 1—40 carbolic solution, and the wound drenched with a 1—2000 sublimate solution. He referred to Sir David Semple's observations showing that tetanus might follow in the case of a wound containing a ligatured anaerobic stump, *e.g.*, the neck of the sac in the radial cure of hernia. The speaker therefore advocated stitching in preference to ligaturing in such cases. He objected to gloves because they lessened the dexterity essential to rapid operating, and rapidity, in its turn, often did away with the necessity of draining a wound. Six months in a workshop would afford better training for a would-be surgeon than post-graduate courses; and a man intending to practice abdominal surgery would do well to spend a few months on a tailor's bench in order to learn how to handle needles and thread.

Remarks were also made by Professor Koch (Groningen), Dr. Douglas Drew (London), Professor Cameron (Toronto), and Sir Thomas Chavasse, president of the Section.

Sarcoma Treated by Radium.—On behalf of Dr. Louis Wickham of Paris, Professor Ryerson of Toronto presented a report on two cases of sarcoma treated by radium with good results. The first case was that of a girl of ten, from whom a sarcoma of a digit of the left foot was removed in February, 1908; recurrence followed, and the front half of the foot was amputated in February, 1910; in August, 1910, a growth appeared in Scarpa's triangle (left), and this had disappeared under Dr. Wickham's treatment by radium at intervals from April 4, 1911, to July 7, 1911. The second case was that of an English boy, aged eleven, from whom a London surgeon removed a large sarcoma of the thigh last April. The growth recurred, and, as amputation at the hip was declined, treatment by radium was undertaken by Dr. Wickham from the 4th to the 9th of July, with the result that the tumor had disappeared. (This patient was shown to the meeting, and examined by many surgeons present.) Dr. Wickham conveyed the opinion that while all operable cases of sarcoma should be treated by operation, radium was an adjunct to surgery, and might be regarded as a prolongation of the surgeon's bistoury, because of its power to penetrate beyond the reach of eye or finger. It was also of value as a means of relieving pain in cases of inoperable malignant growths.

Third Day—Friday, July 29.

Some Functions and Surgical Uses of the Omentum.—D. P. D. Wilkie of Edinburgh read this paper. The omentum was no specialized organ for absorption of fluid from the abdomen. It had a remarkable capacity, however, for picking up any foreign particles of solid matter left in the peritoneal cavity. Removal of the omentum markedly lowered an animal's resistance to peritoneal infection. There was no evidence to show that the omentum was capable of "intelligent movement," or that it was attracted by any infection. It was borne to the zone of irritation by simple mechanical factors. The omentum might with benefit be wrapped round a portion of intestine the vitality of which was doubtful. The use of isolated portions of omentum as grafts to reinforce suture lines could not be recommended, owing to the tendency to extensive adhesions to neighboring viscera. In cases in which a perforation of a hollow viscus could not be closed by the ordinary methods, a plug of omentum

might be relied on to occlude the opening. At the conclusion of his paper Mr. Wilkie gave a lantern demonstration illustrating the uses of the omentum as shown in the effects produced by experiments on animals.

Abdominal Aneurysm and Its Surgical Treatment.—Mr. W. DE C. WHEELER of Dublin reported two cases successfully operated on by himself during the last twelve months. He urged the necessity for extraordinary precautions in asepsis, in the presence of advanced arterial disease and of buried metal. He advised the administration of 606 in recent syphilitic disease, or in the presence of a positive Wassermann reaction. This was a prophylactic measure against the development of a secondary aneurysm or rupture of the aorta. He also advised the injection of horse serum at the time of operation to assist coagulation. He deplored the fact that abdominal aneurysm was not diagnosed until it was almost "pointing," thus defeating the best chance for the cure by operation. Colt's apparatus, he thought, made the operation safe and effective. Mr. Wheeler introduced 150 inches of wire in the form of a cage in his first case, and a wisp of 105 inches in the second. One man was back at work eleven months after operation; the other was only recently treated, but showed a marked improvement.

Appendicitis Without Physical Signs.—Mr. H. J. PATERSON of London read this paper. The appendix might be the seat of gross lesions although the patient had never had a recognizable attack of appendicitis. In acute appendicitis the physical signs might be very slight, in rare cases absent, so that there might be little indication of the serious condition of the patient. Chronic appendicitis might simulate gastric disease with remarkable fidelity. The author gave an account of the symptoms and gastric analyses in these cases. Based on an experience of forty-four cases, he formulated the following important surgical lessons: (1) In operation for supposed gastric or duodenal ulcer failure to discover these lesions suggested examination of the condition of the appendix. (2) In cases of abdominal pain of obscure origin we should bear in mind that the appendix might be the cause, although there might have been no definite clinical attacks of appendicitis. The speaker related cases of acute appendicitis in which physical signs were absent when the patient was seen, and yet operation revealed serious and extensive inflammation of the appendix. Such cases taught that in dealing with acute appendicitis there was no place for procrastination. It was absolutely impossible to foretell which cases would do well without operation, and which would prove fatal without operation. In acute appendicitis the symptoms were so deceptive, the physical signs so inconstant, the indications of danger so slight, the ultimate issue so uncertain, that immediate operation as soon as the diagnosis was made was the wisest course, and would enable us to approach within measurable distance of the ideal expressed by Dr. Murphy, "We ought to have no deaths from appendicitis."

Tuberculous Mesenteric Glands and Some Abdominal Conditions They May Give Rise To.—Mr. G. P. NEWBOLT of Liverpool read this paper. These glands might give rise to acute abdominal crises of which volvulus and acute peritonitis due to the rupture of a suppurating gland were the best examples. In addition, various subacute, or chronic conditions might occur, giving rise to pain simulating appendicitis, etc., which needed surgical interference. The conditions were chiefly met with in young adults. Whenever the glands were so much enlarged as to be palpable, and when, in addition, they gave rise to pain, they should be removed in order to get rid of a condition which might terminate in an acute emergency. When met with in the course of abdominal operations, and when caseating, they should be removed, unless this involved risk to the patient, in which case one should wait and interfere later, if necessary. It was well to remember that these glands might give rise to trouble, when consulting the causes of abdominal disease.

Treatment of Cleft Palate.—Mr. JAMES BERRY of London presented a table of 81 consecutive cases of cleft palate treated by operation. In 37 cases of complete cleft of hard and soft palate he had obtained complete union after the first operation in 15, and after a supplementary operation in 7. In 22 cases of cleft of soft and part of hard palate complete union had been obtained in 12 after the first operation, and in 5 after one or more supplementary operations. In 21 cases of cleft of the soft palate only complete union was obtained after the first operation in 17. In one case of central cleft of the hard palate only operation had resulted in partial closure.

Fibromatous Tumors of Mesentery.—W. J. GREER of Newport stated that early records contained references to mesenteric tumors found at autopsy in women who had been thought to be pregnant. As to their etiology little was known. The diagnosis was difficult and errors were frequent. The tumors developed sometimes painlessly, but usually causing constipation and discomfort. Abdominal examination revealed areas of dullness surrounded by areas of resonance with the tumor more movable in the transverse direction than in the vertical. The prognosis was unfavorable if operation was not performed. The operation consisted in careful enucleation, with closure of the cavity with catgut. Resection of a portion of gut might be required. The speaker reported a case of successful removal of a mesenteric fibromatous tumor weighing 3 pounds and 4½ ounces.

Fracture of Scaphoid Bone.—W. A. MACLENNON of Glasgow read a paper on this subject.

(To be continued.)

AMERICAN PEDIATRIC SOCIETY.

Twenty-third Annual Meeting, Held at Mohonk Lake, N. Y., May 31-June 1, 1911.

THE PRESIDENT, DR. HENRY DWIGHT CHAPIN OF NEW YORK, IN THE CHAIR.

(Continued from page 253.)

The Value of Pertussis Vaccine in the Treatment of Whooping Cough.—Dr. EDWIN E. GRAHAM of Philadelphia read this paper. He said that the fact that pertussis in infants was such a serious disease and that it had a tendency to be complicated by pneumonia, emphysema, convulsions, and perhaps paralysis, together with the fact that it did not respond to treatment by drugs, made it important that any new treatment that offered a reasonable hope of success should be thoroughly tested. Bordet and Gengou claimed to have found the bacillus of pertussis and described it. This bacillus did not grow well in blood agar but developed in liquid media of one per cent. glycerinated bouillon with equal parts of rabbit's blood or serum. In his earliest cases Dr. Graham gave 20,000,000 bacteria for four days. This dose did not produce any untoward symptoms and was increased to 40,000,000 bacteria every four days. A careful study of these cases seemed to show that the disease was modified by the treatment employed. The same dose was then given every three days and later every two days, the number of injections varying from six to eight. In not a single instance was there any evidence of any local reaction. Those who came into intimate contact with these patients had been in favor of the remedy, believing that it diminished the number and severity of the attacks and shortened the course of the disease. Only 24 cases were reported; of these seven were apparently not benefited by the treatment. Dr. Graham believed that the dose should be increased beyond 40,000,000 especially in severe cases.

The results obtained in these cases warranted a more extensive trial of the vaccine.

An Operation Upon Tonsils and Adenoids.—Dr. Charles Gilmore Kerley of New York presented this paper, in which he stated that during the past year he had performed adenoid and tonsil operations 371 times. The method of procedure until eighteen months ago was to remove as much of the tonsil as possible by firm pressure with the tonsillotome. In this way from two-thirds to seven-eighths of the tonsil was removed. The majority of cases seen early were permanently benefited to some degree, while in others the benefit was only temporary, the tonsil soon resuming its former size. A second and sometimes even a third operation had been required in many cases. Dr. Kerley had for some time appreciated the desirablity of the complete removal of the tonsil. He learned of the method of finger enucleation practised by Dr. Frank S. Mathews of New York City (*Annals of Surgery*, December, 1908) and had followed that procedure with but little deviation. Anesthesia was administered to the point of the abolition of the corneal reflex. The object was to strip the tonsil from its bed. In operating upon the right tonsil he passed the index finger into the mouth and with moderate pressure the finger was passed into the superior fossa at the junction of the anterior and posterior pillars. He then went above the tonsil and worked down behind the capsule, pulling the tonsil downward; with pressure exerted first anteriorly and then posteriorly he separated it from its attachments until it hung by a pedicle. The tonsillotome was slipped over this pedicle. Pressure was made from without by the anesthetist and from within by the operator and the pedicle was cut. He had no difficulty in removing the whole tonsil by this method. Tonsils deeply imbedded slipped out as easily as those more superficially placed. The duration of the entire operation was rarely more than six minutes, and this included as well the removal of any adenoids that might be present. In the removal of adenoids he used the modified Gottstein curette built on an angle of about 45 degrees. From six weeks to three months after operation the nasal vault was examined for adhesions and if any were present they were easily removed with the finger.

Dr. Rotch of Boston thought that Dr. Kerley's paper had brought up a number of valuable ideas. They should remember in considering the subject of tonsils in children that the process of development must be taken into account. Normally adenoid tissue occurred up to a certain age and then tended to diminish. This fact accounted for the recurrences when early removal was practised. He did not know whether this radical enucleation put an end to normal growth or not, but if they operated later there was not much tendency to recurrence. Again it was not always the enlarged tonsil that gave the most trouble; absorption from a small amount of diseased tonsil affected the health of the individual. Tonsils that were not enlarged frequently had to be removed for this reason.

Dr. L. E. LaFetra of New York said that he had had a talk with Dr. Mathews when the latter was working out the technique of his operation and the latter had showed tonsils that had been removed by this method; ever since it had appealed to the speaker as the most satisfactory method. With this procedure there need not be any fear of recurrence. Another point was that they did not see the severe attacks of sore throat that they did when the tonsils were simply sliced off. There were cases in which the separation of the tonsillar pillars from the tonsil was very difficult because of repeated attacks of inflammation, and the use of separators would be found necessary in more cases than Dr. Kerley's paper would indicate. If one operated upon a child of six or seven years who had had frequent attacks, the capsule would be found adherent and if one tried to enucleate the tonsil with the finger alone there would be the same bleeding that occurred when the tonsil was sliced off. There was also some danger of tearing the tonsillar pillars. The speaker had found that in using the adenoid curette it was better to use it as one would a knife, making a lateral motion and cutting across the base of the adenoid so that it was removed in one piece. This was more satisfactory than making two or three sweeps with it as in using a curette. Of course the curette should be very sharp.

Dr. Henry Koplik of New York said that the cases that had been operated upon two or three times and had recurrences were very discouraging. Some of them still had obstructions in the nose and postpharyngeal space. It was an obstruction not due to adenoids alone, but to a thickening of the whole mucous membrane and to adenoid tissue under the mucous membrane. Repeated operations really harmed this particular class of children. The whole subject was not as simple as it had appeared to be here this morning. Some of the cases required a great deal of consideration as to when operation should be done and as to whether any benefit might be expected from operative procedures. There were other forms of tonsils which operators seemed anxious to remove, as for instance the small tonsils in babies just born. Dr. Koplik had seen several of these cases operated upon in which it seemed that the condition of the child was worse after the operation than before. This did not refer to cases where diseased tonsils were causing trouble. He felt that tonsils had been placed there for some purpose and future study might reveal this. With laryngologists who had given the subject the most study the tendency was to leave a small amount of tonsillar tissue behind. The speaker had seen two cases of endocarditis following enucleation and in the hospital others had seen similar cases. He had also seen severe diphtheria occur on the seat of a tonsillar fossa.

Dr. R. G. Freeman of New York thought that if they looked at the tonsils as a part of the normal mechanism for keeping out bacterial infection it was a question whether they should be entirely removed. If they should not be removed then they might expect after their removal to see an infection of the cervical lymphnodes. Dr. Kerley had mentioned such a case. It was questionable if it was not better to leave some of this tissue.

Dr. Haines of New York thought that enucleation was better than cutting, because of its simplicity and freedom from hemorrhage and subsequent prostration. It seemed to him that the cases in which the hemorrhage had been greatest were those in which sharp instruments had been used. The use of calcium lactate had in his experience lessened hemorrhage. He believed that so far as the adenoid was concerned the curette was all that was required except where the tissue was so far forward that it was in apposition with the vomer. The removal of the entire adenoid in one piece was preferable. It was advisable to feel with the finger in the postnasal space and to guide the blade of the curette.

Dr. J. Mason Knox of Baltimore asked Dr. Kerley what the age was of the children upon whom he operated and what he considered the indications for removal of adenoids in babies. He also asked whether the results had been as good in babies as in older children.

Dr. Henry D. Chapin of New York called attention to the fact that in some children the bony pharynx was shaped like a Gothic arch instead of a round one and in his experience such children did not get as much relief from the adenoid operation as did others. Some symptoms that were attributed to adenoids were really due to an underlying condition of faulty development. Tonsils probably had some function to perform; it might be

that of producing an internal secretion and some harm might result from their complete removal.

Dr. Jacobi of New York said that he had been told that this operation was a difficult one and that cases should be sent to the author of it for operation; he was glad to learn now that there was no longer a monopoly in this field and that this operation was very easily performed. He did not believe, however, that it should be done as frequently as some gentlemen seemed to think. It was not a matter of indifference whether the capsule was removed or not. He believed that we should learn that infection through the capsule was rather difficult; the capsule was a protection to the blood and lymph circulation. It was probable that the infection of rheumatism and scarlet fever through the capsule was not so frequent; it more likely took place through the soft lymphnodes of the Waldeyer ring. Dr. Jacobi emphasized the desirability of keeping the nares clean both before and after operation; if there was greater care in this respect so many operations would probably not be necessary. The speaker also advocated irrigations rather than injections.

Dr. Kerley of New York, in closing the discussion, said that Dr. Haine's point was an excellent one, namely, that of locating the adenoid with the finger in the post-nasal space at the time of using the curette. As to the age of the patients, he tried to avoid operating upon children under one year of age. This was especially true so far as the tonsils are concerned. However, he thought that adenoids should be removed regardless of age if they were sufficient to produce obstruction. As to the endocarditis to which Dr. Koplik referred, there were many cases of this condition where tonsillectomy had not been performed and how could he tell whether the endocarditis was due to the tonsillectomy? The laryngologist was perhaps not always a safe man to follow, as he did the operation and then turned the case over to the pediatrist. He thought the use of the pillar separators a very good thing. As to the function of the tonsils he knew nothing, but he did know that the ones he took out were so riddled with holes and filled with connective tissue and crypts filled with bacteria that they failed to perform any function if they had one. Adenoids did return, but there was no reason why they should not be removed a second or a third time if necessary.

Thursday, June 1—Second Day.

The Polygraph as an Aid to Diagnosis in Cardiac Conditions in Children.—Dr. Godfrey R. Pisek and Dr. T. Homer Coffen of New York presented this paper. They said that the use of the polygraph had proven of great value in correlating physiological and clinical data in adults. Polygraphic records had stimulated closer study of the heart and circulation and newer conceptions of the intricate heart mechanisms had been developed. This method gave precise knowledge of cardiac functions and could be compared with the data obtained by the pathologist in his laboratory. The authors undertook to discover whether satisfactory tracings could be made from children, if additional information could be obtained in physical examination, and if this information could be made practical in prognosis and treatment. With slight modifications of the apparatus and technique they were able to make records in children without any difficulty. They gave an analysis of their findings, showing their significance in such conditions as heart block, cardiac arrhythmia, and the extra heart sound, and concluded that when making a physical examination of the patient with cardiac disease perhaps the least important factor was the determination of the precise valve involved. It was more important to determine the exact power of the heart, the functionating ability of the myocardium, and the data of the cardiac activity. Polygraphs would not stultify physical findings, but would enhance their value.

Dr. L. E. La Fetra of New York reported a case of heart block occurring in a child eight years old. The polygraph showed that she had partial heart block, with two auricular systoles to one ventricular; the auricular 80 to the minute and the ventricular 40. In seeking the possible cause of this condition it was found that the patient had had diphtheria three years before, with some paralysis, and it was possible that this caused some disturbance of the bundle of His, preventing complete conduction. One similar case had been reported.

Dr. Jacobi of New York thought that for a long time they had neglected the diseases of the myocardium. These had been conceded to be an important factor only within the past twenty-five or thirty years. He feared that now they were in danger of overdoing it. Formerly they made only a diagnosis of endocarditis; now they made only a diagnosis of myocarditis. They had learned that in chronic aortic disease digitalis and strophanthus would do little for them and were contraindicated, and if the myocardium was so absolutely the prevailing factor in their indications they might be led into error.

Dr. Pisek of New York said he was glad Dr. Jacobi had brought out that point. Before making any exact reports the study should be continued for a year or two, especially in diphtheria and scarlet fever, where they had found in checking up the diagnoses that they could determine that there was no obstruction in the conductivity or in the essential functions of the heart. A great many cases of accidental murmur had been recorded as grave conditions, and in this way they could check that up.

A Preparatory Study of the Bacillus Acidophilus in Regard to Its Possible Therapeutic Use.—Dr. Thomas Morgan Rotch of Boston read this paper, in which he stated that recent advances in their knowledge of the gastroenteric tract had been so great that it seemed to be time to begin studies as to the practical use which they could make of individual organisms. Prominent among these organisms was the *Bacillus acidophilus*. This bacillus was a hydrocarbon saprophyte. It did not produce toxins. It was a fermental organism whose habitat was in the large intestine. It throve on carbohydrates and produced relatively large amounts of lactic acid from fermentable sugars. It was antagonistic to the proteolytic organisms, producing fermentation provided sugar was present. Although it produced acid it grew best where the medium was less acid. It appeared to grow better below the ileocecal valve than above. The *Bacillus acidophilus* was non-pathogenic for experimental animals and under normal conditions was found to be the inhabitant of the intestinal tract of man. It had the ability to render that portion of the intestinal tract where it was located unfavorable to the development of other invading organisms. It might form a considerable amount of acid from carbohydrates, this occurring mostly below the ileocecal valve. The *Bacillus bulgaricus* had some different characteristics; its habitat was chiefly above the ileocecal valve, and it grew less as it approached the anus. There appeared to be a considerable number of intestinal disturbances associated with the activities of the putrefactive bacteria, some of which might be influenced by the activity of the *Bacillus acidophilus*. There were three types of bacterial activity recognized in the intestinal tract, the proteolytic, the fermentative, and the facultative. The intestinal bacteria of abnormal nurslings were strictly fermentative. It had not been proven that the fermentative flora of the normal nurslings was a valuable factor in protecting the host from invasion by other organisms, particularly of the proteolytic type. It was evident that the increased administration of carbohydrates and the restitution of the protein would furnish the dietetic conditions most favorable for the development of the proper organisms; if the obligate fermentative bacteria were present and available in the intestinal canal they might be brought

up to their natural degree of activity. The observations presented were designed to show the feasibility of encouraging the growth of the *Bacillus acidophilus* by a suitably modified food. From a theoretical point of view it seemed advisable to introduce cultures of *Bacillus acidophilus* provided they were known to have been obtained from a source known to be normal and apparently free from objectionable conditions. The speaker described the details of his experiments and gave a complete report of two cases.

Dr. L. Lovett Morse of Boston said that he had understood Dr. Rotch to say that the acid reaction of the stool was due to the sugar in the food; he thought it depended upon the relation of the fats and proteids and that the sugar had no effect.

Dr. Jacobi of New York said he had a prejudice against this bacillus because of its name; it had a long Latin name with a good-sized Greek termination and he would suggest that Dr. Rotch should act as godfather and give it a better name. As to the use of these bacteria as a medicine he was glad if there was something that he could give to correct the mistakes of nurses and doctors. If they insisted on feeding babies on an exclusive milk diet they would have this condition. By adding carbohydrates to the food the condition would not be created. All these scientific researches confirmed what he had insisted upon for half a century, namely, that they should not feed milk without carbohydrates. Cane sugar or cereals should be substituted for the too plentiful milk diet.

Dr. J. Mason Knox of Baltimore thought that as far as the treatment of dysentery was concerned the reader of the paper took a rather too optimistic view. The bacteria were located in the mucous membrane after the onset of the disease and were in intimate association with the lymph and blood, and it was not likely that feeding different kinds of bacteria in ulcerated dysentery would give very brilliant results.

Dr. Charles Hunter Dunn of Boston related that during last summer an attempt was made to treat these cases by injections of sterilized dextrose solution into the blood. The cases were as yet two few to enable them to draw conclusions, but it was thought that there was some amelioration of the condition. It seemed to the speaker that the great difficulty lay in getting the proper diagnostic basis. They had probably been using acid producing bacilli in fermentative conditions without such a clear knowledge as they now possessed of the difference between fermentation and putrefaction. What was needed was a simple method of making the diagnosis.

Dr. Rotch of Boston said that Dr. Knox was right in what he said about dysentery; they could not reach the organisms after they had penetrated the mucosa. The organisms produced toxins in the intestines, however, and they reduced the number of bacilli which were making toxins. In regard to Dr. Morse's remarks, the speaker said that it was a well accepted fact that carbohydrates and sugars did produce acid and that changes in the diet brought about a change in the condition, a change which was inimical to the putrefaction.

(To be continued.)

THE PRACTITIONERS' SOCIETY OF NEW YORK.

237th Regular Meeting, February 3, 1911.

The President, Dr. H. M. Biggs, in the Chair.

On the Control of Hemorrhage from Neoplasms of the Bladder, with Remarks on the Trypsin and Ascitic Serum (Hodenpyl) Treatment.—By Dr. L. B. Bangs. (See page 359.)

Dr. C. L. Gibson said that the case reported by Dr. Bangs as having received the Hodenpyl serum had already been commented on by another speaker while reviewing the treatment in a case which seemed to show amelioration. Dr. Samuel Alexander also related a similar experience, but the patients promptly died. The apparent changes for the better in such conditions might be explained thus: carcinoma was a parasitic condition, and was influenced by the condition of the parent trunk. Introducing a foreign material like serum into the circulation produced changes which were sometimes quite obvious in the recipient, lowering his vitality and secondarily that of its parasite, the carcinomatous growth. The Hodenpyl treatment, Dr. Gibson further stated, was erroneously conceived on an impression that the serum was derived from a case of spontaneous healing of a carcinoma: later this belief was demonstrated to be false.

Dr. V. P. Gibney asked Dr. Bangs if there had been any permanent cures by means of the Hodenpyl serum. He had heard that there were and also that there there none.

Dr. L. B. Bangs, replying to the question, said that it was the statement of its effect upon external and visible tumors that led him to make the experiment, but he did not know of any real cures by this serum. However he felt justified in making the attempt. He could not say that the course of the malady had been changed any, except apparently a sudden increase in the size of the obstruction, which he could not explain scientifically for the reason that an autopsy could not be had ,and, therefore, he did not know the exact size after the treatment had been ended.

An Unusual Duodenal Ulcer.—Dr. W. Gilman Thompson reported this interesting case, and stated that it was unusual from its long duration, with exceedingly serious hemorrhages, and the possible etiology. The patient was a robust man, now 52 years of age, who for twenty-five years had suffered from occasional sudden attacks developing three or four hours after eating, and consisting of intense nausea, cold sweats, great prostration, and subsequent vomiting of blood and its passage in the stools. True pain and epigastric tenderness were not complained of, but there was a sensation of vague epigastric discomfort, which the patient had described as a sensation of obstruction, "as if some greasy, ill-tasting substance had been eaten." The earlier attacks were attributed by the patient to biliousness, as blood was observed only in minute quantity, but at the age of 47, and again at 49, hematemesis twice occurred in such severity as to produce partial coma and bring life to the lowest possible ebb. The speaker saw the man in both of these attacks, and in several minor ones, and in one of them he sought surgical aid, but in the opinion of the surgeon the man was moribund, and the operation was not justified. The worst attack occurred in the midst of a dinner at the house of a friend, when the patient suddenly became deadly pale and faint, but without pain or local tenderness. He reached his home in a cab, and was then attacked with hematemesis and melena. He also recovered with astonishing promptness from the attacks, and, being abstemious as to both food and drink, remained in robust health in the intervals. This fact, together with the long duration of the malady, led the speaker to the suspicion that the hemorrhage might be due to some unusual local vascular condition in the intestine. On examining the abdomen he found an elevated bunch of congenital varicose veins, about three-fourths of an inch in diameter, situated a short distance above the umbilicus, and it seemed possible that there might have been a similar defect in the veins of the duodenum, one of which, when irritated by food, occasionally ruptured. With this provisional diagnosis the patient was sent to Dr. William J. Mayo for exploration in an interval when he was in good health. Dr. Mayo's report, which was written two years ago, stated: "Judge X was operated

upon this morning. We found a varicose ulcer on the superior wall of the duodenum, one and one-fourth inches below the pylorous, which had a chronic perforation, that is a point where it was closely adherent to the edge of the lesser omentum and gall-bladder, and which, when separated, left a small opening into the duodenum. The ulcer was small without much induration except at the adherent point, and, while there was considerable contraction, there was no obstruction. The ulcer was enfolded and the vessels closed with mattress sutures of linen." In the two years which had elapsed since the operation the patient had remained in perfect health, the speaker said, without digestive disorder of any kind. The connection between the varicose veins of the abdominal wall and their presence in the intestine, Dr. Thompson said, suggested the hypothesis that both were congenital vascular defects, and that such may occasionally be a factor in the obscure etiology of duodenal ulcer.

Two Cases of Malignant Tumor of the Orbit, Treated by the X-Ray, with Very Different Results.—Dr. C. S. Bull reported these two cases. The first was that of a gentleman, aged 46, who was first seen in January, 1900. The left eye was displaced upward and slightly outward, and the lower lid was pushed forward by a growth which occupied the inferior orbital margin and extended back along the floor of the orbit, mainly to the nasal side. After careful examination of the nose and pharynx, and the use of transillumination, the speaker decided that the superior nasal meatus and the ethmoid antrum were not involved, and that it was purely an orbital growth, and he decided to operate. The growth was removed from the margin and floor of the orbit, leaving the eye in place. The periosteum was stripped from the lower margin of the orbit and floor as far back as could be reached. The maxillary antrum was not involved, and there was no opening into the nasal meatus and none in the orbital plate of the ethmoid. The orbital tissue did not seem to be involved, and the speaker concluded that the growth had started from the periosteum of the floor. The patient made a rapid recovery and the eye resumed its normal position with vision of 20/40+. The patient remained free from any return of the growth for about two years and a half, and then a nodule was noticed at the inner angle of the orbit, which grew rapidly and extended into the orbit and lower lid. When he saw him four months later the whole orbit was involved, the eye protruded forward, outward and upward, and the maxillary antrum and ethmoid by transillumination were found to be involved. The patient was told that nothing but a very radical operation, including the resection of the superior maxilla and cleaning out the entire contents of the orbit, ethnoid, and superior nasal meatus, would do any good. To this he consented. When the orbit was cleaned out there was such a profuse and continuous hemorrhage that a consultation of the physicians present advised ligation of the left common carotid, which was done. All the diseased bones were removed, including the contents of the ethmoid. The frontal sinus was not involved. The patient made a slow but uneventful recovery, and, while the cheek was sunken, the deformity was not as great as had been feared. He remained perfectly well for nearly three years, and then a recurrence appeared at the inner canthus and lower lid and jaw with great rapidity, so that in two months there was a large bulging mass protruding from between the lids. Dr. Bull advised against any further operative interference, and suggested that treatment by *x*-ray be tried, which was done. The patient had eighteen sittings of varying length and at varying intervals, covering a period of four months. At that time all traces of the neoplasm had entirely disappeared, and there had been no return of the growth for a period now of about three years. The original tumor and the recurring growths proved to be sarcoma of the round cell type.

Dr. Bull's second case was that of a young man, aged 26, whom he saw in January, 1906. Three years before he noticed a protrusion or swelling at the upper and outer angle of the left orbit, which slowly but steadily increased in size, and of late it had been quite painful. There was partial ptosis, and the eye protruded forward and inward toward the nasal side. There was some limitation of motility outward and upward. There was some chemosis of the conjunctiva and constant pain, which was increased by any pressure on the lid and eyeball. The growth showed at the external canthus, where it was ulcerated and bleeding. About three months before the speaker saw him a similar swelling had appeared at the upper and outer angle of the right orbit, and had increased rapidly in size. A careful examination convinced Dr. Bull that he had to do with a neoplasm of both lacrymal glands, and his first suspicion was that it was tuberculous. A cutaneous and a hypodermic test with tuberculin were made on two occasions, but the result was negative, and there was no reaction. There was nothing in the personal or family history to point to a tuberculous origin. He then decided that it was probably a sarcoma of the lacrymal gland, and he proposed that he should try the treatment by the *x*-ray. The patient had twelve exposures at intervals of three days apart, the exposures varying in time from three minutes to twenty minutes. The effect of the treatment was quite unexpected, as there was a steady increase in the growth at a much more rapid rate than before with corresponding increase in the pain. After the twelfth exposure the speaker concluded to attempt the removal of the tumors. An incision was made through the upper lids just below the orbital margin, and both glands were removed, after careful dissection from the underlying periosteum, the adhesions not being very serious except at the extreme upper end of the glands. A careful examination was then made of the orbits, but nothing of the nature of infiltration of the orbital tissue or extension of the growth was found. The patient made a rapid recovery, with complete motility and perfect vision and disappearance of the ptosis. A microscopical examination of the tumors showed them to be sarcoma of the small round cell type, but with very marked hypertrophy of the connective tissue structure of the glands.

Dr. L. B. Bangs asked Dr. Bull if radium had been used.

Dr. Bull replied that the first case occurred before there was any knowledge of radium as a therapeutic agent, and that the second case was about five years ago, and then radium was not procurable. Just before the operation he had asked the patient to have radium applied, but the latter had declined to have any further experimenting except with the knife. In addition to what he had already said the speaker added that the sarcoma had involved the sinus. If the tumor was encapsulated Dr. Bull said that the operation would be successful, with the possibility of no recurrence, but if it had broken into the orbit or involved the sinuses secondarily, any operation, no matter how radical, for removal caused a very rapid recurrence of the growth. This was based on an experience of 463 cases.

Dr. Joseph D. Bryant said that if the removal was incomplete it was a very active source of returning and that there was not much change to be noted in that location.

Recurrent Carcinoma of the Bladder.—Dr. C. L. Gibson presented a bladder removed post mortem with the following history. The patient had been operated on

by Dr. Keyes, Sr., for a so-called villous tumor of the bladder. From this he had recovered and had been free from any trouble for more than nine years. He was seen then by Dr. Gibson greatly exsanguinated with a palpable mass in the bladder and passing pure blood. No attempt was made at cystoscopy. A suprapubic cystotomy was performed, and the bladder was found to be filled with diffuse masses as big as the fist involving apparently all parts of it. These were removed as much as possible simply to give a little more space. A microscopical examination showed that it was an epithelioma. The wound healed entirely and there was no recurrence of the hematuria; he was passing clear urine and the bladder held as much as a pint. One would not know that he had anything the matter with his bladder. The patient was then lost sight of for a period of five years, during which he was able to work and earn his living. At the end of this period he came back, saying that he had been bleeding for a few weeks past. His hemoglobin was only 10 per cent. and he died. The bladder showed now only two nodules of the carcinoma as big as a cherry.

Dr. L. B. Bangs said that Dr. Gibson's case was quite in line with a similar experience of his own, but which was not as remarkable as the one reported. He concurred in the statement as to benign papilloma and further stated that he had had only one experience in the removal of a papilloma in which the recurrence had also been a papilloma.

Philadelphia Pediatric Society.

At a stated meeting held March 14 Dr. E. B. Hodge presented kidneys from a child exhibited before the Society on several previous occasions and upon whom the operation of decapsulation of the kidneys was twice performed. In the first illness the child presented symptoms of acute nephritis and a fatal issue appeared imminent. Following the operation the patient improved, and she remained in comparative health for a period of two years, although edema was readily induced by slight disturbing influences. The second operation was performed on the supervention of grave phenomena, but the patient failed to respond. The kidneys were found enclosed in their fatty capsules, but there had been no restoration of the fibrous capsule. Dr. Harry Lowenburg demonstrated a boy who had presented symptoms of intracranial pressure from which he had recovered. He was seven years old, and his head had been enlarged from birth. He developed headache, vomiting, and optic neuritis, and the symptoms disappeared under administration of potassium iodide and mercuric chloride gr. 1/24 thrice daily. The condition was looked upon as internal hydrocephalus. Dr. Robert S. McCombs reported "A Case of Anterior Poliomyelitis Occurring at Five Months of Age, Associated with Facial Palsy." The little patient was seized with fever and diarrhea and presented paralysis of the left upper extremity, of the left side of the face, and of the movements of muscles controlled by the third nerve. Dr. T. H. Weisenburg presented specimens of brain tumors occurring in children and he discussed their clinical significance. He pointed out the rarity of intracranial tumors in early life and their ease of diagnosis in some instances and the difficulty in others. He demonstrated a specimen of a growth in the cerebellopontine angle, one in the third ventricle, one in the cerebellum, and others. Drs. S. S. Woody and J. A. Kozmer presented a communication entitled "A Study of Non-Diphtheritic Exudates." They pointed out the difficulty in determining the nature of a lesion of the mouth and pharynx merely from the clinical manifestations. They considered in detail, in contrast with the exudate and other phenomena of diphtheria, these observed in connection with Vincent's angina, and with pneumococcic, streptococcic, and staphylococcic infections.

Medicolegal Notes.

Liability of Hospitals for Malpractice.—Hospitals treating patients for hire are generally responsible for the negligence or malpractice of their physicians; hospitals conducted for charity, on the other hand, are not. A suit was brought by the administration of a railroad employee against the railroad company for wrongful death caused, it was alleged, by failure to furnish proper medical and surgical attention after an injury. It appeared that a monthly hospital fee was deducted from the pay of the railroad employees to maintain a hospital for them when occasion required. After an injury to the deceased he died, after being treated in the hospital. The railroad company derived no profit from its hospital department. It was held that the railroad company was a mere trustee to administer the hospital fund, and was responsible only for ordinary and reasonable care in the selection of competent and skillful physicians and attendants, and was not liable for the negligence or malpractice of physicians employed by the department.—Arkansas Midland R. Co. v. Pearson, Arkansas Supreme Court, 133 S. W. 917.

Competency of Medical Testimony as to Composition of Gallstones.—In an action to cancel and revoke a license to practise medicine on account of "grossly unprofessional and dishonorable conduct of a character likely to deceive or defraud the public," under the Texas statute of 1907 (Gen. Laws, pp. 224-228), it appeared that the defendant gave himself out as a specialist in the cure of gallstones. He gave a patient medicine composed principally, if not entirely, of olive oil, which she took, and passed from her stomach and intestines a large number of balls, of a green color, from one-eighth to three-eighths of an inch in diameter, which the defendant examined and pronounced to be gallstones, knowing that they were not. It was held that the act was not invalid because it failed to define what was grossly unprofessional or dishonorable conduct. To an objection to the evidence of regular physicians because of the difference of the mode of treatment of diseases by the various schools, defendant claiming to belong to the eclectic school, the court held that the former could testify to questions of anatomy for or against a member of any other school. Regarding the particular point in issue it did not take the wisdom and lore of an allopath, the knowledge of a homeopath, the philosophy of an eclectic, or the erudition of an osteopath to fit a man to testify to the chemical elements composing the balls. Any chemist of any school of medicine could testify to their composition; any one from whatever school could testify that a canal or duct the size of a small pea could not form a passage for a stone the size of a hen's egg.—Berry v. State, Texas Court of Civil Appeals, 135 S. W. 631.

Hospital Records as Evidence.—In a contested will case, where most of the medical evidence was furnished by the physicians attached to hospitals, certain hospital records were allowed to be used in the course of examination by the physicians who made them to refresh their recollection, in accordance with the rule that, where shown to be true at the time made and that the witness has no independent recollection of the facts, a memorandum itself may be given in evidence. But the hospital records themselves, not being public documents, were held not to be receivable as evidence of the facts therein stated. *In re* Hock's Will, 129 N. Y. Supp. 196.

Reading Medical Works to Medical Expert.—It is sometimes the custom in will contests, where the testamentary capacity of the maker is in question, to read from medical books written by eminent physicians, and ask, on cross-examination of a medical expert, whether or not authors whom the witness admitted to be good authority have not expressed opinions different from that given on the stand. In such cases the reference is not for the purpose of making the statements in the books evidence before a jury, but solely for the purpose of ascertaining the weight to be given to the testimony of the witness. The extent to which such examination may go has been held discretionary with the court, and there is no well founded objection to it. But the established rule is that a party cannot read from medical works and ask his expert if he agrees with the statements of the author or if it accords with his experience. The distinction is narrow. In such a case, therefore, all the answers of the experts on cross-examination which were to the effect that they agreed with the statements of medical authors read to them by the cross-examiner were struck out. When the answers were to the effect that the expert witness did not agree with the particular authors read to him the answers were allowed to stand; but permission was given to recall the medical witness, if counsel so elected. While the ruling is in

line with the authorities the result may not be quite fair to the examiner, who is bound by unfavorable answers and gets no advantage of the favorable answers of the expert. *In re* Hock's Will, 129 N. Y. Supp. 203.

Duty to File Certificates of Birth.—A physician who fails to file a certificate of birth within ten days, as required by the Greater New York Charter (Laws 1901, c. 466) § 1239, is liable to the penalty imposed by the statute unless the omission is excused by the commission of health, though the child lives but a short time and the physician files a certificate of death which gives the date of the birth. Department of Health of City of New York v. Dunn, 129 N. Y. Supp. 29.

What Constitutes a Consultation?—"Talking with" a physician and getting medicine from him, it is held, is equivalent to a consultation. Why, said a Missouri court in an insurance case, should a layman talk with a physician about his health and get medicine from him except it be with a view of obtaining direction, information, or advice as to his health, and, if he did that, he was consulting with him. The layman and the physician are not on terms of equality on the subject of the health of the layman, and, where a talk on that subject is accompanied by the giving of medicine by the physician to the layman, the inference is irresistible that the "talk" was a consultation. Winn v. Modern Woodmen (Md.), 137 S. W. 292.

Masseur Treatment Practising Medicine: Constitutionality of Statute Requiring Certificate on Examination.—In an appeal from a conviction of a masseur of the offense of practising medicine and treating disease without registering a certificate the defendant contended that any man has a right to treat disease by the masseur treatment and charge therefor without procuring a certificate or license from the State medical board. The Texas statute, Acts 30th, Ly. c. 123, provides that it shall be unlawful for any person to practise medicine in any of its branches without obtaining such a certificate, to obtain which a man must be examined as to his knowledge of various medical subjects. It provides that any person shall be regarded as practising medicine who publicly professes to be a physician or surgeon and treats or offers to treat any disease or disorder by any system or method, or to effect cures thereof, or who shall do so and charge therefor, directly or indirectly. It was held that this statute was not unconstitutional as discriminating against the practice of the masseur treatment. It did not attempt to say how any one should treat disease. All it said was that he should have a knowledge of certain given subjects before he should undertake to practise. There was no error in not permitting the defendant to prove that there was no board where he could obtain license to practise massage. There was a board where he could obtain such a license; but he must show, in order to get that license, that he had a knowledge of the human anatomy, was able to diagnose disease, and had a knowledge of the studies prescribed. The person named in the information was treated by the defendant for appendicitis. The prosecution was allowed to prove that the defendant treated other persons also, that he had issued advertisments for the purpose of obtaining practice, and the nature of these advertisements, that he made representations to the father of the person named in the information and to others that he could cure appendicitis and certain other diseases and had done so. Evidence as to whether the treatment given by defendant was harmful or beneficial was not material to the case, nor was evidence as to whether the person named in the information had been treated by others before she was treated by the defendant. Germany v. State, Texas Court of Criminal Appeals, 137 S. W. 130.

Evidence: Refreshing Recollection.—In an insurance case a physician's day-book was in evidence before the jury. On the physician's examination the court refused to allow him to refresh his memory as to the date of certain treatments from an *ex parte* affidavit previously made by him. There was no prejudicial error in this, as the witness accomplished the same thing by stating that all his entries were entered in the day-book. Winn v. Modern Woodmen of America, (Mo.) 137 S. W. 292.

Construction of Statute Against Prescribing Intoxicating Liquors.—The Louisiana Act 85 of 1886, page 124, makes it a crime for any physician to prescribe intoxicating liquors with intent to evade or assist others in evading the intoxicating liquor laws of the State. The act applies both to prohibition territory and to territory where the sale of intoxicating liquors is allowed on payment of a license, making it in the latter territory a crime for a physician to prescribe intoxicating liquors with intent to evade or assist others in evading the law requiring a license. State v. Terry, Louisiana Supreme Court, 55 So. 15.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended August 12, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	424	159
Diphtheria	208	18
Measles	172	13
Scarlet Fever	66	1
Smallpox	—	—
Varicella	20	—
Typhoid Fever	157	14
Whooping Cough	88	9
Cerebrospinal Meningitis	5	8
Malarial Fever	—	—
Totals	1,140	222

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended August 11, 1911:

Places	Date	Cases	Deaths
CHOLERA			
Austria-Hungary: Trieste	Aug. 1–7	22	2
Bulgaria: Kalondjik	June 18–20	1	1
Vicinity of Choumen. From the ship Cyrille, bound from the coast of Asia Minor.			
Ceylon: Colombo	June 19–24	3	2
France: Marseille	Aug. 8–10	6	2
Greece: Piraeus, quarantine station	Aug. 4		Present
Italy			
Total for all Italy July 16–26: Cases, 1,018; deaths, 429. Continental Italy outside of Naples Province, July 16–26: Cases 215; deaths, 86.			
Provinces—Naples	July 16–26	303	130
Naples	July 16–26	155	38
Palermo	July 22–26	75	35
Palermo	July 16–26	238	130
Sicily			
Outside Palermo Province, July 22–26: Cases, 32; deaths, 10.			
India: Bombay	June 25–July 1	3	3
Calcutta	June 4–17		93
Madras	June 12–18	1	1
Rangoon	May 1–31	16	15
Indo-China: Saigon	June 12–25	10	10
Java: Batavia	June 19–24	28	10
1 European.			
Russia			
New outbreak Apr. 21–July 10. Cases, 29; deaths, 4, including 7 cases and 2 deaths, p. 1044, vol. 1.			
Governments: Baku—Baku	July 8	1	
Khasan—Kosmodemiansk	July 2	1	
Kherson—Nikolaiev	July 9–10	3	
Samara—Nikolayevsk	June 29–July 3	15	1
Vitebsk—Lepel district	June 19	1	1
Straits Settlements: Singapore	June 4–17	16	22
Turkey: Constantinople	July 10–16		5
YELLOW FEVER			
Ecuador: Guayaquil	July 1–15	1	1
Milagro	July 1–15	7	5
Naranjito	July 1–15	2	
Taguachi	July 1–15		1
Mexico: Merida	Aug. 8	2	
In the lazaretto.			
Venezuela: Caracas	July 1–21	3	1
Maiquetia	July 22	2	
PLAGUE			
Brazil: Para	Aug. 3–4	1	1
Chile: Iquique	June 11–July 1	5	2
China: Amoy	July 11–17		2
Hongkong	June 19–24	25	8
Ecuador: Guayaquil	July 1–15	7	1
India: Calcutta	June 4–17		87
Kurrachi	June 25–July 1	6	4
Rangoon	May 1–31	278	267
Indo-China: Saigon	June 12–25	59	17
Japan: Formosa	June 25–July 1	4	5
In the southern part.			
Straits Settlements: Singapore	June 11–17	1	1
Venezuela: Caracas	July 1–6	1	
SMALLPOX			
Argentina: Buenos Aires	May 1–31		34
Rosario	Apr. 1–May 31		75
Canada: Montreal	July 23–29	1	
Ottawa	July 23–29	3	
Vancouver	July 9–15	1	
Winnipeg	July 23–29	1	
Brazil: Para	Aug. 3		Present
Pernambuco	June 1–15		86
Chile: Talcuhuana	June 25–July 1	3	
Valparaiso	June 25–July 1	59	
Deaths seldom reported.			
China: Hongkong	June 19–24	3	2
Egypt: Port Said	June 18–July 1	3	4
France: Havre	July 16–22	1	1
Paris	July 9–15	2	
Germany			
Total July 16–22: cases, 2.			
Bremen	July 9–15	1	
Great Britain: Birmingham	July 9–15		1
Dundee	July 18–22	4	
India: Madras	July 12–18	8	4
Rangoon	May 1–31	238	107

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Original Articles.

THE TRIUMPH OF AMERICAN MEDICINE IN THE CONSTRUCTION OF THE PANAMA CANAL.

BY J. EWING MEARS, M.D.,

PHILADELPHIA.

IN a paper published in the volume of Transactions of the American Surgical Association for 1908, entitled "Modern Medicine and Surgery in the Orient," I discussed the subject of the conservation of the public health, and directed attention to the methods of sanitation practised in the countries of the Orient, as I had observed them in a visit which I had recently made to these countries. In concluding the paper, I spoke of what had been accomplished in our country, and referred to the great work done in the Isthmian Canal Zone by Col. W. C. Gorgas, U. S. A., Chief Sanitary Officer, Isthmian Canal Zone, and stated that his achievements had made the construction of the Canal possible, claiming that its completion would be a triumph of American Medicine.

During the past winter I have visited the Canal Zone and have had, through the courtesy of Col. Gorgas, an opportunity to observe the marvelous results obtained in the conservation of the health, by the methods of sanitation employed, of the large army of officials and work people, some 47,000 in number, engaged in the stupendous undertaking of the Canal construction.

In order to appreciate fully what has been accomplished by the system of sanitation inaugurated by Col. Gorgas and so perfectly conducted by him and his able corps of assistants, it is necessary to consider the conditions of health which, up to the beginning of the work by the Americans, prevailed in the cities of Colon and Panama, and in what is now known as the Canal Zone, ten miles of territory acquired by purchase by the United States Government from the Republic of Panama, and which is located five miles on either side of the Canal route, including an area of three hundred and twenty-two square miles.

For nearly four hundred years that portion of the neck of land between the Continents of North and South America, now called the Isthmus of Panama, has been known to be one of the unhealthiest regions of the Globe. Uninhabitable to any but the few natives who made their homes there, and the residents of the cities of Panama and Chagres, at the mouth of the Chagres River, on the Atlantic Ocean, with their blood charged to the full with malarial parasites, who fell in great numbers victims to the deadly scourges of malarial and yellow fever, known in their most pernicious forms as Chagres fever, which, existing as endemic forms, frequently assumed the proportions of devastating epidemics, developing under the climatic conditions which encouraged the facile breeding of the anopheles mosquitoes, and the absence of any quarantine regulations which controlled the influx of the stegomyia species, or of its work in transmitting infection.

The eager quest of gold in the waters and lands of California brought many white people to the Isthmus in the year 1849 who desired in this way to avoid the longer and much delayed route around Cape Horn. On foot, on mule, and in vehicles of varied design they fought their way through the almost impenetrable jungle, in torrid heat, under blistering sun-rays, and in torrential rains. Overcome by climatic conditions and exhausted by fatigue, they fell easy victims to the fierce onslaught of the native anopheles, which in swarming myriads welcomed the invasion of new blood. Many laid down to die to find an uninviting grave in the desolate morass and in the tangled jungle

The tide of travel across the Isthmus increased to such extent as to encourage the building of a railroad from the Atlantic to the Pacific Ocean. This was undertaken in 1849 and completed in 1855, under very great difficulties in railway construction, owing to the conditions of land and soil. Here again the anopheles and stegomyia played havoc in the ranks of the laborers, and so many perished from disease that it became a common saying that every railroad tie represented the dead body of a workman.

Ignorant of the cause of malarial and yellow fevers and their methods of transmission, the medical officers in charge were forced to content themselves simply in combating the developed disease with antimalarial remedies and those commonly employed in treating yellow fever.

In the year 1881 another invasion of the Isthmus took place, when the original French company began the construction of an Isthmian Canal. Eleven years—1881 to 1892—were consumed in construction work before the effort was abandoned, with very little accomplished comparatively in the way of a completed canal. While it is stated that corrupt methods and graft played an important part in producing the failure, it is believed that diseases, now preventable, were chiefly responsible. The fifty buildings devoted to hospital purposes left by the French bear testimony to the fact that the medical department was fully organized, but its work was largely ineffective, because the state of knowledge then existing was defective in producing information as to the prevention of the diseases the medical officers were called upon to combat.

That heroic son of Medicine, Dr. Lazear, U. S. A., had not given his life to demonstrate that the infection of yellow fever was transmitted by the mosquito, Stegomyia fasciata, and Col. Gorgas, U. S. A., had not driven disease and pestilence out of Havana by the enlightened methods of sanitation

devised by him. The hopeless contest waged against disease by the French is illustrated in the statement made by Lieut. Constant Cordier, U. S. A., in the thesis presented by him to the San Marcos University, Lima, Peru, for the degree of Doctor of Philosophy, to the effect that in five years the French lost eleven-sixteenths of the working force, one-third of the number French subjects. Out of the twenty-four Sisters of Charity engaged in nursing in the Ancon Hospital, twenty died of yellow fever. Of seventeen engineers who came on one steamer, sixteen died. During the period of time in which the Panama Railroad was undergoing construction, and in the eleven years in which the French were engaged in their efforts to construct the Canal the losses by death from malarial and yellow fever were as great as any suffered by the white race in the history of the tropics.

In the year 1904, when the United States Government took charge of the Canal Zone and began the Canal construction, Col. Gorgas, fresh from the victories won by him in Cuba, was assigned to duty as the Chief Sanitary Officer in the Zone, and began the colossal work of transforming a territorial area of three hundred and twenty-two square miles, surcharged with disease-producing causes, into a region so free from disease that the mortality among the officials and working people is now not greater than that of the towns and cities of our country.

This standard of health was regarded as essential, in order (1) to attract and to protect skilled white workmen who came from their homes in our country, and (2) to maintain a condition of health among all classes of the working force, which would contribute to the continuous and successful labor which was necessary in accomplishing the Canal construction. Col. Gorgas was not only charged with the duty of converting the intricate recesses of the jungle into healthful homes for the employees, but also he was confronted with the difficult task of renovating two cities, aggregating in population fifty thousand people, one of which had been for quite two and a half centuries the birthplace and the home of pestilence and disease. Such were the conditions which existed within the Canal Zone which demanded treatment. At either end of the Zone were gates which, unless securely closed against the introduction of infective diseases, would prove to be fertile sources of conditions which would render futile the efforts made to establish correct sanitary methods within the Zone. These were the harbors of Colon, on the Atlantic Ocean, and Panama, on the Pacific Ocean.

Into these harbors came the trade of the world, in vessels from the Eastern and Western Hemispheres. On the Atlantic side the islands of the Antilles and the many ports of the eastern coast of Central and South America had free intercourse with the Zone through the Colon harbor. In many of the ports yellow fever existed in endemic form. History records that for over one hundred and fifty years yellow fever had existed in Havana, Cuba, as an endemic disease. On the west coast of South America similar conditions existed, many ports not only giving residence to the infective fevers but also to the plague.

In Guayaquil, Ecuador, it is stated that the inhabitants are inclined to rejoice in the presence of yellow fever, as this condition of health keeps out the foreigners who would invade the country and rob them of their business opportunities.

In many of the Pacific seaports the plague has a footing, and during my visit to some of them deaths occurred from it; the same may be said of the Atlantic ports. It is thus to be seen that not only was the Zone area to be purified and purged of disease causes, but it was to be protected from the invasion of disease through the gates of commerce at each end. These conditions, within and without confronted Col. Gorgas in the organization of his sanitary system, and enhanced greatly the difficulties to be overcome in perfecting it. Two chief propositions present themselves in the study of the sanitary system which was planned and adopted. The first one may be regarded as of major importance—that of the prevention of disease by the removal of causes—and the second, the guardianship of the well and the care of the sick from all causes and of those sustaining injuries in the work of canal construction.

The general state of health in the community of officials and work people is maintained by rigid inspection of all food issued for consumption and by weekly examinations and analyses of the water supply from all sources, municipal water supplies, streams, and springs, and condensed water. The houses in which officials and workpeople live claim special attention, and equally well those of the inhabitants of Colon and Panama City. While the political government of these cities, which are within the limits of the Canal Zone, rests with the governmental authorities of the Republic, the sanitary and police control are supervised by the officers of the Canal Commission under the authority of the United States Government. This is absolutely necessary for the maintenance of public order and of correct sanitary conditions within the Zone. The plans for the construction of new houses in these cities must be submitted for approval to the health officers, and the buildings within the Zone for the employees are constructed under the same exacting conditions. Owing to the presence of the plague on both coasts of Central and South America, it is especially necessary that new houses should be constructed so as to make them rat-proof and prevent the harboring of rats. These conditions are accomplished by either raising them three feet from the ground on supports of concrete or other material, covered with tin, so that the rats cannot secure a footing on them, or if placed on the ground they must rest on a floor of concrete All buildings are submitted to inspection at regular intervals; those not in a sanitary condition in the cities must be placed in that condition, if possible, by the owner, or they are condemned and destroyed. Disinfection and fumigation are practised in all buildings in which cases of infectious diseases have occurred. Permits to repair buildings and to occupy them temporarily or permanently must be obtained from the health officials.

In the cities of Panama and Colon systems of sewerage have been installed, and all buildings must make connections with the sewers. This condition exists in all of the communities in which residential or hospital buildings are located. Outside of the sewered areas in the native villages pit closets are used, and are disinfected weekly with a solution of larvacide, a very effective and cheap preparation, consisting of crude carbolic acid and caustic soda.

Uncompromising warfare is carried on against the mosquito, anopheles, and stegomyia. In the cities and in the regions of the Zone occupied by officers or laborers all breeding places are either destroyed or kept in a sanitary condition, free from

larvæ, by oiling or the use of larvacide. Stagnant pools and collections of water are filled up or in large areas drained by ditches which are maintained in sanitary condition. Special attention is given to defective roof gutters, which become prolific breeding places in the water which remains in them owing to the want of proper inclination to carry off all water which comes into them in a rainfall. When very defective by reason of sagging, they are removed, and the owners of buildings are required to replace those thus disposed of by new gutters. In some instances simple punching of the sagging portion keeps the gutter empty.

At first considerable opposition was met with, and the Governor of the District was requested to amend the decree giving authority to the health officials, so that this important work could not be interfered with. All receptacles containing water for use are required to be screened. The constant inspection of known breeding places is maintained, and the mosquito brigade is on continuous and vigilant duty. Persistent search is made for suspected places, and the surveillance is never relaxed. Although no case of yellow fever has occurred on the Canal Zone since the year 1905, the search for the stegomyia and its destruction continues.

The fact that both the adult and larvæ of stegomyia species are transported by railroad trains exposes the Zone to dangers which require that the most exacting precautions should be taken; their escape from patients before entering quarantine is quite within the range of possibility and greatly increases the work of prevention. Fortunately their recognition is within scientific knowledge, and their detection is thus facilitated. All patients are transported to the hospitals on screened stretchers or in screened ambulances.

Notwithstanding the rigid system of prevention, through sanitary measures which have been established on the Zone, the community is still further protected from the invasion of the mosquito the breeding places of which may happen to escape destruction by a most perfect plan of house screening. Residences particularly are screened, the rustless wire (copper) being employed for this purpose. Not only are the doors and windows protected, but the porches, including first and second story, are securely enclosed. On first view, the appearance is novel, and quite suggestive of huge bird cages. The assured safety thus given dissipates any feeling that the inmates are unwilling occupants of the apparent houses of detention.

The known part taken by the fly, the common house fly, in transporting germs of diseases makes it a source of grave danger, and provokes measures of protection against its existence. These measures consist in supplying all buildings of the Commission with range closets, water and sewer connections. The pit closets in the native villages are, so far as possible, made fly-proof, and are disinfected weekly by a solution of larvacide to prevent fly-breeding. By this means of prevention the fly becomes a *rara avis* within the Zone limits, and is very much less in number than in the villages and towns of our country. During my stay I saw but one specimen, and the comfort enjoyed in the homes by their absence is very great, and quite in contrast to the discomfort caused by them in our homes, be it in the country or in the town.

The rat as the habitat in its hairy integument of the plague flea demands extermination. The annual report of the Department of Sanitation of the Isthmian Canal Commission for 1909 gives the number of rats caught and killed in Panama City during the year as 17,004; in the city of Colon the number killed was 7,284. In Panama City 673 dogs were poisoned, and in Colon 66. The report of the Board of Health Laboratory, included in the report of the Department of Sanitation, contains record of 24 examinations of rabies and suspects, and 11 cases of preventive treatment for hydrophobia were completed.

An interesting item relates to the existence of crab holes along the shores. In Colon 7,000 were oiled and 224,220 were worked. In Cristobel 43,200 were worked, and in Mount Hope 73,229. Grass and weeds afford a harbor for mosquitos. In Panama City 1,961,395 square feet of weeds and grass were cut and removed. In Bocas del Toro 340 square yards were cut and burned. In Colon 460 acres of vegetation were removed. In Colon 1,319,514 water receptacles were treated, and in Bocas del Toro 554 were overturned—158 breeding places of the mosquito were found in barrels, tubs, etc., and destroyed.

The antimalarial crusade is carried into the houses and into the public eating places of the employees of the Canal Commission. On the tables are placed bottles of the tonic quinine solution which is taken with the meals. Blood examinations are made to determine the presence of the malarial parasite. The complete report of Col. Gorgas for the year 1909 states the issues of quinine for the year to have been 3,148,053 pounds avordupois, an average per month of 262,337 pounds, representing an issue of 66.74 pounds during the year for each of the 47,167 employees reported as being present and engaged in the Canal construction.

I have selected these few items from Col. Gorgas' report to illustrate, in brief, the character and magnitude of the work carried on to prevent sickness among the employees of the Isthmian Canal Commission, and to maintain a state of health conducive to the most successful results in conducting the constructive work on the Canal. As a test of the success of the sanitary work it is interesting to consider, among other diseases, the hospital admissions and deaths from malaria in the years 1905 to 1909.

Hospital admissions per thousand of employees: 1905, 514; 1906, 821; 1908, 282; 1909, 215. In 1906, owing to exceptional rains, mosquitos were bred in many places and in large numbers, and it seemed not quite possible to control their existence by the measures which, under ordinary conditions, proved to be so successful. In the same period of time the deaths from malaria were: 1905, 86; 1906, 233; 1908, 73; 1909, 52. The vital statistics for 1909, as given by Col. Gorgas in his report, showed a marked improvement. In 1905 and 1906, with the number of employees 10,512 and 26,547, respectively, the death rate was 25.86 and 41.73. In 1908 and 1909, with the number of employees 43,891 and 47,167, respectively, the death rate was 13.01 and 10.64. In the year 1909 the annual death rate per thousand of 11,662 white employees was 6.43 from disease and 3.43 from violence; total, 9.86. Of Americans, average number 8,386, including employees and their families, the death rate per thousand was: from disease, 4.05; from violence, 2.27; total, 6.32. A further statement of the death rate of the total population, including the cities of Colon and Panama and the country between them, shows

it to have been, in 1905, 49.94 and, in 1909, 18.19.

Assuredly nothing can be added to these clear and authentic statements to demonstrate the value of the system of sanitary work inaugurated by Col. Gorgas and so faithfully and successfully conducted by him and his corps of able assistants.

From the consideration of the measures taken to prevent disease it will be interesting to observe how the sick are cared for. For the entire sanitary work on the Zone and in the cities of Panama and Colon there is a personnel of 1,244, the average number of employees at work during the year, distributed in the chief sanitary office, care of property, quarantine service, health officers, in hospitals, sanatorium, asylum for lepers, and dispensaries. There are four hospitals, including a leper asylum, and one sanatorium and nineteen dispensaries. There is a hospital for the insane, which is conducted for the Republic of Panama, which pays to the Commission for each patient 75 cents per day. The Canal Zone Government pays 30 cents a day, and outside patients, as members of the families of employees and others, pay 30 cents a day in the General Hospital. Altogether the paying patients from all sources in the Zone contribute in the year $98,081.72.

Ancon is the Zone town at the Panama end of the Canal and opposite to Panama City. Here is the office of the Chief Sanitary Officer and the Ancon Hospital, which is the largest. This was the site of the French Hospitals. Of the seventy-five buildings for hospital purposes, about fifty were built by the French, which were found by the Americans covered by the jungle. Twenty-five of the buildings are occupied by the staff. In the Ancon Hospital there are 900 beds for medical purposes, in 27 wards; 320 beds for surgical patients, in 10 wards; 5 wards for contagious and infectious diseases; 2 wards and 6 rooms for tuberculosis.

A maternity department is conducted for the families of white American employees, who pay in private rooms $2.50 a day and $1 in the general wards. Thirty contract physicians are employed by the Isthmian Commission, who report to Col. Gorgas, Chief Medical Officer. One hundred and two trained nurses, 93 female, 9 male, trained in the United States, are on duty, with 138 attendants acting as orderlies. The Colon, Culebra, and Santo Tomas Hospitals, with the leper asylum at Palo Seco and the Tobago Sanatorium, have much less capacity and require the services of a much smaller corps of officers and attendants. Attached to the daily trains on the Panama Railroad from Colon to Panama are hospital cars, arranged with berths which can be raised and lowered conveniently, forming comfortable stretchers and beds for the sick and injured who may be taken aboard at the different stations, and in this manner transported with a minimum degree of discomfort to the Ancon Hospital. In charge of these cars is a medical officer, with attendants, who gives attention to patients *en route*, and such medical services as may be needed. Four chaplains are assigned to duty in the hospitals, and two chapels, one Protestant and one Roman Catholic, supply places of worship. Four buildings, at different points in the Zone, provided by the Isthmian Commission, are devoted to the work of the Young Men's Christian Association, containing reading, library, and amusement rooms.

The milk supply comes from the dairy, in which there are 93 cows, which were brought from the United States and were carefully tested for tuberculosis before being sent and after arrival on the Zone. Great care is given to the feeding, stabling, and milking of the cows, and prompt measures taken in the treatment of any diseases which may occur. The milk is pasteurized. The poultry farm contains some 600 chickens, which are carefully watched for diseases. All dying from disease are autopsied and the cause of death determined and recorded.

One of the most important sections of the Isthmian Canal Commission is the laboratory of the Board of Health, forming a part of the department of sanitation, in charge of Samuel T. Darling, M. D., chief of the laboratory. Through the courtesy of Dr. Darling I was permitted to observe the methods of work carried on in the laboratory, which made my visit full of interest. The equipment of the laboratory is complete, the Government, through the Canal Commission, providing all that is necessary to conduct the important work of this department. The routine work in the laboratory includes examinations, pathological and bacteriological, for the hospitals, autopsies, surgical pathology studies, Wassermann reactions, blood cultures, vaccines, chemical analyses for the Commission and chemical examinations for the Ancon and other hospitals of milk and foods (toxicological), special examinations of urine, etc., chemical, bacteriological, and microscopic examination of all Zone water supplies, including five reservoirs. The research work involves various subjects, reports upon which have been published by Dr. Darling. Possibly the most important is that entitled "Studies in Relation to Malaria," published by the Government Printing Office, Washington, D. C., 1910. Most elaborate experiments were conducted in determining some of the factors concerned in the prevention and transmission of malarial fever in the Canal Zone. Among the most interesting results obtained was the determination of the influence exerted by quinine upon the malarial parasite.

The recognition of the mosquitoes common to the Zone, their breeding habits, and the determination made of the species of anopheles hospitable to malaria and those transmitting it claimed critical attention and study. Eleven species of anopheles were collected in the Canal Zone in the five years given to the study. It is interesting to note that observation determined the fact that the characteristic musical note of the mosquito is caused by the vibration of the proboscis and not the wings, as commonly believed. The proboscis is, therefore, not only a weapon of offence, but an organ of harmony—an inharmonious combination.

In concluding this necessarily brief and incomplete recital of what sanitary science in this day has accomplished in the conservation of the health of the working community in the Canal Zone, many questions of far-reaching importance suggest themselves for consideration and for study. To one, as is the writer, familiar by actual contact in field and hospital with the appalling conditions which, through the absence of scientific knowledge, confronted the medical officer of the army in the days of the Civil War, great must be his satisfaction in noting the changes which the last half century has wrought in the development and progress of scientific medicine.

In truth and in justice it can be said that in no

department of medical effort has progress been more pronounced than in the medical corps of our public service, army, navy, and marine-hospital service. The writer feels in this respect that he may be permitted to speak with a shadow of authority, as it came to him in his earlier teaching days to place in the medical department of the public service about ninety of his private students. He knew of the conditions existing in those days and of the requirements exacted by the boards of examination guarding the gates of admission into the service, and with inspiring appreciation and gratifying pride he has watched the gradual but sure advancement in scientific knowledge and in adaptive methods which has taken place.

The war colleges of our army, the hospital ships of our navy, the research laboratories of our marine-hospital service all speak in resounding tones of progress in scientific medicine, and place our public service in the very forefront of achievement among the nations of the world. No longer does the medical department of the different branches of the military and public service occupy the subordinate position assigned to it in the days of the Napoleonic campaigns, or even in those of more recent times.

In the earlier days the commanding general of the army concerned himself much, through his under-officers, about the state of efficiency of his commissary and quatermasters' departments, in order that he might without interruption continue his line of march to meet the enemy and engage him in battle. The medical department was, in a certain sense, an after-thought: the sick and wounded could be left behind in field hospital or in barracks, but the impedimenta, the quartermaster and commissary stores must be in as efficient a state as possible. He did not know and his medical officers could not tell him at that time how important, absolutely necessary, it was that the medical officer should march side by side, as it were, with the soldier.

Under his care the soldier endures the fatigue of the march and comes to the battle line as an efficient agent in the conflict; between him and disease and pestilence the medical officer stands, without fear and with undaunted courage, erecting barriers of defence and battling, it may be with greater skill than the officer of the line, against the onslaught of the ofttimes concealed enemy. In his hands the soldier becomes a unit of protection against all of the influences of his environment and the methods of his life—he is not only taught to protect himself, but to protect all about him. In a sense every act of his life, as every function of his physical being, becomes the intelligent care of the medical officer. Such, in truth, are the conditions in existence to day under the progressive methods which the advanced state of medical science confers.

It may be urged that it requires military discipline to achieve such results as we observe in the Canal Zone. Recognizing, as we all must, the influence exerted by a state of military control in conquering unsanitary conditions and in obtaining unresisting compliance with those which are conducive, in all respects, to the conservation of health which may be permanently maintained, we find some examples of places presenting conditions similar to those which had existed in the Canal Zone, and which have been completely removed by civic efforts.

In a visit made in the last winter to South America, I landed in Santos, Brazil, city of 41,000 population, and one of the best ports on the Atlantic Ocean. A few years ago this port was devastated by raging epidemics of yellow fever. To such an extent did the disease prevail that vessels coming into the port lost in several instances, and very quickly, their entire crews from the disease, officers and men, before they could be unloaded. I was told of one instance in which a vessel lay anchored in the harbor for a period of eighteen months unloaded, with cargo perishing in the hold.

Inspired by the fact that this city was the greatest shipping port of coffee in the world, the government and municipal authorities inaugurated a system of modern hygienic improvements which destroyed the breeding places of the stegomyia mosquito, and banished yellow fever, converting its beautiful harbor from a home of pestilence into an attractive seaside home, with the ships of many nations unloading and loading in guaranteed security alongside of its commodious and well-arranged quays.

Such results had been obtained by civic effort, and they may be accomplished in other places where knowledge of sanitary science, combined with intelligent cooperation—freed from the demoralizing and destroying grasp of the political boss, surcharged with graft—is employed in correcting unsanitary conditions, conducing, in this manner, to the prevention and to the staying of the ravages of disease.

The world should not, as we hope and believe it will not, look again upon a picture such as the Chickamauga Camp in the Spanish-American War, which portrayed in such lurid colors the humiliation of American medicine. While it is true we were on the eve of discoveries of great import, born of the experience which we gained in the occurrence and in the progress of the war, it may be said, without fear of successful contradiction, that the conditions which provoked such holocausts were in large measure preventable. It is true that we did not know of vaccination as a prophylactic measure against typhoid fever—a recent gift of laboratory research and of experimental medicine, which will take its place with vaccination against smallpox as a monumental contribution to the promotion of the well-being and welfare of the human race—we did know, however, of the great necessity of microscopic, chemical, and bacteriological examinations of food and drink supplies. The bacillus of typhoid fever had been isolated in the year 1880, and we knew the importance of its destruction in the excreta. We knew of the necessity of maintaining all sinks and pits in rigid sanitary conditions, destroying by the free application of the most powerful disinfectants all microorganisms. Our knowledge, at the time, of the part taken by the common house fly in conveying disease germs was sufficient to provoke measures of protection against it, and the employment of agents to prevent fly breeding in all places favorable to such conditions. We had sat for two decades or more under the instruction of the great teacher who had taught us the far-reaching principles of antisepsis, and had demonstrated its practical application in all conditions involving the sick and wounded—the subjects of the wounds of accident and of the wounds of intention. We knew the value of incineration in the disposal of all refuse matter. The gospel of cleanliness, evolving asepsis, as the physician and the surgeon understand it, or should

understand it, had been preached abroad in the land, enjoining all to be clean, through its unremitting application in practice.

All of these things and many more we did know, and yet the dread disease typhoid fever stalked through the camp, apparently unrestrained, laying low one-sixth of the entire command—20,000 cases out of an army corps of 120,000 troops—with a case mortality of 0.7 per cent. The annals of civilized warfare do not present a page quite so black, recording conditions which the knowledge of the day should not have permitted to exist.

The progress of scientific medicine is onward, and to-day in the camps of our armies, on the battleships of our navy, and at the quarantine stations of our marine-hospital service it shines with added luster, the medical officer taking his place, as of right it belongs to him, in the front rank with those whose efforts contribute to civil and military efficiency. Moved with pride by the achievements of his noble profession and inspired by loyal devotion to the corps of which he is a member, he bears aloft the banner of progress and scientific research unfurled by that distinguished disciple of medicine and honored medical officer of the United States Army, William Beaumont, who nearly a century ago gave to the world and to scientific medicine, obtained through accurate research work in the living subject, the first knowledge it had of the functions of the stomach and of the constituent elements of the gastric juice and their action on foods. His name will live as the pioneer in scientific research in the history of American medicine.

Truly, may we not congratulate our professional brethren who have so unselfishly devoted their talents and their lives to the service of their country upon the great work they have accomplished, which stirs our national pride, and proclaims to the world their monumental achievements, as the President and their Commander-in-Chief has so well proclaimed them, "Marvels of American courage, energy, and scientific thoroughness, skill, research, and original discovery." So long as preventable destroying diseases flee before the conquering hosts of efficient sanitation, so long will the labors of these noble benefactors of the human race be cherished. Upon their brows we place wreaths of victory, laurels won not in the fierce conflict of clashing arms, but in the home and in the daily walk in life, over which the Angel of Peace spreads her golden wings. As we acclaim them victors in peace, no less than in war, we enshrine them in the grateful hearts of their countrymen.

FRACTURES OF THE FEMUR.

By J. ALLEN GILBERT, Ph.D., M.D.,

PORTLAND, ORE.

The following method of treating fractures of the femur located anywhere above the lower third has proven so satisfactory that presentation to the profession seems advisable. Some of the principles and parts of the apparatus will be recognized as old friends, but the general scheme of the method for facilitating the application of extension and the method of applying the casts and its accessories used to that end may possibly be of help in this trying class of cases. Results, so far as shortening, danger of pneumonia, and pain during the period in bed are concerned, recommend the present method in preference to the pulley and weight. Experience with eight cases in which the following method was used was so thoroughly satisfactory that description of the apparatus and method of applying the same are given below.

Apparatus—(Key to the letters used in the cuts): A—Pulley with screw-eye and long rope. B—Inch strips of fly-screen netting long enough to reach

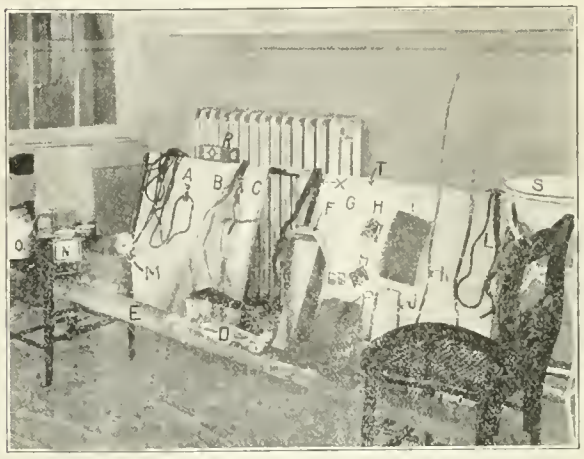

Fig. 1.

around the body. C—Tin scissors to cut fly-screen and to remove the cast after union of the bone. D—Large 12-inch strap-hinge, with one strap bent at about 4 inches from the joint, screwed to a board with an upright support at its end for the unfastened end of the hinge. E—A 2 by 4-inch piece about 6 feet long (strong board just as good). F—Board about 3 by 4 inches, with a wire handle to which is fastened a yard of heavy rubber elastic X. To this is attached the usual adhesive of a Buck's extension. G—Two large buckles with about 18 inches of tape fastened to them to be incorporated in the plaster cast U. H—Two folded pads of fly-screen, to be slipped over the ends of K to prevent it being pushed up through the cast U by the pressure upward from the rubber elastic X. I—Piece of fly-screen netting to be incorporated in the cast U, just over the head of the femur, which is the weakest part of the cast. J—Iron support to be hooked on to K even with the foot. This serves as a support to keep the foot from everting and also supports the bed clothes. K—Strap-iron band to extend from just above the crest of the ilium down

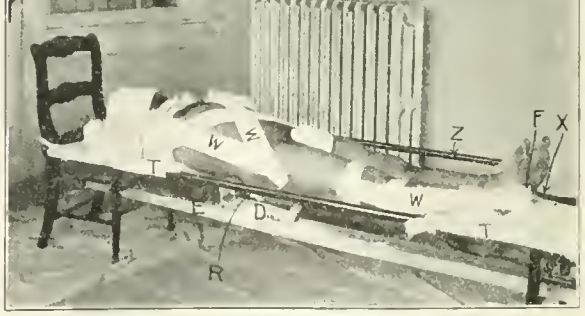

Fig. 2.

along the outer surface of the leg to about 9 inches below the foot, across at right angles, over to the inner aspect of the foot, and up again at right angles following the inner surface of the limb to about two-thirds of the way between the knee and perineum. Below the foot it must be as wide as the

length of F, which must be able to slide freely between the arms of the iron. The strap-iron should be of a strength to allow bending it to fit the curves of the leg. Strap-iron ¾ or ⅝ by ⅛ inches will be found convenient. L—Rope about 6 feet long. M—Spool of 3-inch by 10 yards. Z O—Adhesive

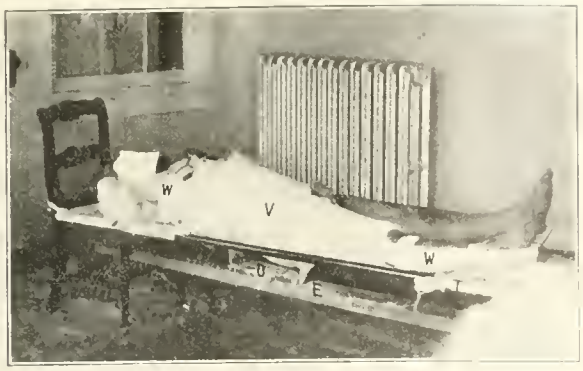

Fig. 3.

plaster. N—Box of plaster bandages, 3 or 3½ inches wide. O—Extra plaster of paris to make into a mush and work into the meshes of the fly-screen used. P—Two or three 1-inch boards 4 by 8 inches, with which to block up the hinge D and bring it to about the same height as the seats of the chairs. R—4-ounce package of cotton. S—Basin of water deep enough to submerge a plaster bandage standing on end. T—Gas pipe frame (Bradford), 6 feet by 2½ feet, over each end of which are pulled tightly fitting canvas slips, leaving space for a bed pan in the middle. The canvas slip under the shoulder can advantageously be slightly longer than the one under the feet. U—Plaster of paris cast. V—Thin layer of cotton over the body where the cast is to be applied. W—Adhesive strips 3 inches wide. X—Rubber elastic band. Y—A pad to relieve pressure on the heel. Z—The frame made of 1-inch gas pipe, 6 feet long and 2½ feet wide. The apparatus, including plaster and all, can be prepared at a cost of about $5.

Steps in Putting on the Cast.—1. Give hypo-

Fig. 4

dermic of ⅛ to ½ grain morphine, according to size of the patient.

2. While patient is still in bed place adhesive strips W, as shown in Fig. 2. Warm them so they will adhere well. On the side of the break the body strips should only extend from the head of the femur to the shoulder. On the uninjured side the lateral strip may extend from the knee to the shoulder. Diagonals across the abdomen are also placed to increase the adhesive surface. On the lower limb are placed the ordinary adhesive strips for a Buck's extension. Instead of the pulley and weights

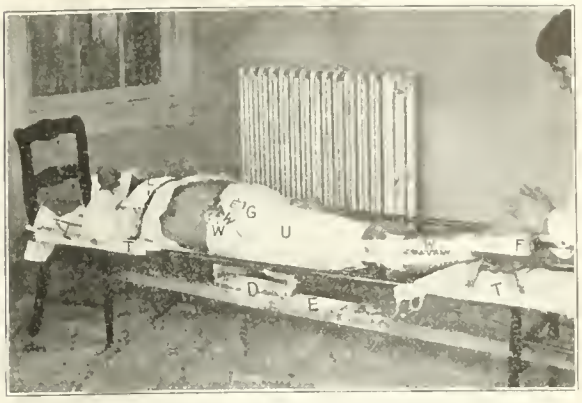

Fig. 5.

the extension is to be obtained by the rubber elastic band X.

3. Put side of the frame T under the sheet and up against the patient as he lies on the bed.

4. Pull him up on the frame by pulling the sheet without lifting him.

5. Place a 2 by 4 on rungs of two chairs, facing each other. Set the mounted hinge D on this and block it up with boards P till it is level with the seats of the chairs, Figs. 1 and 2. If the springs of the bed on which he is to lie are weak let the hinge be a little lower than the chair seats to allow for sagging of the bed. It would be even better to make a fracture bed by placing boards between the springs and the mattress.

6. While two assistants lift the frame at the ends, adjust the hinge, well covered with cotton, so that the small end of the hinge comes to the top of the coccyx or a little below.

7. Gradually lower the patient's shoulders and feet till the frame rests upon the two chairs, Fig 2.

8. Slide the slips up and down in the gas pipe

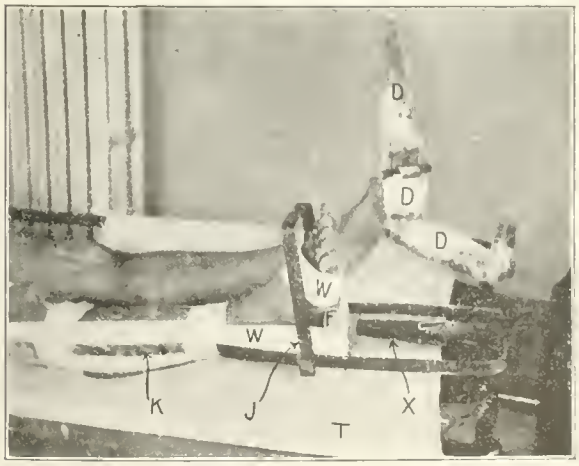

Fig. 6.

frame till they are out of the field of operation in placing the cast, and cover the body and broken thigh from the ribs to the knee with a thin layer of cotton, Fig. 3.—If preferred the body may be vaselined in place of the cotton.

9. With the rope L fasten the patient to the

chair at his head by passing the rope over the chest, under both arms and around the back of the chair, where it can be tied, Figs. 4 and 5.

10. Let an assistant make steady and continuous traction on the foot holding the previously everted foot in an upright position, Figs. 4 and 5.

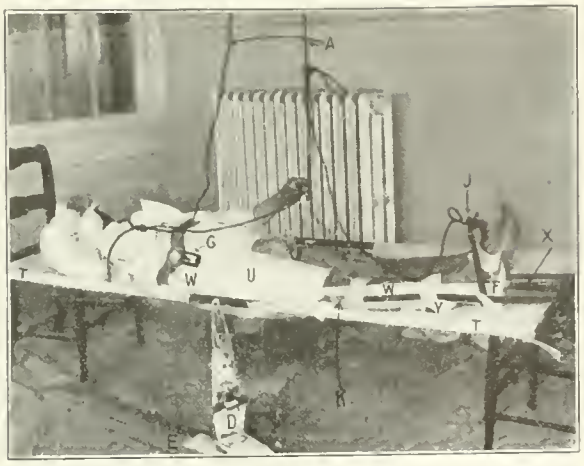

Fig. 7.

11. Enclose the part of the body covered by cotton in a cast U of sufficient strength to protect the body from the apparatus to be incorporated later. Enclose the free strap of the hinge under the cast, but be sure not to have any laps of the plaster bandage above the joint of the hinge so that it can be slipped out later. It is well also to apply a liberal pad of cotton in the groin before applying the cast. This can be removed later, leaving the genitals free and easy of access for cleansing purposes.

12. Adjust the strap-iron band K to the curves of the cast and leg. Slip the fly-screen pads H over each end of the band, one just above the ilium and the other on the inner aspect of the thigh, about two-thirds of the way from the knee to the perineum. Insert the fly-screen sheet I under the band over the hip and bind it all in place with a number of the inch strips of fly-screen B, passing the strips around the outer and inner arms of the iron band, as in Fig. 4. Keep up steady traction on the foot. The rope under the arms gives counter traction.

13. Work a mush of plaster of Paris into the meshes of the fly-screen.

14. Over this apply a heavy cast U, covering all from the ribs to the knee, leaving the uninjured thigh free, of course, Fig. 5. Reinforce the cast at the hip with extra laps of plaster bandage. Here is the weakest point in the cast.

15. While putting on this outer cast incorporate the tapes holding the large buckles G, carrying the tape back and forth, interweaving it among the separate layers of the cast, bringing the buckles finally four or five inches from the top of the cast.

16. Turn down the ends of the adhesive strips above the cast, fold them into straps, and pass them through the buckles G, each buckle thus receiving one diagonal and one lateral strip. The height of the cast can be regulated later, if desired, by these straps, Figs. 5 and 7.

17. Untie the rope holding the patient to the chair at his head and apply the extension below by carrying the rubber elastic X around the end of the strap-iron band and through the handle to block F, as often and as tightly as is required to hold the lower ends of the two femurs even, Fig. 6.

18. Hook the iron support J to the iron band just over the toes and fasten the foot to the inner arm of this support with an adhesive strip to prevent eversion of the foot, Fig. 6. After adjusting this iron support to its proper place, it can be fastened to the strap-iron band by a little adhesive strip, Fig. 7. The iron support J also supports the weight of the bed clothes.

19. By lifting the frame raise the patient. This allows the base of the hinge to drop down and swing from the strap of the hinge still held between the cast and the body. Slip this upward and take it out. The patient can then be put to bed *on the frame*. Fig. 8 shows a patient on a stretcher with the frame still under him. Sheets 1 and 2 can be slipped apart, leaving a space between them, where 3 can do duty immediately under the rectum, where the bed pan is to be used. Sheet 3 is under the frame so that it remains on the bed when the frame and sheets 1 and 2 are raised to insert the bed pan. The pad Y will usually be found advisable to relieve pressure on the heel. A pillow under the leg will serve this purpose well.

20. Remove the bedstead from the room. Place the four corners of the bed-springs and mattress on four boxes or four chairs in the middle of the room. This allows you to get on all sides of the patient without obstruction. The pulley A, in Fig. 1, should be screwed into a joist in the ceiling, just over the center of the bed.

21. Pass the long rope A, Figs. 7 and 8, under the arm on the injured side, behind the back, over the shoulder of the uninjured side up through a pulley screwed into the ceiling over the center of the bed and tie it to the supporting rod at the toe. Connect the two ropes going to the pulley so that the patient can draw either one to him. By pulling down on the rope around his shoulders he can raise his leg enough for the nurse to make the lower half of the bed. By pulling down on the rope fastened to this support over his toes he can raise his shoulders for adjustment of pillows or making the upper half of the bed. The bed can best be dressed by using two sheets between the frame and the body, one to reach from the head of the bed to the buttocks, the other from the foot of the bed to a little below the buttocks, the intervening space being sufficient to allow the use of a bed pan under the sheets and frame. By raising the frame and patient at the foot, supporting the frame with a box of right

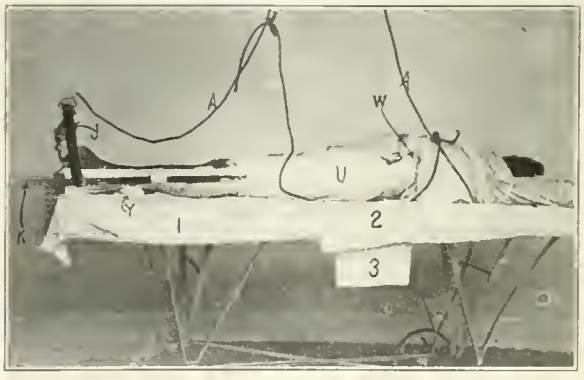

Fig. 8.

height, the bed pan can be slipped under and removed without disturbing either the patient or the extension. By using the uninjured limb and pulling on the ropes with his hands, the patient is able to move and turn himself at will. There is comparatively little pain during the applying of the cast

and during the period in bed. The patient stays on the frame till removal of the cast, which should be done from five weeks up, according to the age and general condition of the patient.

Advantages of the Method.—(1) Extension is continuous, regardless of the position of the patient.

(2) Elevation of the foot of the bed unnecessary and patient can be turned on his side, thus lessening the danger of hypostatic pneumonia.

(3) Adhesive strips on the body more comfortable and more efficient than counter pressure in the groin or on the perineum.

(4) Pain during application of the apparatus and during the period in bed is relatively slight.

(5) One attendant can manage the patient for every necessity.

(6) Well adapted to the application of any cast for hip, body, or femur.

Dekum Building.

ADENOSARCOMA OF THE LEFT KIDNEY IN A YOUNG CHILD; LANGENBUCH'S NEPHRECTOMY; RECOVERY.

By VICTOR C. PEDERSEN, A.M., M.D.,

NEW YORK.

The following report of a case of adenosarcoma of the kidney in a young child will be of interest and it is hoped, a valuable addition to the literature on the subject:

E. V., white, U. S., three years and five months old, referred by Dr. Ira B. Terry, through whose permission this report is made.

Family history negative as to neoplasm of any form so far as the mother knows. Father died of Bright's disease. Mother is in good health. There

A. *B.*

Fig. 1.—Before operation. *A*, Left quarter view, showing the protrusion of the tumor to the left and front, and extension upward and downward; the hollow back is indicated in the right line. *B*, Front view of tumor mass.

is one other child in the family in moderate health. Mother's father died of asthma; mother's mother is living and well in old age. Two brothers on the mother's side died as infants of diseases unknown. Father's father is now dying of dropsy, probably renal in origin. One brother died in infancy of unknown cause; another is living and well. Aside from the foregoing medical diseases of the kidney there have been no surgical lesions of the kidney in any immediate or remote members of the family so far as the mother knows.

The past personal history of the child states that

Fig. 2.—Front view. Tumor divided along its left border, as well as possible toward the hilum. Total destruction of kidney substances is shown, together with cavities, thin walls in places, and degenerated tissue and bloodclots both within the tumor substance and lying about on the table.

she has always been well and seems to have grown as rapidly as most children and to have shown the usual childish tendencies for play and ambition. There have been no serious sicknesses.

The present personal history reveals that for the first time the child passed blood in the urine in large quantities on December 1, 1910. The bleeding continued for a few days and then subsided. It recurred on January 1, 1911, without known cause as before and again lasted two or three days; the quantity of blood was on this occasion also large. Ordinary medicinal measures soon quieted it. The child remained apparently well and in her normal spirits until April 28, 1911, when she complained of pain in her left side. The mother examined her abdomen and found a lump which Dr. Terry diagnosed as renal in origin and summoned the writer in consultation. It was an easy matter to verifiy the diagnosis.

Physical examination showed a tumor perceptible in the erect and lying down positions. The former

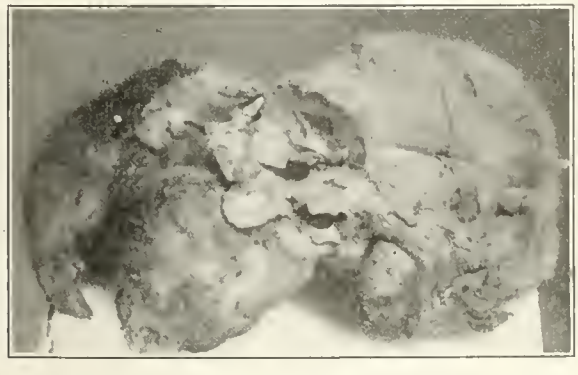

Fig. 3. Posterior view. Kidney substance has been cut across horizontally to secure specimen, thus opening the pelvis. A small portion of the right border and upper pole remained. The mass grew from the anterior surface and upper poles chiefly. The rupture in the thin walls of the tumor are shown in the lower left hand region.

is well shown by the photograph in Fig. 1. On inspection it was noticed that the abdominal muscles on that side of the body were relatively quiet in breathing and that the child on standing threw back her shoulders and hollowed her back much as a woman does when advanced in pregnancy. The

child's mental attitude was one of unusual docility and quiet. On palpation the mass was traced readily into the left flank and was separable from the free border of the ribs. It was not particularly tender although the abdominal muscles resisted the examination somewhat.

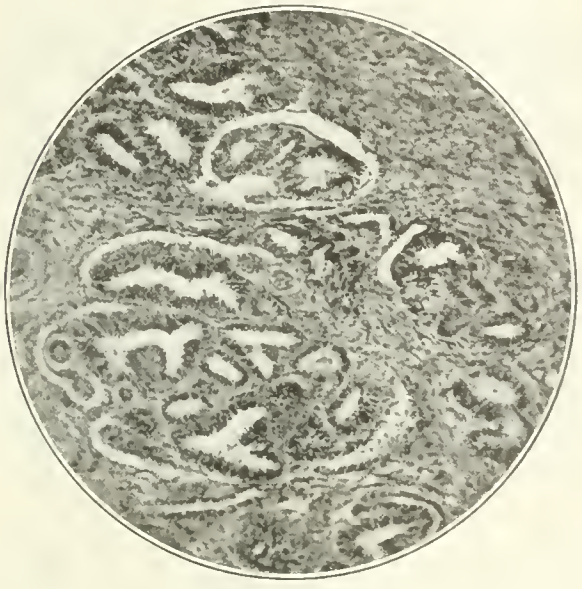

Fig. 4.—Microphotograph showing typical adenosarcoma.

The tumor was soft and rather freely movable from the flank forward but not from above downward, perhaps because one could not get the hand beyond either pole. On percussion the colon was found to pass over the tumor from above downward in good correspondence with the main axis of the mass.

In the flank was another zone of tympanites which the writer regarded as referred from the small intestines gathered together on the right side of the tumor. The point was raised, however, by Dr. Terry and by my chief, Dr. Page, at the People's Hospital, that this sign possibly indicated a coil of small intestines on the left side of the tumor. At the time of the operation the former condition was found to exist. The patient was admitted to the People's Hospital on April 30, 1911. It was determined to test the efficiency of the opposite kidney before proceeding to remove the diseased kidney, which, of course, was regarded as sarcomatous in all human probability. An effort was made to cystoscope the child under local anesthesia, which was neither satisfactory nor successful. The following day, under ether narcosis, a reasonably satisfactory cystoscopy was performed.

The mouth of the left ureter was found to be slightly larger, more patulous, and redder than the right but quite within the range of a normal ureteral mouth except for the fact that it was discharging no urine. The right ureter was found to be rather large for a child and to deliver the natural quantity of urine. A half-gram of indigo carmine was injected into the buttock. Its delivery in the urine began in practically forty-five minutes. Long before this time the anesthesia was stopped. It was considered inadvisable to determine whether the left kidney was excreting at all or not. The test was regarded as demonstrating as reasonably well as necessary the fact that the right kidney would do the work of the body.

The child was allowed to rest two days and then, under ether narcosis, Langenbuch's nephrectomy was performed in the following manner: The abdominal cavity was opened along the left linea semilunaris. It was found necessary to enlarge the original incision both upward and downward in order to deliver the kidney easily.

The abdominal contents were found only on the right side of the mass except the colon, which passed from above downward, corresponding with its long axis. The parietal peritoneum was divided about one inch away from the colon from above downward toward the left. This leaf of peritoneum was rapidly peeled off most of the tumor excepting where it was densely adherent above. It was clamped to the skin every inch or more to shut off the peritoneal cavity. The other leaf was dissected less freely from the abdominal wall and clamped to the skin, once above and below. It would have been better when this dissection was made if the peritoneum had been stitched instead of clamped. The intestines of the child were filled with gas and caused a great deal of trouble by passing between the clamps, especially below.

The kidney was then enucleated from its bed, just as rapidly as possible, first behind, then below and above, and finally in front, where it was adherent. Here the tumor was distinctly softened, and, notwithstanding all reasonable gentleness, ruptured and discharged gelatinous or myxomatous material, which was fortunately caught probably completely upon the gauze pads. After this the peritoneum was pushed away fairly successfully with gauze pads, the pedicle isolated, clamped twice, divided, and the tumor removed. The dissecting, clamping, and division of the pedicle caused shock, from which the child slowly rallied.

Proximal to the clamp on the pedicle at this step of the operation another thin-jawed clamp was placed briefly to control the vessels. In the end of

A. *B.*

Fig. 5.—After operation. *A* and *B* correspond as nearly as possible with the same pictures in Fig. 1.

the stump the artery was isolated and tied, likewise some of the larger veins. The whole stump was then whipped over with a running suture from end to end, drawn tightly. The two ends of this suture were again tied together, massing the stump rather carefully. The distal clamp was then removed and

finally the proximal clamp, while the suture ends, left long, kept the stump in view. No bleeding occurred. The bed of the tumor was then wiped clean, washed with normal salt solution, which was likewise used to clean the exposed portion of the intestines. As there was no ooze, no drainage through the loin or otherwise was employed.

The abdominal wound was closed with through and through silkworm gut sutures every half-inch from end to end. The skin was carefully adjusted to itself and large dressing applied with adhesive plaster passed almost fully round and round the body rather tightly for support. The child was returned to bed in decidedly poor condition. All the usual methods of stimulation and support were adopted in the ward to restore the child to health. After three days of gravest doubt as to the outcome she finally rallied and made a full recovery. The wound healed by primary intention. The gross specimen is rather well shown by Fig. 2. When the kidney was divided it was found that hardly any tissue even approximating normal in appearance remained. Nearly everywhere the specimen was degenerated into gelatinous material. It came away in formalin, hard, and occupied nearly an inch in the bottom of a quart jar. The cavities left in the kidney come distinctly into view in Fig. 3, as does also the thinness in the wall at the upper pole of the kidney where the rupture of the cystic condition occurred.

The microscopical diagnosis was made for me by Dr. Charles J. Stebbins, pathologist of the People's Hospital, to whom I am indebted for the courtesy of the examination and for the microscopical photograph shown in Fig. 4. He pronounced the growth adenosarcoma.

This case was admitted to the People's Hospital in the service of my chief, Dr. Kingman B. Page, to whom I am indebted for the kindly and friendly services and professional cooperation in the matters of the foretreatment, operation, and aftertreatment of the patient.

While there is nothing especially novel in the case, it seems well to contribute it to medical literature. Undoubtedly the child will go the way of other sufferers in this disease. Fig. 5 shows her condition after the operation.

45 West Ninth Street.

A CASE OF GIANT CELL SARCOMA TREATED SUCCESSFULLY BY RADIUM.*

By WILLIAM BENHAM SNOW, M.D.

NEW YORK.

The patient, Mr. J. J. L., first came under my observation on November 28, 1909. At this time he presented on the outer aspect of the left hand, extending from the middle of the outer phalanx of the hand to above the ulnar prominence of the wrist, a marked swelling which had been incised about midway between the two extremities of the growth and from which exuded a serous fluid. The tumor was very prominent and had been painful prior to the incision being made. The growth had started from a small indolent tumor which had been present for about four years and had taken on a rapid development following a long course of typhoid fever, commencing about two months prior to the time it came under my observation.

* Read before the New York Society of Radiology and Physical Therapeutics at the New York Academy of Medicine, February 24, 1911.

The patient had, by the advice of his family physician, Dr. James T. Meehan, been admitted to the St. Vincent Hospital in the service of Dr. George D. Stewart. Through the courtesy of Dr. Stewart and Dr. Meehan I am able to present the report of two microscopical examinations made of sections of the tumor in the pathological laboratory of Bellevue Hospital, which is as follows:

"Pathological Report on Specimens from J. J. L.—The two specimens from the hand of this case show microscopically the lesion of a sarcoma. In the first specimen the picture is that of a fairly cellular fibrosarcoma, and its point of origin cannot be determined. The second specimen, however, shows it to be a sarcoma with a large number of giant cells, such a tumor as frequently arises from the periosteum. Signed, B. C. Crowell."

In a letter to Dr. Meehan Dr. Stewart expressed it as his opinon that an amputation of the arm at the elbow was advisable, providing Dr. Meehan and others concurred in that opinion.

The patient was then referred to me, and I assured him that the use of radium would not interfere with the performance of a subsequent operation if it did not succeed, and it offered a prospect of saving his hand. After consulting his physician, he decided to submit to the radium treatment.

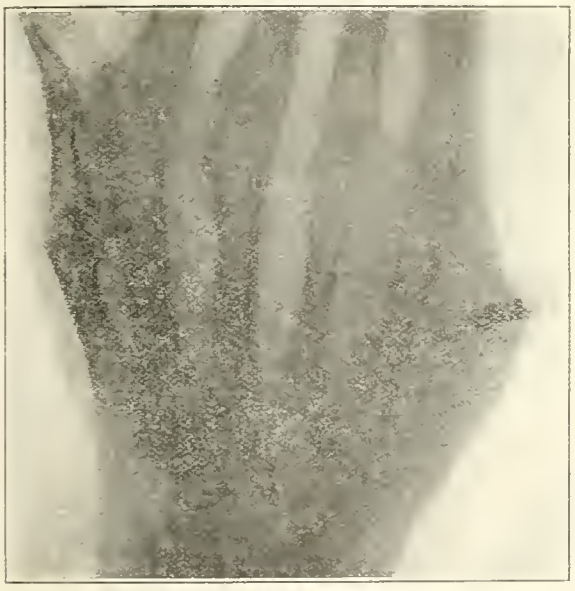

Fig. 1. Cut showing the tube of radium in position in the hand; the radium showing at the outer end of the tube.

On November 26 I introduced a glass tube containing radium bromide of 50,000 radioactivity into the tumor. The bone lay as shown in the cut, across the first metacarpal bone. It was left in this position for eight days and then the position was changed so that the long end of the tube containing the radium should lie in proximity to the cuneiform bone. The patient was instructed to hold the hand in such a position that the radium would gravitate to the inner end of the tube.

It was left in this position for three days longer, making in all eleven days that the tube of radium was in the hand. The tissues were so friable that we were able to place the tube in position with ease and without causing the patient great discomfort. At the end of the eleven days the surface over the whole tumor presented a pinkish appearance, which was the effect of the radium acting upon the skin from within the tissues. This effect was the indication to withdraw the radium.

At this time there was also considerable reaction taking place in the forearm extending to the elbow with the evidence of infection or toxemia, probably the latter, due to the destruction of the malignant cells. This action, however, did not involve the glands or tissues above the elbow.

Until February 2 we gave local applications of radiant light and heat from a high-candle power lamp, and direct d'Arsonvalization with the high-frequency current to the forearm and hand for the purpose of increasing the local resistance by maintaining active hyperemia in the parts.

In the hand where the radium had been placed, immediately surrounding the site occupied by the tube as shown in the skiagraph, a tubular core of tissue had formed, probably due to the action of the β (beta) rays, which would not slough away. This tissue was evidently sterile of germs, as no local reaction or suppuration occurred.

On February 2 I had the hand opened and curetted by Dr. Herman Grad. A microscopic examination was made of this tissue under the direction of Dr. Grad at the Women's Hospital, the report

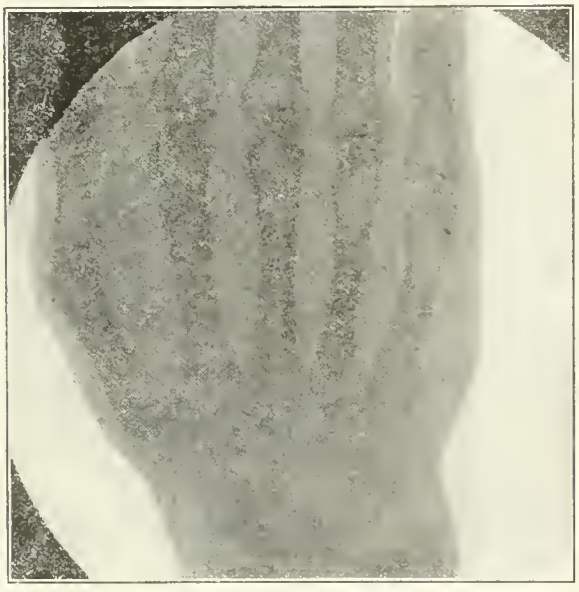

Fig. 2.—Showing the condition of the hand and bones at the present time.

of which was as follows: "The specimen removed from the hand of J. J. L. shows microscopically a mass of broken-down tissue. A frozen section made of the specimen does not show the structures of the cells clearly. The stained section, however, shows the cells to be large, with large nuclei that take the stain well. The field shows a marked round-cell infiltration with many blood-vessels. The vascularity of the tissue is a decided feature with the tissue. The specimen does not show any cells resembling those of a sarcoma. The appearance of the mass is not that of a malignant tumor."

The wound then healed rapidly and the arm and forearm gradually resumed their normal condition and have so continued for one year. There is now no evidence, as will be seen, of any active process in the tissues, and the skiagraph (Fig. 2) taken recently shows the present condition of the bones of the hand.

This case, with others that have been treated by me, and those reported by other writers, demonstrate the selective action of radium on the sarcoma cells, and we believe that if radium were used more heroically than it often has been, there is a time in most of these cases of giant-cell sarcoma when they could be promptly cured.

Another thing demonstrated in these cases is the peculiar action of the β (beta) rays upon the tissues immediately surrounding the glass radium tube when left for some time in the tissues. This can be obviated by placing the glass tube within a tube of aluminum of the requisite thickness to absorb the β rays.

329 West Fifty-seventh Street.

A CASE OF TRUE CONGENITAL UNILATERAL HYPERTROPHY.

By ARTHUR J. DAVIDSON, M.D.,

PHILADELPHIA, PA.

ASSISTANT ORTHOPEDIC SURGEON AND CHIEF OF THE ORTHOPEDIC OUT PATIENT DEPARTMENT, JEFFERSON MEDICAL COLLEGE HOSPITAL; ORTHOPEDIC SURGEON, M. A. LOEB DISPENSARY, JEWISH HOSPITAL.

Because of its interest from the diagnostic standpoint, as one of the unusual types of congenital abnormalities, the following case is reported:

The patient, G. G., a female infant, age one month, of Russian Jewish parentage, was first seen at the Orthopedic Out-Patient Department of Jefferson Medical College Hospital, December 27, 1910. The following history was obtained by Dr. Warren B. Davis, resident physician: The father of the child is twenty-one years of age, and the mother is nineteen. They are both in good health. The mother has had no illness during pregnancy.

Fig. 1.—Congenital unilateral hypertrophy.

They have been married one year, this being their first and only child, born at full term, spontaneous delivery. The child did not breathe well for some time after birth. The mother's supply of milk being inadequate, the patient has been bottle-fed from the beginning. She has taken her nourishment poorly, and often vomits after feeding. The mother noticed that the left eye was inflamed on the day following birth; this inflammation has persisted to the present time, although the eye has been washed twice daily with boric acid solution by the mother. One week ago, a small abscess developed over the left super orbital ridge. The child has been very restless and cries a great deal. She is a very small, poorly nourished child, weighing only six pounds. She has not grown or gained any in weight since birth. Shortly after birth, it was noticed that the right leg and foot were considerably longer than the left, and it was for this reason that the child was brought to the hospital.

Examination—Eyes: The left eye is held tightly closed and has a purulent discharge. The cornea does not show ulceration. The right eye is only

slightly inflamed, with no discharge. There is a small superficial abscess one-fourth inch in diameter over left super orbital ridge. Ears and nose: Negative. Mouth: There is evidence of a begin-

Fig. 2.—Congenital unilateral hypertrophy.

ning stomatitis. The tongue is coated in patches. There are several superficial ulcerations. Thorax: The bony framework is slightly prominent, poorly formed, but symmetrical. Lungs: The lungs are resonant throughout. Heart: The heart sounds are deficient in the muscular element. There are no murmurs. Abdomen: The abdominal walls are thin and slightly distended. Liver: The liver is relatively large. Upper extremities: The upper extremities are symmetrical. They show evidence of poor nutrition, but are otherwise negative. Lower extremities: Both hips are freely movable in all directions. The right leg and foot are appreciably longer and larger in circumference than the left. There is a marked outward bowing of the femur and tibia of each leg. The comparative measurements of the legs are as follows:

	R	L
Circumference of thigh at groin	13⅜ cm.	12½ cm.
" " " " middle	11 "	9½ "
" " calf	9½ "	8¼ "
" " ankle	8½ "	6¾ "
" over dorsum of foot	7½ "	7 "
From anterior superior spine to internal malleolus	19¾ "	16½ "

Radiograph: A series of radiographs were taken by Dr. W. F. Manges. The child, in each instance, was firmly strapped to the radiographic plate, in order that each extremity should be at the exact relative distance from the plate, to obviate any erroneous impression that might exist from shadows thrown from different distances. The upper extremities, thorax and abdomen appear to be normal. The hips are symmetrical and normal in appearance. There is marked enlargement on the bones of the right lower extremity. The femur, tibia and fibula share uniformly in this enlargement. The enlargement of the foot appears to be due mostly to a hypertrophy of the soft parts. There is a distinct outward bowing of the femur and tibia of both legs. The exact measurements taken from the radiographic plate, which are accurate, in consideration of the fact that both limbs were in the same relative position to the plate, are as follows:

	R.	L.
Length of shaft of femur	8.4 cm.	7.7 cm.
" " " " tibia	6.4 "	5.8 "
" " " " fibula	6.5 "	6.1 "
Breadth of lower extremity of femur	2.0 "	1.75 "
" " upper " " "	1.2 "	1.1 "
" " " " " tibia	1.5 "	1.3 "

The above figures show a relative symmetrical enlargement of the bones of the right lower extremity, with a corresponding enlargement of all of the soft parts of the limb. The temperature, sen-

Fig. 3.—Radiograph in a case of congenital unilateral hypertrophy.

sations and reflexes are normal in both limbs. There is no evidence of pain or tenderness. There are no impaired movements of any part of the body, nor is there any unilateral involvement of the upper extremities, face, cranium or chest. The tissue seems to be equally firm in all of the extremities and the general contour of the limbs is undisturbed. In view of the facts, therefore, that there is no evidence of atrophy in any part or parts of the anatomy, no disturbance in function, temperature, reflexes or sensations, and that all of the tissues of the limb in question uniformly participate in the overgrowth, without any disturbance in contour, the above case may be considered as one of true, congenital unilateral hypertrophy.

200 South 12th Street.

THE OPERATIVE TREATMENT OF ACUTE APPENDICITIS.*

By JOSEPH B. BISSELL, M.D.,
NEW YORK.

When your president asked me at rather short notice to read a paper before your society he assured me it need not be long as the discussion was much more important, and would be of a much greater extent than the paper needed to be. It was for this reason that I have the temerity to take up so well-

*Read before the Society of the Alumni of St. Vincent's Hospital, March 8, 1911.

worn and trite a subject as the operative treatment of acute appendicitis. I wish to draw your attention to a few only of the many phases of this rather voluminous subject. The ideas which no doubt most of you entertain on the subject are doubtless more instructive than those which I will endeavor to put, in a rather disconnected way, before you. The scope of the paper will be confined to acute attacks, whether catarrhal, purulent, or gangrenous, and whether the inflammatory condition is limited to the organ itself or has extended to the general peritoneum. The symptoms of pain and tenderness in the right iliac region, rigidity of the right rectus muscle, vomiting, chill, temperature, rapid pulse, combined with the typical blood picture men an attack of inflammation inside the peritoneal cavity, which may or may not lead to suppuration, perforation, blood infection, and possibly death of the subject invaded. If the classical type of the disease presents itself it is easy to differentiate, and the merest surgical tyro can make a proper diagnosis. All sorts of variations from this type occur. From opposite points of view, as the different symptoms appeal to one's mind, the internist and the surgeon may argue as to the necessity of immediate or future operation, or no operation at all. We know certain of these cases do recover without operative interference, but we have no absolute means of saying whether in a given case this particular patient will get well without operation or whether he will go on to abscess, perforation, or a degree of inflammatory action and infection irreparable when at last operation is permitted. We know this much, however, that operation early enough in every case of this disease results in recovery. If this is so, and most of you will acquiesce as to its truth, why hesitate to advise operation after the diagnosis is made? In other words the surgical axiom follows, that the time to operate on appendicitis is as soon as the diagnosis is presumably certain.

Having decided that practically every case of acute or recurring appendicitis should be operated upon, the surgeon, in doing an appendectomy, should pursue his work with the utmost care, with good judgment, and with the latest methods of technique, an up-to-date knowledge of the pathology of the disease, of the powers of recuperation of this part of the body, and of the physiological and constitutional reparative ability of the human body in general, and of the special patient under consideration in particular. The operation should be done rapidly, carefully, and with the latest and best methods. Each surgeon probably has his own special technique. Personal equation counts for much in any operation involving the opening of the abdominal cavity. Whichever method of removal of the appendix is chosen it should be the one with which the operator is most familiar and at which he is most skilful and adept. He may have his own personal way of doing this operation, and his reasons for having special technique; if so, it will be derived from long study and experience, and will undoubtedly produce good results for that reason. Simplicity, delicacy in handling the tissues, and rapidity of action are the three main factors in a successful appendectomy. The method in which one is trained, if based upon good technique, as well as surgical and anatomical knowledge, is the safest and best for the patient. A large operation wound is not necessary, and while not absolutely contraindicated is now seldom made. In all surgical procedures the less the tissue disturbances the better the results obtained. The period is within easy memory of the youngest practitioner here when it was considered good surgery to make large incisions, to do extensive dissections, and to wall off the intestines with large quantities of gauze pads. It was thought absolutely necessary to rigidly inspect the entire suspected peritoneal area, or even the whole peritoneal cavity, and remove all local evidences of inflammation. The cavity was washed out or sponged, or wiped or irrigated with the utmost care and patience, thus taking a long time at the expense of the local and general vitality and resistance of the patient, and to his great detriment.

Lavage as a routine treatment, even if the abdominal cavity is full of sero-pus, is no longer employed. The use of large dry pads, particularly the use of coarse gauze sponges to wipe the abscess cavity and the surrounding tissues, is at present omitted in the operative technique. There is no question but that most of these procedures did great harm: They not only insulted the peritoneum, and impaired its absorbing and repairing ability, but by means of these painstaking, though foolish, measures the operation was often prolonged beyond the limits of the patient's endurance. All irritation of the intestinal covering is to be avoided and the visceral contents of the peritoneal cavity as well as the peritoneal surfaces are to be protected in every way from injury and exposure. Faith in the ability of the peritoneum to take care of much of the inflammatory results of disease has been restored. Every attempt is made to preserve the normal function of the epithelial surface of the peritoneum. Assistance, and not hindrance, is to be afforded to nature in her efforts to cure the infection. As much as possible, pernicious interference with the pathological conditions in the abdominal cavity is proscribed, as likely to handicap or prevent the natural reparative processes. Fortunately for the good name of surgery and for the victims of this disease modern teaching and experience have modified the former vigorous but ill advised efforts so that the tissue destruction and the injury to the vitality of the patient caused by a present-day appendectomy is reduced to one-quarter of that of a few years ago, with a proportionate reduction in morbidity and mortality. Careful handling of the tissues, rapidity in operating, skilful dissection, and following the cleavage layers are component parts of the modern plan of procedure from beginning to end of the operation. The removal of a diseased appendix should be performed as simply and as rapidly as is consistent with thoroughness and safety. These precautions are, of course, not new. They are mentioned, however, to show what is believed to be the reason for the present low percentage of deaths from this operation. Freedom from mortality is no longer pointed out as remarkable. The report of a death as the result of, or following an appendectomy, is received with uplifted eyebrows, and requires an explanation, if not to the family and friends, at least to the surgeon himself. The following description seems best to fulfil, in a general way, the requirements for the removal of a pathological appendix. Variations from this occur, according to the surgeon operating, according to the location and extent of the disease, and according to the pathological findings. Preceding the operation the skin of the region is iodinized in the usual manner, now familiar in hospital practice. On the dry unscrubbed skin of the lower abdomen ordinary tinc-

ture of iodine is rubbed with a piece of gauze on an applicator. No moisture is left on the skin for some time preceding this application. If hairs are to be removed by shaving this should be done several hours before the operation. No subsequent attention is paid to the skin after it has been iodinized, and the operation is at once proceeded with. The incision to be selected will depend not only upon the surgeon's inclination, but also upon whether a tumor or abscess be present. In the latter event, if the diagnosis is obvious the indication is very simple; the abscess is opened and drained, incision being made at its most dependant portion; if it is possible the appendix is removed through this incision. If the appendix does not present itself, and there is difficulty in finding it, no prolonged attempts should be made to discover it and excise it. Free drainage, if necessary, by a counter opening is instituted, while the appendix may be left to be removed at a later period after the abscess has healed up. If a tumor only is present, the surgeon may exercise his discretion as to whether he cuts down directly over the tumor, or makes a typical incision for the removal of the appendix. The ideal incision wound for an appendectomy must be considered from the anatomical, the mechanical, and the surgical standpoint. From an anatomical standpoint all injuries to nerves and important vessels should be avoided. From a mechanical point of view we should never make an incision which cannot be accurately and completely repaired, so as to reestablish the abdominal wall to its normal condition. Surgically, however, we are forced to take into consideration the acute or chronic, pathological situation which calls for interference in order to save the life or health of a patient with only incidental regard for the two former viewpoints. Taking these facts into consideration it is no wonder that appendectomy incisions are many and various. From an anatomical standpoint, as regards the belly wall itself, the McBurney incision is almost ideal. Its greatest fault, and one which we must take into our calculations, is that if drainage is necessary its advantages are at once lost by the necessary destruction of tissue to meet that indication. The old oblique incision over the McBurney point is a mechanically faulty one because it cuts across the internal oblique and transversalis muscles, destroying their usefulness, and leaving the patient predisposed to future hernia. The median incision, like the McBurney cut, avoids the nerves, and is in a location where there are few vessels, none of them important. It is particularly valuable in the female subject, where there is an even chance, or more, that the pelvic viscera may be involved, and need attention. Various other incisions, to which the name of the surgeon who first employed them is attached, are said to have special advantages, and are made use of at times. The Gil-Wylie and the Weir incisions are among the best of these. The incision which I have selected for years, and in the use of which I am the most skillful, has been by a recent anatomical writer condemned as anatomically so faulty that he wonders at its employment. He advances a number of anatomical reasons why it should never be used. The reasons are, I am bound to say, very good ones, and yet practically in my own, and the experience of many other surgeons, the method has been entirely satisfactory. Among other objections which Dr. Tobie, the anatomist in question, advances against the use of this incision, are the following: "With the exception of the rectus muscle it cuts across the fibers of every layer through which it passes at an angle of from 45 to 90 degrees. But this is not its only fault. The sheath of the rectus may properly be considered a conjoined tendon of the internal oblique and transversalis muscles with its insertion at the lines alba. A cut across this tendon is necessarily followed by a retraction of its proximal side—therefore the wound gapes. Nor does the rectum, by its contraction, tend to produce closure, but rather the reverse, through a buckling action produced by force exerted on the upper and lower angles of the wound, pulling them towards each other. Moreover, unless the incision is made short, and fortune favors the selection of its site, it will sever one or more motor nerves and destroy the function of a part of the rectus muscle. Accordingly then, instead of urging as one of the advantages of this incision the fact that it may be lengthened, its description had better be supplemented by the caution 'it should not be lengthened.'"

This incision is known as the Battle, or the Kammerer. It is a vertical cut about two and a half to three inches long over the outer border of the rectus muscle, roughly speaking about a finger's breadth within its edge. It is continued through the outer sheath to the muscle. The wound is retracted towards the median line, and its inner sheath, with the peritoneum, divided somewhere nearer the middle line of the body than the anterior sheath, so that where the two layers are repaired they are not in the same line with each other. The rectus muscle of course lies between them. In spite of all the anatomical objections given above, the result of this operation in my hands has been uniformly successful. As a result of it there has been no appreciable loss of function, or of sensation, in this location. There has been no hernia following it, and even when it has been necessary to institute drainage, because of pus or an abscess, the result has been equally good ultimately.

The treatment of the stump depends somewhat on the special technique of the surgeon operating. The diseased appendix should be removed quickly, and left as harmless as possible. A double ligature carried through the meso-appendix close to the base is divided into two ligatures. The first one is tied around the root of the mesentery, one end being left free temporarily, and the other cut away close to the knot. The appendix is crushed close to its base by a hemostat the other ligature remaining in situ is now tied over this crushed portion, and held firmly but gently in a hemostat. One of the ends of this ligature is also cut off close to the tie. The appendix is grasped by another hemostat about a quarter of an inch away from the first, for protective purposes, to keep any contents of the diseased organ from infecting the parts. The thermocautery now divides the appendix close to the first hemostat, practically burning all the tissues between the two instruments, which are removed, and the knots brought together by tying the ligature ends left for this purpose, bringing the stump of the appendix to the stump of the mesentery, and in this way burying it. All this is done much more quickly than it takes to describe it, and is a safe, simple, and rapid way of disposing of the appendix stump. If drainage is to be instituted because of oozing, or because of a purulent or gangrenous appendix, these two ligature ends are made use of for that purpose as follows: A needle is threaded on to either one

of them, which by this means is brought through the end of a cigarette drain cut long enough to project out of the lower end of the wound. The two ligature ends are then tied together, carrying the cigarette drain down to the base of the appendix and the base of the mesentery, so that it projects from this deep seated location down in the abdominal cavity, out through the lower end of the wound, thus draining the affected peritoneal surfaces. The loosening of the catgut ligatures takes place in four or five days, or more, depending on the size of the thread used. It is usually the No. 0 or the No. 1 plain sterile catgut. If drainage is not necessary, as in the majority of interval appendectomies, the wound is sewn up in three layers with a single continuous catgut suture in each layer. The upper and outer layer being plain sterile catgut, and the middle tier used in the superior sheath of the rectus chromicised catgut. The skin and subjacent fascia are brought together by a subcuticular suture. The ends of this suture are left long, and tied over a thick square pad of gauze, thus pressing the edges of the cut into accurate apposition and keeping them there. The dressings are changed regularly on the seventh day, when the incision is found to have left a fine line of union which hardly shows except for a little redness. This method of closing the abdominal wall gives three tiers of sutures, so placed that they are not exactly over each other, with a thick pad of muscle, the rectus between the two lower layers. The patients are allowed to sit up on the ninth day, out of bed on the tenth, and leave the hospital on the eleventh or twelfth day. The above is a description of the routine operative practice of the writer's in use for several years, and includes the observations in several hundred cases. The mortality is practically *nil*, being less than one-quarter of one per cent. In spite of the anatomical objections, the practical result of this method has been to give a solid belly wall, with practically no scar, no tendency to hernia, and no complaint such as we might expect from non-union of divided nerves, interference with blood supply, or from fascial faults. In all my cases I have never had an abdominal hernia following this operation properly carried out, even where the necessity for drainage has compelled a secondary and long delayed union of the incision.

46 West 55th Street.

BRILL'S DISEASE.*

REPORT OF CASES.

By LEON LOURIA, M.D.,

BROOKLYN, N. Y.,

ATTENDING PHYSICIAN TO THE JEWISH HOSPITAL.

At a meeting of the Section on Medicine of the New York Academy of Medicine, held in January, 1910, Dr. N. E. Brill presented a paper embodying the results of a clinical study of 221 cases of an acute infectious disease of unknown origin. It was his opinion that this disease represents a clinical entity distinct from that of any disease hitherto described. This conclusion was based upon observations made during a period of twelve years at the Mount Sinai Hospital of New York City. The alleged discovery of a new disease is usually received with an attitude of scepticism. It was quite natural that this paper aroused considerable discussion. Even though the reported cases presented a definite clinical and pathological picture, many clinicians were loath to regard this disease other than as an atypical form of typhoid fever. The conclusions arrived at by Dr. Brill, who is known to be a careful and painstaking observer, could not be passed over without further investigation, particularly since these conclusions were based not on casual observation, but on persistent and careful work extending over a period of twelve years.

A committee of the Section of Medicine was accordingly appointed to investigate the evidence justifying this new addition to our nosology. This committee presented the following report at the meeting of the Section of Medicine in December, 1910: "1. The cases described by Dr. Brill present a fairly uniform symptomatic picture and seem to the committee to be entitled to recognition as a clinical group. 2. The clinical picture is quite distinct from that of typhoid fever. 3. It seems conclusive that they are not cases of infection with the typhoid or paratyphoid bacillus. 4. The evidence at hand does not seem sufficient to decide whether these cases represent an atypical form or some already recognized disease other than typhoid or paratyphoid fever, or are instances of a disease hitherto unrecognized."

Dr. Brill published a full report of his observation and conclusions in the *American Journal of Medical Sciences*, April, 1910. One cannot fail to be impressed with the fact that the conclusions of the author are fully warranted. This article awakened the interest of the attending physicians in the medical service of the Jewish Hospital of Brooklyn, who recently have been on the alert for cases of so-called Brill's disease. During the summer and fall we had the opportunity of observing 18 cases of this disease in our service. In brief, the disease in question is an acute infectious disease of a short duration of 12 to 14 days with a sudden onset, a rapid critical fall of temperature, and a marked eruption over the entire body. I shall present the histories of but three cases, which strikingly illustrate the clinical picture of this disease.

Case I. M. S., 28 years of age, male, born in Russia; salesman. Entered the hospital August 16, 1910. His previous history had no bearing on the present illness. Five days before admission he was suddenly taken ill with a severe headache, fever, and marked prostration; his bowels were constipated and there was no epistaxis. The following day the patient had a prolonged chill followed by high fever; the headache still increased in severity and the prostration became more marked. These symptoms continued without abating when he was admitted to our service. His chief complaints were severe headache, fever, and weakness. He looked very ill. On examination, heart and lungs were negative; the abdomen was normal; the spleen was not palpable, though the area of dulness was slightly increased; the conjunctivæ were injected; the tongue was heavily coated with a white fur; there was a profuse rash extending over the anterior and posterior parts of the chest and abdomen and over the upper and lower extremities. The rash was of a pinkish blue color, of a maculopapular character; some of the papules were slightly raised; they did not disappear on pressure though some faded when pressed upon; in some places the eruption was discrete, irregular in shape and about two or three mm. in diameter, while in other places it was somewhat confluent, resembling morbilli. The temperature on admission was 103.6° and continued

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with slight fluctuations until the morning of August 20, the tenth day of the disease, when it reached 104.2°, and then steadily fell to normal on August 23, the thirteenth day of the disease.

The pulse was 118 and respiration 24. The examination of the blood on admission showed 14,600 leucocytes with 80.4 per cent. polynuclear cells. On the 20th the blood count was the same and on the 24th showed 17,000 leucocytes and 73 per cent. polynuclears. The diazo reaction was negative on repeated examinations The Widal reaction was negative on eight examinations made every second day. A blood culture was made August 17, the 7th day of the disease, and gave no growth of organisms. On the 10th day of the disease, simultaneously with the drop of the temperature, the rash began to fade, became indistinct, and on the 12th day, when the temperature came down to normal, the rash disappeared. The convalescence was uneventful with the exception of being slightly protracted in this case, which is explained by the fact that this patient suffered a very severe infection. This was the most typical and most severe case of Brill's disease that came under our observation.

Case II. J. T., 25 years old, male, born in Russia; furrier; was admitted to the hospital September 8, 1910, on the 6th day of his illness. He had typhoid fever at the age of 17, when he was sick for four weeks; otherwise his previous history was negative. The present illness began suddenly with a chill, fever, constipation, pain in the abdomen, and vomiting (the patient vomited once) followed by severe frontal headache and marked prostration. There was no epistaxis. Physical examination of the organs of the chest and abdomen was negative; there was a marked rigidity of the neck and a moderate Kernig sign was present. The skin presented on the abdomen, back, and extremities a profuse rash, which was mottled, discrete in some and confluent in other areas; it was maculopapular in character; the spots were 2 to 4 mm. in diameter and some disappeared on pressure. The temperature on admission was 103.8°; the pulse, 120, and the respiration, 22. The blood showed 10,200 leucocytes, 62 per cent. polynuclears. Diazo reaction was negative. Widal and other agglutination tests as to paratyphoid and colon bacilli were negative on three examinations; the blood culture was sterile. The blood-pressure was 105. The temperature did not vary much until the tenth day of the disease, when it began to fall by crisis and became normal on the morning of the 12th day of the disease. With the drop of the temperature the rash disappeared and the patient rapidly improved and was able to leace his bed on the 4th day after the temperature became normal, on the 16th day of his disease. The further course of this case was uneventful.

Case III. H. W., 26 years old, born in Russia; tailor; admitted on October 23, 1910, on the 6th day of his disease. His previous history was negative. The onset was sudden, with a chill and a severe headache which could not be relieved by drugs. The headache increased in severity on the following day; the patient had chilly sensations and marked prostration, and an occasional cough and some epistaxis the first few days after the onset. The examination of the organs of the chest and abdomen proved negative; there was a marked eruption scattered over the chest, abdomen, arms, thighs, and back; it consisted of small red spots of a maculopapular character, which did not disappear on pressure. There were a moderate rigidity of the neck and a moderate Kernig sign. The temperature on admission was 103°, which gradually rose to 104° and 104.6° on the 8th day of the disease; it then rapidly fell with slight exacerbations and became normal on the morning of the 11th day. The blood examination on admission showed 12,000 leucocytes and 87½ per cent. polynuclears; on the 10th day the leucocyte count was 14,800 with 86½ per cent. polynuclears. The diazo reaction was negative on repeated examinations; blood culture was sterile. The Widal reaction was negative on six occasions. On the 9th day the rash was still present and gradually fading. On the 11th day the rash had almost entirely disappeared, but some spots could still be seen and the pigmentation was quite marked. On the 17th day the patient developed a phlebitis of the left femoral vein, from which he recovered in a week. The blood-pressure was 100, gradually rising when the temperature became normal, and reached 125 mm. of mercury on the 22d day of his disease.

The above three cases illustrate typical cases of Brill's disease. While the number of cases I have personally observed is limited to 18, I shall endeavor to tabulate them and discuss each symptom separatively.

Sex of patients: There were 12 males and 6 females. The larger percentage of males has been also observed by Brill. Nativity: Russia heads the list with 14; Roumania has 2 cases; Austria, 1; United States, 1. The preponderance of Russians is explained by the fact that the largest number of patients applying to the Jewish Hospital of Brooklyn are born in Russia. Months: The summer and fall apparently are favored by the infection; 7 cases occurred in August, 4 in July, 2 in June, 2 in September, and 3 in October. No cases were admitted during the winter months. Age: The disease is most common in the 3d and 4th decades of life; the youngest of our patients was 16 years old and the oldest 48.

In the majority of cases the onset is sudden, with a chill, fever, and severe headache; in a smaller number of cases the onset is a gradual one. In most cases prostration and incapacity for work are marked. Constipation is a prominent feature. In 4 of the cases vomiting and abdominal pain were present. Epistaxis was observed in 2 cases. Cough was present in many of the cases, was usually dry and with no or very scanty expectoration. The tongue was frequently moist, coated with a white fur, only the edges being red. The pulse is rapid, and, while it does not vary according to the height of the temperature, it does not present the characteristic disproportion observed in typhoid fever. In our cases the pulse ranged during the height of the temperature between 90 and 120, and was frequently dicrotic. The blood-pressure was low in the largest number of cases, gradually rising after the temperature had reached normal figures. Eyes: The congestion of the conjunctiva was a prominent symptom in the largest percentage of our cases; in some cases a mucopurulent discharge was observed. The headache and prostration were the most prominent symptoms. The headache began with the onset of the disease, increased in severity, and did not abate until the temperature dropped to normal. This persistent headache, which did not subside with the progress of the disease, made it quite different from the headache of typhoid fever, which usually disappears at the end of the first week. Simultaneously with the headache prostration was very

marked; the patient complained of extreme weakness and appeared very ill. The patient lay listlessly in bed or moaned with his severe headache. The patient did not toss around as typhoid patients do because movement apparently increased his sufferings. Kernig's sign was present in most of the cases and the rigidity of the neck, in greater or less degree, was almost invariably observed. We were inclined to include this rigidity among the cardinal features of this disease. In one case the rigidity and retraction of the head were so marked, the headache so severe, and the tenderness along the spine so prominent that we decided to relieve the patient by making a lumbar puncture. Thirty c.c. of cerebrospinal fluid were obtained under high pressure; the fluid was clear with but few flocculi, gave a faint albumin ring, reduced Fehling's solution, and had 54 per cent. polynuclears and 46 per cent. lymphocytes. This fluid was examined bacteriologically with negative results.

The eruption is the most characteristic symptom of this disease. It usually appears on the 3d or 4th day after the onset, in one crop, and remains prominent during the febrile period, disappearing with the drop of the temperature. The spots are not roseolate, but rather of a maculopapular character. In size they are 2 to 4 mm. in diameter, sometimes discrete and very frequently confluent, resembling measles more than any other eruptive fever. The rash makes its appearance at once all over the trunk and extremities, rarely covering the face. Indeed, in none of our cases did we find any eruption on the face as recorded by other observers. The spots are slightly elevated and, as a rule, do not disappear on pressure. In severe cases the spots have a distinct petechial character. In some of our cases marked pigmentation of a pale yellow color was noticed after the eruption faded away. In the greatest number of cases the urine gave a negative diaze reaction on repeated examinations; only in three out of the 18 cases did we have a positive diazo reaction, but in no instance was it as strong as in a typical typhoid. The examination of urine and feces for bacilli of the typhoid group was negative in all of our cases. The blood count is characteristic. In none of our cases was there a leucopenia. The lowest number of leucocytes recorded was 7,400, the highest 17,800, the majority running between 10,000 and 12,000. Polynuclosis was marked in a few cases; in the majority of cases the differential count was normal. The Widal reaction was negative in every case on repeated examinations; in several cases these were made every second day. The agglutination test was made in several cases with the typhoid bacillus and also with other bacilli belonging to the typhoid group, namely the paratyphoid and colon bacilli. Blood cultures in all of our cases were sterile. The temperature curve is characteristic; following a chill it rises to 104-5° in twenty-four to forty-eight hours, and maintaining this level runs a subcontinuous course for ten, twelve, or fourteen days, when it falls by rapid lysis in from twenty-four to forty-eight hours. The temperature variations are not attended by corsponding changes in the pulse rate, though this is rarely higher than 90 to 120; it is nevertheless markedly higher than the characteristic slow pulse of typhoid. The respiration is slightly increased. The spleen is slightly palpable, and although moderately enlarged as evidenced by percussion, it never attains the size of the spleen in typhoid fever.

With this clinical picture in mind the question naturally arises, what is the essential nature of this disease? The answer to this question can be determined only by an insight into its pathology. Of the 221 cases reported by Brill there was not a single fatality, which left pathological investigation out of the question. Since Brill published his paper there was one death from this disease in his service, and the autopsy findings showed none of the characteristics of typhoid fever, although there were revealed certain degenerative changes in the various organs, chiefly in the hemopoetic system. Efforts to discover any possible relation either close or remote to typhoid fever showed by virture of negative agglutination tests, and absence of organisms in the blood and excreta, that this disease must be excluded from the typhoid group. It may be definitely concluded that this disease bears absolutely no relation to typhoid fever. But this does not warrant one in asserting that it is an entirely new clinical entity. For may it not be an atypical form of some disease other than typhoid? The only other disease to which it bears any close or superficial resemblance is typhus fever. We have had no opportunity of observing the latter disease in New York within the last two or threee decades. At any rate the symptomatic picture of Brill's disease tallies quite closely with the conception of typhus fever that some of us have had an opportunity of forming in our early medical career, either in this country or abroad. Typhus is endemic in Russia; and the fact that most of the cases of Brill's disease have been observed among Russian immigrants in this city may not be a mere fortuitous circumstance. In its sudden onset and its duration, with its petechial rash and cerebral symptoms, the resemblance to typhus as it is seen in Russia to-day is certainly striking. As an important opinion bearing upon this question I shall quote the statement of E. W. Goodall of the Eastern Hospital, Homerton, England: "To me the account given suggests typhus of a mild form; and further observations seem to be required before it can definitely be stated that Brill's disease is not typhus. A reference to Brill's own paper confirms this view. He writes, when discussing the diagnosis of the disease from typhus, as follows: 'In the case of an epidemic of typhus, in my opinion, it would be simply impossible to say that these cases which I have described were not mild typhus fever.' He appears to rely chiefly upon the non-epidemicity of the disease, its apparent want of infectiousness, and its mildness (there was not a fatal case amongst the 221 cases he has observed): the only clinical sign he notes as being different from typhus is the absence of the subcuticular mottling." Goodall further states that "Brill's cases were admitted to the Mount Sinai Hospital during the years 1896 to 1909. It is curious that of his last fifty patients (the details of which he tabulates as exemplary of the whole 221), thirty were Russians and twelve Austrians. In the sporadic cases of typhus I have observed of recent years in London most have been Russian Jews, who have not necessarily recently arrived in England. And, as regards the non-epidemicity and want of infectiousness, sporadic cases still occur in London which do not give rise to others even in what would seem to be the most favorable circumstances. But I admit that I have seen small groups of two or three cases in one family, and the disease may be fatal. Probably typhus in London is overlooked, because it is mild at present. I have twice found a case of the dis-

ease in a large general hospital in London, in which it was being treated as enteric. To me," concludes the London clinician, "Brill's paper proves that typhus fever in mild form still lingers in New York."

This opinion as to the contagiosity of this disease is thus directly at variance with that of Brill, who states that he has not observed a single instance of contagion in this condition. May not this failure be attributed to the attenuated character of the infection and the possibility that some of the cases, owing to their short duration, either do not come under the careful hospital observation or else are classified with typhoid fever? My own experience enables me to record one striking instance of contagion. One year ago I had an opportunity of observing three cases in one family presenting the typical picture of this entity. At that time, being unfamiliar with Dr. Brill's admirable description, I regarded these cases as typhus fever, and on this account I could not sanction their admission to my hospital service. The cases were those of two brothers and a brother-in-law living in one house, who took sick suddenly about the same time, with a high fever, hemorrhagic rash and intense headache, all characteristics of typhus fever. These cases were admitted to a county hospital and were discharged as cured after a typical course of two weeks' duration. In the light of my present knowledge I am not only inclined to include these cases in Brill's group but, furthermore, I would cite these as distinct evidence of the possible contagious nature of this disease.

To recapitulate: Brill's disease presents a typical temperature chart, a characteristic eruption, marked headache and prostration, presence of Kernig's sign and rigidity (or retraction) of the neck, and a totally negative pathology as to causative organisms or resultant lesions. If future investigation will show the non-identity of Brill's disease and typhus fever, one will be warranted in concluding that this handful of symptoms occurring together in no other recorded condition is a new addition to our nosology. The diagnosis is easily made if the above clinical picture is kept in mind, and, indeed, is rarely missed. Even our nurses are able to make the diagnosis. The prognosis is good, recovery taking place almost without exception. This is a very pleasing feature of this disease; it is certainly very gratifying to predict in any given case that the patient will get well in two weeks, will have no relapse and will be free from any of the dreaded complications following in the wake of typhoid fever. The treatment is entirely symptomatic, and no specific therapy is to be employed.

249 Hewes Street.

NOTE ON A CASE OF TUBERCULOUS MENINGITIS.*

WITH A REMARKABLE ANTE-MORTEM RISE OF TEMPERATURE.

By HOWARD D. KING, M.D.,

NEW ORLEANS, LA.

Tuberculous meningitis in adults presents so many difficulties of diagnosis and otherwise which are apt to lead one into error that I am prompted to recite my experience in a case recently coming under my observation. This type of meningitis in adults is likely to baffle the keenest clinical worker by reason of the variance of the symptoms present in the patient from those described in the standard texts. In no other conditions are the chances for erroneous diagnosis greater than in tuberculous meningitis, the reasons for which are many and varied. Tuberculous meningitis in adults is usually the finality of some other tuberculous process, in the majority of cases pulmonary tuberculosis. Debove[1] classifies the meningeal affections connected with phthisis as (a) meningeal tuberculosis; (b) granular tuberculous meningitis with inflammatory exudation; (c) tuberculous meningitis without the finding of the tubercle bacillus. If the lungs should prove the non-causative factor, a continuance of the search will probably bring to light eventually some hidden tuberculous focus. This focus may be located anywhere, in the lymphatics, mesentery, bone, etc.

The patient whose illness forms the basis of this paper was M. G., a female, 30 years old. Family history has but little bearing on the case, but I have reason to believe a brother died of phthisis, though denied by the family. Personal history of the patient is not of much value, as the family, for reasons known only to themselves, to a great extent concealed or distorted facts. The family, once in affluent circumstances, did not, I believe, resort to the concealment of the patient's antecedent troubles in order to hamper me in my work, but merely to shield the family name from adverse comment as to the presence of "insanity in the family." However, by dint of questioning and scattered bits of information, I was able to learn, on the whole, that the patient had been in poor health for three or four years preceding. Patient at no time was a robust child. Menstrual irregularities served to make her life distressing at these periods. She was of a high-strung, nervous temperament, and held aloof from all but immediate members of her family. On account of her shyness and marked aversion to coming into contact with strangers, she resigned her position in a dressmaking establishment and for the last two or three years remained at home, going out but little. Patient suffered from a most severe form of acne which was a source of great anguish and mortification to her, because of the facial disfigurement. For the acne, which, not unnaturally in her sex, she regarded as the source of her unhappiness, recourse was had to innumerable remedies, even vaccine therapy, but to no avail. She was ultrasensitive regarding her affliction and on being warned as to the dangers that might ensue from "picking the pimples" would go off into a corner and cry. About two years ago patient suffered from a spell of hysteria lasting from six to eight weeks. Recovery was slow and since that date patient has been in rather feeble health. This state of affairs continued for about two years and, while the condition was never entirely satisfactory, it was not such as to occasion any alarm in the minds of the family. She received no medical attention whatever during these two years.

The illness covered by this paper began on January 1, 1911. Upon a visit from the family physician it was declared to be a recurrence of the hysteria and similar to the attack of two years previous. Bromide therapy to the point of saturation and general treatment by "long distance" was the extent of the therapeutic endeavors in behalf of the sufferer. The long distance treatment was accomplished in this wise: Once or twice a week a

*Read before the Orleans Parish Medical Society, April 24, 1911.

sister of the patient would go to the physician with a recital of the doings of the week as it concerned the patient, and a prescription or two would be written covering the case until the next visit of the sister. After three or four weeks of this long distance treatment the physician became ill and scant attention was given to the patient until the date of my first visit, March 6, at 11 P. M. When I first saw patient she was in a deep coma and could not be roused. After making a cursory general examination and obtaining the meager history recited above I came to the conclusion that I had a cerebral condition to deal with. I was unable to make a positive diagnosis, however, and, in fact, was on the brink of diagnostic uncertainty as to whether it was a case of typhoid or a cerebral condition due to the absorption of intestinal toxins. The pupils were unequal; there was some rigidity of the neck and spine; and a not too well marked hemiplegic condition on the left side. The next two days brought but little change, though the comatose condition did not appear as deep; but the patient was still decidedly drowsy, stupid, and apathetic. Temperature during the three days did not go over 101.8° F.

At the end of this period it was evident that there was some meningeal trouble, and on the fourth day I gleaned from the family that the patient had lost considerable weight and was a sufferer from a most persistent cough and also had had influenza the previous December. These facts, coupled with the clinical phenomena, strengthened my diagnostic clue and I was convinced that the condition was none other than tuberculous meningitis. To avoid any doubt and not to be misled further, I enlisted the aid of a neurologist and after a thorough examination, including all the reflexes, we arrived at a tentative diagnosis of tuberculous meningitis. Babinski's sign was negative; Kernig's sign was present to a slight degree.

Lumbar puncture brought out the following facts: Twenty cubic centimeters of cerebrospinal fluid were removed at very high pressure, the examination disclosing a marked lymphocytosis. There was a fibrin clot well formed, though made up of delicate coagulæ; no tubercle bacilli were demonstrable. Noguchi's[2] globin test was positive. Fluid on removal was remarkably clear, but later became slightly turbid. The condition of the patient gradually grew worse and on the thirteenth day of her illness the patient was removed to the Presbyterian Hospital, as the resources of the family had become nearly exhausted. One might say that the diagnosis in this case was erroneous, but I will present in detail the obstacles which prevented at the outset a positive diagnosis. The meager history obtainable as to the antecedent troubles may be excluded, as the physician is presumed to make a diagnosis based upon his own observations. At first sight the patient presented a typical "third week typhoid" appearance, but this idea was speedily routed by the fact that the day of my first visit was the first time fever had manifested itself. Widal agglutination test the next day proved negative.

Throughout the entire illness the patient was weak and drowsy. Pressure over the lower limbs seemed to cause pain. The patient was obviously very ill, the tongue was thickly furred, cracked, and dry; the breath was fetid and the sordes were disgusting. The examination of the cerebrospinal fluid obtained by lumbar puncture according to Quincke[3] did not show the presence of tubercle bacilli. The ophthalmoscopical findings also proved negative. Therefore, the question of diagnosis rested entirely on the clinical symptoms and the cytological evidence as found in the cerebrospinal fluid. The fact that a marked lymphocytosis coincident with the clinical picture as herein presented was observed should be sufficient grounds for the making of a diagnosis of tuberculous meningitis. Notwithstanding this, one is forced to consider in the differential diagnosis of tuberculous meningitis a number of diseases presenting clinical pictures similar to that of tuberculous meningitis. These conditions are principally delirium tremens, hysteria, uremia, septicopyemia, typhoid fever, and head symptoms in certain dyscrasic states.

Ten days after withdrawal of spinal fluid a differential white count was made and the following result was obtained: Small lymphocytes 9 per cent., large lymphocytes 2 per cent., polymorphonuclear neutrophiles 88 per cent., transitional 1 per cent.; total white blood count, 12,222. In tuberculous meningitis an increase in the number of leucocytes, as a rule, is rare, but there are cases in the literature in which counts ranging from 14,000 to 34,000 have been recorded. The hyperleucocytosis in this case was due to a complicating terminal pneumonia. Thus it can be readily seen that the later findings did not invalidate the diagnostic import of the primary lymphocytosis. Wilson and Chowning[4] state that a hyperleucocytosis is usual in cases of so-called "spotted fever" of the Rocky Mountains, which is nothing more or less than cerebrospinal fever. As a rule, lymphocytes abound if the inflammatory process is tuberculous, while the polymorphonuclear type reigns in nontuberculous cases. Marcou-Mutzner[5] records a case in which the predominant cell was a polymorphonuclear leucocyte, despite the fact that necropsy showed a typical pulmonary and meningeal tuberculosis. The blood count in tuberculous meningitis has been found to differ in a marked degree from that obtained in other tubercular processes. The usual blood count in a slowly progressing tuberculous condition shows, as a rule, a leukopenia, while in tuberculous meningitis there is generally a demonstrable increase.

Oppenheim[6] in discussing the clinical picture of tuberculous meningitis as it occurs in adults says: "The early delirium and mental confusion which soon occur point out that grown-up patients may go about in this stage and appear mentally affected; sometimes they are in a dreamy state, sometimes excited and agitated, often to such a degree as to closely resemble persons under the influence of alcohol." Brown[7] is led to remark, "in certain instances there has been great difficulty in making the diagnosis from hysteria, early mental disease, or delirium tremens." Warrington[8] records a series of seven cases and makes the following observations: "When previous tubercular disease is not known and evidence of disease elsewhere can not be found the opening symptoms are very difficult to interpret." According to Bonney,[9] pulmonary disease apparently making satisfactory progress is often the forerunner of tuberculous meningitis.

The diagnosis of meningitis, as well as the special type of the infection, has recently acquired greater certainty by resorting to lumbar puncture. That this method of establishing a positive diagnosis is, in the great majority of cases, reliable and satisfactory is evident from the following table:

Name of Observer	Number of Cases	Tubercle Bacilli Found in Cerebrospinal Fluid
Hemenway[10]	137	135
Bernstein[11]	102	100
Park & Krumweide[12]	83	69
Dunn[13]	60	15
Norris[14]	50	47
Furbringer[15]	37	27
Schwarz[16]	22	16
Slawyk & Manicatide[16]	19	19
Warrington[8]	7	4
	517	432

Morse[17] says: "It is true, of course, that the cerebrospinal fluid in tuberculous meningitis contains tubercle bacilli. They are missed in about 90 per cent. of the cases, however, if the examination is the usual routine one." Osler[18] states: "A sterile fluid which is sometimes present also favors the diagnosis of tuberculous meningitis." In the differentiation of the type of meningeal inflammation the clearness of the fluid is regarded as a valuable means of distinguishing the tuberculous from the other forms. The demonstration of tubercle bacilli in the cerebrospinal fluid can not always be done, and their absence therein should not be regarded as sufficient evidence for a negative diagnosis. Dunn[13] says in speaking of the cytodiagnosis of tuberculous meningitis: "The main reliance is placed on the predominance of the mononuclear lymphocytes as shown by a different count of the cells in stained cover glass preparations. In the writer's analysis of sixty cases this predominance of lymphocytes was present in every case, and its absence should be regarded as precluding a diagnosis of tuberculous meningitis." Lucas[19], who has given a great deal of study to the cell findings in the spinal fluid, states that there are many conditions that give rise to the same cytologic findings in the spinal fluid: (a) Encephalitis, (b) epidemic myeloencephalitis, (c) meningismus, (d) tuberculous meningitis, and, (e) syphilis; secondly, that the presence of the mononuclear lymphocytes in the spinal fluid can not be the basis for a diagnosis of tuberculous meningitis; third, that the recovery from animal inoculation or the finding of the tubercle bacillus microscopically are the only positive means of making the diagnosis of tuberculous meningitis: fourth, that the study of the spinal fluid, although very important, must go hand in hand with more accurate clinical studies of such borderlying cases as are frequently confused with tuberculous meningitis. Thus, from the foregoing observations one can see that the only reliable method of establishing a diagnosis, the finding of the tubercle bacillus, is a much mooted question. Notwithstanding the researches of Lucas, a great many leading authorities attach much diagnostic significance to the occurrence of lymphocytosis.

Aside from the difficulty encountered in making a diagnosis the most interesting feature of the case was the accompanying temperature. The caprices exhibited by the temperature were puzzling and inexplicable. At times there would be distinct remissions, only to be followed by a spurt upward and then a sudden downward plunge. Often the temperature oscillations were as much as 2° within as many hours; one morning the temperature would be very high, and the evening temperature low. The next day conditions would be entirely reversed. The day following the withdrawal of the spinal fluid the temperature dropped nearly to normal, only to rise very high the next day. The pulse was not always commensurate with the febrile reaction. On the fourteenth day of illness, the date of patient's removal from home to the hospital, the temperature began to maintain a more definite course, and the ascensions and declinations were not as freaky. The temperature on the fifteenth day of illness reached 105.2° F. with a pulse of 100 and respiration 46. Within the next two hours there was a decline of 2°, though the pulse rate was increased to 128 and respiration had dropped to 36. For five hours temperature 103° F., pulse 128, and respiration 36 remained unchanged and then within the short interval of three hours the temperature leaped to 106.5° F., pulse 140, respiration 48. This sudden change was noted at 6 A.M. and three hours later temperature was 107° F., pulse 145, respiration 60. From this hour the temperature kept mounting higher. To avoid the chances of error in observation several thermometers were used, all with the same result. At 1 P.M. the temperature was 107.8° F., pulse 170, respiration 76 and at 5 P.M. the temperature had reached 110.8° F. Forty minutes after this was recorded the patient expired. A terminal pneumonia hastened the end.

As a rule in tuberculous meningitis just before dissolution the temperature sinks to 94° or 95° F., though there may be a hyperpyrexia. Osler[18] calls attention to a case of Baumler in which the temperature rose just before death to 110.7° F. It is the expressed opinion, though the comment is a rather grim one, that the infallibility of the diagnosis is best established by the death of the patient. That there are exceptions, however rare, to this dictum is acknowledged by a few leading authorities. Some observers doubt the invariable fatality ascribed to the disease and cite certain well authenticated recoveries. Goliski in his clinic in Vienna was in the habit of displaying the brain of a child in which tuberculous meningitis had been the diagnosis. The old scars (healed) at the base of the brain were demonstrable. This case is of interest, as the child succumbed to an entirely different disease some time after. Martin[20] says recoveries are possibly more frequent than has been believed and states that since 1894 there have been no fewer than twenty full recoveries. There are some cases that seemingly recover completely only to be taken ill again in a short time. Allaria[21] classifies the foregoing type as an intermittent form in which the tuberculous process develops at intervals. During the abatement of the condition the patient is to all appearances well. In these cases resistance is so much above par that the infection is checked in its incipiency or the bacillary virulence is decreased to such an extent that the meningeal lesion becomes localized and subsequently undergoes fibrous metamorphosis. These supposedly latent lesions at a later date form the focus of a fresh infection which always terminates fatally. It is in these cases that the prognosis must be carefully weighed.

Summary and Conclusions.—The diagnosis of tuberculous meningitis was based on the following facts: (1) Previous personal history of poor health and enfeebled constitution. (2) The illness, influenza, preceding the general collapse which rendered patient a fertile soil for tuberculous infection. (3) The evidence of pulmonary involvement, persistent cough, great loss of weight, and other physical signs. (4) The meningeal manifestations, cervical rigidity, Kernig's sign, and other clinical phenomena

peculiar to meningitis. (5) The cytodiagnostic evidence as revealed by examination of the cerebrospinal fluid, the amount and clearness of the fluid, the high pressure at which it was obtained, the delicate though firmly coagulated fibrin clot, and the marked lymphocytosis. (6) The death of the patient. Much to my distress permission for an autopsy was refused. After carefully weighing all the facts in the case I believe a "Scotch verdict" would not be inappropriate; and that, while it was not proven absolutely to be a case of tuberculous meningitis, it was not proven otherwise.

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A CASE OF MISSED ABORTION.

By J. OHLBAUM, M.D.,

NEW YORK,

The following case is of sufficient interest in my opinion to place on record.

Mrs. L., age 36, Russian, married eighteen years, mother of three living children, oldest fifteen years, youngest three years old. First pregnancy was instrumental delivery and child died immediately after accouchement; one miscarriage.

Present history: Last menstrual flow occurred in May, 1910. In June, 1910, the woman began to show her usual early symptoms of pregnancy, *i.e.* cessation of menses, which had been punctual outside of her puerperal periods, morning sickness, and the enlargement of the breasts. She consulted several physicians when her menses ceased and was told she had a pregnancy of three months or thereabouts. At about the fifth month from the time her menses ceased she commenced to look for signs of "life," which did not appear. She went the rounds of the different clinics in the city, and finally she diagnosed her own case as one of early menopause and ceased to give herself a thought about her condition. She was gaining in weight and felt comfortable.

On March 12, 1911, at about 3 A. M. she commenced to have cramp-like pains and thought they were from her bowels, having eaten some food the night previous which might have caused her to have a "spoiled stomach" as she called it. The pains became more severe and she decided to send for a physician. I was called in and reached her home at 7.30 A. M. March 12. When I got there I was shown a sac which she had expelled. On examination I found it contained a fetus of about three and a half months. The fetus, cord, and placenta were all connected. Microscopically the placenta showed a fatty degeneration of the entire mass. The fetus was of a dirty, dark, brownish black appearance.

The interesting point of record is that this woman had been carrying a dead fetus *in utero* for probably six and a half months, without it causing her to have any physical disturbance whatsoever.

1665 Lexington Avenue.

Familial Cretinism in Vienna.—R. Eller reports three cases of cretinism occurring in children in one family in a locality free from endemic cretinism. He notes that the symptoms of endemic and those of sporadic cretinism cannot be distinguished from one another.—*Jahrbuch für Kinderheilkunde.*

Value of Examination for Acetone in Gynecological Surgery.—O. Paleani has made examinations of the urine in several cases of internal hemorrhage, for acetone, with a view to ascertaining the value of the test in diagnosis of gynecological cases, which has been maintained by some authors. In the cases tested by him it was found that in spite of there being present in the abdomen large amounts of blood the test was not positive during the time previous to operation. In one old case the test was positive, however. In some other gynecological cases in which there was no blood in the abdomen the test was found to be absent. The obvious conclusion from the author's cases is that the presence of acetone in the urine of gynecological cases has no bearing on the diagnosis of internal hemorrhage.—*Il Policlinico.*

Deviations of the Knee in White Swelling of the Knee.—C. Ducroquet and Victor Veru state that in clinics for orthopedics one is struck by the frequency of the deviations of the knee due to tuberculosis. This deviation is at first pure flexion, and this will remain indefinitely if the child does not walk. Later we see a complex angular deviation consisting of moderate flexion, abduction of the leg, and outward rotation of the foot. This is produced by walking, occurring early in patients who are badly immobilized, and late in those who have not complete ankylosis. The results are the same in both conditions, as manifested in the limitation of motion. The position is assumed by the patient of lessening the length of the limb, which cannot be entirely flexed in bringing the leg forward. Flexion of the knee is indispensable for normal walking. The patient rotates the leg forward, which produces this peculiar deformity. To prevent this deformity all that is necessary is a proper apparatus to prevent motion at the knee, and which shall extend above to the ischium and great trochanter, and below include the heel and back part of the foot. There should be rest in bed for six months, then walking with a proper apparatus, which must be worn for another year. Then an articulated apparatus should be worn until the child has perfect motion. If this is not attained and a perfect ankylosis occurs with slight shortening or flexion walking is good with a slight limp. If flexion is less than ten degrees the apparatus should still be worn until flexion improves. If this does not occur he must walk in external rotation and deformity will certainly occur. A resection is to be recommended.—*Archives de Médecine des Enfants.*

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INDUSTRIAL ACCIDENTS AND COMPENSATION FOR THEM.

ONE of the live questions before the country to-day is that of workmen's compensation for industrial accidents. The decision of the New York State Court of Appeals declaring unconstitutional the law recently enacted fixing the rate of compensation for which employers were liable to their injured employees, a decision which was based on the constitutional provision that no one can be deprived of property without due process of law, places this subject in the limelight of public attention. There are few questions that have interested such a large group of individuals, including, besides the vast army of industrial workers, publicists, physicians, jurists, legislators, lawyers, sociologists, and employers. The fundamental constitutional question involved, interpreted in the manner that it has been by one of the most influential courts in the country, threatens to undermine all legislation that has been enacted in the various States fixing workmen's compensation. The probability is that future legislation along this line will be possible only in the event of amendment of both the national and the State constitutions.

In a most illuminating essay upon the various humanitarian, economic, and legal aspects of this subject, Mr. Gilbert L. Campbell* quotes the report by the New York Commission on the question of employers' liability as follows: "The hazardous employments of the State annually exact their toll of life and limb of the workers with astounding certainty; . . . . there is a mathematical ratio of industrial accidents in the hazardous trades, depending upon the speed at which industry moves and upon the number of workmen, as remorseless and as certain as the death rate on which the tables for life insurance are based."

It is the truth of this statement that brings into sharp relief the fallacy, when applied to modern conditions, of the old doctrines of the common law that have been applied in England and in this country in the determination of employers' liability, namely, the doctrine of contributory negligence, the doctrine of assumed risk, and the doctrine of the fellow-servant. In the doctrine of contributory negligence it was long ago enunciated that if the plaintiff had so contributed to the causes of the accident that the breach of duty on the part of the defendant was not its proximate cause, then he, the plaintiff, had no ground for action. In the doctrine of assumed risk it was declared that he who knowingly places himself in danger of personal injury by accepting hazardous employment assumes therewith the risk of injury. The fellow-servant doctrine, which was not enunciated until 1837, asserted that danger of injury through the negligence of another servant of the same master is a known, common, and ever-present risk of working in company with others, and that consequently a worker so injured has no ground for action against his employer. Campbell states that, although the common law affecting the liability of the employer has been greatly modified by statutory enactments in many States, the judge-made laws concerning negligence, assumed risks, and the fellow-servant are still dominant. But the conditions of to-day in the industrial world are not the same as those that prevailed when these legal maxims were enunciated. "Modern creative processes have brought multitudes of workers into direct contact with ponderous implements of production that render their occupations extremely dangerous and have also made expedient, if not necessary, complicated relations between owners, managers, superintendents, foremen, and employees. In these modern industrial organizations the common worker may be far removed from fellow employees and employer, and thus his individual importance and responsibility are often reduced to a minimum. . . . . The common law of liability, an outgrowth of the past, is no longer in harmony with the social organism it aims to serve, while statutory modifications in many States have been inadequate to remedy its deficiencies."

It is pointed out that in the modern method of human slaughter America takes the lead. While producing one-third more coal per mine-worker than does Europe, it kills and cripples three times as many men. The psychological weakness which makes workmen who constantly face danger grow careless of it, the mechanical imperfections which no care can eliminate, and natural phenomena that cannot be foretold, all tend to make inevitable the loss of many lives by accident. These lives are sacrificed, therefore, as a necessary cost of production. But it is asked, "Who bears the cost? Is this loss met by the profits of production, or does it fall upon individual workers?" It is unfortunate that in most instances under the present system this loss falls upon the workers.

The hardships of the victims of industrial accidents have been met in various ways: By the crude and paltry benefits granted by the workmen's own mutual organizations; by the voluntary payments of kind-hearted employers, only too few; by the establishment in large industrial organizations of relief departments, with a graded scale of benefits, in which the company bears either part of or the entire expense of compensating its employees or their dependents; and by accident insurance, either individual or collective. None of these is regarded as an adequate mode of relief. Even if every employee insured himself against accident, or if the employer insured his employees collectively, the

*"Industrial Accidents and Their Compensation." Boston and New York: Houghton Mifflin Company, 1911.

total losses paid would constitute only about 46 per cent. of the premiums, as shown by the figures of the liability companies for the five-year period ending with 1908. During the latter year twenty-seven leading casualty companies collected $47,098,549 in premiums. Of this sum 45.7 per cent. was paid for losses, 50.01 per cent. for expenses, and but 4.2 per cent. remained as the net underwriting profit in the business. These figures show, as do those for other forms of insurance, that the business is not unduly profitable. Yet the system that returns to the victims of accidents less than one-half of what had been contributed in premiums is open to objection.

What, then, are the remedies for the prevailing inadequate measures of distributing the losses from accident involved in the complex machinery of the modern industrial organization? Drawing his conclusions in part from "Trades Unionism and Labor Problems," by Professor John R. Commons, Campbell suggests the following program of reform: Employers should be held accountable for the safety of surroundings and equipment and for the negligent acts of their employees. The employer's defense of contributory negligence should be denied. Employers should be held accountable for unpreventable accidents. They should bear the burden of proof. Compensation should be paid according to a definite scale fixed by law and varying according to the age and pecuniary condition of the dependents. Payment should be guaranteed by adequate insurance. Compensation payment should be conserved. Courts of proper jurisdiction should be given authority to determine whether lump payments should be made or the sum invested in annuities.

Campbell concludes his admirable contribution to this subject in the following words: "The situation presents a problem in the equitable distribution of the fruits of industry. Production commands a sufficient economic return to meet all of its legitimate charges, and a reasonable portion should be turned to the account of those unfortunates whom industrial accidents leave without means of livelihood. The costs fall with crushing force upon the individual victims. If these costs were to fall upon the enormous capital and tremendous earning power of the industrial world they would seem insignificant. Yet absurd legal precedents set up generations ago, and now dishonored at their source, are effective barriers against proper distribution. Legislation that pulls down these barriers will add much to the security, contentment, and efficiency of American industry."

THE PURIFICATION OF SEWAGE AT ITS SOURCE.

Typhoid fever on this continent is one of the most deadly diseases. The Professor of Hygiene at McGill University stated recently that almost all the public water supplies of Canada were polluted or in the process of being polluted. Considering the immense area of Canada and its comparatively sparse population this is a severe arraignment. However, the United States, or, rather, its sanitarians cannot plume themselves on any marked superiority in this respect over the neighboring dominion. Despite the progress made in purifying public water supplies and consequently in preventing typhoid fever, our country compares unfavorably with some countries of Europe. In Great Britain and Germany, for instance, under more inauspicious conditions by far, typhoid fever has been nearly abolished. In America, generally, the disease has been scotched only.

Bayard Holmes of Chicago writes in the *American Journal of Clinical Medicine* for August, 1911, regarding the septic tank as a practical means for preventing typhoid fever. By this is not meant the septic treatment of sewerage on a large scale in connection with a filtration plant, but the use of septic tanks for the treatment of household sewerage. Many persons will possibly imagine that such a scheme is not practical, but according to Holmes it is not only eminently practical but more or less easy of design and construction, and on the whole, too, the most efficient. Holmes computes the ordinary sewerage from a household of five people at 1,500 grams (50 ounces) of fecal matter, 5,000 c.c. (10 to 11 pints) of urine, and 100 gallons, more or less, of water containing precipitated soap from the bath and much grease and detritus from the kitchen sink. The grease, which is the least perishable, must be dealt with separately. As for the rest of the sewerage, which is perishable and contains within itself all the elements necessary for its own destruction and purification, treatment in the septic tank is indicated.

"This portion of the sewerage should be conducted into a water-tight fermentation tank, which should hold about twice more than the maximum daily output from the household. It should not be more than one hundred feet distant from the house and connected with it by hermetically sealed pipes of glazed tile or iron. The catch-basin, the fermentation tank, and these pipes should be kept freely open to the air by vents running above the roof or the surface of the ground. The septic tank and all drains should be below the post-line and wholly unconnected with gutters from the roof or any other irregular flooding. Another distinct system should take care of the storm water." Holmes proceeds to sketch the complete system of the domestic septic tank and states that when the sewage flows out of this tank it is slightly turbid water of a specific gravity less than that of urine. It is almost without odor, and it contains few if any living pathogenic microorganisms. It can be discharged into an open ditch without producing offensive results, and can be collected into a pond which remains perfectly clear summer and winter. If discharged into a small brook it will not kill the fish nor pollute the stream. It may be discharged into drainage tiles without befouling them, or it may be discharged into sandy soil by letting the end of the outlet pipe open under ground into a hole filled with stone or coarse gravel. It is urged that while one such tank may be constructed for each house, the better plan would be one for each block, with a single outlet into the sewer in the street. It is argued that not only the problem of preventing hookworm disease and typhoid fever can be solved by the use of a modified

and simplified septic tank, but that the nuisance and danger of flies migrating from the privy outhouse to kitchen and *vice versa* can be obviated?

If the methods sketched by Holmes are feasible, and from the description they read as if they might be, the contention that their universal adoption would effectually prevent typhoid fever and hookworm disease is based on sound premises. Typhoid fever would be attacked at the source and cities would be spared the expense of installing elaborate and expensive sewage purification plants, and perhaps filtration plants. Of course, it is too much to hope that the plan will be at once, if ever, generally employed, but its employment even on a small scale would be a step in the right direction. In country districts, if effective, the scheme should work wonders. So long as open privies are in general use in rural districts, and so long as the sewage of cities is dumped into the nearest body of water without being sterilized in any way, just so long will typhoid fever levy its heavy death and sickness toll on the careless inhabitants of this continent.

NEW METHODS FOR THE DIAGNOSIS OF MALIGNANT DISEASE.

No better idea of the practical advances along biochemical lines is procurable than that which is concerned with some individual problem, such as the diagnosis of malignancy. Hirschberg of the Cancer Research Institute, Berlin, has been summarizing these methods in a series of articles in the *Deutsche medizinische Wochenschrift* (Nos. 27, 28, 29). He begins with chemical tests which are divided into urinary, blood, and gastric-juice reactions, the latter pertaining only to cancer of the stomach. The urine tests are not concrete, and deal chiefly with the fluctuations of the urinary ingredients in malignancy, nothing conclusive being obtained thus far from this line of research. The blood tests comprise at least one concrete reaction, to wit, the elevation of the antitryptic index. There is no doubt that the index is greatly increased in cancer, but not alone in that affection. It may therefore be of use when certain other affections can be excluded. The literature of this subject is large and increasing. There are a number of tests of the gastric juice for gastric cancer which may be passed over since they are not applicable to cancer in general.

Morphological studies of the blood deal with alterations in the blood count and do not lead to the isolation of specific tests. Of much greater significance than any of the preceding are the serological tests, for here we have a right to expect specific reactions if such exist anywhere. In regard to the existence of complement fixation authorities are divided in opinion. It is certain that results are usually negative when they should be positive. On the other hand some positive reactions are to be attributed to latent syphilis, etc.

The same inconstancy applies to anaphylactic reactions. In regard to the demonstration of isolysins, hemolysins, heterolysins, cytolysins, and precipitins, all of these bodies have been found, and when present they are of possible value in the detection of latent cancer. For example, Freund's cytolytic reaction in a person formerly subjected to cancer removal is held by some surgeons to be of much value (solution of cancer cells by serum of cancer-free individuals). Kelling's heterolysin test is held to be practicable in two-thirds of all cases. Last, but not least in bulk of literature, is the miostagmin reaction, which is of course not specific for malignancy, being much used in tuberculosis. It appears to be of only conditional value in cancer. In his final summary Hirschberg is somewhat pessimistic as to results actually accomplished, but thinks that in the future the enormous labors performed to date will not have been in vain.

OCCUPATIONAL TREATMENT OF INSANITY.

Writing in the *Monthly Cyclopedia and Medical Bulletin* for May, 1911, Frank Wade Robertson urges the value of occupation for mind and body in the treatment of various psychoses. He says that in studying old-time methods of treating the insane one is impressed with the dependence placed upon drugs and the ceaseless search for a specific for each and every form of mental disease, and he notes that it has been only tardily discovered that no therapeutic panacea is available in the treatment of insanity. He draws attention to the fact that in 1845 Earle showed how much good was to be derived from the employment of manual labor in the treatment of the insane. Bell in 1838 wrote that he attributed his success in the treatment of the insane very largely to "systematic, regular employment in useful bodily labor" and to the amusements provided. It has been the experience of Robertson in the treatment of the psychoneuroses where the power of attention has not been too much disturbed, that well-selected amusements, card-playing, games, plays, and conversation upon subjects which arouse the patient's interest frequently have a beneficial effect.

As a means of both exercise and occupation, the crying need of our hospitals and sanatoria to-day, Robertson insists, is for properly equipped workshops and amusement rooms for men and women. The effect on the patients would be twofold; exercise and occupation would benefit body and mind, and the disciplinary effect on the patient would act as a curative measure of inestimable value. Thus, in the opinion of the writer, in place of the aimless inactivity which at present characterizes many of the abodes of the insane, there would be animation, activity, and enthusiasm among the inmates.

The good results of occupation in the treatment of the insane were also emphasized by Dr. Mary Lawson Neff in an article published in the Medical Record, December 3, 1910. In this the author referred to the fact that work, especially basket-making, was insisted upon in the York Retreat as early as the latter part of the 18th century, and she showed how games could be made use of, as well as industrial occupation, in psychotherapy. From all points of view, healthful occupation would exert a favorable influence on those suffering from mental disorders of different kinds and of varying stages of intensity. The curative value of trade schools

has already been partially demonstrated in the treatment of defectives and there would seem to be cause to anticipate an equally favorable outcome from the application of similar methods of treatment for the insane.

Tolerance of Nurslings Toward Morphine.

Many therapeutists insist that opiates must never be given to infants during the first year of life, and much has been written against the use of "soothing syrups" during this period. It has been alleged that many babies go through their colic and teething ages in a state of virtual stupor, and despite all this propaganda it is known that most mothers make some use of opiates, or at least did so before recent restrictive laws went into operation. Every physician in family practice must have heard of families of intelligence and cultivation who threw out accumulated empty bottles of soothing syrup literally in basketfuls. Nevertheless, the number of actual cases in which responsibility for death can be traced directly to paregoric and soothing syrups, even if considerable, must be relatively small. Now, while everything which has been done in warning against the use of opiates in the first year of life, and, in fact, at any other period, is wholly admirable from any point of view, the fact undoubtedly remains that nurslings are really very tolerant toward these drugs. It would be better to state perhaps that some infants exhibit this tolerance, for we cannot assume that the reverse does not occur. When cases occur such as that reported by Wichura in the *Münchener medizinische Wochenschrift* of July 25, in which recovery readily followed poisoning of an infant three months old with at least a twentyfold dose (for the first-year period) of morphine, we cannot always attribute this resistance to idiosyncrasy. A similar tolerance to codeine has also been noted. The truth of the matter is doubtless that a nursling may readily show the effects of morphine—the pupils and sensorium may rapidly respond to minute doses —but that the lethal dose is much larger than has hitherto been taught. The bearing of the subject is principally forensic in character, for practically the fact remains that opiates should never be used in domestic practice for either infants or adults, and should be prescribed for infants by the physician with caution and only when definitely indicated.

Cadaveric Rigidity.

The older teaching as to the nature of cadaveric rigidity was very simple and plain. It was due solely to coagulation of the fluid muscle albumin, and analogous to coagulation of blood fibrin. At a recent session of the K. K. Gesellschaft für Aerzte (*Münchener medizinische Wochenschrift*, July 18) von Fuerth and Lenck announce as a result of years of experience that this theory is best replaced by another. According to these investigators the acid formed in the muscle after death causes the muscle fibers to swell up, becoming thereby shorter and thicker. This causes the rigidity proper. The following coagulation of the muscle albumin represents the relaxation which follows on rigidity. If measures are employed which tend to promote this coagulation the latter is hastened. Thus this occurs if muscle is placed in the incubator. Violent muscular exertion shortly before death hastens the onset of rigor mortis because of increase in the amount of sarcolactic acid. On the other hand, the presence of oxygen prevents rigor mortis because it hinders the formation of sarcolactic acid. If the muscle is infiltrated with Ringer's solution the commencing rigidity is made to retrograde because the acid is washed out. There are *in vitro* a type of rigor mortis due to heat and another due to drugs (quinine and chloroform).

News of the Week.

Industrial Poisonings to be Reported.—An amendment of the labor law of New York State, passed by the Legislature on June 6, reads as follows: "1. Every medical practitioner attending on or called in to visit a patient whom he believes to be suffering from poisoning from lead, phosphorus, arsenic or mercury or their compounds, or from anthrax, or from compressed air illness, contracted as the result of the nature of the patient's employment, shall send to the Commissioner of Labor a notice stating the name and full postal address and place of employment of the patient and the disease from which, in the opinion of the medical practitioner, the patient is suffering, with such other and further information as may be required by the said commissioner. 2. If any medical practitioner, when required by this section to send a notice, fails forthwith to send the same, he shall be liable to a fine not exceeding ten dollars. 3. It shall be the duty of the Commissioner of Labor to enforce the provisions of this section, and he may call upon the State and local boards of health for assistance." This act will take effect on September 1.

A Plan for Better Vital Statistics.—The Monthly Bulletin of the New York Department of Health for July discussed the report of a committee appointed some time since to consider the relations between public health and vital statistics, as the present system is considered quite inadequate. This report, after enumerating the benefits that would accrue from more carefully and accurately kept statistics, recommends that the city be divided for purposes of tabulation into small sanitary districts which should coincide wherever possible with those of the Census Bureau; that deaths, births, and marriages for the year 1910, and for subsequent years, should be tabulated by these tracts; that there should be a working agreement with the Census Bureau to avoid reduplication of work; that an estimate should be made of the cost of producing statistical tables now published, and the possibility of changing the tables so as to secure better results for the same money considered; that in selecting subjects for statistical investigation emphasis be placed on those in regard to which the public is interested or can easily be aroused, and upon which other divisions of the Department of Health are working; that the State enumeration of 1915 be taken with reference to its serving as a basis for the vital statistics of New York Ciy. The committee further suggests that the name of the present Bureau of Records be changed to the Bureau of Vital Statistics, and that it be reorganized under three divisions, namely: (a) Division of records; (b) division of research; (c) division of publicity. Each division shall have its own chief, who shall receive $5,000 a year. The members of this committee are Prof. Walter F. Wilcox of Cornell University; President C. A. E. Winslow of the College of the City of New York; Dr. Cressy C. Wilbur.

Dr. Robert S. Tracy, Dr. William H. Guilfoy, Dr. Herman M. Biggs, and Dr. Josephine S. Baker, director of the Department of Child Hygiene.

For a Children's Bureau.—A bill to establish a children's bureau in the Department of Commerce and Labor has been reported favorably from the Senate Committee on Education and Labor. The bill requires that the commissioner of the new bureau shall gather information on all subjects relating to child life, accidents, mortality, and dangerous employments, as well as to child delinquents and juvenile courts.

Salt Lake City Uses Typhoid Vaccine.—The apparent efficacy of vaccination for typhoid fever has led the Salt Lake Board of Health to begin an active campaign for its use in putting an end to the ravages of typhoid fever The board has not yet decided to make the use of the vaccine compulsory, but that it will constantly have the preparation on hand and that city physicians will administer it free of cost.

New Milk Station Opened.—The Board of Health of New York City announces the opening of a pure milk station in Division street. This is the fifteenth station to be opened by the department.

Infant Death Rate.—The total number of infant deaths in New York City from January 1 to August 12 was 9,398, as compared with 10,365 for the same period in 1910, a total decrease of 967. It is the hope of the Health Commissioner to show a difference of 1,000 by the end of the summer. For the week ending August 12 there were 410 deaths of infants under one year of age, and for the corresponding week of 1910, 422. The week ending August 19 shows 412 deaths of infants under one year of age, as against 396 for the corresponding week of 1910.

Summer Work at Sea Breeze.—Up to August 15 the Association for Improving the Condition of the Poor has sent 17,059 mothers and children to Sea Breeze, Coney Island, while, for the entire summer of 1910, 25,886 mothers and infants were given outings.

Typhoid Fever and Poliomyelitis.—In New York City there have been 576 cases of typhoid fever reported to the Health Department in the last ten weeks, as compared with about 300 for the corresponding time in 1910. In July 318 cases of typhoid fever were reported for the greater city and 56 deaths. For the first twelve days of August there were 279 cases reported, as against 191 in 1910. The greatest number of cases in Manhattan have developed in an area between 26th and 100th streets. Since August 1, 16 cases of infantile paralysis were reported to the Health Department, while not a single case was reported during the same time last year.

Ban on Public Drinking Cups.—The new sanitary code ordinance which will take effect in New York City October 1, 1911, abolishes drinking cups in hotels, public schools, railroad stations, factories, theaters, and all public places. Children will have to provide their own drinking cups at school, and those working in factories will have to do the same; it will be a violation of the law for any person to loan his or her drinking cup.

To Enforce Cold Storage Law.—The State Department of Health has been inspecting cold storage plants, especially in New York, Albany, Utica, Syracuse, Rochester, and Buffalo, and has demonstrated that there is great need for rigid enforcement of the law from the public health standpoint. The department will insist vigorously on the labeling of the food products as to date, receipt and delivery and also the selling of cold storage foods as such, and will prosecute those who have flagrantly violated the law.

Work of the Kitchen Association.—This society which has been assisting the Health Department in the campaign to save the lives of babies has at present more than 1,500 infants under its care and supports nine milk stations. It is said that there has been practically no mortality among the infants under its care.

Professor Albrecht Lossel, Director of the Physiological Institute of the University of Heidelberg, arrived in this country on August 12, and will deliver lectures at the Johns Hopkins and other American universities.

Dr. Amos T. Baker, Assistant Superintendent of the Matteawan State Hospital for the Criminal Insane, has tendered his resignation to take effect immediately, and will hereafter be connected with Dr. Flavius Packer's private sanatorium at Riverdale, N. Y.

Dr. J. L. Eaves, until recently pathologist to the University of Edinburgh, Scotland, has become a member of the Stamford faculty at the Cooper Medical College.

Hospital for Los Angeles.—The Frances Willard Hospital Association is preparing plans for a hospital building to be erected at Washington and Figueroa streets at a cost of $100,000.

Milk Exhibit.—At the State fair to be held in Syracuse in September the New York Milk Committee and the New York Dairy Demonstration Company will give a joint exhibit which will show methods of producing pure milk for New York at a nominal cost. The Milk Committee will show by charts and literature what is being done all over the United States in establishing uniform milk inspections, the proper relation between municipal and State authorities, and the need of inter-state cooperation. There will also be a reproduction of a city milk station with clinics by doctors and lessons by nurses. Charts, tables, and photographs will show what is being done in other cities to reduce infant mortality.

For Duty-free Lemons.—An effort is being made to enlist the hospitals in the campaign for the abolition of the duty on lemons. A circular has been sent to the superintendent of every hospital in the country, asking him to write to the Senators from his State to request them to vote for the reduction or abolition of the duty on this fruit, on the ground that a considerable reduction would thereby result in the working expenses of the hospital.

Hospitals and the Proposed New Charter.—One of the clauses of the proposed new charter for New York City provides for the transfer of Bellevue and the Allied Hospitals from the present trustee system to a commission to be appointed by the Mayor. At a recent hearing before the joint legislative committee, the United Hebrew Charities, the Society for Improving the Conditions of the Poor, and other philanthropic organizations protested against this change which would again make the hospitals the toy of the politicians. Leopold Plaut, the head of the Hebrew Charities, urges that all who are interested in the hospitals and the welfare of the sick poor use their influence with the Legislature to prevent this change.

Typhoid Epidemic at Canastota.—This village

with a population of 3,200 has at present 60 cases of typhoid fever. The water supply is said to be responsible for the epidemic.

Recent Cholera News.—The official report of the Italian Government shows that from August 8 to 12 there were 1,736 cases of cholera and 632 deaths in Italy. Since the last of July there have been 40 cases in Rome while during the previous six months there were only 13 cases. A dispatch from the Paris *Midi* states that there have been 37 cases of cholera at Marseilles and 20 deaths and that 60 soldiers at the Marseilles garrison are held in the hospital as suspected cholera patients. The report comes from Canada that 37 cholera suspects and 283 smallpox suspects are being held at the Dominion Government quarantine station at Grosse Isle. The *Re d'Italia* from Naples and Palermo, which arrived in New York Harbor on August 19, reported that three deaths of children from cholera had occured during the voyage and two passengers were suspected of having the disease.

Harvard to Have a Medical School in China.—That Harvard will have a medical school in Shanghia, China, within eight months seems an assured fact. Plans have been under consideration for about three years, and Dr. Martin R. Edwards has just returned from a seven months' stay in China, where he was sent for the purpose of studying conditions to determine in what place in China it would be best to start a medical school. There is a dire need of such an institution in China, there being at present but one fairly well trained physician to every 400,000 population. Two-fifths of the sum of money necessary for this project have been contributed by the Legislatures of Oregon, Washington, and California, these States being particularly interested in preventing the coming of cholera, bubonic plague, and other Oriental diseases to Pacific ports.

Dr. Percy Bartlett, of the Dartmouth College Medical School has been chosen to succeed Dr. Charles F. Richardson as trustee of the Mary Hitchcock Memorial Hospital at Hanover, N. H.

Dr. Alfred Mitchell, professor of the Theory and Practcice of Medicine and Dean of the Medical School of Maine, a part of Bowdoin College, since 1897, has resigned. Dr. Frederick H. Gerrish, who has been connected with this institution since 1872, has also resigned and has been appointed Professor Emeritus of Surgery and Professor of Medical Ethics.

New Dispensary for Medical College.—The regular physicians of Maine and the alumni of the Medical School of Maine have instructed the Trustees of Bowdoin College to raise $140,000 for building a dispensary and for laboratories of anatomy, physiology, bacteriology, pathology, and pharmacology.

Bathing in Flushing Bay Forbidden.—The Board of Health has closed the bathhouses on Flushing Bay, not because of the unsanitary condition of the bay, as was rumored, but because there were not sterilizing plants for bathing suits and there were complaints that this had led to the communication of disease.

A New Health Ordinance for Cincinnati.—The Health Department of this city has passed an ordinance requiring factory owners to place cuspidors on the floors of their establishments.

Hospital Changes Hands.—The Lutheran Hospital of Granite City, Mo., has been sold to Father Kaenders, who will put the institution in charge of the Sisters of Charity.

The Colorado State Board of Heath.—Dr. Arnold Stedman of Denver, Dr. James R. Arneil of Denver, and Dr. Charles Morrison of Colorado City have been appointed to vacancies on the State Board of Health of Colorado.

Benefit for Hospital.—A benefit for the Hospital of Milford, Mass., netted that institution $828.

Arkansas Medical Schools Unite.—The College of Physicians and Surgeons and the University of Arkansas Medical Department, both of Little Rock, have joined forces and will be controlled and financed by the University of Arkansas.

American Electro-Therapeutic Association.—The twenty-first annual convention of this American Electro-Therapeutic Association will be held at the building of the College of Physicians, Philadelphia, Tuesday, Wednesday, and Thursday, September 5, 6, and 7, 1911, under the presidency of Dr. Frederick de Kraft of New York. The secretary is Dr. J. Willard Travell, 27 East Eleventh street, New York City.

Obituary Notes.—Dr Herman P. Bender of Williamsburg, N. Y., a graduate of the University of Freiburg in 1879, was struck and instantly killed by an automobile as he stepped from a surface car on August 14, aged 54.

Dr. Edward B. Coburn of New York City, a graduate of Albany Medical College in 1890, a member of the American Medical Association, New York Academy of Medicine, Surgeon to the New Amsterdam Eye and Ear and Cornell Dispensaries, died on August 10, aged 43.

Dr. Paul Georges Dieulafoy of Toulouse, a member of the French Academy of Medicine and of the Legion of Honor, died August 16, aged 72.

Dr. James J. Gleeson of New Haven, Conn., a graduate of the University of Pennsylvania in 1898, died August 13.

Dr. Charles Voorhees Butler of New Brunswick, N. J., a graduate of New York University Medical College in 1893, died in Paris, France, August 17, of pyemia following a carbuncle.

Dr. Brayton Muscott of Anacortes, Wash., was accidentally shot and killed August 5, aged 42.

Dr. Nathan J. Davis of Somerville, Mass., a graduate of Harvard Medical College in 1871, died August 9, aged 67.

Dr. J. Solomon Smith of Denver, Col., a graduate of the University of Louisville, Ky., 1880, died at Excelsior Springs, Mo., August 3, aged 60.

Dr. William Hope Davis of San Antonio, Tex., a graduate of Eclectric Medical Institute, Cincinnati, 1865, died August 5, aged 74.

Correspondence.

LECTURES ON INEBRIETY AND ALCOHOLISM.

To the Editor of the Medical Record:

Sir:—A new phase of public hygienic lectures has come into prominence this year and is evidently going to attain great proportions in the near future. In July a remarkable series of addresses were given to public audiences in Birmingham and Manchester, preceding and during the session of the British Medical Association. These addresses were arranged by a committee with the object of having leading medical men address the public on the alcoholic problem. Fifty different physicians from all over the British Isles accepted these invitations and spoke at churches, halls, and other places on alcohol

and its effects. Among the prominent speakers were Sir Victor Horsley of London, Dr. Hyslop, Robert Jones, Basil Price, Dr. Eccles, Sims Woodhead of Cambridge, Dr. Sunderland, Claude Taylor, and others. Every large city of the British Isles was represented by some leading physician who discussed alcohol and its effects on the human body in a most satisfactory way. This is the first time so large a number of medical men was called upon to discuss the alcoholic problem before lay audiences. The temperance journals gave full reports of these lectures, which, in many respects, are the most startling innovation noted in the conservative profession of England. In this country a similar movement began at Atlantic City at the meeting of the American Medical Association in 1909. Six different physicians delivered addresses on the alcoholic problem in the various churches and halls of that city. This movement was under the auspices of the American Society for the Study of Alcohol and Other Narcotics, and grew out of the request of temperance and philanthropic workers to have some medical instruction along the lines of their work. In 1910 the meeting at St. Louis showed an increased interest. Nine physicians spoke in more than a dozen churches and halls on the Sunday before the association met and during the week of the meeting. At the meeting at Los Angeles this year the effort was continued, but owing to the absence of many of the leaders only five physicians spoke specifically on the alcoholic problem in the halls and churches. It was noted that more than a dozen physicians gave addresses on other hygienic subjects in the various churches and halls which attracted a great deal of attention.

Evidently a new movement has begun and the lay public look to physicians for instruction on the various subjects of hygiene and sanitary science, particularly at the time of the great meetings. The success of the movement in England will give new impetus to the work in this country. This is but a natural outlook where so many physicians gather in great conventions, that they should address the public and popular audience on questions that are of vital interest. The alcoholic problem as well as the great social evils are subjects that become more and more vital and the public interest to hear the leaders of the profession on these topics should be encouraged as the beginning of a wider movement that will react to give the profession greater power and force in public estimation.

T. D. Crothers, M.D.

Hartford, Conn.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE MEDICAL CONFERENCE—THE INSURANCE BILL IN THE HOUSE OF COMMONS COMMITTEE—SUNDAY FUND—MEDALS OF THE ROYAL COLLEGE OF PHYSICIANS.

London, August 4, 1911.

The medical meeting at Birmingham has passed and been a successful one—some 1,300 members are said to have attended. Next year's meeting is to be at Liverpool and Sir James Barr, consulting physician to the Royal Infirmary, has been elected as president for 1912.

Some London members returned to town on Friday or Saturday, but others made Birmingham the starting place for their holiday. Many took the week-end at home and then began their trip. One does not therefore see many of the returned members or hear as much as one might expect about the proceedings. As to the political discussion the interest has been transferred to the House of Commons, as you will see below. There the points insisted on by the association have had to be met.

Of the sections the surgical appears to have been the most attractive and this is only what might be expected, considering how greatly surgery has encroached on the domain of medicine. It is unsafe now to pronounce any area of the body as inaccessible to the surgeon.

The special sections were of course attended chiefly, if not exclusively, by those devoted to the several branches, but complaints are being made that they were too numerous—no less than 16 sections all sitting at the same time. It was, therefore, impossible for anyone to fully attend more than one. Many of the papers read had a wide interest, but it will be long before some of them can be published in the *Journal*, of which indeed they will be the pabulum for the year.

August opened in Parliament with the Insurance Bill in committee for the 10th day, 118 pages of amendments on the paper. Eleven clauses had been passed, and the whole available time was devoted to the 12th. This deals with insured patients in hospitals and provides that no payment be made to them, although they have paid their premiums. There was a long discussion on this and further on the danger that the bill would cripple or destroy valuable hospitals.

It was maintained that the managers of the principal hospitals in the Midlands estimated they would lose 50 or 60 per cent. of their income, and in one case 70, and another perhaps more. Mr. Lloyd George pooh-poohed the fears of the managers and said many persons would pass from the charge of their hospitals to that of the insurance fund, so they might anticipate relief from a heavy burden. He did not see why workingmen should give less to hospitals than they had done, and denied that employers would subscribe less freely. The hospital managers say, on the contrary, that when both these classes are compelled to pay so much a week they will consider they have done their duty. But the next day (Tuesday), on resumption of the debate, the Chancellor agreed that the amount due to an inpatient, might, if he had no dependants, go toward his maintainance in the hospital.

The next change was then taken up, which proposed that the medical benefits should be administered by the friendly approved societies in the cases of their own members. An amendment was moved by Dr. Addison in favor of transferring the administration of medical benefits exclusively to the local Health Committee. Speaking as a medical man, he told the government that without some such change the scheme would be imperilled, for most practitioners had very strong objections to be controlled by the societies. He was supported in various parts of the House, but some labor members rather objected. Mr. Lloyd George admitted that he was personally in favor of Dr. Addison's view, and believed it to be the general opinion of the House, but the government whips would not "tell" in the division upon it.

In the end Dr. Addison's amendment was carried by 387 votes to 15, the announcement of the figures giving rise to much laughter and bantering cries of "resign."

On Wednesday the committee came to the clause dealing with the income of insured persons. Sir

P. Magnus, Member for the London University, moved to confine medical benefit to those whose incomes did not exceed £104 per annum. This, he urged, would include all the really poor and leave out those who could afford to make their own arrangements for medical attendance and would mostly prefer to do so. He told the House that if passed without some such amendment the bill would absolutely ruin a great proportion of medical men. To prevent unfairness he would later move that the excluded persons should receive an equivalent to medical attendance.

Mr. Lloyd George was strongly opposed to any such modification of the provisions of the bill, and he said that a man with 30 shillings a week in the country was very much better off than one with £2 in London.

Sir R. Finlay, Member for Edinburgh and St. Andrews Universities, said the great flaw of the bill was that it proposed to perpetuate the contract system of medical practice, which was condemned by everyone who had had any experience with it. The payment of a fee promoted a patient's self-respect and prevented unreasonable demands being made. In many ways, he said, the bill was a retrograde measure as far as national health was concerned.

Dr. Addison moved an amendment under which it was left to the local Health Committee to fix income limits, and this was eventually adopted by a majority of 278 votes to 41. In the meantime the committee had agreed that all medical men who so desired should be placed on the lists of those who agreed to treat insured persons, and these last could select from the list their doctor if he consented to attend. Amendments were also inserted to protect medical institutions and to give the insured the right of choosing their own chemists and druggists.

It should not be forgotten that many other interests than the medical are affected by the Insurance Scheme. Four more deputations went to the Chancellor to make objections on behalf of local authorities. The Trades Unionists and the Socialists and Labor Party generally are beginning to pick holes, and some are advising delay or the division ot the bill into two. But the Chancellor is obstinate on this point, and it is said he will call in the closure and force it through this session, though he may have to propose amendments in the next. It seems he might have been wiser to postpone a consideration of the medical part, as all along desired by the profession, to allow time for a thorough discussion of the measure.

A meeting of the Hospital Sunday Fund was held on Tuesday, when it appeared that a serious falling off of contributions had occurred. It was suggested that absence from home on the day of the collection accounted for some of the decrease, which amounted to as much as £6,000. Others blamed the Insurance Bill and ridiculed Mr. Lloyd George's optimistic assurances that the workmen and their employers would never reduce their subscriptions.

The Royal College of Physicians has awarded the Baly Medal to Professor Halliburton, of King's College. This is given every alternate year for distinction in physiology. The college has also awarded the Bisset Hawkins Medal (or triennial distinction) to Dr. Clement Dukes, for work in sanitary science.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

THE NATURE OF RIGOR MORTIS—PHOTOGRAPHY OF THE EYEGROUNDS—CONGENITAL DEFECTS OF THE SKULL—TREATMENT OF OSTEOMALACIA WITH HYPOPHYSIS EXTRACT.

VIENNA, August 1, 1911.

THE nature of rigor mortis and of its dissolution has been studied by Otto V. Furth and Em. Lenk. Heretofore rigor mortis has been regarded as the result of the coagulation of the muscle plasma, or as an equivalent of the contractile state. P. Saxl had shown that some time after death the greater portion of the muscle protein is transformed into a substance that is soluble with great difficulty. If muscle is extracted with ammonium chloride, seven-eighths of the former goes into solution; if this experiment is performed six to nine hours after death, only one-half of the muscle is dissolved. The coagulation theory fails to explain certain phenomena, particularly the physiological cessation of rigor mortis. Certain substances, such as quinine, chloroform, and sodium monobromacetate, produce rigor mortis and coagulation of the muscle plasma.

Sodium chloride evokes rigor mortis, but inhibits coagulation of protein; while compounds of rhodium and sodium salicylate favor the coagulation of muscle plasma, but do not hasten rigor mortis. The formation of a precipitate in muscle plasma occurs later than the incidence of rigor mortis. The physiological cessation of the latter has been explained on the basis of decomposition, the formation of acids, or autolytic processes in the muscle. These hypotheses are not supported by the above investigations. Fürth and Lenk believe that rigor mortis is probably the result of a swelling up of the muscle fibrils caused by the formation post mortem of acids. The fibrils swell up and become shorter. The cessation of rigor mortis is brought about by the coagulation of the muscle plasma, which has been shown to proceed *pari passu* with the subsidence of the fibrillar swelling. Between 20 and 30 hours after death the muscle reaches the maximum of its power of imbibing water, which power then rapidly diminishes.

All factors that favor the coagulation of muscle plasma also hasten the subsidence of rigor mortis. Both of these processes are hastened in the incubator, while, according to V. Eiselberg, rigor mortis is retarded by section of the nerves. In an atmosphere of oxygen rigor mortis does not appear, while strangely no lactic acid is formed, and whatever lactic acid is present is destroyed. Perfusion of the muscle with Ringer's solution, which washes out the lactic acid, removes the condition of rigor mortis. Heat rigor is a phenomenon differing from rigor mortis, depending upon the coagulation in large lumps of the muscle plasma; such muscle is hard and white. Chemical rigor, such as is produced by quinine, sodium fluoride, chloroform, and sodium monobromacetate, has various causes, among which may be mentioned as one of the most probable the formation of acids by means of a protoplasmic poison (sodium fluoride).

The photography of the eyegrounds has been achieved by Professor Friedrich Dimmer. Efforts in this direction are as old as the use of the ophthal-

moscope. The advantage of this procedure consists in the rapid elaboration of the picture, which would be subject to metric analysis. Difficulties that present themselves in photography of the retina are retinal reflexes and the changes in focus, such as occur in glaucoma, swelling of the papilla, and separation of the retina. To counteract the reflexes polarized light was employed, but this method provided insufficient light. Better was the use of screens. Gerloff, in 1888, was the first to demonstrate a photograph of the retina. In 1899 Dimmer communicated his results, and in 1902 he demonstrated instantaneous photographs. The apparatus is a complicated one, providing an exposure of 1/20 of a second, and giving a picture that is enlarged from three to four times, and that comprises a visual area from five to six times the diameter of the papilla.

"Congenital Deficiencies of the Skull" is the title of a paper by Hochsinger, who summarizes his conclusions as follows:—There are three forms: (1) the type depending upon excess of intrauterine, intracranial pressure resulting from a preexisting hydrocephalus or some ordinary malformation; (2) congenital softness of the skull of rachitic origin; (3) congenital thinness of the cranial bones resulting from a fetal panostitis. In softness of the skull bones the bone near the sutures is soft and there is frequently craniotabes. In genuine deficiency of the cranial bones there are bone ossification defects without rickets, and the bony margins are hard. In many cases there is also spina bifida, which would indicate a fetal hydromyelia in conjunction with hydrocephalus. Genuine defects in the skull may in some cases be results of simple inhibition of development. Congenital syphilis may also be one of the causes of cranial defects.

The treatment of osteomalacia was the subject of an investigation by Dr. Bab in Professor Wertheim's clinic. He had had exceptional success in a most severe case of osteomalacia, to whom he had administered subcutaneously 2 c.c. of pituitrin daily. This form of therapy was suggested by the fundamental antagonism between acromegaly and osteomalacia, and between the hypophyseal and ovarian functions. In acromegaly there occur atrophy of the ovaries; amenorrhea; cure by extirpation of the hypophysis; greater incidence at the climacteric, after ovariotomy, or in the course of a sterility associated with amenorrhea; loss of sexual desire; tendency to diabetes; relationships to myxedema; therapeutic inefficiency of pituitrin, but efficacy of thyroidectin and the return of menstruation after extirpation of the hypophysis. Above all, in acromegaly there is the formation of strong bony substance.

Just the reverse of all this occurs in osteomalacia, in which there are the following manifestations: hyperfunction of the ovaries, cured by ovariotomy; greatest incidence in the period of sexual maturity, great average fertility, no disturbance of the course of gestation, preservation of the libido, absence of adrenalin glycosuria, relationships to exophthalmic goiter, therapeutic success with antithyroidin of Moebius, and softening of the bones. On the basis of an experience with eight cases the author concludes that pituitrin in the majority of the cases cures the pains and improves the general condition. In other cases the improvement proceeds only to a certain degree. In other cases there is no improvemnt.

The Boston Medical and Surgical Journal.

August 10, 1911.

Aspects of Abdominal Ptosis. By J. G. Mumford.
Chronic Acetanilid Poisoning a Perfectly Definite Symptom Complex. H. C. Gordinier.
Hydrocele and Its Radical Cure by the Insertion of Catgut. C. M. Whitney.
Concerning Nurse Training Schools. S. E. Parsons.
"Compression Myelitis" by an Aneurysm Occurring in a Tabetic. J. B. Ayer.

Abdominal Ptosis.—J. G. Mumford states that acquired ptosis is comparatively rare, but congenital ptosis is extremely common. The latter is found in 20 per cent. of all dissecting-room subjects. A prolapse of the stomach leads commonly to stasis, to pyloric kinking and obstruction, to toxemia, rarely to gastric tetany, frequently to loss of appetite with chronic nausea and occasional vomiting. In addition there are headaches, loss of flesh and strength, secondary anemia, changes in temperament, irritability, and neurasthenia. Prolapse of the large intestine is probably far more significant than prolapse of the small intestine. It results in chronic catarrh of the intestine, often with stercoral ulcer, with accumulations of gas, and with a distressing constipation, sometimes alternating with diarrhea. The toxemias resulting from abdominal ptosis may cause gastric and intestinal indigestion, headache, iritis, disorders of the lens, extensive mucous inflammations, neurasthenia, arthritis, and disorders of the ductless glands. Many cases of exophthalmic goiter are associated with abdominal ptosis. Treatment of prolapsed abdominal viscera consists in postures, the wearing of braces and belts, and operations.

Chronic Acetanilid Poisoning.—H. C. Gordinier states that the continuous ingestion of acetanilid or allied products causes cyanosis; enlargement of the heart, spleen and liver; a secondary anemia, with a moderate polynucleosis; the drop of blood obtained from the ear or finger is of a bluish black or chocolate color; the urine is dark brown or black in color and gives the characteristic indophenol reaction. Acetanilid is a most virulent hemolytic poison.

Treatment of Hydrocele.—C. M. Whitney states that this may be palliative or radical. The former consists in tapping the sac. The radical methods are of two kinds, operative and non-operative. The latter consist in tapping the sac and injecting into it a fluid or inserting a substance which causes an acute inflammation with adhesion of its walls and obliteration of its cavity. One method is the introduction of sterile catgut. Another is the injection of pure carbolic acid. The third and oldest method is the injection of tincture of iodine. The author concludes from his experience, involving the treatment of 196 cases, that one can reasonably expect a larger percentage of cures from the insertion of sterile catgut than from any other method.

Nurses' Training Schools.—S. E. Parsons calls attention to a few of the important facts to be considered relative to the selection by a young woman of a suitable training school.

Compression Myelitis.—J. B. Ayer reports the case of a colored male aged 49 years, who for two years had had cramp-like pains, mostly in the limbs, and for less than a month had had sensory disturbances and loss of sphincter control. Pupils were unequal, reacted sluggishly to light, and knee-jerks were absent. There was a large pulsating aneurysm in the back. There were two cord lesions; one of ancient date, tabetiform in character; the other, acute and caused by pressure of the aneurysm.

New York Medical Journal.

August 12, 1911.

Chronic Appendicitis with Obscure Manifestations. N. Jacobson.
A Case of Typhoid Bacillus Cholecystitis without Past or Present Typhoid Enteritis and without Cholelithiasis. B. Holmes.

Esthetics of Surgery. A. M. Crispin.
Further Experiences with Salvarsan in Syphilis. H. Goldenberg and D. J. Kaliski.
The Medical Aspect of Life Insurance. A. Moss.
The Prophylaxis of Social Disease. M. Glasgow.
Treatment of Gastric Ulcers by Lenbartz's Method. J. J. Gilbride.
Report of Two Cases of Occipital Abscess with Wernicke's Pupillary Phenomenon. I. Strauss.

Chronic Appendicitis.—N. Jacobson reports a series of cases in which the early history was always indefinite, the symptoms pointing to the stomach, duodenum, gall-bladder, or the large bowel, and a period varying from one year to several years elapsed before any evidence strongly suggested appendicular disturbance.

Typhoid Bacillus Cholecystitis.—B. Holmes concludes that typhoid bacillus cholecystitis is an invariable attendant on typhoid fever. Clinical (obstructive) cholecystitis occurs when the cystic duct is obstructed. The gall-bladder often retains the infection long after the typhoid septicemia and typhoid enteritis have passed away, and then the typhoid bacilli may, by use of cholegogues, be found in the stools. The fate of a typhoid bacillus cholecystitis is so uncertain and so surrounded with danger that the fear of a surgical operation in the course or at the beginning of typhoid fever should not be given too much weight. The cholecystostomy should be promptly and quickly performed with the minimum of anesthetic and the minimum of traumatism. No attempt should be made during typhoid fever to remove stones from the cystic duct. A later cholecystectomy will rarely be necessary.

Esthetics of Surgery.—A. M. Crispin believes that surgery possesses all the elements which compose the fine arts besides its highly altruistic tendencies. It is decidedly utilitarian, increasing the happiness of the individual, relieving him of malformations, repairing and creating new conditions, augmenting their beauty, saving or prolonging life. He also finds it to be superior to the other arts in that its aim is not only the weal or woe of the individual but, more important still, the betterment and conservation of the race.

Salvarsan.—H. Goldenberg and D. J. Kaliski conclude that salvarsan has a large sphere of usefulness, acting beneficially on all forms of active specific lesions. They recommend strongly the use of both salvarsan and mercury, a thorough course of the latter following one or two injections of salvarsan, and, finally, an additional injection of salvarsan.

Medical Aspects of Life Insurance.—By A. Moss. (See page 444.)

Prevention of Prostitution.—M. Glasgow states that when women become economically independent, when they are carefully educated and trained for the occupations they have elected, then the days of prostitution will be numbered.

Treatment of Gastric Ulcer by Lenhartz's Method.—J. J. Gilbride describes this method of treatment and states that it relives the pain in from three to eight days in ordinary cases. The patient is cured not only of his ulcer but also of his anemia and debility. The treatment can be applied at the home of the patient without the aid of a trained nurse.

Occipital Abscess.—I. Strauss reports two cases of this condition, in both of which hemianopsia was present, together with the hemiopic pupillary reaction, which is usually not present in lesions of the occipital lobe. This reaction, which is known as Wernicke's pupillary phenomenon, is as follows: When hemianopsia is due to a lesion of the optic tract anywhere from the chiasm to the external geniculate body, the pupillary reflex to light is absent when the light is thrown on the blind half of the retina, but when the lesion is between the geniculate body and the cortex around the calcarine fissure there is pupillary response to light in the blind half of the retina.

Journal of the American Medical Association.

August 12, 1911.

Intratracheal Insufflation. S. J. Meltzer.
Treatment of Localized Appendicular Abscess. Van B. Knott.
Subphrenic Abscess the Result of Acute Inflammation of the Vermiform Appendix. G. G. Ross.
Tumors of the Mesentery with Report of Four Cases. H. A. Royster.
Have We an Ideal Operation for Internal Hemorrhoids? A New Hemorrhoid Clamp. A. B. Cooke.
Experimental Direct Transplantation of Tendon and Fascia. D. Lewis and C. B. Davis.
The Influence of Climate on Middle-Ear Diseases and Their Predisposing Causes. J. J. Pattee.
How Far May Conditions in the Nose and Throat Be Responsible for Middle-Ear Diseases. W. R. Murray.
What Improvement Can Rationally Be Expected from Treatment of the Nose and Throat in Middle-Ear Deafness? J. F. Barnhill.
Refraction Changes in Diabetes. C. D. Wescott and J. B. Ellis.
The Importance of a Certified or Pasteurized Butter. A. F. Hess.
The Diagnosis of Pancreatic Disease. L. G. Heyn.
Death of Fetus Due to Twisting of Cord in Utero. H. W. Froehlich.

Intratracheal Insufflation.—S. J. Meltzer states that this method consists in the introduction deep into the trachea of a flexible elastic tube, the diameter of which has to be much smaller than the lumen of the trachea, and the driving through the tube of a nearly continuous stream of air which returns through the space between the tube and the walls of the trachea. The method keeps up an efficient respiration, overcomes the difficulties presented by double pneumothorax, and offers a reliable method for anesthesia, especially by ether.

Appendicular Abscess. By Van B. Knott. See MEDICAL RECORD, July 8, 1911, page 100.

Subphrenic Abscess Following Appendicitis.—G. G. Ross describes three groups of cases: (1) Those occurring or found at operation, *i.e.* an immediate and primary complication of the disease; (2) those making themselves manifest as late or postoperative sequelæ during the postoperative stadium; and (3) cases occurring a long time after the primary infection. In giving a list of symptoms of subphrenic abscess, the author places first sepsis following an operation for appendicitis without evidence of its cause, the primary incision progressing favorably. Second in importance to the symptoms of general sepsis are the signs of pulmonary involvement at the base of the lungs. The most valuable of these indications is the presence of a more or less marked area of dulness. In addition to this, the other indications of a collection in the pleural cavity are often found, *i.e.* lessened breath sounds and fremitus. The abdominal symptoms, when present, are those of any collection within the abdomen. The treatment of subphrenic abscess following appendicitis is that of any other collection within the abdominal cavity.

Tumors of the Mesentery.—By H. H. Royster. See MEDICAL RECORD, July 8, 1911, page 102.

Technique of Operations for Hemorrhoids.—A. B. Cooke states that the most important points in this technique are complete hemostasis, immediate closure of the operative wounds, preservation of the function of the parts, permanency of cure, and due consideration of the factors of safety, simplicity of technique, time required for recovery, and the amount of postoperative pain.

Tendon and Fascia Transplantation.—By D. Lewis and C. B. Davis. See MEDICAL RECORD, July 8, 1911, page 100.

Climate and Middle-Ear Diseases.—J. J. Pattee describes the atmospheric and climatic conditions of the Rocky Mountain region in Arizona, New Mexico, and Colorado, and points out how they may affect middle-ear diseases for the better. The atmospheric conditions are stimulating to the respiratory, circulatory, and nervous systems, and the vasomotor apparatus is therefore usually in a healthy condition and the body resists taking cold.

Nose and Throat and Middle-Ear Disease.—W. R. Murray emphasizes the following points: (1) A very large proportion of people are subject to some aural de-

fect; disease of the middle ear furnishes from 65 to 70 per cent. of all aural diseases, and of all cases of deafness the middle ear is responsible for about 85 per cent. (2) Of all sources of involvement of the middle ear, about 90 per cent. are caused by involvement through the Eustachian tube.

Nose and Throat and Middle-Ear Deafness.—J. F. Barnhill states that the continued presence of any obstructive growth in the nasopharynx is a menace to the integrity of hearing. Before aural disease appears in the child the removal of adenoids, etc., will be prophylactic. After the disease has started, but before it has become so great as to cause serious or permanent damage, the case is still hopeful if the obstruction and other abnormalities are removed, but later, when tissue changes are palpable and long standing, the prospect of relief gradually decreases to nothing.

Refraction Changes in Diabetes.—C. D. Wescott and J. B. Ellis call attention to the fact that the refraction not only may be increased in diabetes, but that it may be diminished; and that the changes bear no necessary relation to the amount of sugar in the urine.

Certified and Pasteurized Butter.—A. F. Hess states that the public has not been warned against the dangers of contaminated butter as it has against those of contaminated milk, and admits that these dangers are of secondary importance though still worth heeding. The certification of butter should impose the same requirements as those for certified milk.

Diagnosis of Pancreatic Disease.—L. G. Heyn describes the various methods of testing for the presence of the ferments in the stools in pancreatic disease. The two ferments are trypsin and amylopsin, and the absence of either from the stools would point to pancreas obstruction or insufficiency.

Twisting of Cord in Utero.—H. W. Froehlich reports a case of death of a six-months' fetus from this cause.

The Lancet.

August 5, 1911.

School Health. F. E. Fremantle.
On Cancer, Cancer Regarded as an Adaptive Response on the Part of Certain Cells or Cell Groups to Environmental Change, and as the Result of a Process of Variation and Selection of an "Inter-" or "Intra-" Cellular Kind. C. J. Bond.
Diffused Cancer of the Female Mammary and Thoracic Integument ("Cancer en Cuirasse"). Sir G. T. Beatson.
A Case of Toxemia of Uncertain Origin, and Its Treatment by Sea-water Injection. I. C. Maclean and L. de C. Harston.

School Health.—F. E. Fremantle states that school children are entrusted to the State for a large part of their malleable life and that consequently the State has both a responsibility and an opportunity of molding its future citizens in accordance with the rules of health and medical experience. The main objects are three: (1) The health and future ability of each child. (2) The healthy influence of each child on its neighbor. (3) A statistical record by which to compare the health of different schools and communities or of different years and periods, and so to arrive at the effect of different social conditions in promoting or retarding health. The main principles to be observed are therefore as follows: (1) The gradual installation of the school doctor as the general and responsible guardian of the school health. (2) The gradual installation of the school teacher as the daily inspector of the children's health, and as the prime agent in the inculcation, both by reason and habit, of school hygiene. (3) Continuity of medical inspection and record throughout the school life of each child. (4) A high degree of clinical experience, public spirit, and personal authority in the medical inspector. (5) Intimate connection between those in charge of the child's health at school (the head-teacher and medical inspector) and those at home (parents and sanitary authority). (6) Sufficient participation by those in charge of school health in the whole work of the educational machine. (7) Accuracy, a uniform common-sense standard, and an efficient method of recording the facts observed; care in their compilation; caution in the deduction of results, and wisdom in the presentation both of facts and conclusions to the authority and to the public.

Cancer.—C. J. Bond believes that cancer, like all "new growth," must be regarded in the light of a response of an adaptive kind on the part of certain cells or cell-groups of varying potentiality to changes in their environment. He suggests that in epithelial cancer, at any rate, this response takes place under the same conditions as those which are associated with the occurrence of variation and selection among other organisms when exposed to environmental change and where evolution of new characters is taking place, especially in response to changes in the external environment. And the suggestion is therefore made that blastomatosis, including cancer and certain other forms of cell multiplication, takes place under the influence of the same evolutionary factors—namely, variation and selection of the "inter-" or "intra-" cellular kind. The old inquiry still remains: the ascertainment of the kind of environmental influence on the one hand, and the special factor, hereditary or acquired, in cell potentiality on the other, which are independently or conjointly responsible for initiating the process whereby the new characters arise "innately" in, or are "acquired" by, cells engaged in neoplasmic growth.

"Cancer en Cuirasse."—Sir. G. T. Beatson concludes that in cases of mammary carcinoma there may be a cancerous invasion of the lymphatics of the skin exhibiting all the symptoms of Velpeau's "cancer en cuirasse." The cutaneous lymphatics have to be reckoned with as a possible area of dissemination of the disease.

Sea-Water Treatment of Toxemia.—I. C. Maclean and L. de C. Harston report the case of a female patient aged 60 years, suffering from what appeared to be infective arthritis, accompanied by colitis and endocarditis. Blood cultures were sterile. The administration of autogenous *Bacillus coli* vaccines had no effect. Improvement followed the subcutaneous injection of sea-water, twice a week, in doses of from 25 to 50 c.c., until 30 injections were given.

British Medical Journal.

August 5, 1911.

Complications of Rheumatism in Childhood. F. J. Poynton.
Four Cases Illustrative of Certain Points in Psychoanalysis. H. Wingfield.
Retinoscopy without Atropine, and Some Observations on Ocular Headaches. J. A. Wilson.

Complications of Rheumatism in Childhood.—F. J. Poynton discusses this subject in continuation of a former paper in which he referred to rheumatic rashes and purpura, venous thrombosis and early rheumatic tachycardia, mastitis and epistaxis. He now describes the following complications: pleurisy, pneumonia, and acute pulmonary edema. Bronchitis is not a complication of rheumatism. Although abdominal symptoms simulating appendicitis may occur in rheumatism, particularly in arthritis of the right hip, nevertheless appendicitis is not a frequent complication of rheumatism. Abdominal pain in rheumatism may be fascial, neuritic, or gastric. Rarely the pain results from splenic infarction. The possibility of a rheumatic peritonitis is still in dispute. There may occur a smouldering rheumatic inflammation of the cervical fasciæ and vertebral joints, with a spread of the same process to the nerve roots in the neighborhood. This may simulate spinal caries, and may have something to do with the clinical history of spondylitis rhizomélique.

Psychoanalysis.—H. Wingfield reports four cases illustrating certain points in this process.

Retinoscopy Without Atropine.—J. A. Wilson points

out the advantages of this procedure as demonstrated in 100 children. He also discusses the subject of ocular headache and states that whatever may be due to error of refraction, inefficient accommodation, disturbance of muscle balance, and their interrelations, there is behind all this a varying quantity, a background of susceptibility which belongs to the province of the physician or the general medical practitioner.

Berliner klinische Wochenschrift.

July 31, 1911.

Mutation Phenomena in Bacteria.—Baerthlein has continued his labors in this field, working chiefly with cholera vibriones and typhoid bacilli. He has isolated several types of the former which behave differently in regard to hemolysis. The cultures differ in appearance even to the naked eye. Differences as to agglutination, while evident, are very slight. The mutations of Eberth's bacillus have no connection with paratayphoid bacilli, which are looked upon as quite distinct. A number of such mutations are recorded under such designations as the typhus Krause, t. Stettin, etc., while in other cases numbers are used for designation (194, 234). These mutations are so numerous than they are even subdivided into groups. The chief characteristics are morphological, and the cultures are even distinguishable to the naked eye. The biological reactions do not differ notably. More time is required to obtain these conditions than is the case with cholera vibriones. There are various mutations of the Shiga dysentery bacillus, one of which behaves much like a typhus culture. The paratyphoid bacilli, already separated into two quite distinct forms, show many mutations, named for different investigators or clinics. Some of these are already regarded as specific germs, such as the bacillus of mouse typhoid, that of psittacosis, etc. The practical bearing is largely limited, thus far, to comparative pathology.

Ichthyotoxic Conjunctivitis.—Steindorff refers chiefly to eel blood conjunctivitis. Eel serum is known to be toxic by fishermen, fish dealers, and cooks, *i.e.* locally toxic, but only recently have cases of conjunctivitis from this source been reported. The author has seen two such cases. When the blood spurts into the eye of the fish dresser, reddening and smarting result, and eventually a typical conjunctivitis is present. In the laboratory it has long been known that eel serum contains a toxic substance which cannot be isolated but is inherent in the serum. The latter also exerts a hemolytic action in proportion to its toxicity. It is known that the leech is naturally immune to these activities. The power of the serum in causing conjunctivitis has been shown in the laboratory. Other sera, as far as known, do not cause this phenomenon. Heating to 58° C. does not destroy the toxic principle. The author does not bring the subject into the realm of fish poisoning from ingestion, which may be regarded as more or less anaphylactic in character. As far as known, the toxin of eel serum induces all its effects without involving this question.

An Anti-Epileptic.—Lion claims to have cured epilepsy by injecting subcutaneously a combination of a brain extract with arsenic. The former is not specified as to character and manufacture, but it is intimated that any cerebral extract will answer the purpose. The arsenic is given in the form of sodium cacodylate. The method of combination is not stated. This form of treatment is advocated tentatively. The results quoted seem about on a par with those obtained by bromide medication, while it is admitted that the treatment is very burdensome, even if quite harmless. The author seems unable to cite any *a priori* reason for exhibiting arsenic in epilepsy.

Iodine Injections in Gonorrheal Arthritis.—Hildebrand has revived this old remedy, which was used nearly a century ago for ordinary acute synovitis and later for tuberculous arthritis, while it has been the accepted remedy for hydrocele. The tincture or watery solution respectively is believed to destroy all gonococci on the surface and perhaps those more deeply seated; since the penetrating power of iodine is shown by its rapid appearance in the urine. The author has practised the injections in the knee and hip joints, among others, for some nine months. The joints swell rapidly, but the swelling quickly recedes and no unpleasant consequences result. Pus in the joint furnishes a contraindication. The author has used a 5 per cent. tincture.

Münchener medizinische Wochenschrift.

August 1, 1911.

Vasoconstrictor Substance in the Serum of Rachitis, Tetany, etc.—The Drs. Hirschfeld have examined many sera from subjects with rickets, tetany, and the exudative diathesis. These conditions naturally tend to occur side by side in the same subjects. Thus in an infant with tetany eclampsia, laryngospasm, and eczema coexisted. In another with diagnosis of exudative diathesis (eczema) there was slight rachitis. In the third, with main diagnosis of rachitis, the facialis phenomenon was inducible. Therefore these children represented a common condition in which the bone affections, spasmophilia, and the exudative diathesis were often all three represented, and usually two at least were present. The power of the serum to cause vasoconstriction in the frog's vessels was three or four times as great as that of normal serum, and differed but little with the diagnosis. If tetany was present in a well-marked form the constricting power was somewhat greater than in simple rickets or exudative diathesis, but the average proportion was only 7.1 to 5.8. Individual cases of rickets, etc., showed as great or greater an index than any individual case of tetany. Whence comes this vasoconstricting substance? The latter has been thought to be an excess of adrenalin from the parathyroids, due to some disturbance in the latter, which may be either primary or due in turn to some anomaly of the adrenals.

Thyreoses (continued).—Krecke, who in a previous number considered thyreoses with predominance of cardiac symptoms, proceeds with a second type in which the nervous system suffers chiefly. It is, of course, common to see both the heart and nervous system notably affected in Graves' disease, and the author naturally refers to cases in which the tachycardia is not pronounced, while the nerves are markedly implicated. We also see in simple goiter an entire series of nervous phenomena due to hyperthyreosis. In a case which presents itself with general nervousness an overlooked small goiter may be recognized. The leading symptoms are a fine tremor of the hands, motor unrest, excitability, and psychic disturbances. In some cases of apparent neurasthenia and hysteria antithyroidin by relieving the symptoms points to the true nature of the malady, even when an enlarged thyroid cannot be made out. In thyreoses with disturbed nutrition, which in turn seems to depend on gastrointestinal disturbance, the author does not refer at all to myxedema, but to Basedowoid, in which loss of weight is a much more pronounced symptom than tachycardia or nervousness. If a goiter can be felt the diagnosis is not difficult. In theory iodides would intensify the symptoms, but to give them with this end in view would not be justifiable. The type last considered is thyreosis simulating iodine poisoning or so-called iodine Basedow.

Frequency of Peptic Ulcerations.—Gruber states that of late years there has been much interest in the subject of the total morbidity from peptic ulcers of the esophagus, stomach, and duodenum. Chiari found among 4,208 autopsies at Strassburg 140 cadavers with peptic lesions. These figures cover a period of ten years. The percent-

age is about 4. In other cities similar figures range from 2 to 7 per cent. Males predominated by a comfortable margin, and in a series of 115 cases the condition was recognized clinically in only 18. Cicatrices are included in the material, no less than actual ulcers. The affection is one which flourishes between 40 and 70 years of age, and may be almost disregarded in children under ten years. Over one-half of the subjects suffered from pathological alterations in the heart and vessels, but this includes slight as well as marked changes. Healed or manifest tuberculosis was present in about one-third of all cases. In 14 per cent. of all cases the ulcers were perforating. Nothing new is developed as to frequency according to site.

Deutsche medizinische Wochenschrift.

July 27 and August 3, 1911.

Physiological Pathology of the Bechterew-Strümpell Disease.—Plesch has analyzed four cases of chronic rigidity of the spine, a condition which however simple in itself, leads to the most tragic consequences. In all four cases there was expiratory fixation of the thorax, so that respiration was chiefly diaphragmatic. It has evidently been held a fact that the fatal termination in these cases results directly from the disease, for the author professes great surprise at his discovery. As a result of the stiffening of the vertebral column many muscles undergo atrophy from disuse, while the addition of polyneuritis to the spondylitis causes further trophic disturbances, while contractures supervene. The interference with respiration leads to progressive oxygen hunger, a fact which could readily be demonstrated. The patients die from gradual failure of the respiration and circulation. Any rational treatment must include the mobilization of the ribs by resection at the posterior costal articulation.

Treatment of Hay Fever by Bilateral Resection of the Anterior Ethmoidal Nerve.—Albrecht reviews the work of the English surgeon, Jonge, in this field, and gives an experience of his own in which the patient became distinctly worse after intervention. A second patient may have been benefited, but as he was not exposed to pollen the following summer no conclusion could be drawn as to the character of the results. The author thinks the operation without sufficient anatomical justification, as shown by some markedly negative results. Scars remain, and in one of the author's cases became keloidal. Double vision resulted in one case, due, it would appear, to postoperative hematoma, which required months for its absorption. It is necessary to prevent this accident that the trochea be spared. Postoperative neuralgia is also prone to develop in this type of intervention, which is naturally similar to that required for suppuration in the ethmoidal and frontal sinuses.

Determination of Gastric Acidity by the X-Ray.—Schlesinger endeavors to make the gastric juice visible by having the patient drink a solution of sodium bicarbonate. The rays first give an idea of the amount of gastric juice in a fasting stomach or the amount of chyme in the digesting stomach. The amount of effervescence, as estimated by the shadow, is a measure of the free acid in the stomach. The method may be used in cases unsuitable for sounding or as a corrective for the usual test. A diagram shows very plainly the three strata in the shadow. The lower half of the stomach shows the stomach contents blackened with bismuth. The author usually prefers to have the patient take into his empty stomach a pulp containing the latter. The stomach is at once photographed. About an hour afterward a second exposure is made, whereupon an intermediary layer of gastric secretion is visible above the bismuth. The soda solution is then drunk, and two minutes later a third exposure is made, whereupon an upper stratum of gas is seen filling the upper part of the stomach. Although the author only claims a qualitative value for the test, he gives numerous quantities obtained by measuring the shadows.

Treatment of Gastric Hyperacidity with H_2O_2.—Prof. Winternitz states that pure solutions of hydrogen peroxide will lower the gastric acidity even when the concentration of the latter is but feeble. The action, however, is very transitory. For this and other reasons not described he has virtually abandoned the use of the remedy as a step toward cure. He seems to have originated this treatment, and as others report favorably on it it has been renounced only after a thorough trial. He thinks it better to leave the remedy to those who find benefit from it.

Senile Affections of the Central Nervous System.—Spielmeyer considers these in a serial article without apparent effort at new propaganda. He deals largely with senile dementia, with especial reference to Alsheimer's researches. Attempts have been successfully made to separate senile dementia into different types, based largely on histopathological findings. It is known that an essential type occurs which is quite independent of arteriosclerosis. Retrograde changes occur when the nerve substance is completely exhausted and in the form of plaques, which are readily revealed at autopsy by applying certain stains to the tissues, chiefly the middle layer of the cortex. They are most numerous in the frontal lobe and cornua of Ammon. These plaques, while pathognomonic in some degree, do not furnish the sole anatomical base for senile dementia. Despite the radical difference in their nature there are many points of close resemblance between the latter affection and paresis. Both have the same predilection areas, and even in the histopathology there are certain analogies. Clinically, of course, paresis has always been considered as a form of dementia. Alsheimer and others have described forms of atypical senile dementia due to special local involvement. What clinically is known as essential senile dementia represents only a rapid accentuation of a normal involutionary process. A special type of senile involution begins in the blood-vessels when these are, so to speak, worn out. The change is known as atherosclerosis. Two types are recognized. In the first the cortex is the seat, while the second, which is not much known, attacks the bulb. It seems assured that the cortical changes which are secondary to atherosclerosis are quite different from those of essential senile dementia. Nor do these two conditions exhaust the subject of the anatomical substratum. Other affections occur, but have not yet been isolated.

Syphilitic Reinfection after a Salvarsan Cure.—Krefting discusses the old teaching as to reinfection, and after stating that most of the recorded cases came to be regarded as examples of pseudochancre and chancre redux admits that a certain number of cases were evidently genuine. Both the mercurial and the spontaneous recoveries from syphilis which would make reinfection possible were slow and uncertain, and were without other criteria of cure. To-day we have in salvarsan a possible rapid and abortive cure, and the Wassermann reaction as an independent test of curability or cure when properly estimated. We further have the criterion furnished by the presence or absence of the spirochete in a supposed primary lesion. In a case cited by the author the patient originally had a chancre teeming with spirochetes. The Wassermann reaction had not yet become positive. Conditions were ideal for aborting the disease with salvarsan given intravenously in three injections at intervals of twelve days and thirty-six days respectively. No secondary symptoms developed. The Wassermann never became positive. Patient was regarded as cured April 30. The following June he contracted two new chancres, the serum from which contained spirochetes in abundance. The Wassermann reaction was already weakly positive.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

HYGIENIC SURROUNDINGS.

The question of hygienic surroundings is about the first to excite the interest of the examiner upon his arrival at the appointed place and he usually has an opportunity to look around while waiting for the applicant to appear. An individual who is willing and able to apply for life insurance is so apt to understand and observe the laws of hygiene that the examiner, as a rule, pays but little attention to the sanitary surroundings of the applicant. The unsatisfactory conditions described further on are encountered at times, however, and it is therefore not a good idea to take it for granted that the environment is always above criticism. While the examiner can only make a personal investigation, as a rule, at the place where he meets the applicant, he ought to inquire into the sanitary conditions existing at the residence or place of business, as the case may be, or in regard to both places, if the applicant comes to the examiner's office.

Residence.—Applications numerous enough to excite comment are received from persons living in quarters which, by reason of the squalor, filth, and overcrowding found there, are so distinctly unsanitary that the occupants become undesirable risks. These applicants are usually found among the foreign elements of the population in the larger cities. Their one and only idea is the accumulation of money, and they are absolutely ignorant of or indifferent to the most ordinary laws of hygiene. Yet, strange as it may seem, they are keenly alive to the advantages derived from life insurance and willing to pay for it. Such people may, furthermore, be counted upon to choose food unfit to eat and more or less devoid of nourishment. We are frequently assured by the agents that these people live to a ripe old age in spite of their habits and environment, but the fact that a few patriarchs are found among them is easily explained by the law allowing the survival of the fittest. To prove how little foundation there is to such statements, we only have to remember that there are quite a number of authenticated records of individual negroes living considerably over 100 years of age, yet recent statistics of the city of Washington give a death rate of 27 per thousand among the colored peoples, while that of the whites is 15 per thousand. After all has been said, however, it remains true that human beings can exist under unfavorable circumstances, provided the conditions are not altogether bad, and the examiner will, therefore, have to make careful observations and then exercise his judgment as to whether or not he should recommend the risk. The presence of tuberculosis or other infectious diseases and the hygienic measures adopted for the protection of others should be fully reported.

Place of Business.—It is not unusual to find workers horded in places, especially the sweat shops and junk shops, which are so overcrowded, badly ventilated, damp, and poorly lighted that their health is liable to become impaired. The applicants met in such places are usually in the class described in the preceding section. The objectionable condition may be due to the occupation rather than to lack of sanitation, but as the companies have investigated the subject of occupation carefully and instituted certain restrictions, the examiner will seldom have to take any action other than noticing if the occupation has been correctly given in the application. Nevertheless, if an applicant is found exposed to any condition liable to prove dangerous to life, such, for instance, as the presence of noxious fumes, or an excess of metallic or other injurious dust, the facts should be incorporated in the medical report.

The Locality.—In the cities and towns about the only adverse conditions threatening the whole community are the rare but violent epidemics of typhoid, yellow fever, and other contagious diseases. Owing to the better understanding of preventive measures, the authorities are able to adopt the proper and effective precautions. While, then, epidemics of these diseases seldom assume so grave an outlook as to warrant the companies in even temporarily ceasing to accept business from the affected locality, nevertheless it remains for the examiner to advise the home office of the existence of any epidemic and as to whether or not proper sanitary and preventative measures are taken by the applicant. In the country and small villages the local organization for putting preventive measures into force may be too limited to insure complete and satisfactory results, so that it will be better in the rare instances in which this condition is likely to appear, to report it.

Last, and perhaps the most important, especially in the South and Southwest, is the prevention of malaria by means of drainage and screens. Through these two measures a great deal has been accomplished in preventing the propagation of the malaria-bearing mosquito and the entrance of these insects into the house. Many people are careless, however, and when the applicant is a resident in a district where malaria of a severe type is known to occur, vigilance should be exercised in noting the surroundings, the presence of unscreened rain barrels and other vessels holding water, and whether or not the house is properly screened.

Industrial Accidents and Compensation for Them.—(See page 431.)

Medical Aspects of Life Insurance.—A. Moss emphasizes the grave responsibility that rests upon the medical examiner, who, if incapable, dishonest, or lax in his duties, threatens the very foundation of life insurance. It is important that the examiner should identify the applicant; inasmuch as many substitutions occur, a good detective ability on the part of the examiner is a valuable asset. One great fault of the examiner is indecision: the endeavor to shift the responsibility of accepting the risk upon the home office medical director. The apex of the right lung is responsible for considerable confusion in the mind of the inexperienced examiner. In order to be entirely normal the right apex must conform to the following tests: There should be neither dullness nor râles; there may be an increase of pitch in the expiratory note as one approaches the spinal column, but, if there is a uniform heightening of the pitch throughout, the apex is abnormal; there should be no increase in the vocal fremitus, except corresponding to the natural increase in pitch toward the spinal column; there should be no sunken supraclavicular space, and there should be pure vesicular breathing high up in the axillary space. Life insurance statistics show that 21 per cent. of the total mortality is due to diseases of the circulatory system, indicating a poor initial selection of risks. The errors of diagnosis where actual valvular lesions are concerned are almost negligible. The great mistake consists in failure to estimate the arterial conditions. One should take both radial pulses

simultaneously, noting carefully the condition of the arteries, the rate, the tension, and the volume. One should next elevate the applicant's right hand above the head, and examine the pulse in that position; this will sometimes reveal a Corrigan pulse. Some heart murmurs are heard only in the recumbent position. Cardiac arrhythmia is present more frequently than is supposed, and is looked upon with grave suspicion. One important question to be asked of the applicant is whether he has ever had colic. If this is acknowledged, then the examiner should elicit the following facts: Was the pain due to a transient condition, such as flatulence, constipation, or indigestion; was there a more serious cause operating, such as gastric ulcer, beginning malignant disease, hepatic or renal colic or abscess, appendicitis, etc.? Associated symptoms in any of these conditions should be inquired into. The boiling test for albumin is very untrustworthy. The moral hazard of a risk is sometimes so great that the company will reject on that ground alone; occupation may be extrahazardous, and the hygienic surroundings may be a sufficient cause for rejection. One should not reject an applicant on general principles, but should do so for a good and valid reason: if one cannot discover it in the heart, lungs, or the abdominal viscera, and the applicant still impresses one poorly, one should look for extreme anemia, chronic indigestion, or gastritis, alcoholism, plethora, arteriosclerosis, immoral habits, etc. Any of these causes, if it really exists, is sufficient reason for rejection, and should be explained fully in the report.—*New York Medical Journal*, August 12, 1911.

Life Insurance and Sanitary Science.—In an address delivered at the annual meeting of the Louisiana State Medical Society on June 1 Dr. J. H. Florence, medical director of the Great Southern Life Insurance Company, Houston, Texas, made a strong plea for better sanitation in the towns and cities of the South, approaching the subject from the insurance standpoint. It is a well-known fact, he says, that a large proportion of the profit made by life insurance companies arises from a saving in mortality; hence, the fewer the number of deaths among policyholders the more profitable the business. Therefore, it requires no thought to deduce that when the sanitary surroundings in any locality are good, and every possible agent conducive to good health and long life is used, the life insurance in that locality will be conducted upon a profitable basis The reverse also holds. Where business is put on the books from unhealthful and unsanitary localities, with all the surroundings detrimental to good health, it only remains to be said that such business is carried at a loss, or at a minimum profit. The question naturally arises: Why so much concern about the welfare of the stockholders? We may rest assured that the premiums on all policies are loaded to cover lives in unhealthful territory, also to cover those shortened by the non-observance of the laws of health. This loading is necessary to protect the companies against loss arising from unsanitary surroundings, which would not occur were the policyholders residing in localities conducive to good health. In other words, a citizenship which permits preventable diseases and unsanitary conditions to exist, and death to run rampant, must "pay the freight," not only with the life blood of its individual members, but in loss of time and money.

From a cold business point of view, it is not profitable to life insurance companies to collect an excess for deaths that ought not to occur, but do and will as long as the present conditions exist, as it is inevitable that it must be paid out. The longer a policyholder lives the more he pays; also the fewer the deaths the greater the profit to the companies; so it can readily be reckoned that the companies are eager for this much-needed reform. It is a notable fact that a few companies refuse to enter the Southern States; others enter, but restrict their operations to certain districts. Evidently there is a reason, and it is not an imaginary one, but is based upon mortality experience tables.

An awakening, Florence says, may be expected when sanitation and hygiene are taught daily in the schools, when sane health laws are passed and consistently enforced, and when the vast financial saving of such procedure dawns upon the average man,—but not till then. It is a well-known fact that when you prove to the average citizen that his pocketbook suffers by any neglect upon the part of himself, or his State, there is found an early remedy; and if we wish to accomplish much we must make that the basis of our plea. The initiation of this sanitary reform, so earnestly desired by the insurance companies, as a purely business matter, depends largely upon the medical profession working through the organized medical bodies; they should by precept and example, in season and out, educate the people, give publicity to these needed reforms, deliver public addresses, and give their expressions to the secular press in no uncertain terms.

Insanity Following Withdrawal of Pension.—Räuber tells of a woman who received a pension because of an alleged carcinoma of the breast. Several years later the pension was withdrawn because the woman was declared to be able to do work. This was followed by an acute outbreak of mental disease, characterized by violence, excitability, and hysterical manifestations. A new application for pension because of this was proposed and Räuber was appointed to decide the matter. The family history showed that there were highly nervous relatives. The patient's behavior during examinations showed abnormality, loss of self-control, tendency to ideas of persecution, etc. The pension was accordingly granted again.—*Zeitschrift für Versicherungsmedizin*, February, 1911.

German Association for the Study of Insurance.—Meltzing reports the proceedings of the medical section of this society at a meeting held December 5, 1910. Ruge spoke of the value of a careful history in cases of alleged accident. Ruge thinks that a history of the circumstances surrounding an alleged accident should always be sufficient to prove whether an accident has really taken place. Cerebral hemorrhages frequently are reported as "accidents" if the patient happens to slide to the floor from a chair, or fall down because of the apoplexy. Appendicitis alleged to be caused by an injury is usually of long standing; the surgical report of the operation gives the necessary data in such a case. Tuberculosis following injury is rare and usually begins at the site of injury. Infections should be included as accidents, if the insured can show that he has taken all proper precautions against them.—*Zeitschrift für Versicherungsmedizin*, February, 1911.

Vital Statistics Among Railroad Employees in Prussia, Hessen, and Alsace-Lorraine.—Eisenstadt contributes a statistical study of the longevity, causes of death, diseases, etc., among railroad employees. The article is not adapted for abstraction.—*Zeitschrift für Versicherungsmedizin*, January, 1911.

Decrease in Railroad Accidents.—A considerable falling off of casualties on interstate railways during the quarter ended March 31 last is shown in the Accident Bulletin for that period issued recently by the Interstate Commerce Commission. There were 2,124 persons killed and 16,430 injured during the quarter, including 706 employees killed and 10,974 injured. This is a decrease of 229 in the number killed and of 2,908 in the injured, as compared with the corresponding quarter of last year. Accidents reported by the electric lines, on which interstate traffic is carried, show that 61 persons were killed and 696 injured during the second quarter, a decrease of 53 in the number killed and 335 in the number injured, as compared with the corresponding quarter of last year.

Book Reviews.

La Base de toute Réforme. Santé, richesse, et liberté assurées à la société et à chaque individu par l'alimentation rationelle. Par Otto Carqué. Libraire de culture humaine: Bruxelles, Belgique.

The mental and moral reform of the human race is to be accomplished, according to our author, by a vegetable diet. Here we meet again our old friends, Chittenden, on the Physiological Economy in Nutrition, and that name which is now in every dictionary, Fletcher. The author even suggests that a vegetable diet will cause a suffragette to regard the ballot as an undesirable possession.

The Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School; and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume II, General Surgery. Edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in the Northwestern University, Attending Surgeon and Chief of Staff of Mercy Hospital, Wesley Hospital, St. Joseph's Hospital, and Columbus Hospital, Consulting Surgeon to Cook County Hospital and Alexian Brothers Hospital, Chicago, Ill. Series 1911. Price $2.00. Chicago: The Year Book Publishers, 1911.

We always review with a great deal of pleasure the books of the Practical Medicine Series, and especially the one on General Surgery. Dr. Murphy not only gives us the meat of the surgical literature of the previous year but he adds to the value of the book by inserting here and there his own opinions and experiences.

War on the Great White Plague. By Rev. John Ischoll.

This small pamphlet is devoted to hygiene and contains also references to the tubercle bacillus, as regards its history, methods of growth, its means of entrance into the human body, and the subjective and objective symptoms that are first noted by the patient. The pamphlet, which is intended for the instruction of the laity, is written in the simplest style. With others of its kind it will doubtless be useful in the fight against tuberculosis.

Diseases of the Joints and Spine. By Howard Marsh, M.A., M.C., Cantab., F.R.C.S., Master of Downing College and Professor of Surgery in the University of Cambridge; Consulting Surgeon to St. Bartholomew's Hospital and to the Hospital for Sick Children, Great Ormond Street; Corresponding Member of the Orthopedic Association, New York. New and Enlarged Edition, thoroughly revised by the Author and by C. Gordon Watson, F.R.C.S., Surgeon to the Metropolitan Hospital; Assistant Surgeon to St. Bartholomew's Hospital and to St. Mark's Hospital for Fistula. With four colored illustrations and eight black and white plates, and upward of 100 illustrations in the text. Chicago: Chicago Medical Book Company, 1910.

This new edition of Marsh's well known and classical work on the Joints contains four new chapters, on Arthritis in Specific Infective Diseases, Septic Arthritis, Intermittent Hydrarthrosis, and Coxa Vara. The chapter on Osteoarthritis has been largely rewritten, and now appears under the title of Arthritis Deformans; it embraces Rheumatoid Arthritis, Osteoarthritis, and Hypertrophic Osteoarthropathy. The use of radiography and vaccine therapy in the diagnosis and treatment of diseases of the joints has necessitated some revision in the other chapters. To make room for this large amount of new material some of the case-narratives have been omitted, and so the size of the volume is not materially greater than before. The work still represents very largely the personal experience of the author; those who are acquainted with the previous editions will need nothing beyond a notice of this third edition; to those who do not know the work it is very cordially recommended.

The Modern Materia Medica, Second Edition, revised and enlarged. Price $1.25. New York: The Druggists' Circular, 1911.

As is aptly stated in the preface to the first edition of this volume, "it is practically impossible for the pharmacist of to-day to keep pace with the developments in modern chemistry as regards new remedies. Hundreds and hundreds of new therapeutic agents are introduced yearly, some meritorious and of permanent interest, others of but passing importance." Likewise, it is practically an impossibility for the physician to keep himself informed on the new agents. Yet at times, in response to the questions of patients about this or that wonderful new remedy, he must be able to obtain reliable information quickly. The Modern Materia Medica meets this need. The list of drugs given is arranged alphabetically for easy reference, and the descriptions furnish all the necessary data regarding each preparation, including the name of the manufacturer.

International Clinics. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A. Volume IV. Twentieth Series, 1910. Philadelphia and London: J. B. Lippincott Company, 1910.

This volume contains twenty-six papers, most of them of some value. The first section deals with Diagnosis and Treatment, and contains two articles on "606," a few lines on the United States Pharmacopœia (of no particular value and certainly with no relation to "clinics," international or otherwise), and a magnificent article by L. F. Barker on The Methods of Examining the Blood, of greatest importance for the general practitioner; this last is of considerable value and is quite the most satisfactory article in the volume. The section on Medicine contains three papers; that on Surgery, ten, of which special mention may be made of the contributions of Eisendrath (on the retrocecal appendix) and Ochsner (on colectomy, goiter, appendicitis, etc.). There are two papers on Neurology; one (by Warthin) on Pathology; one on Ophthalmology; two on State Medicine, and one on a so-called Postgraduate Course.

Introduction to Practical Organic Chemistry. Including Qualitative and Quantitative Analysis and Preparations. With a special appendix on the London University syllabus, and schemes of analysis for Stages 1 and 2 of the Board of Education Syllabus. By A. M. Kellas, B.Sc. (Lond.), Ph.D. (Heidelberg), Lecturer on Chemistry at the Middlesex Hospital Medical School, formerly Examiner in Chemistry to the Conjoint Board of the Royal Colleges of Physicians and Surgeons. Price $1.35. London: Henry Frowde, and Hodder & Stoughton, 1910.

This seems to be a very systematic and useful little volume on a subject that does not receive as much recognition as it might in the modern medical curriculum. The preparations are arranged in the order in which they are studied in the theoretical part of the subject, and the general reactions are indicated very clearly; so that the general principles of the science are kept prominently before the student. The book is divided into six parts: 1. Qualitative analysis of organic compounds for elements; 2. General laboratory operations with determination of physical constants; 3. Preparation of typical organic compounds; 4. Tests and analysis for specific compounds; 5. Detection of the group to which a compound belongs; and 6. Quantitative analysis. The book is well printed and well arranged, and is a useful addition to the works on this subject. There is one drawback to the general use of the volume, namely, its binding will not permit of its remaining open at any given page; and as this is so essential for all books used in laboratory work, the absence of this feature is of some importance.

Der Haftapparat der Weiblichen Genitalien, eine anatomische Studie. By Dr. Eduard Martin, Assistant of the Univ.-Frauenklinik of Berlin. With 16 plates. Berlin: S. Karger, 1911. Price $3.00.

This elaborate monograph presents an extended anatomical study of the structures which serve to suspend and attach the female genital organs. The author's aim is to establish more completely in dissections those conditions which are met with in the operative treatment of genital prolapse. The first portion of the work is concerned with the connective tissue, the fasciæ, and the musculature of the pelvic organs. A study of the extensive literature, which serves as an introduction, shows that some uncertainty still exists as to the exact relations of these structures. The dissections are next described and illustrated in a series of 16 well executed folio plates. Among the author's conclusions attention may be particularly directed to the statement regarding the function of the round ligament of the uterus, which, it is claimed, is only brought into action near the end of pregnancy, when it serves to steady the attachment of the lower uterine segment and to anchor the fundus, as with two strong cords, to the bony pelvis. It is also claimed that the labor pains which begin at the fundal portion of the uterus are aided by the resultant fixation of the latter through the round ligaments and that the expulsive action is thus favored. The excellent plates and their careful descriptions are well worthy of study by the obstetrician and gynecologist.

A Handbook of Obstetric Nursing for Nurses, Students, and Mothers. Comprising the course of Instruction in Obstetric Nursing Given to the Pupils of the Training School for Nurses Connected with the Woman's Hospital of Philadelphia. By Anna M. Fullerton, M.D., Formerly Obstetrician, Gynecologist, and Surgeon to the Woman's Hospital of Philadelphia, Physician in Charge and Superintendent of the Nurse School; and Clinical Professor of Gynecology in the Woman's Medical College of Pennsylvania, etc. Seventh revised edition, illustrated. Price $1.00. Philadelphia: P. Blakiston's Son & Co., 1911.

This seventh edition contains two new chapters, one on Examination During Pregnancy and one on Obstetric Operations. The chapters on Care of the New-Born Infant, Eclampsia, Ophthalmia Neonatorum, and Care of Premature Infants have ben enlarged, an dthe book as a whole has been thoroughly revised. The volume is small, but it contains all that is required; and the author's method of treating her subject leaves nothing to be desired. Physicians often want such a book as this for their nurses and the present volume is one of the most satisfactory with which we are acquainted.

State Board Questions and Answers. By R. Max Goepp, M.D., Professor of Clinical Medicine at the Philadelphia Polyclinic; Assistant Visiting Physician to the Philadelphia General Hospital; Associate in Clinical Medicine, Jefferson Medical College. Second edition, thoroughly revised. Price $4.00. Philadelphia and London: W. B. Saunders Company, 1911.

This second edition is little, if any, better than the first. The questions are still only "selected" and are therefore of but little value to any one preparing for a State Board examination. Perchance the questions that the compiler of this bulky volume has omitted are the very ones that some candidate might like to have answered, or might be delighted to omit in his examination if only he might. The statement that this edition is "thoroughly revised" does not appear to be correct, since we find many of the blunders of the former edition perpetuated here. For example: A poison is still defined as "any substance producing deleterious effects upon the animal organism"; this would include an automobile or a stiletto. "Expired air contains no oxygen or only a very little." Na_2CO_3 is given as the formula for sodium bicarbonate. Several of the chemical equations do not balance. The rate of the blood current in the capillaries is given as two inches a second. "Boron is one of the constituent elements of the human body." All of these are reproduced from the first edition, and it would be interesting to know how a State Board examiner would grade these answers. Many of the answers are satisfactory and quite a number appear to have been taken bodily from other sources (*e.g.* from the Medical Record). The value of a work of this sort depends upon its accuracy and not upon its size; and the only students who could use this work with safety are those who do not require such assistance.

The Blues (Splanchnic Neurasthenia). Causes and Cure. By Albert Abrams, A.M., M.D. (Heidelberg), F.R.M.S.; Consulting Physician Denver National Hospital for Consumptives, the Mount Zion and the French Hospitals, San Francisco; President of the Emanuel Sisterhood Polyclinic; Formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College, San Francisco. Illustrated. Fourth Edition, Revised and Enlarged. New York: E. B. Treat & Co., 1911.

That this little book has already gone through three editions is sufficient proof of its usefulness and popularity. Dr. Abrams refers to that condition of depression of a paroxysmal nature and of a varying duration known as "the blues" and designates it by the name of splanchnic neurasthenia. Since the apearance of the first edition several additions have been made and in the fourth edition the new feature is note 20 of the appendix, which deals with augmenting the tone of the splanchnic circulation. The "blues" is a very common complaint and therefore a book which claims to recommend successful methods of treatment cannot fail to have readers.

Text-Books of Massage. By L. L. Despard, Member and Examiner, Incorporated Society of Trained Masseuses. Price $4.00. London: Henry Frowde, Oxford University Press; and Hodder & Stoughton, 1911.

The author's aim in writing this textbook has been to embody in concise form such a knowledge of the theory of massage, as well as the principles of elementary anatomy and physiology, as is indispensable to all those desirous of taking up massage as a profession. This book cannot take the place of practical instruction from a competent teacher, for massage is an art that can be mastered only by experience. Nevertheless the successful practice of this art requires an accurate knowledge of physiology and anatomy, of the theory of massage and of its therapeutic indications. Part I takes up the subject of anatomy and physiology. Part II deals with the theory of massage. The first part is replete with excellent illustrations of anatomy, many of which are colored. The descriptions of the various forms of massage, such as stroking (*effleurage*), friction, kneading (*pétrissage*), percussion (*tapotement*) and vibration, are illustrated with many photographic reproductions. The numerous pathological conditions in which massage may be of service are briefly described, and the technique of massage in each case is presented in great detail.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. March 1, 1911. Price $6.00 per annum. Philadelphia and New York: Lea & Febiger.

The present number contains five complete sections. First, sixty pages on Surgery of the Head, Neck, and Thorax, by C. H. Frazier. Second, one hundred and thirty-four pages on Infectious Diseases, including acute rheumatism, croupous pneumonia, and influenza, by J. Ruhrah. Third, Diseases of Children, by F. M. Crandall. Fourth, Rhinology and Laryngology, by D. B. Kyle. And Otology, by A. B. Duel. As is customary, the articles are complete, authoritative, and up to date; the whole makes interesting reading, keeps one well posted with the advance of medical science, and may be said to form an admirable post-graduate course.

Handbook of the Surgery of the Kidneys. By W. Bruce Clarke, M.A., M.B. (Oxon.), F.R.C.S., Senior Surgeon St. Bartholomew's Hospital; formerly Surgeon to the West London Hospital and to St. Peter's Hospital for Stone and other Diseases of the Urinary Tract; Member of the Council and of the Court of Examiners of the Royal College of Surgeons of England; formerly Examiner in Surgery to the University of Oxford. With 5 plates and 50 illustrations in the text. London: Henry Frowde, Oxford University Press, 1911.

This brief work presents a concise account of those lesions of the kidney that are amenable to surgical treatment. The author is well known in England for his work and the book is therefore interesting as presenting his personal views on many topics. There is no attempt made to give the book an encyclopedic chcaracter; it is presented rather as a concise handbook on the subject. The book is well made and the illustrations, mostly photographs from pathological specimens, are appropriate and very satisfactory. After the preliminary chapters on the anatomy of the kidney and ureter, the operations on these organs are discussed, followed by a description of injuries, movable kidney, hydronephrosis, calculus, tubercular disease, pyelonephritis, and other infective conditions and tumors. The general features of each of these are considered, the author frequently making use of the recital of illustrative cases. In reading the book one is impressed that in its less than 200 pages a very satisfactory presentation of this important subject is given.

Collected Papers by the Staff of St. Mary's Hospital, Rochester, Minn., 1905-1909. Philadelphia and London: W. B. Saunders Co., 1911. Cloth, $5.50 net.

This work is presented by the authors as an indexed collection of reprints of articles published by them in recent current medical literature. The medical profession will be a gainer by the fact that this book has been placed on the market instead of being limited to private distribution as was first intended. The work herewith noted comprises articles on the surgery of the alimentary canal, the genitourinary organs, the ductless glands, the head and extremities, and hernia. In addition there are a number of papers on technique and several addresses. There is also a review by Magaw of 14,000 surgical anesthesias, in which attention is centered on the simplicity of the method employed. As all of these papers have already been noted in the current medical periodicals during the last few years, detailed mention of their contents would be out of place at this point, but a final word of praise may be given to the editor for the thorough and satisfactory manner in which these valuable contributions to the literature have been presented for ready reference.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Seventy-ninth Annual Meeting, Held in Birmingham, July 25-29, 1911.

(Special report to the MEDICAL RECORD.)

(*Continued from page 402.*)

SECTION OF OBSTETRICS AND GYNECOLOGY.

First Day—Wednesday, July 26.

President's Address.—Professor EDWARD MALIUS of Birmingham in opening the proceedings of the section said that there was still much work to be done in diminishing puerperal mortality and morbidity. Puerperal morbidity was responsible for one-third of all the cases of diseases of women presenting themselves for treatment at the hospital. There had been a great development in the operations of the Central Midwives Board. The roll now contained 31,600 names, of which 10,400 were placed on the roll by examination and 10,000 were accepted on the strength of certificates obtained from other examining bodies before the act came into force; the remainder were of the old type who were registered as having been in practice as "bonafide midwives" before the passing of the act. Two thousand three hundred women passed the examination of the Central Midwives Board each year, and of these 55 per cent. announced their intention to practise. The certificate of the board was much sought after; it was required for many posts as matron of hospitals and for appointments under government. The more efficient training would undoubtedly tend to reduce sepsis, and he thought that especial importance should attach to the teaching of the proper way of taking and recording pulse and temperature. The speaker advocated strongly the establishment of municipal maternity homes, and instanced St. Petersburg, where there were fifteen of these homes, and in these 19,000 cases of midwifery were attended last year, and 41 per cent. of all the confinements in St. Petersburg took place in these homes.

Eclampsia Occurring in Labor in a Girl Aged Twelve—Recovery of Mother and Child.—Dr. C. HUBERT ROBERTS of London read this paper. The child was a Jewess, 4 feet 11 inches in height, and well developed for her age. When first seen she was pallid and edematous, and suffering from mental excitement. The urine contained two-thirds of a column of albumin. The os was the size of a shilling, and the membranes were intact. There was a purulent vaginal discharge. Chloral and potassium bromide, 20 grains of each, were given. Fourteen hours later a fit occurred. The patient was then treated by morphine hypodermically, gr. ⅓, rectal salines, and the hot pack. Four hours later, after a second fit, the child was delivered by forceps. It weighed 7 pounds, and survived. Fourteen convulsions followed the confinement, and these were treated by morphine, gr. 1/16, digitalin, gr. 1/100, and inhalations of chloroform. There was no record of a case of eclampsia at such an early age. The speaker's usual treatment of eclampsia was chloroform, purgation, diaphoresis, saline infusion, and, in certain cases, venesection. Washing out the stomach under anesthesia was also very useful.

Dr. THOMAS WILSON of Birmingham said that the more one saw of these cases the less confident one felt in giving a prognosis. He thought that the preliminary examination of the urine would by no means always show the danger, and in many cases all of the symptoms came on within forty-eight hours.

Prof. HERBERT SPENCER had come to the conclusion that one could not prognose as to which cases would prove fatal. He thought that the urine more often gave warning than the last speaker had stated. He doubted the value of saline infusions.

Dr. HELLIER of Leeds said that in cases in which there were fits and no signs of labor he would rupture the membranes to bring on labor.

Dr. JOHN CAMPBELL of Belfast advised giving morphine, rupturing the membranes, and leaving the case alone, repeating the morphine if there were more convulsions.

Professor STRASSMANN of Berlin said that cases differed at different times of the year, and were generally worse in the cold weather, owing to the effects of cold and wet on the kidneys. Vaginal cesarean section was sometimes useful for this condition, but could be done only in hospital.

Pathology and Treatment of Asphyxia Neonatorum.—Sir FRANCIS CHAMPNEYS of London opened the discussion. He discussed first of all the predisposing causes of the first breath, one of which was the shrinking of the placental site, and later separation of the placenta. The child might not breathe when first born, but if the cord was beating regularly no anxiety need be felt, as the child was still respiring by the placenta. The exciting cause of the first breath was contact with the cold air. There were two varieties of asphyxia: (1) apoplectic or livid blue: (2) syncopal or white, pale, flabby. The second form occurred more often in head-last cases. If the head in these cases was not delivered in three or four minutes the child generally died. The first breath might draw foreign matters into the throat or lungs. As to the question of prognosis and treatment, in a general way it might be said that the blue cases nearly all recovered and the pale ones frequently died. The blue case might be left alone after cleaning out the mouth. In the pale cases the reflexes were lost and the pupils widely dilated. It was no good to allow blood to flow from the cord in such cases. The child should be laid on the back, the mouth wiped out, and the throat gently pressed. A catheter might be passed into the larynx. It should pass down 3½ inches from the lips in order to reach the glottis, and after it was placed *in situ* it should be blown down, and not sucked up. The catheter could then be secured by an elastic band. In doing artificial respiration pressure on thorax was good in adults but bad in new-born children. The only good method of artificial respiration was that known as Sylvester's. In performing it it was important to attend carefully to the following points: The arms should be everted and held above the elbows. In performing Schultze's method the important point was that the whole body of the child should be supported by the fingers under the armpits and that the chest should on no account be grasped. In doing mouth-to-mouth inflation the physician should blow through a cloth, and the nose should not be held. By the first precaution the danger of transmitting tuberculosis to the child was avoided and by the second the possibility of rupturing the lungs. The method of rhythmical traction on the tongue known as Laborde's was worthy of trial. To sum up, he would advise that the physician should never hurry. Before commencing treatment he should endeavor to diagnose the cause of the asphyxia. If the heart was beating ever so slowly the child was not dead, though slowness of heart beat showed a more dangerous state than feebleness. Whatever method was adopted it should not be discontinued until the child breathed regularly.

Dr. HERBERT SPENCER of London said that the pale cases were frequently not asphyxiated at all, but were suffering from shock due to injuries to viscera and internal hemorrhages. To intubate the larynx he used a No. 6 catheter and gripped the larynx externally between the finger and thumb. He thought that Schultze's method sometimes severely injured children by causing hemorrhages into the lungs, and he had proved this by post-mortem examina-

tions on the still-born child. He had had very good results from administering oxygen.

Dr. Hellier of Leeds said that in Sylvester's method we must have the feet held.

Dr. Thomas Wilson of Birmingham said that the first movement should be one of expiration, to get rid of foreign matter. Sylvester's method was the one most taught in this country because it was easier to learn than Schultze's, the latter method being badly taught even in textbooks. Inflation was much inferior to artificial respiration because it did not stimulate the heart. For pale asphyxia he advocated warm baths, and he gave as a criterion for diagnosis between pale and blue asphyxia the following: If the finger was grasped by the child when introduced into its mouth the condition was blue asphyxia; if not, pale.

Dr. Hubert Roberts of London had noticed that babies born after cesarean section looked well at first but later became pale, and he asked the reason. He laid stress on the value of the hot bath in pale asphyxia and said that in these cases a cold bath was absolutely fatal.

Dr. Buist of Dundee described his own method of artificial respiration. He held the child first prone and then supine in each hand alternately. It was an advantage to begin by making a single insufflation. The objection to Laborde's method was that it left the tongue sore and unfit for sucking.

Sir Francis Champneys, in closing the discussion, said that in passing the catheter he passed the little finger down the pharynx, so as to plug the œsophagus, and then passed the catheter with a stylet. He would not teach Schultze's method to midwives. He had found good from placing the child in hot and cold baths alternately.

Second Day—Thursday, July 27.

The Present Position of Vaginal Operations in Relation to the Uterus and Its Adnexa.—Professor Paul Strassmann of Berlin in opening this discussion said that he would reserve laparotomy mainly for large myomata and pus tubes. The dangers of laparotomy were peritonitis, disturbances of intestinal activity, adhesions leading to stomach trouble, and hernia. Great care should be taken to place the omentum in its proper position. Stomach troubles after laparotomy were frequently due to traction from omental adhesions. All stumps should be covered with peritoneum. Unabsorbable ligatures should never be used. Hernia of the abdominal wall had decreased since suturing the fascia separately had been adopted. Laparotomy was the only procedure advisable in many cases, including those where appendicitis might be present, and in cases of tumors of doubtful character. The size of a tumor was not a contraindication, but its character was. For retroflexion he would always operate by the vaginal route. The objections to the vaginal route were: (1) narrowness of the space available; (2) danger of injury to bladder and ureters. The anterior vaginal incision involved more skill than the posterior, but was better for displacements. He described some points in the technique of the anterior vaginal incision. It must not involve the cervix; after opening the peritoneum the cervix was allowed to fall back. He used special forceps for holding the omentum, and said that ordinary artery forceps should not be used for that purpose. After completing the vaginal incisions he removed all specula and inserted the half hand. Conservative operations on the adnexa might be done by this method, and for treating simple adhesions it was much to be preferred to laparotomy, as the latter was too severe. It was also a good operation for pus in the pelvis and for suppurating hematoma. He had given up the use of clamps. In the after-treatment the catheter was sometimes required, but for one day only in most cases. He had found that three-fourths of the women passed water spontaneously on the second day. The exploratory vaginal incision was very good in malignant ascites and to be preferred to laparotomy. In prolapse he thought that one was never justified in opening the abdomen. In the treatment of this condition he had no faith in the Alexander operation, preferring vaginal fixation. He did not do the Schauta-Wertheim interposition operation, however, during the period of sexual activity. He used the vaginal operation for all cases of cancer of the body of the uterus and for cases of cancer of the cervix in fat women. One-half of the cases of ovarian tumors might be dealt with by posterior vaginal incision. Fibroids, when multiple and situated low down on the uterus, could be dealt with vaginally. In 109 cases of extrauterine gestation he had operated on 10 by the abdominal and 99 by the vaginal route, with one death. In anemic women he advised spinal anesthesia, the injection being given with the patient in the lateral position.

Professor Spencer of London did not think that in abdominal section drainage of the wound was always followed by hernia. He thought that there was a danger of tetanus in using catgut. He had found that there was difficulty in controlling hemorrhage in vaginal hysterectomy. He allowed gauze to remain in until the eighth or tenth day.

Dr. Amand Routh of London disagreed as to the better view obtainable by vaginal section, though he allowed that the vaginal operation was not followed by intestinal paresis. He would not attempt to remove fibroids larger than a fist by the vaginal route. He thought that the cystitis following vaginal operations was often due to the use of gauze, and he took the gauze out gradually, beginning two or three days after the operation and removing a fresh piece each day.

Dr. Heller of Leeds said that increasing experience led him to prefer the abdominal route. He advocated removing ovarian tumors entire. He had found that there was more bleeding after the vaginal section, usually taking the form of a troublesome oozing.

Dr. Purslow of Birmingham said he did not believe that knots could be tied as securely in catgut as in silk. Although on the whole he preferred laparotomy there was one condition in which a vaginal incision might save life when an abdominal section would prove fatal; this was in cases of what he might call "acute pus collection in the pelvis," and in these vaginal section was indicated as the immediate treatment, though abdominal section for removal of the pus sac might be required after the acute symptoms had subsided.

Dr. A. W. Russell of Glasgow agreed as to the difficulty of tying secure knots in catgut. He never left gauze in more than twenty-four hours. He used Prior's removable clamps, but found the removal painful and sometimes requiring a little anesthetic.

Dr. Thomas Wilson of Birmingham had occasionally met with dangerous bleeding from the upper part of the pedicle in doing vaginal hysterectomy, and had been compelled to open the abdomen to check this by securing the ovarian vessels. In his fibroid cases he had operated on 35 per cent. by the vagina and had found the mortality of the vaginal and abdominal operations equal. In cancer cases he had had 70 vaginal operations with 1 death, and 50 abdominal (including Wertheim's operation), with 8 deaths.

Dr. John Campbell of Belfast said that in cases of doubt he always used the abdominal method, and he removed ovarian tumors entire. For backward displacements and prolapse he always used abdominal methods, as he had found that the vaginal operations were often followed by relapse.

Mr. Stanmore Bishop of Manchester used silk in the

abdominal cavity and catgut outside. He thought that much of the cystitis met with was due to the catheter, and he strongly opposed the routine practice of passing a catheter before operation.

Dr. Scott Carmichael of Edinburgh said that he considered ventral fixation was never justifiable for retroflexion during sexual life. In mild cases of adnexal disease he would use the vaginal route. For all ovarian neoplasms he would operate by the abdomen.

Dr. May Thorne of London, on the whole, preferred the abdominal route, and was not afraid of hernia even after using a drainage tube. She strongly urged the use of linen ligatures for all purposes.

Mr. R. J. Johnstone of Belfast said that for almost all cases of acute inflammatory disease of the appendages he would prefer the vaginal route. Also for nearly all cases of extrauterine gestation. For tumors and cancer he used the abdominal route.

Dr. Gemmell of Liverpool always used catgut, and had never seen secondary hemorrhage from slipping of the ligature.

Dr. Handfield Jones of London said that some years ago there was a wave of opinion in favor of vaginal operations, and many serious accidents occurred, such as tearing of the bowel. In acute cases of pus formation he advocated vaginal drainage, even if abdominal section was required later.

Third Day—Friday, July 28.

Cause and Cure of Eclampsia.—Dr. Hastings Tweedy of Dublin read this paper. He said that for the purposes of the paper he had not included any case in which albuminuria was not present, and, on the other hand, he had included all cases of toxemic women with albuminuria, even though fits were absent, as he considered that these cases ought to be considered as eclamptic. He had found that any food in the stomach increased the eclampsia. He at first gave milk in these cases when the patient was conscious and could swallow, but he was now strongly of opinion that food in any form, even milk, might be an exciting cause of convulsions. That this was not owing to decomposition of the milk was proved by the fact that even whey produced the same effect. He thought that the milk particles entered the blood and acted as anaphylactic poisons. Pregnancy was a predisposing cause of the condition, and observation showed that pregnant women did not drink enough fluid. He had treated twenty-nine consecutive cases in two years, with no mortality. He withheld all food for some time after the fits had ceased. He had found inhalation of oxygen very useful. He washed out the stomach, but did not leave any fluid in its cavity. The urine was drawn off by catheter. With the patient on the side, the rectum was washed out with sodium bicarbonate solution, one pint at a time, repeated, if necessary, until a gallon or more had been used. He left 1½ pints of this solution in the rectum. If the urine was scanty he gave a subcutaneous injection of the same solution. He had abandoned sodium chloride solution for sodium carbonate. He applied poultice to the loins. He wiped out the mouth with moist cotton wool and discountenanced wiping out the pharynx and the use of a gag. The speaker then dwelt on the importance of having specially trained nurses, and a medical man should always be present during the time the patient was comatose. The head and shoulders must be brought over the side of the bed and the face turned toward the floor. The patient should be disturbed as little as possible, the catheter should be passed every eight hours. He gave morphine hypodermically, beginning with ½ grain, and repeating in ¼-grain doses up to a total of 2 grains. If the respiration fell to 7 or 8 per minute that was an indication that enough morphia had been given. He discountenanced *accouchement forcé*, although when the os was fully dilated forceps might be used, but in most of his cases labor terminated without assistance. The speaker thought that vapor baths did harm, and that chloroform increased the toxemia. Stroganoff advised inhalation of 15 to 20 minims of chloroform for each manipulation required, as catheter, enema, etc., and the speaker intended to try this.

The Dangers of Fibromyomata of the Uterus in the Later Years of Life.—Dr. Nigel Stark of Glasgow read this paper. He said that the only cases in which operation was contraindicated were those of young childless women, when the tumor was producing no symptoms. In all other cases he would operate, and he would never advise delay in operation in the hope that a cure would take place at the menopause. Many more women than was usually suspected died from complications in the later years of life. He had done 140 hysterectomies and 40 myomectomies for uterine fibroids. The dangers in the later years of life were: sepsis and necrosis, calcification, cancer of the uterus, and cancer of the bowel. Sepsis and necrosis accounted for two-thirds of the deaths from fibroids after the menopause. Calcification generally occurred in patients over fifty, and might lead secondarily to suppuration and death. Cancer of the uterus and cancer of the bowel resulted from the mechanically irritating effect of the tumor on neighboring intestine. The changes enumerated occurred in 30 per cent. of the cases of fibroids in later life.

Dysmenorrhea Due to Very Small Fibroids.—Dr. Thomas Wilson of Birmingham, in this paper, said that in the worst cases one had to choose between removal of the ovaries or uterus and the formation of a drug habit. He had done the radical operation for dysmenorrhea in eight cases; in four of these there was no sign of disease, in the other four there were very small fibroids present; in three of these he did hysterectomy, and in the fourth he enucleated the fibroid. It was about the size of a pea, 7 mm. in diameter, and was situated at the level of the internal os. Complete relief of the dysmenorrhea followed its removal. He attributed the dysmenorrhea to the action of the fibroid in interfering with the dilatation of the internal os.

Professors Strassmann and Tweedy discussed these papers and advised splitting the uterus from top to bottom after opening the abdomen. If any fibroids were found they could be enucleated, and if not the uterus could be curetted and sutured up again.

Tuberculous Elephantiasis of the Vulva.—Dr. Purslow of Birmingham reported a case of this kind. The whole labia majora, labia minora, mons veneris, and prepuce of the clitoris were removed by operation. The parts removed were shown; also photographs of the case before operation, and of the microscopical sections taken from different parts of the specimen.

A vote of thanks to the President, Professor Malins, concluded the proceedings.

AMERICAN PEDIATRIC SOCIETY.

Twenty-third Annual Meeting, Held at Lake Mohonk, N. Y., May 31-June 1, 1911.

The President, Dr. Henry Dwight Chapin of New York, in the Chair.

(*Continued from page 405.*)

Diabetes Mellitus in a Seven-Month-Old Child.—Dr. P. J. Eaton of Pittsburg reported this case. The child was brought to a physician because the toes were reddened and swollen. It was found that after urination the diapers were sticky and stiffened upon drying. The specific gravity of the urine was 1035 and there was a decided sugar reaction. Three weeks after the first examina-

tion there was a typical reaction for grape sugar; acetone and diacetic acid were present. The saccharometer read over 10 per cent. These examinations had been made in January and February; in May the specific gravity was 1044; no albumin was found but sugar was present. In a review of the literature of the past fifteen years Dr Eaton had found reports of 647 cases of diabetes mellitus occurring in children; among these there were but seven under the age of one year. The question arose as to whether they were true cases or whether the condition was only transitory. Although the speaker's patient had been under observation for more than four months and the symptom complex was fairly complete, the absence of increased thirst and diuresis caused the speaker to refrain from giving an absolutely unfavorable diagnosis.

Dr. Jacobi of New York said that he had noticed in the literature a few cases of about the same age as the one reported. He himself had seen several; usually they died in a short time, even when ten or fifteen years of age. He had seldom seen one live over a year. However, he had seen two boys in the same family, one of five and the other of seven, about ten years ago, both of whom had diabetes mellitus. He had met one of these boys about a year ago and he was a strapping fellow of sixteen or seventeen. Both boys were in good health; the percentage of sugar in their urine was about three per cent. This was encouraging, and they should not give up in these cases.

Dr. P. J. Eaton of Pittsburgh asked for some hint as to the treatment of diabetes mellitus in children.

Dr. Kerley of New York said the boys to which Dr. Jacobi had referred had been his patients almost since birth. They were athletes and on a reasonably strict diet. The sugar sometimes ran as low as 3 per cent. and sometimes as high as 7 per cent. Dr. Kerley said he had seen other cases of this disease in children where the clinical picture was very different.

Dr. Jacobi, in answer to Dr. Eaton's question, said that he had done what he would have done in the case of adults. The drugs he had been using were four—salicylic acid, continued for a long time and used with bicarbonate of soda; arsenic, in larger doses and higher dilution than were usually given; codeine, which was his preference, and atropine in large doses. Atropine was tolerated in much larger doses by children than by adults.

Symposium on Poliomyelitis—The Present Extent and Distribution of the Disease in the United States and Canada.—Dr. Robert W. Morse of Boston made a report on studies made in two hospitals, one, the Children's Hospital in Boston, and the other, the New York Orthopedic Hospital. It was shown that there had been a gradual increase in the number of cases during the past twenty-five years. The first outbreak in the United States occurred in 1894, and during the following eleven years nine small epidemics were reported, the largest occurring in California and the second largest in Massachusetts. The total number of reported cases during these eleven years was 157. In 1907 there was an extensive epidemic in New York City, 2,500 cases having been reported. In 1908 the disease appeared to be quiescent, but in 1909 a large epidemic occurred in various parts of the United States, a total of 2,343 cases being reported. In 1910 a larger number of cases were reported than at any time before, there being 8,700. In summarizing the speaker said that there was no doubt but that the disease had existed for many years. Charts were exhibited which showed the relative frequency of the disease in America and in Europe. Five-sevenths of the cases had occurred in this country. The disease was reportable in but twenty-three States. State boards of health should make it reportable. A careful house-to-house study of poliomyelitis should be made by competent medical men. The solution of the problems connected with this disease might come from the laboratory or from field work. The medical profession should have every facility offered them in order to obtain the information needed; they should have financial support.

Prevailing Clinical Manifestations — The Cerebral Type.—Dr. Henry Koplik of New York said that the cerebral forms of poliomelitis had been brought to the attention of the profession in 1905 and in the epidemic described by Wickman in Sweden. In these cases the membranes of the brain and medulla as well as the brain itself and the medullary substance were involved. With the cerebral symptoms they had nuclear palsies; the muscles of the oculomotor group were frequently involved. There are cases of ophthalmoplegia and of paralysis of the facial muscles with the symptoms of meningitis, giving the picture described by Wernick as polioencephalitis inferior. If the process extended further down and involved the hypoglossal or bulbar muscles there were symptoms of bulbar paralysis added to the cerebral symptoms. In this last group were numbered some of the fatal cases. In some cases all forms might be merged into one another. The greatest difficulties in diagnosis were offered by these cerebral cases which might simulate either meningococcic meningitis with isolated basic palsies or meningitis of the tuberculous type. The speaker described three types: 1. A child, previously in good health, might be attacked with high fever, headache, and vomiting. After about twenty-four hours he went to bed with a tired feeling; there was increasing stupor, and the temperature subsided to normal or a little above. The patient might be delirious, irrational, and hyperesthetic. There were rigidity of the neck, Kernig's sign, and a mild hydrocephalus. After a week the patient became more rational, recognizing objects and friends; or the disturbance might continue with the hydrocephalus. In some cases the temperature was normal and in others it might continue at 102° or 103° F. for a week and then subside to normal. Recovery might take place with a slight strabismus, optic neuritis, and choked disc. These might pass away or there might remain an absolute blindness which improved after a time. There might be an ophthalmoplegia with rigidity of the eye and dilated pupil, which might remain indefinitely. The condition differed from that of acute meningitis in that there was a preliminary period when the patient was up and around. 2. This type resembled the tuberculous form of meningitis, but the onset was sudden. There were fever, high or low; vomiting, and, after a day or two, sopor, normal temperature, and unconsciousness. There were marked hydrocephalus, facial paralysis, ocular palsy, loss of reflexes, no Kernig's sign, Cheyne-Stokes respiration, mild neck rigidity, and no reaction to mechanical or other stimuli in the paralytic stage of the meningitis. The patient might die or recover with hydrocephalus. 3. In this type there was a short period of fever, then normal temperature, stupidity, and a trance-like cataleptic state. The patient then became brighter and presented a motor ataxia, vertigo, and final recovery. It should be differentiated from the tuberculous forms of meningitis by the sudden onset. Dr. Koplik reported eight cases belonging to the above types. The fatal cerebral cases not only included cases of the above forms but those in which there was a picture of an acute bulbar paralysis. The onset might be acute or gradual and the paralysis might involve the muscles of deglutition and phonation as well as of respiration. There might also be a complete motor paralysis which extended down and involved the muscles of the trunk and extremities. In these cases the fluid obtained by lumbar puncture might give a lymphocytic cytology and the blood might show a polymorphonuclear leucocytosis.

Prevailing Clinical Manifestations—The Spinal Type.—Dr. John Lovett Morse of Boston stated that it was commonly known that paralysis came on quickly in the

course of a few hours or at most three or four days; this was followed by a stationary period of from one to four weeks and then the period of improvement set in, lasting six months or perhaps a year. It was impossible in the acute stage to prophesy how extensive the final paralysis would be. The points upon which a prophesy might be based were the character of the initial paralysis, the time of the beginning of the retrogression and the slowness of its progress, and the character of the final paralysis. As a rule, spinal paralysis was mono or hemiplegic, seldom diplegic or paraplegic; and it was comparatively unusual to have all of the muscles of the extremities involved. The grouping of the paralyzed muscles had, moreover, no relation to their physiological function or to their distribution. In a certain number of cases the paralysis was progressive in type, as that of the so-called Landry's paralysis. It was probable that a very considerable number of those cases were really cases of infantile paralysis. In the polyneuritic type pain was a prominent symptom. It was usually most marked in the paralyzed parts. There was a combination of rigidity and resistance only when the muscles were but partially paralyzed and when some of them were intact. Failure to appreciate the significance of this condition led to many errors in diagnosis during the acute stage. The diagnosis after the appearance of paralysis was very easy; the difficulty lay in making a diagnosis before its appearance. Sweating, marked irritability, and hyperesthesia were present in many instances, but they were not constant. Hyperesthesia was the most constant symptom. Leucopenia occurred in animals during the early part of the acute stage of infantile paralysis, but it was not a constant symptom in man. The only possible method of making a diagnosis of infantile paralysis of the spinal form before the onset of paralysis was by lumbar puncture.

The Present Status of Experimental Work Upon the Nature and Treatment of the Disease.—Dr. Simon Flexner of New York said that in dealing with the topic assigned to him he would take cognizance of the fact that they were already familiar with much of the experimental work on this disease. They were aware that infantile paralysis, as it occurred in human beings, was transmissible to monkeys; however, monkeys were only susceptible to the experimental form of the disease. The disease had not yet appeared spontaneously among monkeys as the result of contact; in order to produce the infection it was necessary that the virus should pass the barriers of the external surface of the body. This defense against the infection was not possessed by the human being, especially the young. When a small quantity of the virus was brought to the central nervous system and injury was inflicted then the monkey was more susceptible than the human being, and the mortality was much greater in the monkey than in the human being. The speaker said there were two questions which seemed to him to be of importance in reference to the disease under discussion: First, control by prevention; second, its cure by treatment. In regard to the control of the disease by prevention, any knowledge which related to the manner of infection would lead to the introduction of methods which looked toward prevention. It seemed that direct contact was necessary to bring about a distribution of the disease. Not many instances were known where direct contact had occurred which had been followed by secondary cases. There might be other means besides direct contact which would in time be discovered; at present the human agency was the best to consider. Their discoveries had suggested that some other agency was responsible for the transmission of this disease. They were trying to determine whether or not an insect could be responsible for its transmission. The speaker did not wish to be understood as stating that insects transmitted the disease, but they could be contaminated and be made transmittors of the disease. Poliomyelitis was a disease that affected all classes of society alike and appeared under the best as well as the worst sanitary conditions. The disease was one of the summer time. The house fly fulfilled all the conditions set forth by the speaker. Experiments with the fly showed that when contaminated with the virus of poliomyelitis the fly harbored the virus in a living and infectious state for at least forty-eight hours. The experiments did not show that this was the limit of the period of survival, and they threw no light on the question as to whether the virus was retained merely as a superficial contamination or whether it could survive in the gastro-intestinal tract. Experiments relating to these points were in progress. In considering the second point, the therapy of the disease, Dr. Flexner said that because the disease was sudden in onset and rapid in development and because so much improvement took place after this onset he believed there was hope for a rapid restoration of function. The question of therapy suggested itself along two lines. One was the serum therapy. There was a large variety of animals that could be immunized to a certain extent. The value of the serum was slight, however; it was so weak that it was doubtful if it could ever be applied in the treatment of this disease. He had thought of the addition of some chemical, as urotropin. It had been proven that urotropin had the power of preventing the disease in monkeys. The question arose as to whether it could not be modified in directions looking toward an improved action. It was remarkably easy to add chemical groups to urotropin. They had now quite a series which could be added, perhaps fifteen. These had been used only on monkeys, and the time was ripe to apply them to human beings. These drugs were carried extremely well in the serum as well. It was probably better to use these agents with the serum than to administer them alone. Hitherto all drugs had their effects neutralized by the serum.

The Most Promising Outlook for Improvement in the Treatment from the Standpoint of the Pediatrician.—Dr. J. H. Mason Knox of Baltimore read this paper.

Dr. Samuel S. Adams of Washington related his experience with the management of a Washington hospital because it was thought that he had not been sufficiently careful to isolate cases of poliomyelitis. He had written letters to hospitals all over the country asking questions in regard to the management of this disease and had been surprised to learn that in many they took no precautions against contagion. He had also learned that many physicians did not report cases of poliomyelitis. Five hundred cases had been reported in the District of Columbia, and that was far from the number that really occurred. Dr. Adams was supporting the Marine-Hospital Service in its efforts for compulsory isolation. He could not understand why physicians who were otherwise conscientious were absolutely indifferent to the methods of prevention of this veritable scourge, which had recently so increased its virulence.

Dr. Westcott of Philadelphia said that he had found that lumbar puncture gave relief to the pains in the joints, which were one of the most distressing symptoms of the disease.

Dr. Jacobi described the disease as it looked fifty years ago and as it had appeared to him when he wrote on the subject in 1862. At that time his treatment consisted in the application of ice, now and then a mustard plaster, and tincture of iodine; the administration of a purgative, calomel or saline, and ergot in the beginning. He formerly never used strychnine. Electricity might be relied on to some extent in certain cases. He had found now that strychnine occasionally did some good in older cases. It should be given subcutaneously.

Dr. Cotton of Chicago described the first case that he had diagnosed in its incipiency and said that as he reviewed the history of this disease it occurred to him that

there were many little epidemics which occurred without ever having been reported before the attention of the profession was focused upon the subject. The speaker thought that the rational treatment indicated by the pathology of the disease was one of depletion. Elimination of the toxin was certainly desirable. He suggested catharsis, diaphoresis, diuresis, depletion, and rest; even by blood letting good might be accomplished. He always applied bromide and ergot and would also use atropine. During the past eighteen months he had had three cases which he treated in this way.

Dr. Blackader of Montreal asked Dr. Flexner whether he considered lumbar puncture of value in the treatment of poliomyelitis.

Dr. Floyd Crandall of Philadelphia said he had seen his first case twenty-three years ago, and the cases he saw at that time seemed to resemble the description given by Dr. Jacobi. Later it became difficult for him to readjust his conception of the disease. It seemed that it appeared today in a rather different form from that manifested twenty years ago.

Dr. Morse of Boston said that as he understood the disease there was an obstruction to circulation through the arteries in the cord and, therefore, he failed to see how leeches, bloodletting, purgatives, etc., could have any good effect. In the cases that Dr. Morse had seen seventeen years ago a diagnosis of rheumatism had usually been previously made.

Dr. Acker of Washington mentioned several epidemics of poliomyelitis that had occurred in that city. The one last summer began in June and lasted until September. He had not seen any cases of contagion. On Washington avenue leading out to the country cases occurred along the avenue but not out in the country. He had found that hot baths given during attacks relieved the pain. Where lumbar puncture had been used it seemed to relieve the pain almost immediately.

Dr. Machell of Toronto asked Dr. Flexner whether they had noticed that cases occurring in the last epidemic had been milder than those seen in former years. This seemed to be the case in Toronto. The disease had appeared to occur in younger children, also. Several cases had a rash something like chicken pox.

Dr. Simon Flexner of New York, in answer to Dr. Blackader's question, said that he thought that lumbar puncture could do no harm. As to the question of contagion, poliomyelitis was not contagious as were scarlet fever and measles, but there were plenty of instances where several cases had occurred in the same family. In the present state of their knowledge and ignorance they should consider the disease contagious. As to the persistence of the virus in the nasopharynx, it was present there in the acute stage of the disease and it had been proven to be present in the nasopharynx of the monkey for six months after recovery from the disease. These were probably exceptional occurrences, like the the occasional persistence of the diphtheria bacilli. The speaker was of the opinion that three or four weeks was the limit of contagiousness in the human being. For a local disinfectant he recommended menthol in the usual combination; it led to cleanliness, and he believed that mechanical cleansing was an important factor.

Dr. Koplik of New York said he did not know whether the type of the disease was different from what it formerly was or not. He emphasized the point made by Dr. Flexner that they could not compare hospital cases with those seen in private practice.

Dr. Knox of Baltimore expressed his disapproval of bloodletting, as antibodies were produced in the blood, and to remove the substance in which they were produced was to destroy one of the best means of protection.

(To be continued.)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners of Delaware.

June 20-22, 1911.

ANATOMY.

1. Explain formation of skull, giving sutures connecting the individual cranial bones.
2. Explain formation of (infantile) anterior fontanelle.
3. Give origin, insertion, and length of the omohyoid muscle.
4. Origin, insertion, and length of the thyrohyoid muscle.
5. Origin, course, and distribution of subclavian artery.
6. Origin, course, and distribution of the common carotid artery.
7. Origin, course, and distribution of internal jugular vein.
8. Origin, course, and distribution of pneumogastric nerve.
9. The brachial plexus of nerves is how formed? Where distributed?
10. Hair follicles are how formed? How nourished?

PHYSIOLOGY.

1. Define (1) birth, (2) life, (3) death.
2. What are the percentages of O, CO_2, and N in arterial and venous blood respectively?
3. Describe a cardiac cycle.
4. What functions do the lymphatics and lacteals perform?
5. What parts of the digestive processes are performed in the mouth?
6. What functions are performed by the liver?
7. Describe the gaseous interchanges which take place in the lungs during respiration.
8. Name the glands of the skin and describe their functions.
9. How is the normal temperature of the human body maintained in health?
10. Discuss the sympathetic nervous system.

CHEMISTRY.

1. What is a meter, liter, and a gram?
2. Describe specific gravity and evaporation.
3. What are the incompatibles of the iodides and what is the antidote for tr. iodine poisoning?
4. Give symptoms and treatment of corrosive sublimate poisoning.
5. Give symptoms and treatment of nitrate silver poisoning.
6. Define organic and physiological chemistry.
7. What are three of the most important products of the halogen derivatives of methane?
8. What are aldehydes? Name three of the most important compounds.
9. What are benzine hydroxides?
10. What are terpenes and stearoptens? Describe menthol and thymol.

MATERIA MEDICA.

1. What is salol and why should care be exercised in its administration?
2. Name the incompatibles of iron.
3. Give the preparations of opium and tell what proportion of this drug is in paregoric and Dover's powder.
4. Compare the physiological actions of ether and chloroform.
5. Name the chemical antidote of iodine. Arsenic.
6. Give the common name, active principle, preparations, and doses of aconite.
7. Define aphrodisiac (*a*) oxytocic (*b*) emmenagogue. Mention one drug of each class
8. Make a list of the ammonium salts
9. Give the preparations and doses of belladonna.
10. What do we mean by hydragogue diuretics? Name three drugs of this class.

THERAPEUTICS.

1. What is Dr. Young's rule for ascertaining the dose for children?
2. How would you procure and maintain intestinal asepsis?
3. What property or power has diastase?

Describe the therapeutic uses of the following:

4. Ergot. 5. Bismuth. 6. Hydrastis. 7. Arsenic. 8. Ipecac. 9. Sodium chloride. 10. Hydrochloric acid.

PATHOLOGY.

1. Define (1) toxemia, (2) bacteremia
2. Describe the bacillus typhosus.
3. Discuss the theories of immunity.
4. Name the cardinal signs of inflammation.
5. Describe the process of repair in a fractured bone.
6. Describe briefly a miliary tubercle.
7. Give the pathology of cirrhosis of the liver.
8. Describe a kidney from a case of chronic interstitial nephritis.
9. What is the clinical significance of an excess of uric acid in the urine?
10. Give a classification of the carcinomata.

PRACTICE OF MEDICINE.

1. Give etiology and symptoms of arteriosclerosis. At what age does it usually occur?
2. Describe symptoms and treatment of acute laryngitis.
3. Mention the conditions that would contraindicate the use of a general anesthetic.
4. Give symptoms and treatment of exophthalmic goiter.
5. Outline the symptoms and give treatment of tubercular peritonitis.
6. What are the symptoms of mitral incompetency? Differentiate same from purely functional heart murmurs.
7. Differentiate angina pectoris from pseudo-angina.
8. Give the clinical history of chronic catarrhal gastritis.
9. Give period of incubation, symptoms, and treatment of measles.
10. Define and give treatment of acute appendicitis

OBSTETRICS.

1. Define menstruation. Name condition influencing same.
2. Give a summary of the diagnostic signs of pregnancy.
3. Name the most frequent cause of ophthalmia neonatorum. Give treatment, prophylactic and curative.
4. Name every possible source of postpartum hemorrhage and your method of controlling the same.
5. What conditions would indicate the following procedures: (*a*) version, (*b*) high forceps, (*c*) cesarean section?
6. Diagnose placenta prævia. Name varieties and give treatment of each variety.
7. Give rules for calculating the date of confinement. (1) When the date of a single cohabitation is known. (2) When the date of the last menstruation is depended upon. (3) When the date of the last menstruation is unknown.
8. What is the placenta? Describe Crede's method of placental expression.
9. Give the hygienic rules you would consider important for a pregnant woman to observe.
10. Differentiate pregnancy (7-months) from any four other similar conditions.

SURGERY.

1. Give in detail the method for operating for circumcision.
2. Explain the several methods for suppression of hemorrhage.
3. Explain the primary causes of atrophy of bone structures.
4. What structural changes favor hematocele as a sequela of hydrocele?
5. Explain the general rules that should be observed in the reduction of fractures of the arm and forearm.
6. What are the general rules that must be observed in the reduction of dislocation of shoulder and hip joints?
7. What general rules govern the ligation of all large arteries? Give in detail the technique to be observed in operating.
8. In what particular does neurotomy differ from neurectomy?
9. Differentiate dry and suppurative synovitis. In what particular does the treatment differ?
10. Give etiology, diagnosis, and treatment of strumous synovitis.

HYGIENE.

1. Define hygiene, health, and disease.
2. Where and when is the relative humidity of the atmosphere the greatest, and state its influence on health?
3. Give general rules, in full, for ventilation.
4. What are the most reliable sources for pure drinking water, and what are the best methods of purification?
5. What diseases of domestic animals are communicable to man? Give best method of meat inspection, and state the effect of light and dark meats on the human system and what influence they may have on certain diseases.
6. What effect has exercise on the circulation, nervous system, and the elimination of nitrogen?
7. What is the most important feature of quality in summer clothing, hygienically, as a protection against heat?
8. Name six contagious diseases in which no specific organisms have as yet been isolated.
9. What disinfecting methods, measures, and agents would you employ in the exanthemata, respiratory, and intestinal diseases?
10. What comprises vital statistics proper?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF DELAWARE.

June 20-22, 1911.

ANATOMY.

1. Gray's "Anatomy" (1910), pages 123 and 121.
2. Gray's "Anatomy" (1910), page 143.
3. OMOHYOID. *Origin:* Upper border of scapula. *Insertion:* Inferior border of body of hyoid bone.
4. THYROHYOID. *Origin:* Side of thyroid cartilage. *Insertion:* Inferior border of body and greater cornu of hyoid bone.
5. See Cunningham's "Anatomy" (1909), page 821; or Gray's "Anatomy" (1910), page 625.
6. See Cunningham's "Anatomy" (1909), page 801; or Gray's "Anatomy" (1910), page 586.
7. See Cunningham's "Anatomy" (1909), page 875; or Gray's "Anatomy" (1910), page 746.
8. See Cunningham's "Anatomy" (1909), page 690; or Gray's "Anatomy" (1910), page 1006.
9. The *brachial plexus* is formed by the union and subsequent division of the anterior divisions of the fifth, sixth, seventh, and eighth cervical and the first dorsal nerves. The union of the fifth and sixth makes the upper trunk; the seventh forms the middle trunk, and the eighth cervical and first dorsal make the lower trunk. Each of these trunks is divided into an anterior and a posterior branch. The anterior branches, from the upper and middle trunks, make the upper or outer cord of the plexus; the anterior branch of the lower trunk becomes the lower or inner cord; the three posterior branches unite to form the posterior or middle cord. The plexus lies between the Scalenus anticus and medius.

And see Cunningham's "Anatomy" (1909), page 622; or Gray's "Anatomy" (1910), page 1029.

10. See Cunningham's "Anatomy" (1909), page 776; or Gray's "Anatomy" (1910), page 1161.

PHYSIOLOGY.

1. *Birth* is the act of being born, or the passage of the child from the uterus to the outside world.

Life is the sum of the properties that enable an organism to adapt itself to surrounding conditions.

Death is the complete and permanent cessation of functional activity.

2. In *arterial blood* there is 20 per cent. of oxygen, 1 to 2 per cent. of nitrogen, and 40 per cent. of carbon dioxide; in *venous blood* there is 8 to 12 per cent. of oxygen, 1 to 2 per cent. of nitrogen, and 46 to 50 per cent. of carbon dioxide.

3. The *cardiac cycle* includes all the changes which occur between the commencement of one heart-beat and the commencement of the next; it consists of the alternate contractions (or systole) and relaxations (or diastole) of the auricles and ventricles of the heart. The contraction of the two auricles takes place simultaneously, and is followed by the simultaneous contraction of the two ventricles; then follows a period during which the whole heart is in a state of diastole. The cycle then begins again with the auricular systole.

4. *Function of lymphatics:* To provide the tissues with material necessary to their functional activity, growth, and repair; to receive from the issues their waste products; and to convey the products of digestion and absorption to the blood-current.

Function of lacteals is the absorption of fats from the small intestine.

5. Mastication, insalivation, and the commencement of the conversion of starches into maltose.

6. *Functions of the liver:* (1) Secretion of bile; (2) formation and storage of glycogen; (3) formation of urea and uric acid; (4) manufacture of heat; and (5) the conversion of poisonous and harmful substances into inert material.

7. Oxygen passes from the air in the lungs, through the alveoli, to the capillary walls, and into the blood plasma, by *diffusion*. Similarly the carbon dioxide passes from the blood to the atmospheric air.

8. The glands of the skin are: (1) SWEAT GLANDS, whose *function* is the secretion of sweat; and (2) SEBACEOUS GLANDS, whose *function* is the secretion of sebum.

9. The normal temperature of the body is *maintained* by the thermotactic centers in the brain and cord keeping an equilibrium between the heat gained or produced in the body and the heat lost. Heat is *gained* in the body by (1) the muscles, during contraction; (2) the secreting glands; (3) the brain, during mental activity; and (4) by the ingestion of food and hot liquids.

Heat is *lost* to the body by (1) the skin, through evaporation, radiation, and conduction; (2) the lungs; and (3) the excretion (feces and urine).

10. See Cunningham's "Anatomy" (1909), page 703; or Gray's "Anatomy" (1910), page 1066.

Functions: "It may safely be said that the sympathetic system has, to a great extent, a controlling influence over the secretion of most of the glands, the lacrymal, the salivary, the sweat glands, the glands of the stomach and intestines, the liver, the kidney, etc.; that it presides over the circulation by regulating the caliber of the blood-vessels and the action of the heart; that it influences respiration; and, finally, that all involuntary muscles, those of the digestive apparatus, of the genitourinary system, of the hair follicles (pilomotor nerves) are under its control to such extent that, for instance, in certain mammalians the bladder still continues to fulfill its function for weeks after all the cerebrospinal motor nerves leading to it have been severed. In short, we find that all vegetative life of the organism is, to a greater or less extent, under the control of the sympathetic system. Therefore it may properly be called the vegetative nerve system *par excellence*."—(*Reference Handbook of the Medical Sciences.*)

CHEMISTRY.

1. A *meter* is a measure of length, and is a little more than 39 inches.

A *liter* is a measure of capacity, containing 1000 cubic centimeters, or a little more than a quart.

A *gram* is a measure of weight; it is equivalent to about 15½ grains.

2. *Specific gravity* is the weight of a given volume of a substance as compared with the weight of an equal volume of some substance, accepted as a standard of comparison, under like conditions of temperature and pressure.

Evaporation is change from liquid to a gaseous or vapor form.

3. *Incompatibles of the iodides* are: Alkaloids, bromine, chlorine, metallic salts, nitrites in acid solution, and salts of arsenic in acid solution.

The antidote for tincture of iodine poisoning is starch.

4. The *characteristic symptoms of poisoning by corrosive sublimate* are: A burning pain in the mouth, pharynx, and stomach; the mouth and tongue are white; the vomitus is white, with shreds of mucous membrane, and tinged with blood; bloody stools; also salivation may occcr.

Treatment: The antidote is white of egg, but too much must not be given at one time; this should be followed by an emetic.

5. SILVER NITRATE POISONING. *Symptoms:* Pain; vomiting of white, cheesy matter, which becomes black in the sunlight; cramps, purging, depression; convulsions; coma or collapse. *Antidote:* Solution of sodium chloride.

6. *Organic chemistry* is the chemistry of the carbon compounds.

Physiological chemistry is the chemistry of the living organism and of all its processes.

7. Chloroform (trichlormethane), bromoform (tribromomethane), and iodoform (triiodomethane).

8. Aldehydes are substances intermediate between alcohols and acids; they are the first oxidation products of primary alcohols, and on further oxidation become acids. Formaldehyde, acetaldehyde, and trichloraldehyde (chloral).

9. There are no benzine hydroxides.

10. *Terpenes* are hydrocarbons having the formula $C_{10}H_{16}$.

Stearoptenes are the solid part of a volatile oil; camphors are stearoptenes.

Menthol is a secondary alcohol derived from oil of peppermint; it is a colorless crystal, with odor of peppermint, a warm aromatic taste; freely soluble in alcohol or ether, and but slightly soluble in water.

Thymol is a phenol contained in oil of thyme; it is a colorless crystal, with aromatic odor and pungent taste; soluble in alcohol, ether, fats, and oils, but only sparingly soluble in water.

MATERIA MEDICA.

1. Salol is phenyl salicylate. Care should be exercised in its administration, because large doses may produce phenol poisoning.

2. INCOMPATIBLES OF IRON. "Incompatible with *Metallic Iron* are: Hydrogen dioxide, oxidizers, potassium chlorate, potassium permanganate; salts of antimony, copper, bismuth, lead, mercury, and silver. With *Ferrous Salts* are: Alkalies, carbonates, chromates, chlorates in acid solution, ferrocyanides, gold salts, hydrogen dioxide, mercuric salts, phosphates, permanganates, sulphides, tannic acid, silver salts. With *Ferric Salts* are: Acacia, albumin, alkalies, apomorphine, aloin, benzoates, carbonates, creosote, balsam of Peru, benzoin in alcoholic solution, diuretin, gallic acid, gelatin, guaiac, guaiacol, hydriodic acid, hypophosphites, hyposulphites, iodides, morphine; oils of bay, cloves, cinnamon, pimento, thyme, and wintergreen; pyrogallol, resorcin, salol, salicylates, sulphides, sulphites, tannic acid, vegetable infusions and decoctions.

"Incompatible with the *Tincture of Ferric Chloride* are: Acacia, albumin, alkalies, carbonates, gelatin, lime-water, magnesium carbonate, piperazin, vegetable decoctions infusions, and tinctures. With *Ferrous Sulphate* are: Alkalies, carbonates; chlorides of ammonium, barium, and calcium; gold and silver salts, lead acetate, lime-water, piperazin, potassium iodide, potassium nitrate, Rochelle salt, sodium borate, tannic acid, vegetable astringent infusions." (Potter's *Materia Medica.*)

3. *Preparations of opium:* Pulvis opii, opium granulatum, opium deodoratum, extractum opii, pilulæ opii, tinctura opii, tinctura opii deodorati, vinum opii, acetum opii, tinctura opii camphorata, emplastrum opii, pulvis ipecacuanhæ et opii, tinctura ipecacuanhæ et opii, trochisci glycyrrhizæ et opii.

Paregoric contains 4/10 of 1 per cent. of opium. Dover's powder contains 10 per cent. of opium.

"4. *Ether* is anodyne, antispasmodic, diaphoretic and anthelmintic; a cardiac and cerebral stimulant, an anesthetic, and a narcotic poison. Given internally, it is a most powerful stimulant of secretion, acting especially on the secretions of the stomach, salivary glands, and pancreas. On the cerebrum and the motor and sensory nerves its action is similar to that of alcohol, but more prompt and less protracted. It is eliminated rapidly, chiefly by the lungs.

"The action of *Chloroform* is similar to that of ether, with several important differences. It is more irritant to the mucous membranes, and if swallowed undiluted it produces violent gastroenteritis, which becomes apparent after the subsidence of the profound narcotism which at first follows its ingestion in quantity. A dose of ℥j internally may cause death, though recovery has taken place after the ingestion of one, two, and even three ounces. (Wood). It clots the blood outside the body, converting it into a mass resembling sealing-wax.

"As compared with ether the inhalation of chloroform is less stimulating, more irritant to the kidneys, more depressant to the vital functions, and much more dangerous on account of its direct paralyzant action on the heart. Its vapor is less irritant to the air-passages, non-inflammable, more agreeable, more prompt in action, produces much less subsequent vomiting, a shorter stage of excitement, and a more profound degree of narcosis; and should be diluted with 96½ per cent. of air to produce anesthesia with safety, according to the general teaching on this subject."—(Potter's *Materia Medica.*)

5. The chemical antidote of *iodine* is starch; of *arsenic*, is freshly prepared solution of ferric hydroxide.

6. ACONITE. *Common name*, monk's hood; *active principle*, aconitine; *preparations and doses:* Fluidextract, ♏j; and tincture, ♏x.

7. *Aphrodisiac* is an agent which arouses or increases sexual desire and power; as phosphorus.

Oxytocic is an agent which stimulates contraction of the gravid uterus, and may produce abortion; as ergot.

Emmenagogue is an agent which restores the menstrual functions; as savine.

8. *Ammonium salts:* Benzoate, bromide, carbonate, chloride, iodide, salicylate, and valerate of ammonium.

9. Extract of belladonna leaves, gr. 1/10 to ½; tincture of belladonna leaves, ♏vij; belladonna plaster, belladonna ointment; fluidextract of belladonna root, ♏j; and belladonna liniment.

10. *Hydragogue diuretics* are diuretics which increase the water of the urine considerably; as digitalis, caffeine, and squill.

THERAPEUTICS.

1. *To determine the proper dosage for a child:* Let x = the age of a patient; then $\frac{x}{x+12}$ = the fraction of the adult dose which the patient should receive. Thus, a patient of

four years old should receive $\frac{4}{4+12} = \frac{4}{16} = \frac{1}{4}$ of an adult dose.

2. It is not possible to procure and maintain intestinal asepsis.

3. Diastase has the power of converting starch into sugar.

4. *Therapeutic uses of ergot:* To promote uterine contractions during third stage of labor; for fibroids, menorrhagia, postpartum hemorrhage; some forms of amenorrhea and dysmenorrhea, dysentery, arterial hemorrhage, congestive headaches, laxity of sphincters, of bladder or rectum, hemorrhoids, aneurysm, diabetes, urinary incontinence, direct paralysis of the sphincter vesicæ, atonic spermatorrhea.

5. *Therapeutic uses of bismuth:* "Bismuth salts, as dusting powders and in ointments, are used for excoriated surfaces, wounds, etc., and in the treatment of skin diseases. The subnitrate, snuffed into the nostrils, is employed in coryza and simple ozena and as a topical application in aphthous or nursing sore mouth, mercurial ptyalism, chronic conjunctivitis, and granular lids, and ulcers of the rectum. Internally bismuth salts are useful in gastralgia, vomiting, gastritis, and diarrhea, and as intestinal antiseptics." (Wilcox's *Materia Medica.*)

6. *Therapeutic uses of hydrastis:* As a stomachic tonic, for catarrh of the gastrointestinal tract, for gonorrhea, gleet, nasal catarrh; as an application to ulcers, sores, hemorrhoids, fissures, etc.; in menorrhagia.

7. *Therapeutic uses of arsenic:* In stomach disorders, bronchial and pulmonary affections, diabetes, diarrhea, anemia and chlorosis, chorea, malaria, and chronic skin diseases.

8. *Therapeutic uses of ipecac:* As an emetic to clear the respiratory passages, to relieve the stomach, in bronchitis, emphysema, dysentery and jaundice, and as a diaphoretic in rheumatism.

9. *Therapeutic uses of sodium chloride:* "Locally it is of service in affections of the mucous membranes, and salt baths are invigorating as well as cleansing. A strong solution constitutes one of the best injections for threadworms, and salt solutions are also used to limit the action of silver nitrate. Hot salt, enclosed in bags, is a good application in lumbago and various other painful conditions. Internally as an emetic and also in dyspeptic conditions, administered in carbon dioxide water or in the form of natural mineral waters. Solutions of salt in distilled water are given by intravenous injection or hypodermoclysis in conditions where the body has lost much fluid and also in carbon dioxide or coal gas poisoning and in uremia and similar intoxications. On poisoning by silver nitrate sodium chloride arrests the corrosive action." (Wilcox's *Materia Medica.*)

10. *Therapeutic uses of hydrochloric acid:* As a caustic; also when the gastric juice is deficient in acidity, in some forms of dyspepsia, and in some fevers (such as typhoid).

PATHOLOGY.

1. *Toxemia* is a condition in which bacterial toxins are present in the blood.

Bacteremia is a condition in which bacteria are present in the blood.

2. *Bacillus typhosus* is a rod-shaped organism, with rounded ends, is from 2 to 4 microns in length, and about three-fourths of a micron in breadth; it does not stain by Gram's method but stains with all the aniln dyes; it has flagella, no spores, is aerobic and facultative anaerobic, and is motile.

3. See French's "Practice of Medicine" (1910), page 00.

4. Redness, swelling, pain, heat, and disordered function.

5. See Rose and Carless' "Surgery" (1908), page 472; or Da Costa's "Surgery" (1908), page 457.

6. See Rose and Carless' "Surgery" (1908), page 166; or Da Costa's "Surgery" (1908), page 213.

7. See French's "Practice of Medicine" (1910), pages 832 and 849; or Osler's "Practice of Medicine" (1909), pages 557 and 561.

8. See French's "Practice of Medicine" (1910), page 925; or Osler's "Practice of Medicine" (1909), page 695.

9. See French's "Practice of Medicine" (1910), page 903; or Osler's "Practice of Medicine" (1909), page 677.

10. See Rose and Carless' "Surgery" (1908), page 209; or Da Costa's "Surgery" (1908), page 333.

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), pages 640 and 642; or Osler's "Practice of Medicine" (1909), pages 848 and 851.

2. See French's "Practice of Medicine" (1910), page 660; or Osler's "Practice of Medicine" (1909), page 596.

3. *Contraindications for a general anesthetic* are said to be: Fatty degeneration or dilatation of the heart, disease of the lungs or kidneys, cerebral tumors, and chronic alcoholism; also enlarged tonsils. (Gould and Pyle's *Pocket Cyclopedia.*)

4. See French's "Practice of Medicine" (1910), page 558; or Osler's "Practice of Medicine" (1909), page 706.

5. See French's "Practice of Medicine" (1910), pages 357 and 408.

6. See French's "Practice of Medicine" (1910), page 590; or Osler's "Practice of Medicine" (1909), page 805.

Functional heart murmurs are usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient; and they denote, as a rule, an impoverished condition of the blood.

7. See French's "Practice of Medicine" (1910), page 636; or Osler's "Practice of Medicine" (1909), page 841.

8. See French's "Practice of Medicine" (1910), page 751; or Osler's "Practice of Medicine" (1909), page 461.

9. See French's "Practice of Medicine" (1910), pages 326 and 331; or Osler's "Practice of Medicine" (1909), pages 141 and 145.

10. See French's "Practice of Medicine" (1910), pages 805 and 816; or Osler's "Practice of Medicine" (1909), pages 512 and 518; and Rose and Carless' "Surgery" (1908), page 1045; or Da Costa's "Surgery" (1908), page 861.

OBSTETRICS.

1. See Hirst's "Obstetrics" (1909), pages 57 and 59.

2. *Positive signs of pregnancy:* (1) Hearing the fetal heart sound; (2) active movement of the fetus; (3) ballottement; (4) outlining the fetus in whole or part by palpation; and (5) the umbilical or funic souffle.

Doubtful signs of pregnancy: (1) Progressive enlargement of the uterus; (2) Hegar's sign; (3) Braxton Hicks' sign; (4) uterine murmur; (5) cessation of menstruation; (6) changes in the breasts; (7) discoloration of the vagina and cervix; (8) pigmentation and striæ; (9) morning sickness.

Subjective signs of pregnancy, in the order of their appearance, are: Cessation of menstruation, morning sickness, increased frequency of urination, active fetal movements.

Objective signs of pregnancy, in the order of their appearance, are: Softening of the cervix, changes in the mammary glands, discoloration of the vulva and vagina, pulsation in the vaginal vault, Hegar's sign, active fetal movements, ballottement, palpation of the fetus, intermittent uterine contractions, hearing the fetal heartbeat, rate of growth of the uterine tumor.

3. Ophthalmia neonatorum is an infectious, purulent inflammation of the conjunctiva in the newborn, due to the gonococcus or other pyogenic germ; produced by contact of the eye with the vaginal secretion of the mother during labor, or infected fingers, or instruments, etc.

The treatment is (1) *Prophylactic.*—Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 or 2 per cent. solution of nitrate of silver, immediately after birth. (2) *Remedial.*—Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burned.

4. See Williams' "Obstetrics" (1909), pages 818 and 821; or Hirst's "Obstetrics" (1909), pages 585 and 587.

5. (*a*) *Indications for the use of forceps* are: "1. *Forces at fault:* Inertia uteri in the presence of conditions likely to jeopardize the interests of mother or child. (*a*) Impending exhaustion; (*b*) arrest of head, from feeble pains. 2. *Passages at fault:* Moderate narrowing, 3¼ to 3¾ inches, true conjugate; moderate obstruction in the soft parts. 3. *Passenger at fault:* A.—Dystocia due to (*a*) occipitoposterior, (*b*) mentoanterior face, (*c*) breech arrested in cavity. B.—Evidence of fetal exhaustion (pulse above 160 or below 100 per minute). 4. *Accidental complications:* Hemorrhage; prolapsus funis; eclampsia. All acute or chronic diseases or complications in which immediate delivery is required in the interest of mother or child, or both." (*b*) *Indications for version* are: (1) In transverse presentations; (2) in placenta prævia; (3) in malpresentations of the head; (4) in simple flattened pelvis, and in minor degrees of pelvic contraction; (5) in prolapsed funis; (6) in sudden death of the mother, and

(7) in any case where speedy delivery is imperative. (c) *Indications for cesarean section* are: Extreme pelvic contraction or deformity in which delivery by forceps or version or symphyseotomy is impossible, and in which craniotomy is either impossible or would be more dangerous to the mother; the presence of extreme atresia of the vagina; rupture of the uterus; sudden maternal death.

6. See Williams' "Obstetrics" (1909), pages 800, 814, and 815; or Hirst's "Obstetrics" (1909), pages 574, 575, and 577.

7. See Williams' "Obstetrics" (1909), page 194; or Hirst's "Obstetrics" (1909), page 210.

8. See Williams' "Obstetrics" (1909), pages 134 and 298; or Hirst's "Obstetrics" (1909), pages 120 and 343.

9. See Williams "Obstetrics (1909), page 199; or Hirst's "Obstetrics" (1909), page 188.

10. See Williams' "Obstetrics" (1909), page 190; or Hirst's "Obstetrics" (1909), page 205.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), page 1248; or Da Costa's "Surgery" (1908), page 1181.

2. See Rose and Carless' "Surgery" (1908), page 282; or Da Costa's "Surgery" (1908), page 377.

3. See Rose and Carless' "Surgery" (1908), page 598; or or Da Costa's "Surgery" (1908), page 1202.

4. See Rose and Carless' "Surgery" (1908), page 1255, or Da Costa's "Surgery" (1908), page 1202.

5. See Rose and Carless' "Surgery" (1908), page 475; or Da Costa's "Surgery" (1908), page 400.

6. See Rose and Carless' "Surgery" (1908), pages 622 and 630; or Da Costa's "Surgery" (1908), pages 500 and 601.

7. See Rose and Carless' "Surgery" (1908), page 328; or Da Costa's "Surgery" (1908), page 401.

8. In *neurotomy* the nerve is cut; in *neurectomy* a piece of the nerve is excised.

9. In *dry synovitis* there is little or no fluid present; in *suppurative synovitis* there is a purulent distention of the synovial sac. The latter form requires drainage, while the former does not.

10. See Rose and Carless' "Surgery" (1908), page 654; or Da Costa's "Surgery" (1908), page 548.

HYGIENE.

1. *Hygiene* is the science and art of all that tends to the maintenance and improvement of health, the prevention or shortening of the duration of diseases, and the prolongation of life.

Health is the condition in which all the functions of the body and mind are performed normally.

Disease is the condition in which there is some departure from the normal in the mental or bodily functions.

2. "Relative humidity is greatest near the surface of the earth during night, when the temperature, being at or near the daily minimum, approaches the dew point; it is also great in the morning, when the sun's rays have evaporated the dew, and the vapor is as yet only diffused a little way upward; and it is least during the greatest heat of the day. . . . Humidity of the air is very generally supposed to be associated with the spread or prevalence of disease; much moisture in the air favors the continuance of colds, but at the same time appears to relieve bronchitis by assisting expectoration and the general discharge of mucus." (Notter and Firth's *Hygiene.*)

3. Parkes summarizes *the practical points of ventilation* as follows: "(1) When air is heated it expands and tends to rise; when air is cooled it contracts and tends to fall. (2) Cold air tends to enter a room and to move about very much as water would; and this holds true so long as the temperature of the fresh air remains lower than that in the room. (3) The extent of inlet provision for fresh air is not quite of the same importance as that for the exit of foul air; for if foul air is extracted in sufficient quantities fresh air will enter somehow to replace it. (4) The inlet provision for fresh air should average 24 square inches for each individual; the provision of inlet areas somewhat larger than those of exit tends to minimize draughts. (5) Inlets should be as low in the room as possible, viz., just above the floor (so as not to raise the dust) if the outside air is warm or has been warmed prior to entry, but at a height of about 5 feet if the outside air is cold; otherwise unpleasant draughts are experienced. As a further protection against unpleasant draughts when cold air is admitted, the incoming air should be directed upward; while hot air, since it tends to rise, should be directed downward. (6) Outlets should be as high as possible, and preferably close to or in the ceiling; and they should have their extractive powers maintained by means of heat or an exhaust fan, or they are liable to act as inlets. (7) Where possible outlets should be so placed that the vitiated air is drawn toward them before mixing with the general air of the room. (8) There is a tendency for fresh air to take a direct course to the outlets, and this must be counterbalanced by a judicious selection of the relative positions of inlets and outlets. (9) Methods of ventilation devised to ventilate *crowded* premises are generally inefficient, unless the incoming air can be warmed in winter to about 60° F.; for efficient ventilation by cold air cannot be tolerated, and there is a great tendency among workers to close all ventilating inlets. (10) With less than 250 cubic feet of space per head no ventilation can ever be satisfactory which is not aided by mechanical force. (11) The source of the incoming air should be considered. It should not be borrowed from adjoining rooms, but taken direct from the outside. One great advantage of the more expensive mechanical system of ventilation is the fact that sufficient air can always be obtained from a source which is known and selected. (12) Ventilation dependent on the extraction of foul air is often more convenient than that in which propulsion is mainly relied upon; but the purity of the air is not easily provided for or guaranteed. (13) If warmed air is forced into a room it should only be raised to a temperature sufficient to prevent a feeling of cold (about 60° F.) More highly heated air is often felt to be overdry and unpleasant."

4. The most reliable sources for pure drinking water are spring water and deep well water. The best methods of purification are boiling and filtration (in a clean filter).

5. *Diseases of domestic animals communicable to man:* Glanders, anthrax, tuberculosis, rabies, aphtha, tapeworm and other intestinal parasites, ringworm, echinococcus, diphtheria.

Animals should be inspected before they are slaughtered, and the meat should also be inspected afterwards.

Red meats (beef, mutton, venison) have been prohibited to patients with gout and rheumatism; also sometimes to patients with gastrointestinal or kidney troubles. The reason for this prejudice against red meats was the belief that they acted as an irritant on the kidneys and so interfered with elimination, and caused autointoxication. This has not been substantiated.

6. Exercise increases the force and frequency of the heart's action, and so increases the circulation of the blood all through the body. Its effect on the nervous system is not settled; probably moderate exercise benefits the nervous system. Exercise increases the elimination of nitrogen by the kidneys.

7. Light color and ready absorption of moisture without a feeling of dampness.

8. Measles, mumps, German measles, scarlet fever, smallpox, whooping cough.

9. For *disinfection of rooms* use formaldehyde gas: *clothing*, use solution of phenol (5 per cent.) for an hour, then boil for an hour; *person*, wash in soap and water, and then with cresol or carbolic acid solution; *bedding*, use steam or formalin; *excreta*, etc., should be passed into vessels containing dilute solution of formalin, of greater quantity than the expected excretion; *sputum* should be burned.

10. *Vital statistics* comprises: Past and present facts bearing on population, age and sex distribution, births, marriages, deaths, diseases, health, and expectation of life of each class in the community.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*.	W. H. Sanders, Montgomery.	Montgomery	
Arizona*.	Ancil Martin, Phoenix.	Phoenix	Oct 2
Arkansas.	F. T. Murphy, Brinkley	Little Rock.	Nov. 14
California*.	Chas. L. Tisdale, 929 Butler Building, San Francisco.	Los Angeles	Dec 5
Colorado.	David A. Strickler, Empire Building, Denver.	Denver	Oct 3
Connecticut*	Chas. A Tuttle, New Haven	New Haven	Nov. 14
Delaware.	J. H Wilson, Dover.	Dover	Dec. 12
Dist. of Col'ba.	Geo. C. Ober, Washington.	Washington.	Oct. 12
Florida*.	I. D Fernandez, Jacksonville	Jacksonville.	Nov. 7
Georgia	T. H. Goss, Athens.	Atlanta	
Idaho*.	O J. Allen, Bellevue.	Wallace.	Oct 3
Illinois.	J. A. Egan, Springfield	Chicago.	
Indiana.	W T. Gott, Crawfordsville.	Indianapolis.	
Iowa	G H. Sumner, Des Moines.	Des Moines.	Sept. 19
Kansas	H. A. Dykes, Lebanon	Topeka.	Oct. 10
Kentucky	J. N. McCormack, Bowling Green	Louisville.	Dec 19
Louisiana	A. B. Brown, Cusach's Bldg. New Orleans.	New Orleans.	Oct. 19
Maine.	F. W. Searle, Portland	Portland	Nov. 14
Maryland	J. McP. Scott, Hagerstown.	Baltimore.	Dec. 12
Massachusetts*	E. B. Harvey, State House. Boston	Boston	Sept. 12
Michigan.	B D. Harison, 205 Whitney Building, Detroit.	Lansing.	Oct 10
Minnesota.	W S. Fullerton, St. Paul.	Minneapolis.	
Mississippi	S. H. McLean, Jackson.	Jackson.	
Missouri.	Frank B. Hiller, Jefferson City.	St. Louis.	

Montana*	Wm. C. Riddell, Helena	Helena	Oct.	3
Nebraska	E. A. Carr, Lincoln	Lincoln	Aug.	9
Nevada	S. L. Lee, Carson City	Carson City	Nov.	6
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord		
New Jersey	H. G. Norton, Trenton	Trenton	Oct.	17
New Mexico	J. A. Massie, Santa Fe	Santa Fe	Oct.	9
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	Sept.	26
N. Carolina	B. K. Hays, Oxford	Hendersonville	June	11
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	Oct.	3
Ohio	Geo. H. Matson, Columbus	Columbus	Dec.	5
Oklahoma*	J. W. Duke, Guthrie	Guthrie		
Oregon	B. E. Miller, Portland	Portland		
Pennsylvania*	A. R. Aleen, Carlisle	Philadelphia / Pittsburgh	Dec.	
Rhode Island	G. T. Swarts, Providence	Providence	Oct	5
S. Carolina	H. H. Wyman, Aiken	Columbus		
S. Dakota	F. W. Freyberg, Mitchell	Pierre		
Tennessee	C. A. Abernathy, Pulaski	Memphis / Nashville / Knoxville		
Texas	J. D. Mitchell, Fort Worth	Fort Worth	Nov.	14
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	Oct	2
Vermont	W. Scott Nay, Underhill	Montpelier	Jan.	9
Virginia	R. S. Martin, Stuart	Lynchburg	Dec.	21
Washington*	F. P. Witter, Spokane	Tacoma	Jan.	2
W. Virginia	H. A. Barbee, Point Pleasant	Clarksburg	Nov.	13
Wisconsin	J. M. Beffel, Milwaukee	Madison		
Wyoming	A. B. Tonkin, Riverton	Laramie		

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

THE TREATMENT OF SYPHILIS WITH SALVARSAN. By Dr. WILHELM WECHSELMANN of Berlin, Dr. PAUL EHRLICH of Frankfort-on-Main, and ABR. L. WOLBARST, M.D., of New York. 175 pages; cloth; illustrated; price $5.00. Rebman Company, Publishers, New York.

THE WASSERMANN SERODIAGNOSIS OF SYPHILIS IN ITS APPLICATION TO PSYCHIATRY. By Dr. FELIX PLAUT. 188 pages; paper. The Journal of Nervous and Mental Disease Publishing Company, Publishers, New York.

INTERNATIONAL CLINICS. Vol. I, 21st Series. By HENRY W. CATTELL A.M., M.D. 300 pages; cloth; illustrated; price $2.00. J. B. Lippincott Company, Publishers, Philadelphia.

EINFÜHRUNG IN DIE EXPERIMENTELLE THERAPIE. By Dr. MARTIN JACOBY. 180 pages; paper; illustrated; pamphlet price 5.00 M., bound 5.80 M. Julius Springer, Publisher, Berlin.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. By Dr. L. KATZ. 48 pages; paper; illustrated. Curt Kabitzsch, Publisher, Würzburg.

INANITION BEI ERNÄHRUNGSSTÖRUNGEN DER SÄUGLINGE. By Prof. AD. CZERNY. 24 pages; paper. Carl Marhold, Publisher.

SCIENCE FROM AN EASY CHAIR. By Sir RAY LANKESTER, K.C.B., F.R.S. 423 pages; cloth; illustrated; price $1.75 net. The Macmillan Company, Publishers, New York.

THE PRACTICAL MEDICINE SERIES. Vol. I. GENERAL MEDICINE. By FRANK BILLINGS, M.S., M.D., and J. H. SALISBURY, A.M., M.D. 405 pages; cloth; price $1.50. The Year Book Publishers, Publishers, Chicago.

ENLARGEMENT OF THE PROSTATE. By C. MANSELL MOULLIN, M.D. (Oxon.), F.R.C.S. 176 pages; cloth; illustrated; price $1.75 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

THE EXPERIMENTAL CHEMOTHERAPY OF SPIRILLOSES. By PAUL EHRLICH and S. HATA. 181 pages; cloth; illustrated; price $4.00. Rebman Company, Publishers, New York.

DIE PRAKTISCHE BEDEUTUNG DES SALVARSAN FÜR DIE SYPHILISTHERAPIE. By Dr. S. JESSNER. 73 pages; paper; price 1.80 M. Curt Kabitzsch, Publisher, Würzburg.

NEW AND NONOFFICIAL REMEDIES. THE AMERICAN MEDICAL ASSOCIATION, Publishers, Chicago. 282 pages; cloth; price 50 cents; paper 25 cents.

HOSPITAL MANAGEMENT. By CHARLOTTE A. AIKENS. 488 pages; cloth; illustrated; price $3.00 net. W. B. Saunders Company, Publishers, Philadelphia.

THE CARE OF THE BABY. By J. P. CROZER GRIFFITH, M.D. 12mo, 455 pages, cloth, illustrated, price $1.50 net. W. B. Saunders Co., Publishers, Philadelphia.

THE FATS. By J. B. LEATHES, M.A., M.B., F.R.C.S. 133 pages; cloth; price $1.25 net. Longmans, Green & Co., Publishers, New York.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended August 19, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	522	
Diphtheria	162	
Measles	166	
Scarlet Fever	49	
Smallpox	—	
Varicella	9	
Typhoid Fever	183	
Whooping Cough	43	
Cerebrospinal Meningitis	6	
Malarial Fever	—	
Totals	1,140	

Non-Operative Treatment of Cancer of the Uterus.—Luigi Mangiagalli has made a careful examination of all the measures used in the treatment of cancer of the uterus, including ablation of the tumor, curettage, thermocauterization, etc. He finds that all drugs are useless; opotherapy has had no results; trypsin has not cured; cancerous serotherapy has proved valueless; erysipelas toxins are too dangerous for general use; bacteriotherapy of several kinds has failed; fulguration applied to inoperable cases after a partial operation has shown undoubted benefits, lessening of pain, sepsis, hemorrhages, and long absence of recurrences. But in spite of this it has been seen that ablation, carefully and thoroughly done, has had better results than any of these methods, and up to date must be the preferred treatment of all early cases.—*L'Obstétrique.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended August 18, 1911:

CHOLERA

Places	Date	Cases	Deaths
Austria-Hungary: Cattaro	July 6–22	3	..
Trieste	Aug. 8–14	9	3
India: Calcutta	June 18–24	..	37
Italy		..	..
Total for Italy July 27–31; Cases, 802; deaths, 319.			
Provinces—Naples	July 27–31	98	16
Naples, city	July 27–31	94	29
Continental Italy outside of Naples Province: Cases, 370; deaths, 166.			
Sicily	July 27–31	52	23
Palermo	July 27–31	61	32
Palermo, city	July 27–31	127	53
Java		..	..
[1]June 15–28; Present in Borneo at Pamank and Singkawang; Sumatra at Telokpakedai, and in Lombok at Geroeng.			
Batavia	June 25–July 1	22	7
Boeloe	June 15–28	..	Present
Russia: Governments—Saratov	July 22	1	..
Tambov	June 26	..	..
[2]Present in 5 districts.			
Straits Settlements: Singapore	June 18–July 2	9	12
Turkey: Constantinople	July 11–15	7	5
Turkey in Asia: Foglieri	July 26	2	1
In the gulf of Smyrna.			

[1] Bulletin Quarantenaire d'Egypte, July 27.

[2] From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Aug. 2.

PLAGUE

Chile: Iquique	July 2–8	2	2
India: Calcutta	June 18–24	..	6
Kurrachi	July 2–8	5	4
Java: Pasoroean Residency	June 25–July 1	42	12
Paraguay: Asuncion	Aug. 9	..	Present
Straits Settlements: Singapore	June 25–July 2	63	19

SMALLPOX

Arabia: Aden	Apr. 11–June 23	205	7
And vicinity.			
Brazil: Rio de Janeiro	June 25–July 8	9	..
Canada: Quebec	Aug. 1–5	1	..
Vancouver	July 23–29	1	..
Chile: Valparaiso	July 2–8	59	..
France: Paris	July 16–22	2	..
Germany	July 23–29	1	..
India: Calcutta	June 18–24	..	2
Madras	July 2–8	7	3
Italy: Palermo	July 16–22	33	11
Porto Rico: Ponce	Apr. 1–30	..	1
Portugal: Lisbon	July 16–22	12	..
Mexico: Ciudad Porfirio	July 31–Aug. 5	..	2
Mexico	July 2–15	..	25
June 25–July 1; cases, 11.			
San Luis Potosi	July 2–22	7	6
Russia: Batoum	June 1–30	2	..
Moscow	July 9–15	5	10
Warsaw	Apr. 2–June 3	31	16
Siberia: Vladivostok	May 14–June 13	12	5
Spain: Valencia	July 16–22	8	1
Straits Settlements: Singapore	June 18–July 2	21	

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Original Articles.

THE PITUITARY BODY.*

BY CHARLES W. HITCHCOCK, M.D.

DETROIT, MICH.

CONCERNING the pituitary gland, or hypophysis cerebri, much study and more speculation have been indulged in, but accurate knowledge has only of late given promise of possible development. The last word has by no means as yet been said concerning this obscure corner of anatomy, physiology, and pathology, and the very obscurity in which it has so long been enshrouded may serve as our apology for treating the subject in a manner open to the accusation of being perhaps somewhat elementary.

"The pituitary body is a small reddish-gray mass," says Kirke,[1] "occupying the sella turcica of the sphenoid bone." According to Zander, quoted by Dock,[2] its size is somewhat variable, 6 to 10.5 mm. in sagittal, 10 to 14.5 mm. in vertical, and 5 to 9.75 mm. in transverse diameter, and weighing on the average in health 0.6 grain.

Facts of development account for the two parts of which it is largely made up and for the fact that these have separate blood-supplies. Its anterior (non-nervous) lobe is derived from Rathke's pouch of the pharyngeal ectoderm, while its posterior lobe (the nervous portion) is developed from the midbrain ectoderm, these processes growing up and down respectively, the connection of the former with the oral cavity disappearing entirely at the level of the sphenoid while the connection of the latter becomes much narrowed but persisting as the infundibulum.

The anterior portion is much the larger and its structure bears a resemblance to that of the thyroid body. If a more detailed account of the histological structure of the hypophysis be sought, it may be said that the anterior portion is made up of follicles of various shapes, containing large chromophile cells, with acidophile and basophile granules, and smaller paler cells of indistinct outline, called "chief cells" by one observer (Stieda quoted by Dock); while according to Benda, the various cells represent stages of a single class, the chromophile cells being more numerous in middle life, the chief cells in old age. The posterior lobe is made up of connective tissue, blood-vessels, pigmented cells of various sizes and shapes, and also cells like those in the anterior lobe. The "pars intermedia," partly glandular, with colloid in tubules and vesicles, and partly vascular, is of necessity extremely thin, so closely adjacent are the anterior and posterior lobes.

The relations of the pituitary body with the thyroid have long been suspected and of late years the relations of the hypophysis with the ductless glands in general, particularly the adrenal system, have been the subject of no little speculation as well as more scientific investigation.

The physiology of this small portion of the organism has proven a complex affair and is still in a somewhat unsettled state, Tigerstedt[3] stating that "from results thus far before us no positive conclusion can be drawn as to the normal workings of the hypophysis," and Dock reaches no more satisfactory conclusion, in view of Schaefer's experiments, than that "it is probable the relation of the pituitary body to other organs and to diseases, concerning which so many brilliant speculations have been made, is closely associated with the production, by various parts of the pituitary, of 'hormones,' activating or stimulating substances with obscure but important effects on numerous organs, ductless, sexual, and others, as well as upon metabolism in its broadest meaning, including growth." Results of other work in this direction we shall later see.

This obscure organ, once termed by Van Gehuchten "l'organe, enigmatique," bids fair, however, to have more light thrown upon it through the patient efforts of a host of later energetic workers. They may, perhaps, receive some animating impulse from the fascination which attaches just now to the complex problem of the ductless glands in general.

The rather commonly accepted conclusion that the pituitary body is essential to the maintenance of life had some doubt cast upon it by statements of Horsley who experimented upon dogs. It is believed, however, that his results were due to incomplete hypophysectomies, for Reford and Cushing,[4] raising this very question concerning the hypophysis and seeking to confirm or refute Horsley's findings, conclude that their careful experiments on dogs only further sustain Paulesco's earlier contention that a total hypophysectomy is incompatible with the continuance of life, although its continuance in their cases was longer than that observed by Paulesco. Such a conclusion as to the importance of the pituitary body would seem to place obvious limitations upon the surgery of this region, restricting it to removal of tumors or, in other cases, to partial hypophysectomies.

In another communication as to "The Functions of the Pituitary Body," Cushing[5] describes studies on this organ which he made (1) by simulated oversecretion by injections, feedings, etc.; (2) by simulated undersecretion through partial or total removal or destruction of the gland; (3) by observing alterations of the gland in disease and in various states of functional activity, and (4) by noting hypophyseal changes secondary to lesions of other ductless glands. He refers also to the earlier observations of Marie, Howell, Oliver, Schaefer, et al, which established that the glandular extract even after being raised to the boiling point led to a rise in

*Read before the District Society of Neurology and Psychiatry, April 6, 1911.

blood-pressure and that this substance was confined to the pars nervosa and its epithelial investment. The reaction following its injection was found to be more enduring than that produced by adrenalin and to be accompanied by a definite slowing of the pulse. And it was later discovered that this principle distends the kidneys and increases the flow of urine. Like adrenalin, it dilates the pupil.

In view of the commonly accepted belief that the occurrence of acromegaly establishes conclusively disease of the pituitary body, it is most interesting to note Cushing's statement that "the actual association of an hypophyseal lesion with acromegaly is by no means generally conceded, despite the obvious tumor or enlargement so frequently observed, for a number of autopsies of undoubted cases of acromegaly have shown a pituitary body which has been regarded as practically normal."

As a result of his investigations Cushing concluded (*a*) that the pituitary body is a double organ, the secretion of its "anterior and solidly epithelial portions" discharging into the blood sinuses in that part of the gland, and the hyaline substance, apparently the secretion from the epithelial investment of the posterior lobe, entering the cerebrospinal space by way of channels in the posterior part; (*b*) that the secretion of the posterior part does not seem to be so vitally essential to physiological equilibrium as that of the anterior lobe; (*c*) that alterations of the gland, which in their earlier stages may represent an hypertrophy and in their later progress assume the characteristics of an adenoma, are common in acromegaly and gigantism, and that these conditions represent the consequences of hyperactivity of the pars anterior; (*d*) that total removal of the pars anterior leads to death with a peculiar train of symptoms, while its partial ablation leads to obvious disturbance of metabolism, oftentimes accompanied by adiposity, and in the young by a persistence of infantilism, or, in adults by a loss of secondary sexual characteristics already acquired. Cushing further concludes in view of the apparent interrelation of many of the glands of internal secretion that it is quite probable that certain of the symptoms accompanying hypophyseal disease may be due to secondary changes in other glands, which follow upon the primary lesion of the hypophysis. Such a conjecture certainly complicates rather than simplifies the problems of the hypophysis. The possible complexities of its investigation are further hinted at by the fact noted by Cushing (in his oration June, 1909) that "it is impossible to remove, probably partially to remove, the hypophysis without producing marked alterations in all the other glands, thyroid, parathyroid, adrenal, testicle, ovaries, islands of Langerhans and thymus."

Although it is believed that deviation from the usual functioning of the normal hypophysis is quite as frequent as such departures from the normal in the case of the thyroid, the clinical manifestations of such irregularities have been but poorly understood. It is believed, however, that hyperpituitarism, due to an increased activity of the pars anterior, and hypopituitarism, due to a diminished activity of the same epithelial structure, ought now to be differentiated; the former indicated by condition of overgrowth, gigantism, when commencing in youth, and by acromegaly, when developing at a later period, the latter expressed chiefly by an excessive deposition of fat with persistence of infantile sexual characteristics when the process starts early, and a loss of adolescent features if appearing in adult life. Further, it is highly improbable that all of the functional abnormalities of the hypophysis are due either to a tumor of the gland itself or to pressure of a growth in its immediate vicinity.

The recent investigations of Wiggers[8] concerning the physiology of the pituitary lead him to conclude that while the anterior lobe develops a secretion essential to life and to normal metabolism and development, this substance has thus far resisted extraction by various solvents, and for this reason its chemistry and physiological properties are still unknown; while, on the other hand, the posterior lobe, not of vital importance, secretes a substance extractable bl water, glycerin, or salt solution, resisting boiling, but not demonstrated to be identical with the secretion of the anterior lobe or as representing its vital principle. He finds that while these extracts constrict peripheral vessels, thus raising blood-pressure, this constriction is not equally pronounced, for the renal vessels are dilated during its action; and he states that while these extracts are generally stated to slow and strengthen the heart, careful tracings show a depressing influence to be the most constant and characteristic one. The slowing and depression are largely attributable to a direct cardiac action. Only in its blood-pressure-raising action does pituitary extract resemble adrenalin. In addition to its cardiovascular effects, this extract increases the excretion of urine and inhibits the flow of pancreatic juice, but to just what substances these effects are due is not as yet known.

As to the interrelation of the hypophysis and other glands of internal secretion, excepting the thyroid, Parhon and Golstein[7] cite first the amenorrhea present in the cases of gigantic or acromegalic women, as also the impotence, accompanied often with a glabrous state of skin of face and body, in the case of men similarly afflicted, and they have also noted facts which argue for the possibility of the appearance of early puberty under the influence of a lesion of the pituitary body, although they do not lost sight of the opposite nature of early puberty and infantilism. While these relations do not seem to be defined as yet with entire exactness, still they regard it as established that there are close relations between the pituitary and the sexual organs.

Similarly, the relations of the hypophysis and the pancreas are strongly suggested by the frequent occurrence of diabetes and glycosuria in patients the subjects of acromegaly.

Though the persistence of the thymus in certain acromegalics raises the question of some relation between this gland and the hypophysis, this abnormal persistence may possibly be explained by the insufficiency of the sexual glands, so frequently met with in acromegaly and gigantism, for several facts tend to demonstrate the existence of an antagonism between the functions of the thymus and those of the sexual glands.

The liver is frequently enlarged in acromegaly. On the other hand, the urea is very often diminished, and more rarely, as in complicated cases of diabetes, glycosuric or other, it is increased. The kidneys, too, may be increased in volume, and albuminuria and polyuria are symptoms frequently met with. Hypertrophy of the spleen and of the lymphatic glands in acromegaly suggests the existence of a relation between these organs and the hypophysis. It is to be noted that these French authors assume apparently as proven the hypophyseal etiology of

acromegaly. They admit the as yet indefinite character of the suggested relations between the hypophysis and the other glands of internal secretion, simply claiming it as more than probable, but regarding as among future problems the determination of how far and in what manner each one of these glands influences the nervous system or is influenced by it, and to what extent the nervous system may intervene in the pathogeny of acromegaly. They also report a case of tumor of the hypophysis without acromegaly, and cite further the experiments of Cerletti as indicative of the errors into which we are likely to fall in jumping too readily to large conclusions from small premises. There is much room for possible error, since Cerletti, having experimented for some time and on a number of animals in giving injections of hypophyseal extract, observed as a seeming result a general retardation in bodily development, more especially of the skeleton, yet it seems to be fairly well established that hyperpituitarism leads to quite another result.

Quite similar, as to present uncertainty concerning interrelation of the glands of internal secretion, are the conclusions of Hoskins,[8] who considers these glands *scriatim*. The effect, he says, of experimental hyperpituitarism upon the thyroid has been so little studied that the evidence is on the whole quite inconclusive. The effect upon the thyroid of hypopituitism has been studied in cases of extirpation of the thyroid for relief of acromegaly, and also in hypophysectomies in young dogs, hypertrophy of the thyroid quite uniformly resulting. "Taken altogether," he says, "the evidence supports a theory that the two glands are synergic, and either can, to some extent, in case of need, function vicariously for the other."

A possible relation of the pituitary to the sexual organs is hinted at by the cessation of menstruation in the female and impotence in the male, which are recognized initial symptoms of acromegaly. Observations as to hyperpituitarism afford as yet but negative results, and though the inference is drawn, from the genital atrophy ensuing after partial ablation of the anterior lobe, that the pituitary normally stimulates the sex glands to activity, it is freely admitted that further evidence is necessary before a final conclusion is reached.

Nor is there any valid ground as yet upon which to base any conclusions as to the relationship of the pituitary and adrenals, while the possible connection between the pancreas and pituitary is veiled in just as great doubt, which also enshrouds any possible pituitary-parathyroid relationship. This delightful uncertainty seems so far to crown all efforts to definitely confirm suggested relations of the pituitary with the glands of internal secretion.

As to the functionating of the hypophysis, Delille[9] says: "In an hypophysis in full functioning will be found numerous chromophile cells, an abundant colloid substance, both intracellular and extracellular; in a gland exhausted or nearly so will be seen slightly granular cells, not large, homogeneous, poorly stained, some pale and scattered nuclei, some chromophilic cells without vacuoles or granules."

Delille refers to the fact that the histological examinations seem to prove that the anterior lobe is the active part of the hypophysis though he then quotes various explanations to reconcile this apparently paradoxical finding. He says the (French) physiologists have established in an "undeniable manner" that the extracts of the posterior lobe alone possess a cardiovascular action, though the histological finding would quite agree with the recent conclusions of Cushing. He remarks incidentally that the suprarenal still offers identical difficulties of study, being formed from two embryologically different points of origin.

As to the toxicity of the hypophyseal substance, large doses are more or less toxic and may lead to the death of the animal, but in ordinary physiological and therapeutic doses but small risks are run.

One of the French investigators, M. de Cyon, believes that the hypophysis produces several active substances. One, hypophysin, acts particularly on the force and number of beats of the heart, while another acts particularly upon the vasoconstrictors. Hypophysin, which is probably an organic combination of phosphorus, considerably increases the strength of the pulse and produces a notable slowing rarely preceded by a short acceleration. This slowing is accompanied by an increase of blood-pressure. The pulse produced by extracts of the hypophysis, especially by those which have been prepared at the boiling-point, has the character of reënforced contractions, lasting 5 to 15 minutes and tending to manifest themselves in series lasting 60 to 100 seconds and more, this series being neither prevented nor interrupted by stimulation or section of the pneumogastric.

In reviewing the trophic effects produced by the hypophyseal extracts, Delille observes that they stimulate metabolism, modifying the excretion of nitrogen, phosphorus, and calcium. The effects upon development and growth are as yet too little known to warrant positive conclusions. None of the animals, however, fed with these extracts exhibited any acromegalic changes.

Effects upon other organs following intraperitoneal injections of an extract of the whole gland have been carefully noted. Small doses keep the hypophysis in hyperfunctioning during a long time (6, 10, and even 14 months); medium and strong doses of the extract, on the other hand, more or less quickly exhausting it, proportionally to the amount administered. Under the influence of the extract of the whole gland the suprarenal hypertrophies and may double in size but histological examination reveals a hypofunctioning. While this treatment at first seems to stimulate the suprarenal secretion it leads soon to exhaustion, and hence the state just referred to of macroscopic enlargement and a lowering of function.

The thyroid is the seat of various cellular changes; there is a diminution in colloid substance and a probable hypothyroidism, probably due to vasoconstricting effect produced upon the thyroid by the hypophyseal injections. Neither testicles nor ovaries present appreciable change. The liver shows some congestion and a granulo-fatty degeneration in its periphery. Examination of the spleen is negative; the kidney frequently shows a mild congestion, and the glomeruli are almost always increased in volume. The lungs, too, are mildly congested, while the cardiovascular apparatus presents no significant alterations.

Changes in the hypophysis in various diseases have been noted, but the observations have been too few or the changes too insignificant or too inconstant to make them worthy of note.

Pal[10] concludes, from experiments as to the effect of the extract upon the arteries, that upon the carotid, mesenteric, and femoral arteries of cattle, the same effect is produced as follows the similar

use of adrenalin, but that the action upon the vessels of the heart and kidneys is diametrically opposed to that of adrenalin, as determined by numerous experiments.

Crowe and Cushing[11] in their experiments on the transplanting of the hypophysis confirmed Halsted's principle that, essential to the success of such experiments, a preliminary physiological deficit is necessary. They transplanted hypophyseal tissue into the rectus muscle, the marrow of the tibia, and into the cerebral cortex, killing their dogs in 16, 17, and 18 days, respectively. Cachexia hypophyseopriva, evidenced by arching of the back, subnormal temperature, and general dulness, had developed in all prior to death.

Cushing and Goetsch[12] confirm the suggestion made by Herring (1908) that the granular hyaline or colloid masses in the posterior lobe of the hypophysis represent products of secretory activity of the epithelial investment, which find their way through the tissue interstices of the pars nervosa and ultimately discharge between the ependymal cells into the cavity of the third ventricle. This suspicion was regarded as confirmed by finding in the cerebrospinal fluid a substance giving the same reactions as those produced by the extract of the posterior lobe itself.

Houghton and Merrill[13] after elaborate experiments confirmed a diuretic action following the intravenous injection of the active principle of the gland, but concluded that this was due rather to an increased blood-pressure than to a specific hormone. Wiggers[14] has investigated the influence of the pituitary extract as a pressure-raising drug, and finds it to possess advantages over adrenalin in that it causes a prolonged rise of pressure after a single intravenous injection, which makes it especially valuable to maintain a proper supply to the brain during hemorrhage. Further physiological research will undoubtedly bring us still more exact knowledge of the effect on life produced by this small structure.

As to its pathology, we shall find that the conclusions of Münzer[15] are quite in agreement with those reached by other investigators. He concludes that the pathologic changes of the hypophysis may be either atrophic, hypertrophic, or those incident to tumor; that mechanical disturbances and purely functional alterations must be differentiated, the former being especially likely to cause anomalies of vision; that acromegaly probably should not be regarded as dependent upon primary hypophyseal changes; that quite commonly tumor of the hypophysis is associated with "dystrophia adiposogenitalis," though this is of unknown cause. He notes, too, that coincidentally with disease of the hypophysis other glands are affected and myxoedema or diabetes may be present. He believes the hypophyseal tumors as operable and that the vascular glands form a combined system. Acromegaly he regards as a polyglandular affection.

Hecht[16] recites that particularly our knowledge of the neoplasms of the hypophysis has been enriched within the past few years by laboratory research, and neuro-surgical work as well as by expert radiography, and reports a case of tumor of mixed type, reviewing the histology, pathology and symptomatology. "Hypophyseal tumors," he says, "are on the whole slow growing and benign. In size they may vary from a millet-seed up to a pea, and occasionally attain to the size of a walnut, but sarcomata, having the dimension of a hen's egg or a male fist have been reported." They may excavate the sella turcica, penetrate through the base, and grow even into the nasal sinuses, and a case has been reported of extension into the orbit. Boyce and Beadles (in a paper referred to by Hecht) divided these tumors into: (1) Abscesses and granulomata; (2) hematomata; (3) tumors of the infundibulum and posterior lobe; (4) tumors of the membranes surrounding the hypophysis, as lipomata; (5) glandular neoplasmata; (6) teratomata; but of the 77 cases collated by them 56 were of glandular origin and 3 were teratomata.

Though there have been zealous contenders for the constant relation of hypophyseal enlargement to acromegaly, the absence of this disease condition in cases of undoubted tumor and enlargement has been eloquently pointed out as conclusively refuting the contention. Hecht concludes that "it is now quite well settled that a tumor may be present without causing acromegaly, and conversely acromegaly may exist without a tumor being found present."

The symptoms of tumor of the hypophysis may be so little localizing as in Hecht's case, which presented vomiting, headache, disturbed vision with choked discs, and paralysis of right external rectus, as to point merely to the presence of an intracranial growth, though alterations of the visual field, changes in the fundus, unilateral or bilateral blindness are among the symptoms most constantly met. Many cases, therefore, find their way into ophthalmological literature.

Ocular palsies are not unknown, nor are various pupillary alterations, even total iridoplegia. Headache, too, is a not infrequent symptom, and may be associated with pain in the orbit. The fifth nerve seems to be sometimes involved, and the pain may be most intractable. The headache may be diffuse, frontal or temporal, or involving both frontal and temporal regions. Increased tension doubtless accounts for much of the pain present. At least two investigators agree that sundry modifications of speech are rather characteristic of tumors of this region.

Lewis[17] speaks of acromegaly in connection with hypophyseal tumors as if he regarded the relation as much more constant than that found by other writers. The most common lesion in cases of acromegaly he regards as adenoma of the anterior lobe. Tumors arising from the pars intermedia he finds to be rare, having encountered but three cases, of which two gave rise to no symptoms.

Halstead [18] reported to the Chicago Neurological Society two cases operated on by him, one, a man of 39, presented six months after operation; the other, a woman, who died the day following operation. His first patient dated back two years the commencement of his trouble, the initial symptoms being a frontal headache of a pricking character. A year later his eyesight began to fail, and later his visual fields were narrowed, but diagnosis was not made until the occurrence of bitemporal hemianopia and bilateral optic atrophy.

Halstead's method of operation was as follows: Following a high tracheotomy and the insertion of a Trendelenburg cannula, the upper lip was raised and its mucous membrane incised, the soft tissues freed, and the nose drawn up with retractors, the septum being loosened with bone forceps. The turbinates, vomer, and perpendicular plate of the ethmoid were then removed, and approach was then had through the sphenoidal sinus, a blue-colored pulsating mass coming into view which was easily removed by the

curette. The cavity was packed, the septum sutured back in place, and the mucous membrane of the mouth replaced and sutured. A high temperature prior to removal of the packing was the only noteworthy occurrence in an uneventful recovery. His headache entirely disappeared and the vision of the right eye improved from 4-200 to 6-15 and the left from 5-200 to 6-22. The growth Halstead regarded as an epithelial tumor. This route for operation is, at least, commendable in this respect, that it leaves no scar.

Another route worked out by Kanavel[19] and called the infranasal is similarly commendable. This plan consisted in the deflection of the cartilaginous septum and the removal of a section of the vomer and the anterior wall of the sphenoid. Kanavel's patient so operated on lived five weeks after the operation. A preliminary diagnosis of sarcoma was made, the growth being of the size of a walnut. Less free from cosmetic defect is the route from the side, a temporo-sphenoidal avenue of approach, advocated by some.

No attempt has been made by the writer to collect the various hypophyseal tumors operated on and recorded in the literature. The foregoing cases are merely referred to as illustrative of the surgical treatment of these tumors which, according to Aldren Turner and Grainger Stewart,[20] fall in their general aspects into two types, the first of which is characterized by bilateral, temporal hemianopsia, with pallor of the inner half of the optic discs, without optic neuritis; by an absence of general symptoms, but accompanied with some mental impairment, such as loss of memory and sluggish mental action. Motor, sensory, and reflex symptoms are absent. In the second type, the general symptoms of intracranial growth are well marked—frontal headache, optic neuritis, and mental impairment being early in evidence. In this type acromegaly never develops and loss of vision is rapid.

Bitemporal hemianopsia may appear early, but quickly gives place to blindness, earlier on one side, hemianopsia being sometimes observed on one side and blindness on the other. The complete blindness which ensues is entirely disproportionate to any fundus changes which are to be found. Inattention, loss of memory, childish conduct, and increasing dementia characterize these cases.

Impairment of function of the third and sixth nerves on one or both sides is not seldom in evidence. Generalized epileptic attacks, muscular hypertonicity, slight spasticity of the limbs are sometimes seen. The deep reflexes are exaggerated and the superficial diminished. If there be lack of control of sphincters it is attributable to the mental failure.

A research investigator of pituitary problems from the chemical side (whose work is still unpublished) advises the writer that its chemistry is rather unsatisfactorily worked out and that comparatively little is now positively known. Cholin is found in the anterior portion, apparently associated with lecithin; its existence in the posterior portion is as yet a matter of doubt. To the presence of the cholin is probably due the fall in blood-pressure occasionally observed after the injection of the extract. Whether or not the blood-pressure raising agent contained in the pituitary extract is of proteid nature is one of the problems yet to be solved by the physiological chemist.

Nor is this by any means the only unsolved question connected with this organ, for degeneration of the pituitary is followed by premature senility, and this is in itself suggestive of possible farther light yet to be shed upon the relation of the hypophysis to the onset of old age; the fact of the blood-pressure raising agent contained in its extract hints at possible relations of the pituitary to arterio-sclerotic changes, and the questions are many and complex which are suggested by the interrelations of the ductless glands, a field of investigation already attracting many and earnest workers. Though Torri noticed a hyperplasia of the chromophile cells of the pituitary body and disappearance of the colloid from the follicles in the majority of cases of pneumonia, typhoid fever, tuberculosis, diphtheria, and other infectious diseases, less definite have been the conclusions of other investigators, and there is need of still further research before the relations of the ductless glands to these diseases and to the problems of life in general are fully understood, though better and better is their importance becoming appreciated, and among them the pituitary seems to play no inconspicuous part.

What, then, is the present status of the hypophysis? It may fairly be said that:

1. Its anatomy, gross and fine, has been thoroughly studied and is well understood.

2. Its physiology is less obscure than formerly, but will doubtless be still more clarified as the result of patient research work. The importance of the pars anterior and the fact that it is essential to life are better emphasized and clearly established. The great resistance of the pars anterior to ordinary extractives has made difficult its more thorough investigation.

3. While there seems a basis for the suspected relationship of the glands of internal secretion, this relationship is not as yet clearly defined, and perhaps the least definitely understood is the part played by the pituitary body.

4. Its physiological chemistry is still under investigation, presenting as yet but few facts definitely known and clearly settled.

The literature of the hypophysis has already attained truly dignified proportions, in spite of the seemingly little positive knowledge which we possess, and of this the writer has been able to invade but a small portion. He presumes to hope, however, that this meager review of the present status of the hypophysis may serve to make clearer the complexity of its problems and possibly awaken a deeper interest in its further study.

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270 Woodward Avenue.

STUTTERING, ITS ORIGIN AND TREATMENT.

By N. J. POOCK VAN BAGGEN.

THE HAGUE, HOLLAND.

During my visit to America I frequently had the opportunity to state the difference between the treatment of stutterers in America and that employed in Holland. For a long time it has been my intention to publish the present article, in which I shall endeavor to give a short review of the etiology and the pathology as they are known here and of the therapeutics which I have applied during seven years with the most satisfactory results. There is perhaps no disease which has been more subject to the most contradictory modes of treatment than stuttering.* The multiplicity of ways of treating the stutterer were chiefly the result of the want of knowledge of the origin of the disease. When we review the works of the different authors who have written about stuttering we see that stuttering and its origin have been studied most carefully, and with the sincerest effort to uncover the hidden source of this evil. One can readily understand how those earnest investigations could lead to the most opposite conclusions. Later on there comes greater similarity in the result. Instead of contradicting each other the facts corroborate each other and readily come to a clear understanding of the main cause of the disease. However, even with this knowledge of the origin, stuttering remains one of the speech defects which is most difficult to cure, and which requires from the specialist as well as from the stutterer himself the utmost endeavor, patience and energy. Absolute confidence in the physician and the strictest obedience are required from the patient. But too often the cure is halted, and even fails altogether, by the carelessness and neglect of the patient. The false ideas about stuttering and its origin still prevalent among the laity also prove to be a great hindrance to the cure.

*As the words stuttering and stammering are often confused by English authors the following explains the difference between them: The stutterer pronounces all consonants and combinations of consonants correctly; he can speak normally when his speech is not interrupted by incoordinate movements of the breathing, vocal, or articulating muscles. The stammerer cannot pronounce certain consonants and combinations of consonants, while the continuity of his speech is not broken.

Many are they who believe that stuttering is simply a bad habit, a negligence in speech. I have met with several parents who punished their children severely for stuttering, and often it is not a slight task to make them understand that their doings aggravate the evil considerably and sometimes even render it incurable. It occurs, also, frequently that the patient is given the advice not to take any notice of his impediment, for with time it will pass away by itself. Worse advice could hardly be given, because by delaying the cure not only will the disease itself have time to take deeper root, but also the derangements in the whole nervous system which show themselves only too soon with the stutterer will have full opportunity to develop and so complicate the case. Therefore, quick interference is needed. The younger the patient and the more recent the disease the greater is the prospect of cure. Only with the form of stuttering which often appears in children between two and five years of age the treatment by the specialist is unnecessary, this stuttering being generally due to the rudimentary speech of the child. Training of the articulating muscles is generally sufficient to overcome this difficulty.

To cure a disease it is necessary to look for the root of the evil. Our first concern is the question of etiology. With stuttering this is often difficult because of the variety in the symptoms which accompany the disease. There are, however, certain symptoms or principles by means of which we can invariably state the nature of the affliction. It is important not to be confused by the nervous symptoms which mostly accompany this speech impediment, and which sometimes assume such proportions as to entirely hide the impediment itself.

Observing the stutterer while he is speaking, one will note that the harmonious continuity of speech is interrupted by incoordinate movements, or what is the same, spasmodic contractions of the articulating, vocal, or breathing muscles. Spasmodic contraction of the muscles is caused by abnormal action of the motor nerve fibers. Where there exists a condition of irritability of a motor nerve fiber the voluntary contraction of the muscles is interrupted by movements independent of the will. Those involuntary movements are known as spasms, and thus one can conclude that the origin of stuttering is a spasm due to a morbid condition of irritability of the motor nerve fibers of speech. The motor nerve fibers in action when speech is produced are motor fibers of the nervous trigeminus, the nervus facialis, the nervus hypoglossus, the nervus vagus and of the nerves connected with the respiratory muscles. It is one or more of those nerves which are affected in stuttering. Mostly the nervus hypoglossus and the nervus facialis are affected. According to the nerve which is affected the cramp will affect the articulating, the vocal, or the breathing muscles. When the articulating muscles suffer from the spasmodic contraction the patient is hindered in pronouncing the consonants. Sometimes the lips cannot be used freely; or the cramp is felt at the point or at the back of the tongue. In the first case, the patient will tell you that he has great difficulty in pronouncing *p, b, m, f, v,* or *w;* while in the second case, *l, t, d, n,* or *r;* and in the last case the *k, g, j, s,* or *z* is the cause of the embarrassment.

The spasm appears generally more frequently when forming the breath consonants than when pronouncing the voiced consonants. Also stop con-

sonants prove to be more dangerous to the patient than the continuents. The spasm of the vocal muscles, whereby the pronunciation of the vowels and of the *h* is impeded, occurs less frequently. Of course, the regular breathing is disturbed when there is spasm of the articulating or of the vocal muscles, but this irregularity in breathing is not caused by cramp of the thoracic muscles. It is rarely that we meet with cases where the motive power of speech, the breath itself, is stemmed by a spasmodic contraction of the muscles of the thorax.

Usually the patient has the greatest difficulty in beginning to speak; the initial letter of the initial word of the phrase is most subject to the cramp. When once this obstacle is surmounted the patient speaks fluently and pronounces all the consonants and vowels, even those which he imagines that he cannot form, correctly, and without embarrassment. Momentarily the patient is free from cramp until unexpectedly it reappears and causes him to stutter again.

The spasms are of a clonic or of a tonic nature. The clonic spasm is characterized by a rapid succession of involuntary movements of the muscles. When the stutterer who suffers from it makes an effort to speak the consonant or vowel is uttered over and over again before it is joined to the following vowel or consonant. The tonic spasm shows but one contraction of the muscles which, however, lasts some moments. We see the articulating parts of the mouth of the stutterer affected by this kind of cramp, almost locked together, and the patient is not able to produce a sound before the muscles are relaxed.

The adherent symptoms which accompany stuttering consist in convulsive movements of the face, the head, the limbs or of the whole body. We see the stutterer, in his effort to speak, rolling his eyes, contorting his features. Some jump up and down, while others pound or slap themselves. Sometimes these movements, as already said, take such proportions as to hide entirely the speech impediment. I know of one case where the stutterer was considered a madman, and treated like it. When this patient made an effort to answer a question addressed to him he rolled his eyes and with clinched fists he approached his interlocutor with the most threatening movements of arms and legs; his foam-covered lips were locked tightly together, and large beads of perspiration moistened his brow. When at last the convulsion relaxed the utterly exhausted patient spoke a few words in a scarcely audible voice, but fluently; however, when he tried to continue to speak the same convulsions overtook him. The doctor of the asylum where he was brought for his apparent insanity discovered the real cause of his trouble. The treatment of his speech impediment brought on the desired result.

It has often been stated that the stutterer executes these movements to aid him in his efforts to speak, thus that they are voluntary movements. Later investigations bring forth a contrary view of the cause of those adherent symptoms and we now consider them as involuntary spasmodic movements of which the cause is closely allied to the origin of stuttering; in other words, to the morbid condition of irritability of the motor nerve fibers of speech. The motor nerve fibers of speech are all in close connection with other motor nerve fibers. When the moving impulses, born in the motor center of speech, are obstructed at the afflicted part of the fiber, these impulses strive for an outlet and pass over to other fibers, causing spasmodic contractions or involuntary movements of the muscles associated with the fibers.

Considering the general constitutional disposition and health of the stutterers we find that most of them are highly sensitive and of feeble nervous condition. An excitable and vivacious temperament is a fertile soil for the evil. I cannot agree with those who state that stuttering generally is associated with a scrofulous constitution. Save his peculiar nervous temperament the average stutterer, so far as I have observed, does not suffer from an impaired constitution. Many believe that stuttering is an hereditary evil. This statement is true only to a certain degree. It is not the stuttering itself that is hereditary, but rather the particular condition of the temperament which predisposes the patient to the evil. In unfavorable circumstances this predisposition will develop in stuttering. As unfavorable circumstances may be considered: poverty, worry, care, want of discipline, and spoiling of children, and last, but not least, the intercourse with stutterers. The contact with stutterers and imitating them is only too dangerous for the predisposed temperament.

After what has been said about the origin of stuttering it is evident that the first thing to do when treating a stutterer is to give him a rest. So the stutterer is forbidden to speak. Some do not stutter when they speak in a whisper. These are allowed to whisper, but not more than is strictly necessary. At the same time exercises are given for the breathing, vocal, and articulating muscles. These exercises not only aim at the development of the muscles but also tend to favorably influence the nerve fibers associated to the muscle. Therefore the exercises must be carefully chosen in such a manner as to produce a quiet, regular movement of the muscles by means of which all stuttering is excluded. After some days the patient is allowed to speak, in the beginning only in the presence of the teacher and only for a few moments. At a later period when the patient does not stutter the discourses are prolonged. These early conversations, during which stuttering must be carefully avoided, are for the specialist one of the most difficult parts of the cure. They require the exercise of the greatest tact in leading the conversation in such a manner as to prevent the patient from stuttering. When the latter has spoken fluently for some days with his teacher without any stuttering he is allowed to converse a few moments with his family and friends. When we have succeeded so far we generally notice a rapid progress. The patient regains his self-confidence and the constant apprehension associated with his speech disappears; this has a favorable influence on the entire nervous system. When the cure is completed the patient must remain under the control of the specialist for some time, while also continuing the exercises with increasingly longer intervals. If there are adherent symptoms the exercises for the breathing, vocal, and articulating muscles must be combined with slow, regular movements of the limbs. Those voluntary movements suppress the involuntary convulsions.

When treating a stutterer it is necessary to take into consideration not only the manifest symptoms of the disease but also the temperament of the patient. The timid patient who suffers deeply from the humiliation entailed by his infirmity must be dealt with in a manner different from that with which one deals with the heedless stutterer who

feels only the irksomeness of his impediment. The spoiled, undisciplined child requires firmer management, while the bashful little stutterer must be approached with kindness. The success of the treatment depends much on a good understanding between the patient and the specialist.

The above is only a general view of the treatment that I have employed since eight years with the best results. I hope to be able to refer again to this subject and to give a more ample explanation of the method of cure and of the exercises.

THE VIRTUES OF SALT SOLUTION;

WITH SOME EXPERIENCES WHEN COMBINED WITH ADRENALIN AS AN INTRAVENOUS INFUSION.

By JEROME M. LYNCH, M.D.,

NEW YORK,

CLINICAL PROFESSOR, NEW YORK POLYCLINIC.

The longer I live, and the more I know about salt solution, the more convinced I am of its unlimited virtues. At the same time I remember some near-fatalities from its improper use, or I should say its improper application in too concentrated a solution.

Abderhalden says: "Inorganic salts are usually present in different foods to an extent entirely sufficient for all our demands. An exception to his general rule is the fact that man and certain animals require an additional supply of sodium chloride. Sodium chloride is the only inorganic substance which it is necessary to add to our diet. This is rather remarkable, because both animal and vegetable foods already contain considerable sodium and chloride. The explanation of this exceptional requirement in the case of common salt we owe to C. v. Bunge. Bunge pointed out in the first place that among animals only the true herbivora, and the carnivora, crave salt. The fact is familiar to hunters. They know that wild herbivora — ruminants and solidungulates — frequent the salt licks. Now, the amount of sodium chloride which these animals obtain by their food is about the same per unit of the animal's weight as that obtained by the carnivora in its diet. It is hardly to be said, therefore, that there is a lack of sodium chloride unless we assume that this salt plays a particular part in the organism of the herbivora, an assumption which, in the light of recent investigation concerning the action of the individual ions, no longer seems so improbable. Bunge has shown, however, that vegetable food differs from animal food by the amount of potash which the former contains. The herbivora obtain three or four times as much potassium salt in the food as the carnivora do. All vegetables, especially potatoes, clover, and meadow hay, contain large amounts of potash. We know of but very few land plants which, like the varieties of Chenopodium and Atriplex, contain more sodium chloride than potassium salt. It is easy to account for the high potash content of plants by the distribution of the elements sodium and potassium on the earth's surface. By the weathering of silicate rocks sodium carbonate is formed, which dissolves readily in rain water and trickles down into the earth. The potassium, on the other hand, remains with the other bases combined with silica and aluminum as an insoluble double salt. The latter remains near the earth's surface, while the sodium is flushed out by springs, brooks, and rivers and carried on to the ocean. This accounts for the fact that potassium salts predominate on the surface of the earth, while the ocean is rich in sodium salts, especially the chloride.

"Now why should an increased amount of potassium salts create a demand for a greater supply of sodium chloride? Bunge suggests the following ingenious explanation: If a potassium salt, for example, the carbonate, comes in contact with sodium chloride, a partial decomposition takes place, a little potassium chloride and sodium carbonate being formed. Now, as regards the inorganic salts of the blood-serum, sodium chloride ranks foremost. It is found there to a considerable extent, and, as far as we know, the amount is kept fairly constant. On bringing the serum in contact with the abundance of absorbed potassium salts obtained from the vegetable nourishment, this double decomposition between the sodium salt in the blood and the absorbed potassium salt will take place to some extent. In this way potassium chloride is formed, and a part of the sodium of the blood combines with the acid which was previously united with the potassium. By this process the composition of the blood is changed. The serum now contains a substance which did not occur in it previously, or at any rate not to the same extent as now; namely, the newly formed sodium salt. It is the duty of the kidneys, as we shall see later, to keep guard over the serum and to regulate its chemical composition. They eliminate every constituent which, under normal conditions, is foreign to it, and take away any excess of compounds which belong there. In the above case the kidneys eliminate the newly formed sodium salt together with the potassium salt. This process, therefore, results in the serum being deprived of sodium chloride.

"Bunge succeeded in testing this theory experimentally. He, himself, took 18 grams of potassa as phosphate and citrate in three doses during the course of the day, and showed that as a result his body lost 6 grams of sodium chloride. This does not constitute an abnormal amount of potassium salts. A man fed largely on potatoes will easily take 40 grams of potassa into his system during the day. The loss of sodium chloride is by no means restricted to the blood. There is a constant exchange of material between it and the cells. After what we have seen with regard to the effect of the ions, we can easily understand the possibility that a diminution in the amount of sodium contained in the cells, which is in no way replacable by potassium ions, may lead to serious disturbances. The organism, at all events, will attempt as soon as possible to restore the disturbed equilibrium.

"Bunge, to support his views, cited numerous facts. He showed, for example, that in France the country folk consume three times as much salt per capita as those who dwell in cities. Now it is a fact that in the country much larger quantities of vegetables are eaten than in the city, where the diet consists largely of meat. A further support of the assumption that the vegetables rich in potassium were the cause of the increased consumption of salt was gained by the study of people who live entirely upon meat, *e.g.* certain races of hunters, fishermen, and nomads. To gain this knowledge, Bunge read through a large number of articles on travels, and also placed himself in correspondence with travelers. In this way he established the fact that at all times and in all countries where the people subsist solely upon animal nourishment, either they have no knowledge of salts or do not care for it, whereas, in countries in which the inhabitants sub-

sist mainly on vegetables there is always such an unmistakable craving for salt that it has become considered as one of the necessaries of life. This is the case in both the north and south polar regions. Again, in countries in which the inhabitants live on meat and rice there is no craving for salt. Rice contains but one-sixth as much potash as wheat, rye, barley, or Indian corn, one-twentieth as much as the legumes, and from one-twentieth to one-thirtieth as much as potatoes.

"Now what happens in the case of a people subsisting chiefly on vegetables, and yet living where there is no salt supply? Such people prepare a salt of their own. Thus, Bunge was able to procure a salt obtained by ignition of a plant which was used by the negroes in the southern part of Kartum, Africa, as a seasoning for their vegetable food. The analysis of this salt showed it to contain 19.27 per cent. Na_2O and 4.92 per cent. K_2O, or nearly six equivalents of soda to one of potash. It is interesting here to find that the natives have selected a plant, salsola, or salt-wort, which is especially characterized by its high soda content. The natural instinct, however, does not always assert itself so well in this direction, for there are other races which use for salt the ash of a plant rich in potash. Lapicque examined such a salt. The inhabitants of the Angoni district in British Central Africa use a substance prepared by burning goat manure and wood. Analysis showed that it contained 21.98 per cent. KCl and 0.47 per cent. NaCl. It is interesting to learn, however, that after Lapicque had shown the natives how to obtain salt they gave up the preparation of their own native condiment. Salt, for the inhabitants of Angoni, is an extremely expensive article of commerce. The natives toil for salt upon the plantations."

We quote this to show how absolutely necessary salt is to the individual. Is it surprising, therefore, that the value of this mineral when combined with water just as it is in the cell should have a benign influence on pathological conditions? We are firmly convinced that the limit of the influence for good of salt solution has not yet been reached.

Following the discovery by Pasteur and Lister, we acquired the habit of using strong antiseptic solutions, believing, as we did, that a solution which theoretically in the test tube inhibited the growth of bacteria, or killed the bacteria, must of necessity be the ideal solution in suppurative conditions. As time went by and our experience widened and brought with it a more intimate knowledge of the capabilities of the cell to protect the body, we gradually became weaned from this idea and now know that if a solution is strong enough to kill the bacteria it is strong enough to destroy the tissues. The word of the day being simplicity of technique in surgery, supporting nature, wholesome food and fresh air, it would seem that we had arrived at the age of greatest wisdom.

One must conclude that a salt so intimately associated with life and necessary to its existence, has many virtues not possessed by alien drugs.

"Henkel discusses some recent communications on the effect of saline infusion as liable to be injurious, but states that his experience has been the reverse. It seems evident that the animals are affected differently from human beings — all his experiences speak in favor of the harmlessness and possible benefit from salt incorporated in various ways, even when the kidneys are decidedly pathological. Six pregnant women near term were given 10 gm. of salt daily for a month. The urine was examined daily for two weeks and then every third day. In a second group, four pregnant women were given an intravenous injection of 5 c.c. of a 10 per cent. solution, and four others a subcutaneous infusion every third day. In none of the women was there any evidence of injury and albumin never appeared in the urine; except for increased output of urine there did not seem to be any symptom from saline infusion. Another woman with parenchymatous nephritis, but no edema, was given an intravenous injection of 5 gm. of a 50 per cent. solution. The Esbach findings previously had been 4 per cent., but notwithstanding the saline infusion the albuminuria constantly declined and the urine was normal in eight days. In another case of nephritis, with edema during the puerperium, the 4 per 1,000 albuminuria had subsided by the nineteenth day to mere traces. The woman was then given two intravenous injections of the same amount and concentration as the other patient, but all within twenty-four hours, and no harm resulted. The edema did not return and the urine remained normal. In a still more severe case of nephritis with 8 per 1,000 albumin and changes in the retina, subcutaneous infusion of 1 liter of 1.8 per cent. salt solution increased the output of urine, but did not check the progressive subsidence of the albuminuria, which sank to 0.25 per 1,000 by the second day of the puerperium, then 15 gm. of a 10 per cent. salt solution were given at one time. The albuminuria did not increase and the diuresis remained good. In another case a woman at the ninth month of pregnancy, free from albuminuria at any time, and the specific gravity of the urine increased only from 1,017 to 1,020. Weichel has recently reported that a 10 per cent. salt solution kills the bacteria of meat poisoning, and Henkel thinks that this confirms the general impression in regard to the direct disinfectant that can kill bacteria in tissues without injuring the tissues. Many have already witnessed great benefit from saline infusion and the experiences here related supply, he says, the scientific basis for the clinical facts observed. Notwithstanding, therefore, the unfavorable action of salt in experiments on animals, he thinks that there is no reason to refrain from saline infusion in the clinic, not even when there are edema, a heart defect, or nephritis. He has made much use of salt in eclampsia, and has never witnessed harm, but rather benefit."

Henckel's conclusions as to the subject of more concentrated solutions than nine-tenths of 1 per cent. do not seem to be in keeping with physiological facts. It may be that the use of small quantities of concentrated solution may have the virtue of destroying bacteria without causing laking of the blood, but the only experience the writer has had with a concentrated solution terminated almost fatally. It was a case in which an appendicostomy had been done for amebic dysentery. By some mistake the nurse injected into the bowel a concentrated stock solution of salt and, when the writer saw the patient, he was in a state of collapse. The tongue was swollen, and he was exceedingly thirsty; it took several hours to resuscitate him.

Cases have been reported by other men. Hare mentions several cases in which death resulted from the use of solutions more concentrated than the normal, so that it would seem to us care should be exercised before departing from the physiological salt solution. We have had excellent results with the normal salt solutions in amebic dysentery and

in severe infections of the rectum. Five cases of amebic dysentery have been cured by the exclusive use of physiological salt solution and it was this fact that tempted the writer to bring the matter before the profession.

The next case in which this solution has been used is a most interesting one. Mrs. L. R., 39 years, married and the mother of several children. She was perfectly well up to four years ago, when she had an attack of diarrhea, which was ushered in by bearing-down pain in the rectum with an intense desire to move the bowels — so much so that she would sit in the toilet for long periods, straining, without getting much relief. At times the desire to move the bowels became so imperative that she would not have time to reach the toilet and would soil her clothes. At first she had fairly good movements, mixed with blood and mucus. Later, she passed large quantities of blood mixed with mucus. This condition lasted for about a month and gradually abated. Ever since that time her bowels have been irregular. At times she would be comfortable, but from time to time would suffer acute exacerbations. She went along in this way for two years before seeking medical aid, and was then treated by different physicians, who did not examine her but used drugs with indifferent success.

One year ago she was examined at one of the hospitals in New York and was told she had tumors and an operation was advised and consented to. In November, 1909, several tumors were removed by cautery, but she suffered such intense pain after the operation that she did not return for further treatment, considering herself benefited by the operation, but dreading repetition of the pain. In February, 1910, she drifted into my clinic at St. Bartholomew's. She had then lost considerable weight, was very anemic and poorly nourished. The rectum and lower sigmoid were found studded with polypoid sessile growths varying in size from that of grape seed to that of a cherry. The examination also disclosed numerous ulcers of the mucous membrane, their size varying from that of a pin-head to one-half an inch in diameter. The remainder of the membrane was granular, bled easily, and was covered with mucus, blood, and pus. The upper portion of the sigmoid was fairly healthy. The treatment advised consisted of an enema of cold physiological salt solution morning and evening, with an occasional additional injection of 25 per cent. solution of aqueous fluid extract of krameria. She was kept under observation, and still visits the clinic twice each week, the improvement being marked after the first treatment, which occasioned the patient so little inconvenience that she has gladly followed the prescribed course and is regular in reporting. The improvement has been steady. We should mention here that the polypi were removed at several sittings by means of a wire snare. The very small ones were not touched but gradually disappeared. Following the disappearance of all the polypi, the mucous membrane remained in an ulcerative, sloughy condition, the rectum and sigmoid were covered with mucus and pus, and in fact there was very little healthy mucous membrane, but all the polypi had disappeared.

It seemed to us under the circumstances there was nothing to do but a colostomy in order to relieve the strain, after which it was inevitable that this inflammatory condition should go on to a formation of a tubular stricture. Examination of a section of the mucous membrane shows the following condition: Microscopic sections show a small piece of the glandular layer of the mucous membrane arranged about a central stock of dense adult fibrous tissue which is infiltrated to a marked degree by inflammatory, small round cells, fibroblasts, and exudate of leucocytes, among which are a few eosinophiles. The fibrous interstitial tissue between the glands shows in a few places a considerable increase and is infiltrated in these areas by small round cells and leucocytes, one area showing a large accumulation of lymphoid cells, with a tendency to develop centrally fibrous tissue fibrils. The glands appear normal and show no tendency to proliferation.

Diagnosis: Chronic interstitial and acute exudative colitis. December 6, 1910. The patient had now been under our observation one year. About three months ago we put her on injections of physiological salt solution exclusively, about a quart twice daily. She came to the clinic once a week, and we kept her under observation. She was so much improved by this treatment that we decided to abandon all other lines until we had given this adequate trial. The patient was examined January 16, 1911, by the writer, by Dr. Humphries, and also by two of our colleagues, who have been visiting New York, namely Drs. Cleland and Walter McKeown. The inflammatory condition had entirely disappeared, the membranes had a healthy appearance, and the ulcerated condition was healed. We believe this entirely due to the systematic and continuous use of the salt solution.

We have also had very excellent results following the use of Wright's solution in suppurated conditions. Wright's solution is sodium citrate 1 per cent., sodium chloride 4 per cent.

We shall not speak of the many advantages possessed by this solution, as the entire profession are aware by now of the wonderful results obtained in peritonitis by the use of Murphy's method, or proctoclysis. Nor will we dwell at length on the wonderful results obtained by infusion of physiological salt solution, as these miracles are quite well known; but we must say a few words about the administration of this solution when mixed with adrenalin. Some fatalities have recently been reported by the use of adrenalin saline. The cases reported (so far two or three) have been supposed to have been due to some deterioration of the adrenalin.

Haeberlein, in the *Zentralbatt für Chirugie,* November, 1910, reports a case of peritonitis in which intravenous infusion of 100 to 500 c.c. of salt solution, to which eight drops of adrenalin had been added, gave him relief, but was followed an hour later by severe chill and increasing pulse rate and temperature, with death in less than three hours. He explains this as the result of washing out from the lymphatics the accumulated residual toxins. This sudden flooding of the circulating blood with toxins and their absorption readily explained the symptoms in sepsis under the vasoconstrictive action of the adrenalin.

The writer will add two cases to those already reported.

The first case was a case of general sepsis following a colon fistulous infection. The patient was in an almost moribund condition, and it was decided after vaccines and serum had been used to try an in-

travenous infusion of normal salt solution, to which twenty minims of adrenalin had been added. About a minute after the solution had been administered the patient became restless, exceedingly nervous, and frightened. This was followed by a severe chill which lasted five minutes, and in which the patient shook the bed. There was great improvement in the patient's condition following this, apparently, and the writer ascribed it to a possible fresh focus of infection, but did not suspect the adrenalin at the time. It became necessary, a little later, owing to the condition of the patient, to administer another intravenous infusion. The same symptoms followed, and the patient died about four hours afterwards.

The second case was a patient, Mrs. N., who had had a major operation. The first twenty-four hours following the operation she passed only two ounces of urine. All methods to stimulate the kidneys failed. It was decided, therefore, to give an intravenous infusion. Ten minims of adrenalin were added to the solution. About fifteen minutes later the patient had a violent chill, became excited, and died one hour afterwards. Both of these patients would inevitably have died within a short time, one owing to septic condition, and the other to the shutting down of the kidneys; but we are inclined to think that there is no question but that the adrenalin saline had something to do with hastening the end. Whether the condition was due to washing out from the lymphatics the residual toxins or to some other condition we cannot say, but we bring up these cases that in future great care may be exercised with this preparation under the circumstances we have mentioned.

58 West Fifty-eighth Street.

WHAT CONSTITUTES HYPERCHLORHYDRIA?*

By CHARLES SUMNER FISCHER, Ph.D., M.D.

NEW YORK.

The frequency with which excessive native acidity is encountered in the ordinary dyspepsia of everyday life has rendered the term hyperchlorhydria almost a synonym for chronic dyspepsia. To question this frequency would seem heretical according to accepted standards. For the close observer, however, there is both clinical and physiological justification for some doubt. In a previous article I have attempted to show that the hypersecretion of hydrochloric acid by the stomach is an entirely physiological process inherent in the organ as a result of biological development, hereditary inducement, and established habit. A normal stomach must respond to a physicochemical or psychoneurotic insult by an overproduction of its customary secretion in a defensive sense if in no other. This attitude in itself would account for the great frequency of this condition, for every beginning dyspepsia must be hyperacid unless there exist constitutional reasons to the contrary. Hence, the average gastric analysis as ordinarily practised will reveal the condition hyperchlorhydria in a majority of all chronic stomach diseases and the term has become a byword in gastrology.

It is a question whether the standards heretofore accepted as indicating this condition will not have to be modified. Viewed from the biological standpoint, the apparently excessive secretion of hydrochloric acid cannot always be regarded as a pathological process in the absolute sense. No physiological activity, called into being for natural reasons, can be so regarded. The ulterior consequences may be unfortunate, but the motive remains normal. The ultimate effects are purely individual, and depend on physiological and psychological adaptivity. Clinical experience teaches that many people constantly exhibit and support a high degree of natural gastric acidity without symptoms. It is also a matter of common observation that the disappearance of existing disagreeable symptoms does not always depend upon fluctuation of the acid content of the stomach. The examination of many cases, months and years after relief through medical or surgical measures, will reveal the percentage composition of the gastric secretion unchanged. To such an extent is this true that the possibility of influencing an established and habitual gastric secretion, except in distinctly anatomical abnormalities, becomes entirely problematical, at least, within the usual observatory periods of time. Symptoms may be relieved, but inherent vagaries remain, and the whole object of treatment in many of these cases would seem to be to adapt the organism, mental and physical, to local conditions as they exist.

To those to whom the mellowing effect of clinical experience, as opposed to more accurate laboratory data, does not appeal, who demand more convincing scientific evidence, it can be suggested that the most recent physiological research seems to be supplying the same. From this it would appear that the normal percentage of hydrochloric acid in the average stomach is higher than formerly supposed. With improved methods of experimentation it would appear that what has heretofore been accepted clinically as the hyperchlorhydric state represents, in reality, a normal secretion. We have been in the habit, in the past, of classifying as hyperchlorhydria all cases in which the free natural acid content of the filtered chyme reached two and one-half to three per thousand. With this quantity of free acid the usual symptoms should appear. The physiologists now tell us that the normal gastric juice always contains hydrochloric acid to the extent of five per thousand. According to the old conception, any stomach exhibiting this new value would find itself in the hyperchlorhydric state and should respond antagonistically to its normal secretion. On this account certain authorities would disclaim the existence of hyperchlorhydria as such. On the other hand, there are those who contend that a food-containing stomach should never exhibit the physiological limit, chemically demonstrable as free acid, of hydrochloric acid. Granted that the stomach always secretes acid in excess of requirement, 50 c.c. of a trial breakfast should call forth a secretion to assure this excess; that is, a certain volume of secretion with a certain percentage of hydrochloric acid, which, according to the latest developments, is five per thousand. In a careful adjustment of volume to volume of secretion and test meal the excess of acid should always be a constant factor. Fifty c.c. of a test meal of given neutralizing capacity and 50 c.c. of secretion of five per thousand hydrocloric acid content should give the necessary moderate excess of acid. If, however, the neutralizing capacity of the test meal be reduced for any reason, the excess of acid must increase proportionately, so that with a hydrochloric acid content of the normal secretion of five per thousand a hyperchlorhydria may be diagnosed

*From a paper read before the Associated Physicians of Montclair, N. J., and vicinity, December 19, 1910.

when, in reality, it does not exist. Indeed, any stomach secreting a juice even in slight excess of its neutralization requirement should exhibit the condition hyperchlorhydria. This would explain the existence of many cases of so-called hyperchlorhydria without symptoms. These individuals are merely supporting a normal gastric juice. This would further limit the diagnosis of hyperchlorhydria to those cases where the volume of secretion is small but the percentage of acid is very high. This number is exceedingly limited, for volume and acid percentage as a rule go hand in hand. Hyperchlorhydria gastric contents are usually very fluid and achylias exhibit the opposite characteristic. A decided differential secretion of acid, ferment and fluid in the digestive secretions has yet to be demonstrated.

The average acidity of a given stomach depends broadly upon four factors. These are the quality of the contained food, its quantity, the rapidity of discharge into the duodenum, and the secreting capability of the organ. The first two are variable quantities. The last two are more or less fixed for each individual. The quality of the ingesta as a factor in digestion is more important experimentally than clinically. The results obtained for the acid secretion by differential food stimulation upon esophagotomized dogs cannot be applied directly or practically to man. In the latter many uncontrollable influences would tend to vitiate such results. The tremendous importance of the psychological element in man's digestion cannot be too fully realized. All the various attempts to permanently influence the gastric secretion in the human subject in the past by persistent application of dietetic methods, based upon the proteid, carbohydrate, and fat content of the food, have been failures. The uninterrupted administration of any one of these elements over a period of time will usually produce the opposite to the desired effect. The stimulating property of the proteids to the gastric secretion, when they are given exclusively, diminishes in power in a certain relation to the time of administration. Clinically we know that many chronic dyspeptics of a certain type do badly on a monotonous diet. This is due to the fact that the majority of the ordinary cases are the result of conditions and environment rather than specific indiscretions. Abuse of the stomach is an overrated conception. Under normal general conditions the average stomach is able to withstand the ordinary unavoidable assaults of daily life. The specific, monotonous, scientifically considered dietary of the books usually does more harm than good. It is folly to expect benefit from a régime which makes life more miserable than it was before. The result may be physiological and phychological rebellion.

Constitutionally each living organism requires so much food of proper chemical constituency for its maintenance. Physiologically there should exist a certain relationship as to time and quantity between the gastric juice and the ingested food, in which case the acidity of the stomach should be more or less of a fixed quantity for a given period of digestion. While the number of required calories is established by natural laws, the method and time of their administration are established by individual habits and the secretion of gastric juice is regulated by the latter. If the habits of the individual are such that the daily food requirement is administered at regular intervals in adjusted quantities of proper chemical proportion, the excess of acid found upon examination will be normal. If, however, the exigencies of daily life necessitate an unequal and irregular distribution in the sense of insufficient or excessive quantity at certain periods of the day, there may be established a habit of secretion adapted to the one or the other. Either the quantity of secretion is sufficient for the smaller quantity of food and insufficient for the larger, or *vice versa*. Judging from the natural tendency of the normal stomach to oversecrete, it is fair to assume the organ will adopt a quantitative habit of secretion adapted to the greatest timely requirements. In this manner the possibility for hypersecretion after small quantities of food always exists, and to these latter the ordinary test meals belong. On this account we often find the hyperchlorhydric state after such tests when, in reality, it does not exist. They have simply called forth the habitual secretion of the individual. This does not indicate that the quantity secreted is not adapted to requirements. It would rather indicate that the tests have failed to meet such requirements and have led to fictitious valuations.

The rate of discharge of food into the intestine has an important bearing upon gastric acidity. Many cases of secretory disturbance are, in reality, affections of motility. Physiologically, the empty stomach should contain no acid or very little acid mucus. In an individual of well regulated habits this normal condition prevails. Clinically, however, the great majority represent two classes—namely, those whose stomachs are never really empty and those whose stomachs are empty most of the day, that is, up to the principal evening meal. The latter class is a numerous one, due in part to compulsory habits of diet, in part to causes over which there is no control. It is an incontestable fact that the remote constitutional influences represented in the lack of inhibitory control, which are the foundation for many cases of hyperchlorhydria, are associated with hypermotility. The motor functions of the stomach are affected similarly to the secretory functions. This association is the best possible combination for hypersecretion and is found in many cases of dyspepsia during the early stages. Examination at this time will often reveal hyperacidity, at least, a very high degree of acidity, which according to accepted standards passes for hyperchlorhydria.

In judging the acidity of a given stomach it is necessary to determine, if possible, what constitutes abnormality for that particular individual. It is reasonable to suppose that each individual possesses an acidity of his own to a certain degree. What is normal for one will not be so for another. We have been in the habit of placing a certain range limit upon the free hydrochloric acid in the stomach. Anything beyond these limits is considered abnormal. According to the newer physiology, these limits will have to be considerably widened. Aside from this, however, there can be no doubt that each individual possesses a characteristic secretion of his own, called into existence by habit, environment, and constitutional requirement. It is the deviation from such acquired acidity, suitable for the purposes of digestion of the individual, which constitutes abnormality. Many individuals, apparently normal, at least comfortable, continuously exhibit an achylic state. Given ten cases of so-called hyperchlorhydria and the symptoms will vary considerably. A certain percentage will give no symptoms whatever. This cannot be demonstrated in a clinic. Here only individuals with symptoms present them-

selves. It can only be demonstrated by examining apparently normal cases.

These differences in susceptibility have heretofore been explained by variation in local irritability. To a certain extent this is true. It is not a universal explanation, however. It simply proves that a certain degree of gastric acidity is excessive for that particular individual for the time being. His hyperchlorhydria may have existed all along. The individual receptivity changes, not the acidity. The latter had been fixed long before by predisposition, determining habits, and general adaptivity. If high, as a result of these influences, the other digestive secretions have been so regulated as to insure a harmonious action of the whole. Hence, apparent hyperchlorhydria may not only be frequent, but its diagnosis becomes entirely an individual matter. The simple determination of the composition of the gastric contents by the usual tests does not constitute a diagnosis. Such examinations reveal a certain degree of acidity, the actual physiological or pathological significance of which must be determined by an intelligent interpretation of all the personal factors in a given case.

The diagnosis of acid conditions in the stomach by the usual methods of tube extraction is based upon the supposition that the material obtained for analysis represents part of a homogeneous mass, any part of which would give a percentage composition characteristic of the entire contents. It is assumed that the invading food is rapidly reduced to a homogeneous state by active muscular action, so that it is immaterial from which part of the stomach the material for examination is taken. The truth of this depends somewhat upon the consistency of the food test. If the same is in fairly liquid form, it is probable that a comparatively rapid combination occurs. If, however, the test is more or less solid, contains proteids in quantity, and does not readily leave the stomach, the conditions are changed. Under the latter circumstances the average and promiscuous analysis may give false values.

Before deciding upon the existence of a hyperchlorhydria it is always wise to determine the state of motility. In case the latter is increased a hyperchlorhydria can easily be diagnosed, when, in reality, it does not exist. The motility is always of first importance in this connection. Especially is this the case in its relation to the consistency of the applied test meal. The most recent investigations would seem to indicate that the fundus of the stomach exhibits very little muscular activity. Certainly, there is no decided churning of the contents. There is a slight pendulous motion to the whole organ and a tonic contraction of the muscular structures around the contained food, which gradually relaxes in proportion to the quantity of the latter. In this manner the more solid portions are held in place for the action of the liquefying gastric juice. This liquefaction takes place only upon the surface of the bolus and the fluid portions resulting pass on to the antrum, where active muscular contraction injects them into the duodenum. Hence, it appears that, in the case of food of some consistency, the gastric secretion does not penetrate to the center of the mass. In the case of more liquid tests, such as the Sahli emulsion soup, the inactivity of the fundus favors a separation of the fat from the rest of the fluid and observation of a bismuth test contents *in situ* reveals three distinct layers, with the heaviest or bismuth-containing portion at the bottom, thus vitiating, to a great extent, the value of these methods for diagnostic purposes.

It is evident that such conditions must have some bearing upon the value of the average analysis of gastric contents as ordinarily practised. The analytical findings will depend, to a great extent, upon the position of the end of the tube in the cavity of the stomach. If the tube is soft and passes over the surface of the food bolus, between it and the mucous membrane, the extraction will represent the gastric secretion in purer form than if it possesses sufficient consistency to penetrate to the center of the mass. With a physiological secretion of five per thousand it is evident that the differences might be very appreciable. The depth to which the tube penetrates is also important by giving misleading values for fundus and antrumacity. It is only under certain conditions that these possibilities may be considered. They demand primarily a gastric content of a certain consistency and a musculature capable of a certain contractile power. These conditions exist many times, however, and are especially important in all tests which approach in consistency those of average daily meals. It is also evident that these considerations can only apply to cases in which the gastric acidity is normal and excessive. They can have no bearing upon achylia or subacidity.

In a rough way, these facts can be demonstrated by giving a test meal composed of a cup of tea, slice of bread, and a quarter of a pound of chopped beef, and making two extractions at the end of two hours. The first should be made by passing the tube until the contents appear by aspiration, preferably near the cardiac orifice. The second is taken by passing the tube to its limit. The analysis of the two extractions will often show a difference of ten to twenty degrees for the free acid, with a total acidity more or less constant. If such differences appear upon the employment of crude clinical methods, it is very probable that by a finer adjustment of the manipulations still greater discrepancies could be elicited. It is quite evident that the gastric contents do not constitute a homogeneous mass and that the position of the end of the extracting tube in the cavity of the stomach deserves some consideration. Should it so happen that the contents extracted consist of gastric secretion which has not come into intimate contact with the food from a point close to the surface of the mucous membrane, analytical figures may be obtained which, to all intents and purposes, would be hyperchlorhydric, whereas, in reality, they represent only pure gastric juice.

The simple determination of gastric acidity is not sufficient for diagnostic purposes. The apparent frequency of hyperchlorhydria is due to a lack of consideration of the various mechanical and personal factors in each case. Only when these harmonize with the analytical findings can such a diagnosis be made.

144 East Thirty-eighth Street.

THE *X*-RAY AS A CURATIVE AGENT IN MALIGNANT TUMORS.*

By ASPINWALL JUDD, M.D.,

NEW YORK,

ADJUNCT PROFESSOR OF SURGERY AND FORMER RADIOLOGIST OF THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

In taking up the therapeutic application of the *x*-ray to cancer it will be my aim to point out as clearly as possible the physiological action of the ray, and allow the auditor to make his own application to

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the particular diseased condition. Indeed, in the space that I am able to devote to this paper it is impossible to go into the details of the treatment of the various conditions in which this agent has proved of value. In addition to the above I shall give only such examples as may more fully emphasize my point. The best electrotherapist is the one who treats each case with a proper regard to the varying conditions which arise, remembering that individual idiosyncrasies to the rays are just as marked as idiosyncrasies toward drugs, and that a stated dose which will always hold good can no more be prescribed in the use of electrical agencies than in drugs. The *x*-ray is not a cure-all. Indeed, in many cases, even where it has therapeutic value, other agencies are preferable, both medical and surgical. On the other hand, there are certain diseased conditions in which by its means our results are incomparably better than by any other means at our disposal. It should be the aim of the electrotherapist to carefully separate the wheat from the chaff and to bring the science to a new dignity by a careful choice in his treatment of cases, rather than by extravagant claims to make it the object of skepticism and ridicule, as is too often done.

In our study of the *x*-ray it is well that we should bear in mind at the outset the character of the agents with which we have to deal and what it is that we are endeavoring to do with those agents in order to produce the proper effect upon our tissues. With this end in view an understanding of the physiological action is essential. We have then the cathode stream and the *x*-ray.

The physiological action of the cathode stream in a low tube is merely that of sunlight intensified, producing, first, hyperemia, and, if carried to its fullest extent, escharosis. It does not penetrate beyond 6 mm. from the surface of the skin, consequently is valueless in treating the deeper structures of the body. A low tube being rich in the cathode stream is of use only in treating skin or surface conditions.

The x-ray in a high tube penetrates all substances with a velocity proportional to their density, travels in straight lines, has a selective action upon diseased tissue, and its effect is, first, to produce stimulation. Upon cell growth this stimulation produces a proliferation of cell elements by division of the nuclei and the formation of new cells. When this effect is intensified it produces overstimulation, with destruction of the cell through fatty degeneration or necrosis. Upon blood-vessels this destruction of the intima or endothelial lining produces a curling up of the membrane, a plugging of the vessel with cells, an increase in fibrin, and finally an obliterating endarteritis. Upon connective tissue the stimulation produces an exaggerated adult type of connective tissue, *i.e.*, fibrous tissue, this by the growth of cells, changing them into fibers with obliteration of the nuclei. Its effect upon epithelial tissue upon the surface of the body is to produce a necrosis and slough of the tumor. Upon deep-seated epithelial growths its first effect alone is apparent, the end result being an increase in the growth of the tumor with the more rapid formation of metastases. Upon connective tissue growths, *i.e.*, first, sarcoma, its effect is to change the embryonal type of connective tissue into the adult type, transforming the sarcoma into a fibroma; secondly, by producing an obliterating endarteritis, to deprive the growth of a part of its nourishment, the end result being a fibroma with nests of sarcoma cells included within it. After a certain time these cells resume their growth, with a consequent recurrence of the sarcoma, which, however, reacts to the ray as kindly as before. The weak point in our use of this agent in this class of cases is our inability to prevent the formation of metastases. The effect of the ray upon fibromata is simply to increase their growth through a proliferation of the fibers. Upon glandular tissue its final action, by overstimulation, is to produce a death of the cell elements. This applies to all glandular tissue, adrenals, thymus, thyroid, lymphatics, liver, spleen, kidney, etc. Upon the leucocytes its action is first, by the division of the cells, to produce an increase, and then, by overstimulation, a rapid diminution in their number. This applies in less measure to the red cells, producing anemia.

Toxic Action.—By destruction of the cell elements and consequent liberation of nucleins the *x*-ray produces a rapid accumulation of toxins. Unless this is carefully watched in the class of tissues which easily break down a degree of autointoxication resulting fatally can readily occur.

X-Ray Burns.—*X*-ray burns are probably produced by the action of the cathode stream producing *x*-rays at the surface of the tube, and, to a much less extent, of the penetrating *x*-rays upon the tissues of the body. They develop very slowly. Three weeks from the time of the initial exposure is usually required for their appearance. They go on growing deeper by the destruction of tissue and obliterating endarteritis, are very painful, and cannot be controlled by any known agent. The treatment of *x*-ray burns is extremely unsatisfactory. The use of a soothing ointment, orthoform in lanolin, in saturated solution, has yielded the best results, in my hands.

As the effect of the *x*-ray is to produce, first, an increase, and, secondly, a diminution in the number of red cells, we should carefully look out for and treat the anemia resulting from our use of the ray.

The treatment of carcinoma naturally divides itself, first into the treatment of superficial carcinoma or epithelioma; secondly, of deep-seated carcinoma.

Epithelioma.—There is no class of cases amenable to the *x*-ray that has yielded such brilliant results as those of superficial epithelioma. About 90 per cent. of these cases, in which the growth is confined to the surface of the body, *i.e.* without metastases or glandular involvement can be cured by this means. Where, however, glandular involvement has occurred, unless the glands are very near the surface of the body, the chance of a successful issue is very small. This conclusion has been arrived at after the treatment of a large number of cases extending over a series of years, and in spite of the opinion expressed by some authorities. In about 10 per cent. of cases, especially growths occurring in old people and in which the growth contains considerable numbers of nests of pearl cells, *i.e.* keratoses, the *x*-ray, while it causes destruction of the growth, fails to prevent its almost immediate recurrence. In the treatment of epithelioma the operator should not be discouraged if his patient fails to react easily, but, with patience and a suitable dosage, he can rest assured of the total disappearance of his growth and of a resulting smooth white cicatrix. In this class of cases we have the choice of a low tube, or a high tube, one rich in penetrating *x*-rays. As the growth to

be treated is on or near the surface of the skin, and as the low tube is efficient in these localities, and as, moreover, the energy or quantity of current required to excite such a tube is much less and the consequent expenditure less, the low tube will probably be preferred. In treating a case of this sort the patient should be thoroughly protected, leaving exposed the growth and about one inch of sound, surrounding tissue. This is for the purpose of eliminating any wandering cancer cells, which may be present in apparently healthy tissue. The tube should be focussed directly upon the tumor. The distance of the tube from the patient depends somewhat upon the tube we are using —with a low tube, a short distance, an inch and a half to six inches; with a high tube, sometimes as great a distance as nine inches. If it is our desire to rapidly affect the growth, the tube will be placed a short distance from the patient, remembering that in this way we will probably get the escharotic effect with the production of a considerable burn. We must warn the operator not to produce too deep a burn, as in such cases an ugly scar will result. In the average case, possibly six inches will be the ideal initial distance, the tube at a later date being placed closer to, or drawn farther away from, the tumor, depending upon the idiosyncrasy of the patient.

We have two quantitative methods of treatment at our disposal. The first consists of giving huge doses, fairly overwhelming the tumor, using twenty to thirty-five minutes at each exposure, the exposures being relatively far apart. This method is not recommended by the writer. The other method consists of starting with ten minutes' exposure two or three times a week, increasing the length of exposure and decreasing the distance of the tube from the tumor if the growth proves resistant to treatment. Do not be discouraged if no result is apparent, even at the end of three months' exposure. When the tumor begins to react the destruction will be rapid. It seems entirely unnecessary to cite illustrative cases of cure in this condition. If any one fact in the therapeutic application of the *x*-ray has been established beyond doubt, it is that superficial epithelial growths are absolutely curable in more than 90 per cent. of all cases by this means.

Malignant Angiomata.—This condition, being a superficial epithelial or endothelial degeneration, reacts most favorably to the action of the *x*-ray. In fact, the condition is easier of control in the early stages than any form of neoplasm. The obliterating endarteritis set up by the ray not only deprives the growth of its nourishment, but destroys it as well. The end result from a cosmetic standpoint is very good indeed. In this class of work a high tube should be used, care being exercised not under any circumstances to burn what is always an extremely delicate skin. One case, by way of illustration, is appended.

Case I.—A baby fifteen months of age was referred to me by Dr. John Erdman. An operation four months previously had been undertaken for the removal of the growth, which occupied the right temporal region, extending down on the cheek. The condition had promptly returned, and, when I saw the case, was irregular in outline, about an inch and a half wide by four inches in length, deep purple and growing rapidly. During the early treatments chloroform had to be administered to keep the little patient quiet. Careful protection by means of lead foil was afforded, a very high picture tube being used. The treatments varied from five to eight minutes in length, distance of tube from patient in this particular case never closer than fourteen inches—treatment twice a week on the average. The condition began to improve within three weeks, and within three months had entirely disappeared. This is nearly three years ago. At last report patient remained cured with no remaining sign of the trouble, even the scar of the surgical procedure being scarcely perceptible. It is worthy of note that not even tanning of the skin occurred at any time. Indeed, with our present knowledge and proper care, burning of the skin or deeper tissues is entirely unjustifiable, except in those cases where, for proper reason, we deliberately aim at this result.

Deep-Seated Carcinoma.—In my opinion, the only class of cases in which the *x*-ray is justifiable are those of a thoroughly inoperable character where an alleviation of pain occurs after the use of the ray. This happens in about 80 per cent. of cases, and, if the result at which we aim is merely euthanasia, this treatment is preferable to opium or other analgesics. We must prepare ourselves, however, for the more rapid occurrence of metastases and the earlier death of our patient. In about 20 per cent. of cases the pain is increasesd after the treatments. Where this occurs the *x*-ray is inadvisable. The use of the *x*-ray in any primary, deep-seated carcinoma of the operable stage is, in my judgment, unjustifiable. As will be seen by reference to its physiological action, the ray penetrates with a velocity proportional to the density of the tissue. Its first effect is to produce, by stimulation, an increased growth; secondly, by oversimulation, a death of the cell elements, and, by the production also of an obliterating endarteritis, the death of the tumor. When, therefore, we are able to produce this secondary effect, the ray is efficient Where only the first effect can be produced we are simply increasing our tumor and adding to the danger of metastases. In nearly all the cases that have come under my observation in the last ten years, treated both by myself and by others (and these number nearly two hundred cases), death has been the inevitable result of the treatment of deep-seated carcinoma of primary origin by the *x*-ray, only the first or stimulating effect being apparent. In a number of cases first rayed and afterward operated upon by myself, in which careful and abundant sections have been made and studied, no efficient effect has been found in the tumor. The examination of the enlarged glands has resulted in finding two sorts of glands—first, those the seat of malignant degeneration. On these glands the rays had no effect. In the second class, where the glands were found affected with non-malignant inflammation, a reduction in size or elimination of the glandular structure had taken place. This last is in line with the results of all observers; that is, that glandular tissue not the seat of malignant, carcinomatous degeneration can be entirely destroyed by the application of the ray.

The postoperative raying of malignant conditions I thoroughly approve, and this as soon as healing is complete. In the cases where it is assumed that the entire neoplasm has not been removed we should begin treatment immediately, if possible. I feel convinced that many recurrences can be prevented by this means, and in the instances where cancer cells have been left behind, but by

reason of the operation are brought nearer the field of action of the ray, the chances of destroying these cells and aiding the surgeon in finally completing a cure are very good indeed. It goes without saying that recurrences in the scar are as easy to control as superficial epithelial growths of primary origin.

Treatment of Sarcoma.—In the treatment of sarcoma we are dealing with an entirely different histological or pathological type of tissue. The sarcoma resembles embryonal connective tissue, being rich in cells of round or spindle shape with a loose reticulum of fibers. Coming now to the application of our principle already mentioned, that the effect of the ray is to stimulate cell growth, the effect upon sarcoma will naturally be the production of an adult type of connective tissue, that is, one rich in fibers, packed closely together, with few cells. The stimulation effected by the ray changes over the embryonal type of connective tissue into the adult type, changing a sarcoma into a fibroma. It also, by the production of an obliterating endarteritis, deprives the growth of a certain amount of its nourishment. The contraction of the growth also tends to reduce its vascularity, the end product being a fibroma with an inclusion of nests of sarcoma cells within its mass. In determining whether we shall treat a sarcoma with the *x*-ray the operability of the tumor comes into question. In these cases the writer strongly recommends its elimination by means of surgical procedure in all possible cases. Where we have an inoperable sarcoma, however, we are justified in the use of the ray. We have been fortunate in being able to cause a disappearance of about 40 per cent. of these tumors.

Recurrence.—It is, unfortunately, true that nearly all these cases recur after a time. The nests of cells included in the mass take on renewed energy, and it is essential that a second series of treatments be instituted. These recurrences react, however, just as kindly, in many cases, as the initial tumor. I have personally rayed a number of second and third recurrences with satisfactory results, and in one case I was compelled to treat the tumor for the fifth time. This case is now of six years' standing, and at the present time shows no sign of further recurrence. It must be remembered of these cases that we never get a complete disappearance of our mass. A fibroma of an extent proportional to the original tumor always remains. Where we can do so, it is advisable, after raying these cases, to enucleate the remaining mass. It must also be borne in mind that the danger of metastases is always present while our patient is undergoing treatment. In melanotic sarcoma this is a very grave danger; in spindle-celled, round-celled, and fibrosarcoma, proportionately less; and in osteosarcoma, still less. Osteosarcoma is more resistant to the action of the ray than any other type with which we have had to deal.

Details of Treatment.—If we are dealing with a deep-seated tumor of any type we must select a tube with the greatest penetration possible, *i.e.* a high tube with a large number of penetrating *x*-rays. The patient should be protected except for the parts to be rayed. As it is essential, owing to the location of the growth, that a larger area should be exposed, our protection is necessarily less complete than in superficial conditions. The tube is best placed at a distance of nine to twelve inches in the beginning, the exposures starting with ten minutes application two or three times a week, with an increase in the length of exposures and decrease in the distance, if it is deemed necessary after the idiosyncrasy of the patient is determined. These cases react very slowly, the treatment often extending over months. In one case four months was required before any effect was shown, and ten months before the final cicatrization of the mass. We must not fail to keep in mind the fact that a severe burn, in treating these cases, will produce a rapid increase in our growth and a rapid dissemination of metastases. In our earlier treatment I lost a case of osteosarcoma of the tibia in its third recurrence by failure to observe proper precautions, a severe burn going on to a spectacular growth of the tumor with metastases, resulting in death.

The case to which I have already referred, in which I was compelled to treat a tumor for the fifth time, is possibly worthy of capitulation.

Case II.—This case, referred to me by Dr. Robert T. Morris, was a woman, thirty-eight years of age, with a sarcoma of the neck. Operation had been attempted and abandoned, owing to the extensive involvement. Such portions were removed as could be taken out without producing disfigurement. This was one of the early cases in which I used a very high picture tube for purposes of treatment. The patient proved extremely resistant to the destructive action of the ray, both upon the skin and deeper structures. Sixty treatments, commencing with one each week and finally going on to three within the same period of time, the exposures lasting for fifteen minutes, the distance of patient from the tube eight inches, finally produced a disappearance of all but a small, fibrous mass situated at the angle of the jaw. The patient then went abroad and remained for a year, when, recurrences having begun, she returned and was subjected to twenty-eight treatments, the method of administration being the same as on the first occasion and the result proving equally satisfactory. At intervals varying from nine months to two years three other recurrences, much less in extent, have taken place; but the result of our treatment has been equally happy in each instance. For the past two years there has been no recurrence. I saw this patient only one month ago. There is no disfigurement nor sign of neoplasm. A small, fibrous, irregularly shaped nodule alone remains. The patient's health is perfect and there are no evidences of metastases.

Case III.—One more instance I should like to note. This case, a man forty-five years of age, a powerful German, was referred to us eight years ago for operation. Upon examination I found a tumor situated in the left side of the abdomen, apparently springing from the ilium, nearly as large as a cocoanut. He was markedly cachectic, much emaciated, and suffering from intestinal obstruction, the last symptom being the cause of his admission to the hospital. An exploratory laparotomy disclosed an inoperable osteosarcoma. The pathological findings corroborated our clinical diagnosis. The patient was immediately subjected to the *x*-ray even before primary union had taken place. The technique was that already described. Within four months the mass had shrunken to the size of an orange, the man had gained forty pounds in weight, and was once more following his vocation of a mail wagon driver. His bowels were normal, and he seemed perfectly recovered. He refused an operation for the enucleation of the remaining mass.

About one year later he returned with a neoplasm about the size of a grape fruit and announced that it had been rapidly growing for the preceding two months. Treatment for three months again caused a shrinkage of the mass to its former size. Two years later a third recurrence took place. On this occasion, being warned by his previous experience, he came to me while the mass was still small. This time I gave him forty-five treatments, with the result of reducing the tumor to the size of a large plum. At the present time (three months ago), when this patient was seen by the doctor who has had him in charge for the past five years, there was no further recurrence and the man was in perfect health.

Lymphosarcoma.—Before closing a word in regard to this condition is indicated. By reference to the changes which we have shown to take place in sarcoma and epithelioma it will readily be realized that, in this condition, we have at once a type of malignant growth in which the *x*-ray is peculiarly efficacious. At the same time metastases are more apt to occur than in any other type of sarcoma while under treatment, these metastases frequently going on to the fatal termination of the case. It will, therefore, readily be seen that early and energetic treatment is indicated if we are to hope for a favorable issue. One example only will be given of this condition.

Case IV.—A young woman, twenty-one years of age, was referred to me with a pronounced glandular involvement, involving all of the cervical, supraclavicular, many of the mediastinal, axillary, and inguinal glands. The retroperitoneal glands were also palpable. Excision of a gland was performed and the pathologist, Dr. Harry Brooks of the Post-Graduate Hospital, made a diagnosis of lymphosarcoma. Six weeks' treatment of this case, with the technique already sufficiently described, produced a diminution of more than one-half in the size of all the glands involved, the various localities being successively rayed in treatments of twenty minutes' exposure each. At the end of this time it was necessary to suspend treatment, owing to the evident toxemia which the rapid breaking down of the glands was producing. In two months' treatment was again resumed, and at the end of five months, greater care being taken not to break down tissue too rapidly, a total disappearance of the glands recurred. This case remained without recurrence for two years, when the patient was lost sight of. There is, of course, a close analogy in the method of treatment and in the results produced in lymphosarcoma and in Hodgkin's disease. The conditions are sufficiently parallel to make the treatment and the results obtained equally applicable.

THE RELATION OF ADENOIDS AND HYPERTROPHIED TONSILS TO RETARDED MENTAL AND PHYSICAL DEVELOPMENT.

By E. BOSWORTH McCREADY, M.D.,

PITTSBURGH, PA.

MEDICAL DIRECTOR, HOSPITAL SCHOOL FOR BACKWARD CHILDREN.

Hypertrophy of the faucial tonsils and of the adenoid tissue situated in the nasopharynx has long been recognized as an important predisposing and causative factor in the etiology of many of the pathological conditions of infancy and childhood. To estimate the relationship which adenoids and hypertrophied tonsils bear to retardation, physical and mental, it is necessary first to consider the pathological physical conditions which make their occurrence possible, and, second, to consider their effect upon growth after development.

Conditions predisposing to tonsil and adenoid hypertrophy. In a paper read before the Pennsylvania Medical Society last October[1] I discussed at some length the characteristics of hypoplasia as shown by the child who is subject to hypertrophy of the faucial and pharyngeal tonsil. This hypoplasia is, in the majority of cases, dependent upon some condition primarily inherent in the ovum, though it may be due to the effect of environmental conditions arising at any time after the beginning of somatic life. We must first, then, look to the parents for manifestations of conditions having a vitiating influence upon cell activity, as tuberculosis, syphilis, cancer, plumbism, malaria, alcoholism, drug habits, insanity, goiter, malnutrition, and environmental influences of various kinds. Given any of the conditions named above in the progenitors, it is very likely that the descendant will be lacking in some of the elements necessary for proper development—will be hypoplastic. This phase of the subject involves the law of degeneracy as advanced by Noble.[2]

That enlarged tonsils and adenoids usually occur in individuals presenting what might be called special diatheses has been commented upon by many observers. Noble says:[3] "Is not this the same pathologic condition (cell hypoplasia) found in the throat and called adenoids and diseased tonsils, and does not this theory explain this group of debilitated women, and also all the children who are not vigorous and who get adenoids and diseased tonsils and become mouth-breathers?" Williams[4] finds adenoids and enlarged tonsils common in children exhibiting symptoms of hypoplasia, due in his opinion to thyroid insufficiency. He believes that adenoids and hypertrophied tonsils are compensatory in their action, correcting, as it were, the thyroid insufficiency. Citelli states:[5] "It is not probable that the tonsils belong to the so-called organs for internal secretion, but in view of certain general or secondary disturbances which are found in adenoid-bearing subjects, which often disappear after an operation, and more especially on account of anatomic researches, I believe it probable that the hypertrophy of the tonsil alone can determine, first, the functional, and then the anatomic, alterations of the pharynx and central hypophysis." Children with pathological conditions of the faucial and pharyngeal tonsils are often subject to the diathesis known as the "status lymphaticus," in which there is a general enlargement of the lymphatic structures associated with hyperplasia of the thymus gland and hypoplasia of the circulatory apparatus. Hypoplasia of the circulatory apparatus is found in chlorotic subjects, who usually present other symptoms of defective development, including hypertrophied tonsils and adenoids.

The diagnosis of the diathesis predisposing to hypertrophy of the lymphoid tissues becomes the same as that of hypoplasia. Among the early symptoms to be noticed are delay in the power of walking and talking, late closing of the fontanels, etc. Progress in these respects may, however, be entirely normal, even more rapid than normal; the precocious child is often an hypoplastic one. Among the most prominent early signs is enuresis,

nocturnal or diurnal. In fact, I have come to consider enuresis, especially when persisting late into childhood, as a most valuable aid to the recognition of this condition. The high-arched palate, first attributed to defective osseous development, and later considered as the result of the presence of adenoids, seems to be again taking its place among the symptoms of hypoplasia, the stigmata of degeneracy. Noble places it among the signs of the condition most easily recognized. Variations in temperature, which may be either subnormal or above normal and subject to fluctuation from slight causes, are not unusual. A constant hyperpyrexia is likely to be due to infected tonsils and adenoids. J. Homer McCready[6] states "that probably one-third of all cases of diseased tonsils and adenoids have a more or less continuous elevation of temperature." Children presenting symptoms of hypoplasia are likely to be undersize and underweight, though they are often tall and slender and often obese, or at least well supplied with subcutaneous fat—the lymphatic type. Graves[7] finds the scaphoid scapula to be common in the type of cases which I would call hypoplastic. In forty-seven cases the children, reported to be much behind in their school grades, were all undersize, showed various anomalies in development, 58 per cent. were mouth breathers, 17 per cent. were subject to enuresis and 85 per cent. showed the scaphoid scapula. Since the appearance of Dr. Graves' paper I have been able to demonstrate the scaphoid scapula in nearly every case exhibiting symptoms indicative of hypoplasia which I have examined. Delayed epiphyseal development as shown by the *x*-ray is practically a constant symptom.

That the secretions of the ductless glands are an important factor in physical and mental development has been amply proved by recent researches. How important perversions of these secretions are in the development of hypoplasia further investigation is necessary to prove. It is reasonable to suppose that defective development of the embryo resulting from an ovum vitiated to any extent and from any cause will, in the first few weeks of fetal life, when the ductless glands begin to appear, involve their structural elements. Unable to secrete to the extent to which they were destined, further defective development results on account of the intimate relationship existing between the process of growth and the pituitary, thymus, and thyroid glands. That retardation in mental and physical development may exist without the presence of hypertrophied tonsils and adenoids, and that hypertrophied tonsils and adenoids may fail to give rise to appreciable symptoms of retardation or deviation is not denied. I believe, however, that careful search will not fail to reveal some symptoms of hypoplasia, accompanied by signs of nervous instability, if not of actual defect, in those children in whom hypertrophied tonsils and adenoids are present.

Hypertrophied tonsils and adenoids as exciting causes of retardation. The alterations in the bony structures of the face and thorax secondary to enlarged tonsils and adenoids are too well known to require description, as is the malnutrition and lessened resistance to disease resulting from these conditions. I will, therefore, limit myself to the consideration of those conditions of retarded mental development caused directly by the mechanical obstruction resulting from their presence. Tonsils hypertrophied beyond the normal size or diseased and adenoids persisting beyond the normal period of atrophy are practically foreign bodies, and are peripheral sources of reflex irritation. The difficulty of breathing which children subject to these conditions experience further adds to their discomfort and gives rise to inability to concentrate the attention. Bonazzola[8] "found among four hundred school children at Bologna that one hundred and forty-one displayed a want of power to concentrate the attention. Examination of this group revealed adenoid growths in all but twenty-four. In the twenty-four with aprosexia without adenoid vegetations there invariably was nasal obstruction from some other cause, and the children were neurasthenic and presented signs of inherited physical degeneracy."

The aprosexia resulting from enlarged tonsils and adenoids is probably responsible for more cases of backward and deviate mental development than any other cause. Unable to apply himself to his studies, the child soon falls hopelessly behind his classmates and casts about for other means to keep his mind occupied, thereby getting himself into mischief of various kinds, and soon becomes a nuisance to his teacher and to his schoolmates. His school duties becoming hateful to him, he becomes truant with an enlarged field for his unrestrained activities, and finally coming into conflict with the authorities through his desire for constant change and excitement, ends in the Juvenile Court and the reformatory. Judge Mack's "straight road from adenoids to the penitentiary" is not an exaggeration. If he be of the phlegmatic type, content to plod without result, to stay where he is put, he becomes the dunce of the class, remaining in the same grade until, either outwearig the overstrained patience of the teacher or outgrowing his seat, he is advanced to the next grade, there to repeat the process. These are extreme cases, but they are to be found in every school, and many others lesser only in degree, in every class room. The hypoplastic child, fundamentally unstable, and still further handicapped by enlarged tonsils and adenoids with their attendant train of evils, is prone to respond to an exaggerated degree to faulty environmental influences of all kinds, and requires the most careful study and attention to ensure the advancement of which he is, in a great number of instances, capable.

Kyle states: "In at least 90 per cent. of cases of adenoid vegetation there is involvement of the Eustachian tube with deafness in varying degree." If the deafness be marked and occur before the child has learned to talk he will remain dumb. Even should he become deaf at the age of five or six, after he has acquired the faculty of speech, he will soon forget how to talk. There is no faculty upon which mental development is dependent to such an extent as upon that of speech. Thought in its higher functions exists only through expression by means of language, of which articulate speech is the most important manifestation. It is impossible for the child to reproduce what he has never heard, consequently two great stimulants to mental development are lacking, the power of understanding spoken language and the faculty of expression by means of speech. When to these handicaps are added the aprosexia and nervous instability usual in adenoid-bearing subjects it is small wonder that a diagnosis of idiocy or imbecility is often made. When the deafness is complete, after the removal of the primary cause, the treatment

should be the same as that accorded any other deaf and dumb child. When there is even a slight vestige of hearing remaining it is often possible by persistent and careful effort to not only develop speech but also to greatly improve the ability to hear.

Deafness in slighter degree may give rise to a peculiar form of speech practically identical in its symptomatology with idioglossia,[10] which condition is dependent upon a biological variation in the auditory word centers without general deafness. The analogous condition occurring as the result of deafness due to enlarged tonsils and adenoids may result either from slight deafness due to middle ear disease, which prevents the child from hearing all sounds except those of a certain pitch or intensity, which he will, of course, reproduce as he hears them, or to faulty subjective audition, the objective hearing being normal. In the latter case he hears words correctly and believes that he reproduces them as heard. His subjective auditory center has become accustomed to receiving faulty word impressions and has lost or failed to develop its power of differentiation. This is dependent upon faulty kinesthetic impressions derived from the peripheral musculature concerned in speech due to the presence of the enlarged tonsils and adenoids. For this reason, after tonsillectomy and adenectomy, a special course of training directed toward the development of the kinesthetic and auditory word centers is necessary.

Conclusions.—First, hypertrophied tonsils and adenoids occur in individuals who present symptoms of hypoplasia resulting either from hereditary or developmental causes. Second, there would seem to be an intimate relationship existing between perversions of the internal secretions of the ductless glands and hypoplasia resulting in hypertrophied tonsils and adenoids. Third, hypertrophied tonsils and adenoids are factors in retardation by their mechanical action as sources of reflex irritation and as impediments to the proper development of the cerebral centers concerned in speech. Fourth, removal of hypertrophied tonsils and adenoids is not sufficient, in cases of marked defect, to bring about restoration to normal. Special training and the institution of measures directed toward the amelioration of the underlying hypoplastic condition are necessary.

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TYMPANO-MASTOIDITIS EXHIBITING MENTAL SYMPTOMS.*

By EMIL AMBERG, M.D.,

DETROIT, MICH.

On January 23, 1911, at noon, I was called to Grace Hospital to see Mrs. Ph. B., thirty years old. Briefly told, the patient had suffered from the grippe for ten or twelve days previous to that day. An otitis dated back a week, and caused the patient great trouble. The ear drum had been incised the day before. The temperature did not reveal much. The previous day it reached 99.2°. The patient was found lying in bed, giving one the impression of being very sick. The right eye showed the effects of a trauma foreign to the present trouble. The left appeared normal. The left outer ear canal was narrowed, swollen, and sagging. Some discharge was noticed in the depth. There was apparently great tenderness over the mastoid. I expressed the opinion that a mastoiditis was present which required immediate attention, but that the mastoiditis itself was not the only pathologic condition before us, because the somewhat delirious condition of the patient and the utter prostration were not agreeing with the usual picture of an acute uncomplicated mastoiditis. I operated immediately. The antrum was opened freely, but no free pus was encountered. The mastoid process was compact, and a few drops of pus were found after penetrating for about three-eighths to a quarter of an inch, according to my recollection. The findings in the operation did not coincide with the clinical picture, and yet the objective symptoms did not justify further interference just then. On the following day, on account of the apparent pain and the unusual utterances of the patient, I decided to investigate the dressing. Before I started I noticed that the patient's head was turned by the assistant or nurse rather more energetically and quickly than I am used to do it soon after a mastoid operation, and I expected an outcry, because patients are very prone to complain when the head is moved soon after a mastoid operation. To my surprise the patient did not mind the moving of the head at all. I was at once convinced that the expressions of pain and the excitement of the patient, which appeared to be alarming, were out of proportion to the physical pain, so far as I could establish it, otherwise the paradoxical occurrence could not be explained.

The history of the patient revealed that the patient had received an unusual amount of anodynes and hypnotics, which, however, did not alleviate her very much. I reasoned that, aside from a possible idiosyncracy against anodynes, even an organic mastoid complication should have been influenced to a greater extent by the same, and assumed that the nervous system was in a state of abnormal reaction. A drug habit was denied by the husband. I tried to persuade the patient to go to sleep by repeating very frequently the words "you go to sleep now," and succeeded in quieting her considerably, yet she declared that she had to have a hypodermic and to hold her husband's hand. I told her she would get a hypodermic, and instructed the nurse to give her a saline hypodermic. I called the husband aside and asked him how much nourishment his wife had had lately. He told me that she had had very little for about sixteen days. I

*Read before the Detroit Society of Psychiatry and Neurology, April 6, 1911.

then ordered a gradually forced nourishment, and replacement of the anodynes as much as possible by eggnogs with whisky. The improvement became shortly noticeable, and she progressed to recovery. The patient herself told me, March 28, 1911, in my office, that she did not recollect much of what had happened in the hospital; that she remembered that she was taken to the hospital and that they took off her things and gave her a hypodermic because she was in such agony. The ear did not discharge at that time, but she had pain behind the ear. She remembers that Dr. M. said that the ear had to be lanced, but that he could not do it, and she asked whether she would not be anesthetized in her room. For a few days she tried to turn her head, she remembers, but could not do it. Mr. B. turned it for her. She said she did not know me when I came in. One night patient says she saw her little nephew, who had been drowned about two years ago, sitting on her feet, and she told him to get off. She was trying to get out of bed, but could not. She asked the house doctor to lift her, and then does not remember anything more. She did not remember the physician who lanced her ear on January 22, so that she did not know him when he presented himself shortly before she left the hospital. The sister reported that the patient said, while in bed in the hospital, that a man came to her all dressed in white and laid a little doll in white in her arms, and that that was her casket, and they were calling her home. She said she was going home, and then going with her mamma (who is not living) and the other angels. She said that they were starving her. She complained to her sister about pain in the head, first in the back of the head and then on top of the head. The husband said that once or twice a day, sometimes oftener, especially toward the evening, the patient had spells during which she did not seem to recognize anybody. One night he was called to the hospital, where he found his wife unconscious, and was told she might not live till morning.

The patient asked to be taken home unreasonably soon. One day when convalescent she kept moving her legs in bed. I told her to stop it. She said that she could not help it, whereupon I told her energetically that she had to discontinue it, that she was not a three-year-old child, and that she could stop it if she wanted to. The patient became quiet and told me, "I do not like you." Some time later, when the patient was in my office and practically well, she moved her hands nervously in the same manner.

Remarks: The condition might have been aggravated by toxins and by the large amount of drugs. It is, however, more reasonable to assume that the inanition and exhaustion furnished the basis for part of the disturbance. The clinical appearance, the laboratory examination (urine and blood), and the findings at the operation, together with the subsequent course of the disease, do not give a simple clinical picture, and I do not think I am far out of the way when I assume that we had before us a patient of hysterical disposition, who suffered from an affection which bordered on a collapse delirium. The same condition might have occurred if any other organ had been affected. The differential diagnosis was of great importance on account of the close connection of the ear with the brain, which always creates the suspicion of a propagation of the disease from the primary focus. Furthermore, a complication on the part of the brain or its coverings does not often admit of much delay. This case demonstrates that a single apparently insignificant fact suggested a way of reasoning which made the conception of the condition more clear and influenced our therapeutic measures, with happy results.

A CASE OF EXTENSIVE HERPES.

By GEO. O. WILLIAMS, M.D.,

GREENE, N. Y.

The patient was a lady, aged 68. On March 8 the herpes appeared, simultaneously on the left upper lip, in the left naris, left inner canthus, in the left middle ear, and external auditory canal from the meatus back.

An enormous serosanious discharge accompanied the aural lesion, saturating cloth after cloth. The membrana tympani and the ossicles were carried away. Hearing was nil with the watch at contact. Illumination showed the pulsating arch of the auditory artery. Treatment consisted in a free application of a saturated solution of alum to the naris, the lip, and the inner canthus, and instillation of the same freely into the auditory canal, and subsequent packing the canal with boric acid. The external lesions were immediately subdued; the aural discharge became purulent. After a week the alum solution was dropped, and irrigation of the canal and subsequent boric acid packing continued. The purulent discharge gradually diminished.

On the twentieth day a narrow rim of new tissue was noticed at the seat of the destroyed membrane. The packing was dropped, and twice daily gentle irrigation was made with weak boric acid solution. The rim of new tissue increased and the lumen gradually diminished. The arterial pulsations remained visible until the complete closure of the opening. This occurred on the forty-second day. The purulent discharge ceased at the same time. Hearing by loud watch one and one-half inches. Duration of tone of *E* fork held between tragus and antiragus, within the concha, five seconds. Examination on the eightieth day—hearing by faint watch, three inches. Duration of tone of fork, fourteen seconds. The tone of this fork is audible by a normal ear thirty-five seconds. Should the fork come in contact with a stray hair the tone instantly stops.

The adventitious membrane has nearly the color of a normal drum, but is minus the outline of the ossicle. The case is of interest as illustrating nature's repair of a badly damaged ear.

Mammary Hypertrophy of Puberty.—Henri Caubet describes a disease of puberty that makes life miserable for some young girls. This is a hypertrophy of the mammary glands at the period of puberty to such an extent that the glands become a burden to the girl, hanging down to her abdomen or even to the knees, so that she cannot stand for the weight, or must remain in bed. The health of the girl fails, she becomes thin and weak, and menstruation is absent. The growth consists of an immense simple hypertrophy of the glandular structures and framework of the breasts. This hypertrophy comes on rapidly and becomes immense in the course of a few months. In some cases the mother was affected in the same way, so that heredity in some cases is an etiological factor. In general puberty seems to be the cause of the growth. The only treatment that is of any avail is the amputation of the breasts.—*Archives de Médecine des Enfants.*

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CARBOHYDRATE TOLERANCE AND THE POSTERIOR LOBE OF THE HYPOPHYSIS CEREBRI.

THE discovery by Crowe, Cushing, and Homans of a reducing substance in the urine of animals upon whom a partial hypophysectomy had been performed stimulated further investigation along this line, the results of which are presented in a communication by Emil Goetsch, Harvey Cushing, and Conrad Jacobson in the *Bulletin of the Johns Hopkins Hospital,* June, 1911. Having noted that postoperative spontaneous glycosuria bore a definite relation to the surgical manipulations of the gland, and that the brief period of carbohydrate intolerance was followed by a reestablishment of tolerance at least to the normal, these observers determined to test these points more systematically.

As the result of their experimental and clinical studies they have shown that the secretory product of the posterior lobe of the hypophysis (*pars nervosa et intermedia*) is discharged into the cavity of the third ventricle, becomes dissolved in the cerebrospinal fluid, and enters the blood stream by way of the dural sinuses. Operative manipulation of the infundibulum and hypophyseal stalk produces a transient hyperglycemia due probably to the setting free of an excess of the stored-up secretion, which in turn causes the discharge of stored glycogen. For the succeeding few days carbohydrate tolerance is considerably diminished, "alimentary glycosuria" being produced by a smaller amount of sugar than was previously required. If the damage to the hypophysis is such as to create a permanent insufficiency of the posterior lobe secretion, the temporary lowering of the assimilation limit is succeeded by an abnormal and enduring augmentation in the tolerance for sugars. This tolerance can be promptly lowered by the coincident intravenous or subcutaneous injection of posterior lobe extract, which, furthermore, lowers the sugar tolerance of the normal animal, causing glycosuria when given in sufficient dosage. Accompanying this increased tolerance resulting from insufficiency of the posterior lobe or of its secretion, there is a tendency toward a generalized adiposity, suggesting a conversion of the stored sugars into fat. There is also a tendency toward a subnormal body temperature, which suggests an imperfect oxidizing or metabolizing capacity. Conversely, repeated injections of posterior lobe extract in the normal animal are apt to cause a profound degree of emaciation resulting presumably from excessive catabolism.

The clinical studies in this subject made by Goetsch, Cushing, and Jacobson present a number of important results. It is shown that intracranial lesions occasioning stasis of the cerebrospinal fluid, and therefore preventing the absorption of the secretion of the posterior lobe, will lead to symptoms of posterior lobe insufficiency. The most common source of moderate grades of this condition is an internal hydrocephalus. Another source is in tumors arising in the interpeduncular space and directly compressing and deforming the infundibulum attachment and "blocking" the secretion. A third source is a preexisting hypophyseal hyperplasia, just as myxedema may supervene on states of hyperthyroidism.

"It is well known," state these observers, "that hyperglycemia is of frequent occurrence in acromegaly and gigantism—clinical states which presumably represent, at the outset at least, a condition of hyperpituitarism, the pars anterior doubtless being chiefly responsible for the skeletal changes. We believe, however, that there is an inevitable tendency in these states toward an ultimate glandular insufficiency—toward dyspituitarism, in other words. Hence, in all probability a lowered sugar tolerance will be found only during the active stages of these maladies. Thus in all but two of the ten cases of acromegaly that we have studied the individuals have begun to show present evidences of posterior lobe hypoplasia which are recognizable through the laboratory experiences with animals suffering from comparable states which have been experimentally produced. They are acquiring adiposity, have subnormal temperatures, and often show an extraordinarily high carbohydrate assimilation limit. In view of this marked transition from a low to a high sugar tolerance which occurs during the progress of the malady, the discordant results of the past studies of metabolism in acromegaly are not surprising." It is suggested that the polyuria which is apt to be associated with these pituitary lesions may present a clinical picture readily mistaken for diabetes mellitus or diabetes insipidus. Possibly also the fleeting glycosurias following fractures of the base of the skull are induced by trauma of the posterior lobe or its infundibular attachment, similarly to those induced by operative manipulation of these structures.

In concluding the summary of their important investigations, which cannot fail to be of practical value from the clinical viewpoint, these observers say that "if loss or diminution of the internal secretion of the pancreas robs the tissues of their power of metabolizing carbohydrates, certainly loss or diminution of the secretion of the hypophyseal posterior lobe greatly enhances their power in this respect. In view of the generalized adiposity, not confined to the panniculus alone, but observable also in liver and muscle as well as in the other organs in these states, it would seem that functional deficiency of the posterior lobe permits the excess of stored carbohydrates to be transformed into fat. In

these states of beginning adiposity indicating a pituitary hypoplasia, glandular administration is indicated, and it is possible that the therapeutic dosage for the individual case may be determinable on the basis of the quantity of extract necessary to produce mellituria with an amount of ingested sugar which would be expected to represent the individual's normal assimilation limit."

AUDE SAPERE.

However inadequate the educational theory of Dr. Boris Sidis, he has unquestionably struck in his recent pamphlet one resounding major chord, and based on the fundamental, that is, his insistence that our common system of teaching greatly errs in not telling children something at least of the ills and the horrors of life, this omission weakening them and placing them at a disadvantage in maturer years. This is a theme that touches close the high-minded physician and every physician at all worthy the proud name of doctor—the learned man, the teacher of men. No phase of human wrong certainly is more conspicuous at our present day than that concerned with sexuality, and especially with its deeper relation to lasting happiness and to lifelong misery. Every thinking man and woman knows that as things are few adolescents ever become fully aware of the most basal fact in life—namely, the inherent unification between bodily love and that "affection that hopes and endures and is patient." This useful knowledge never comes perhaps until forced by irreparable harm, resulting very generally in a half-felt cynicism whose ultimate results are gonorrhea and syphilis, abortionism, and overcrowded divorce courts. Then it comes distorted, debased, perplexed and cynical.

Boys and girls do not need the sexual anthropology of Ploss and Bartels, of Forel, or even all that of Havelock Ellis; there is too little of the heights in all of these. They do need, however (who shall tell how much!) to have impressed upon them (in a way the prudish and conventionalized churches have long since failed to impress) that genuine love, life-long and heaven-high, is their best chance of *happiness* here and perhaps hereafter. The physician can tell them how voluntary and how autosuggestive such love can be. Our boys and girls need to *feel* what DeMorgan so beautifully expresses: "All was not Vanity, preach whoso might! So long as Love itself—the mystery of all mysteries—shall remain unsolved, there is an immeasurable music beyond the octave-stretch, forlorn of our fingers, an unfathomable ocean beyond our little world of pebbles on the shore." This mystery the adequate physician, if any one, can reveal—the transcending satisfaction that lies in the unity of that aspect of love that brings us our children with the aspect that means the life-long loyalty to a wife or husband. As Maurice Hewlett says of "Sanchia," "So her body's beauty is but a poem written by God about her soul," and as another poet writes it, "Love that hath no beginning hath no end."

The "ideal love" and the actual "lust," in short, seem too far apart to too many of our young men and women, and needlessly so, for they are parts of a whole, a rule of life, delights alike in one order of things, and the young people can be made by competent hearts to see them so. In the absence of some one strong voice whose clarion call, as in the Middle Age, can attract every mind to one needful and vital idea, it behooves the numerous physicians in this twentieth century to rise to their high privilege (*noblesse oblige!*) of dignifying that which in a more evolved age will surely dignify itself. If, as the great Augustine was wont to say, "Inter feces et urinam nascimur," yet as Ellis answers, "It may be said, in reverence, that the passage through the channel of birth is a sacrament of Nature more sacred and significant than man could ever invent." A later age will go a step further yet and the Creator at last be justified!

Of course, not many years from now, educational system, public and private, will teach as a routine, but easy task, this phase of the unity of body and soul, the mutual loyalty of man to woman, but until that happy day shall come it is to the physician that the world must look for the distillation of sexual wisdom among the young, the philosophy of life and love. From him it will come with a force and impressiveness derivable from no one else, making for a life-long, death-binding happiness, not less than for the most rapid uplift of our race.

PATHOLOGY OF SLEEP.

The nosological position of sleep disorders, especially of insomnia, still continues to perplex neurologists. While one will say that insomnia is a secondary consequence of nervousness, another insists that it is itself nervousness, *i.e.* by far the most common manifestation of the latter. From a third viewpoint insomnia of artificial or exogenous source tends to induce a nervous state and hence eventually a vicious circle. Mere restlessness or motor hyperactivity is known to be a condition greatly favoring insomnia, and in such cases the best hypnotic will be the drug or other resource which antagonizes this activity or which can remove its causes. Many a subject who gets depressing hypnotics and sedatives really requires only mild antispasmodics or a warm bath. Some individuals remain in a state of high wakefulness, yet are physically tranquil. In some of these cases at least the patient can hardly be said to require sleep, even if it be his bedtime. His mind is normally active and perhaps the best course to pursue would be to work or study until a natural demand for sleep came. Generally speaking, however, persistent wakefulness in one seeking slumber engenders restlessness, and as already stated the latter state is highly unfavorable for sleeping.

At a recent meeting of the Aerztlicher Verein of Hamburg (*Berliner klinische Wochenschrift*, June 26) Trömner attempted to assign a definite nosological status to sleep disorders. He defined sleep as a periodically supervening act for the autoregulation of the body. It is not synonymous with tiredness, but rather the reaction of a healthy organism to the condition of fatigue. Insomnia has been found to be present in over 60 per cent. of neurasthenics, and is two and a half times more frequent in women than in men. Certain cases of insomnia are clearly

due to exogenous causes, as heart disease, fever, pain, abdominal discomfort from flatus, etc. In some cases abuse of sleep in time militates against sleep, as in night workers. There is also a climatic insomnia. Primary insomnia comprises a number of syndromes. There is a pure insomnia, the so-called sleep neurosis, which may be the only evidence of a neurasthenic state. There is the insomnia of overfatigue which is a very familiar phenomenon and an evidence of neuropathy. A condition opposite to this is sleeplessness from underfatigue already alluded to; and in close relation to this is the so-called fear of insomnia which may amount to a true phobia. The insomnia of depression is an important type, for there is a notable association constantly present between sleeplessness and mental depression. Trömner terms this form agrypnia of involution. Periodical insomnia is also associated with periodic depression.

Of sleep disorders other than insomnia the author mentions somnolence as an affection in no wise affiliated with hysteria and epilepsy, but rather an imperative neurosis. Disturbed sleep is divided into sensory (vertigo, optic, and acoustic paresthesiæ), affective (nightmare, pavor nocturnus), and motor (somniloquism, somnambulism, and jactitation). Enuresis nocturna is not a pure neurosis, having a local component. Motor disturbances are best treated by suggestion, and all others, including insomnia, by the latter and dietetic and physical therapy in combination. We cannot, however, wholly dispense with drugs.

Acute Anterior Poliomyelitis.

Anticipating a return in epidemic form of acute anterior poliomyelitis, the New York State Department of Health devotes its July Monthly Bulletin very largely to a consideration of this disease and to the methods which have been inaugurated for its control. On July 31 a conference of about twenty-five medical officers of the State Department of Health was held at Albany to discuss the methods of field investigation to be used in the event of its reappearance. The general practitioner can greatly supplement the special investigation into treatment and etiology by collaboration with the Rockefeller Institute, which announces its desire to receive and treat gratis acute cases of anterior poliomyelitis during the present summer and fall. In the event of fatal cases where an autopsy is held it is desired that specimens of portions of the spinal cord, nasal mucosa, tonsils, and adenoids be preserved in glycerin and forwarded to the institute. It is especially important that these studies be carried out on a large basis and that sufficient data be collected to furnish the statisticians with material for arriving at logical conclusions. Indeed the responsibility of investigation and solution of the cause of any disease rests quite as much upon the shoulders of the general practitioner as those of the laboratory men; for without an adequate knowledge of the clinical features of disease, what are its avenues of infection, how one case leads to another, the seasonal, climatic, and individual factors which favor its spread, there is little hope of the bacteriologist alone being able to solve the problems involved. The epidemics of acute anterior poliomyelitis in New York State in 1907 and 1910 have been rather closely studied and as a result of the statistical compilations by Frost of the United States Public Health and Marine Hospital Service and the laboratory research work of Flexner of the Rockefeller Institute we have reasons for believing that the disease is caused by some ultramicroscopic organism, that it is probably transmitted by some insect as a carrier, that the portal of entry is the upper respiratory passages, and that the infectious agent can be carried by healthy persons or those who have had the disease as well as those who are ill. Furthermore, the recent aggregations of clinical data teach us that there are numerous atypical forms which may arise and for which we should be on the lookout, especially during the presence of an epidemic. Considered in the light of its high mortality and the far reaching economic effects resulting from the more or less complete paralysis of limbs in those cases which otherwise recover, thus leaving behind its trail of lifelong cripples, acute anterior poliomyelitis is especially worthy of the best efforts of the students of preventive medicine.

The Rôle of the Visiting Nurse.

The visiting nurse in the country, and especially in New York, might well say *veni, vidi, vici.* She has come and has come to stay. She has observed how matters stand, and if she has not conquered the diseases and complaints with which she is brought into contact she has at least played an important part in the fight against ill health and in preventive medicine, and she has conquered, or nearly so, the prejudice existing against her and her ministrations. To the *American Journal of Nursing* for August, 1911, C. E. A. Winslow, associate professor of biology, College of the City of New York, contributes an article with reference to the visiting nurse from a public health standpoint. The writer thinks that the visiting nurse is the most important figure in the modern movement for the protection of the public health. The visiting nurse is mainly concerned with school inspection, with tuberculosis, and with the reduction of infant mortality. Visiting nursing was inaugurated in Great Britain, but it has attained its highest stage of development in New York City. Miss Waters, in her book on "Visiting Nursing in the United States," published in 1909, mentioned twenty-four cities which at that time employed nurses for school inspection, and its present status is well summed up in the following paragraph, quoted from Gulick and Ayres' "Medical Inspection of Schools": "To sum up the case for the school nurse, she is the teacher of the parents, the pupils, the teachers, and the family in applied practical hygiene. Her work prevents loss of time on the part of the pupils and vastly reduces the number of exclusions for contagious diseases. She cures minor ailments in the school and furnishes efficient aid in emergencies; she gives practical demonstrations in the home of required treatments, often discovering there the source of the trouble, which if undiscovered would render useless the work of the medical inspector in the school. The school nurse is the most efficient link between the school and the home. Her work is immensely important in its direct results and very far-reaching in its indirect influences. Among foreign populations she is a very potent force for Americanization." Perhaps the most important of the duties of the visiting nurse is in the part she plays in the efforts to reduce infant mortality. In

this field her services are essential. The keynote of the situation as regards the fight against disease is to educate. The nurse is primarily and above all an educative factor. Disease will exist and flourish so long as ignorance prevails, but disease will wither and its prevalence abate in exact proportion to the increase of knowledge. The rôle of the nurse, being chiefly educative, is therefore one of the greatest forces for good in modern life. To Miss Wald is due the inception of visiting nursing in this country, and to the same woman is also owing its development on special lines.

News of the Week.

Measles in Samoa.—Advices from Tutuila, Samoa, say that there has been a deadly epidemic of measles on the islands of American Samoa, 219 deaths having been recorded up to July 23. The mortality due to the disease or directly attributable to it has been nearly 10 per cent. of the population of the towns from which returns have been received. This is the first serious epidemic of measles in these islands in nineteen years.

Cholera in Italy.—According to official figures of the cholera situation in Italy, published August 28, there have been 351 cases and 153 deaths in Sicily, 201 cases and 81 deaths in the city and province of Naples, 292 cases and 98 deaths in the province of Caserta, 25 cases and 14 deaths in Rome, 150 cases and 65 deaths in Leghorn city and province, 134 cases and 68 deaths in Genoa city and province and 534 cases and 180 deaths elsewhere. This is a total of 1,687 cases and 659 deaths. In Verbicaro, a town in the province of Calabria, the peasants have been incited to riot under the belief that the sanitary efforts of the physicians and nurses were intended to spread the disease. They set fire to the town hall, and killed the mayor and two Red Cross nurses. It is noted as a curious fact that the father of the murdered mayor was also mayor and was killed in a similar peasant outbreak fifty years ago.

Poliomyelitis in Boston.—Boston is reported to have 10 cases of poliomyelitis, North Adams 6, and Woburn, another suburb of Boston, 4. When Dr. Shepherd, the State Health Officer, was called to the latter place, he criticized the laxity of the local authorities and insisted on quarantining the cases as strictly as is done in scarlet fever.

Typhoid Epidemic in Orphanage.—Out of 113 cases of typhoid fever that have developed in the Bronx since July 21, 35 have occurred in the Roman Catholic Orphan Asylum. As a result of its investigations the Health Department states that the epidemic is probably due to flies and mosquitos and not to the milk or water supply. For the week ending August 26 there were 91 new cases reported for Manhattan and the Bronx, as against 135 for the preceding week. This leads the Health Department to express the opinion that the high point of the outbreak has been passed. The number of deaths for the week was 31, or 100 per cent. more than during the preceding week. These deaths, however, were from cases reported from one to three weeks ago.

Compulsory Vaccination in the Army.—Major General Leonard Wood issued an order on August 28 making it compulsory for every officer and enlisted man in the United States Army under forty-five years of age to subject himself to vaccination against typhoid fever. Heretofore it has been voluntary on the part of an officer or private in the army whether he should subject himself to this experiment. The War Department has become thoroughly convinced of the efficacy of typhoid inoculation and this order will go into effect immediately.

Glanders in Ulster County.—A report comes from Newburg, N. Y., that there is a serious outbreak of glanders among the horses employed in the work on the New York aqueduct and that 30 horses have been isolated for observation by the State Department of Agriculture.

Ambulance Accidents.—A street car collided with a Bellevue ambulance at Broadway and Twenty-sixth street on August 23 injuring Dr. Hoffman, the ambulance surgeon, and the driver, and badly damaging the ambulance. An ambulance belonging to the Williamsburg Hospital, Brooklyn, collided with a street car on Wyckoff avenue on August 16. The ambulance surgeon escaped injury, but the ambulance was completely wrecked.

Civil Service Examinations.—The United States Civil Service Commission announces an examination to secure eligibles for vacancies in the positions of bacteriologist and pathologist in the Bureau of Science, Manila, P. I. The salaries are $2,000 with opportunities for promotion. Applications must be properly executed and filed with the Civil Service Commission before September 23, 1911. Applicants may make application either to the United States Civil Service Commission, Washington, D. C., to the secretary of the board of examiners, post office, Boston, Mass.; Philadelphia, Pa.; Atlanta, Ga.; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Cal.; Custom House, New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; Old Custom House, St. Louis, Mo.; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. An examination will be held on September 20, 1911, to secure eligibles to fill vacancies as they may occur in the position of trained nurses in the Isthmian Canal, Philippine, and Indian Services. Application blanks may be secured from the secretary of the United States Civil Service Commission at Washington, D. C., where information may be secured in regard to places of examinations.

Another Plan for the Reduction of Infant Mortality.—The Committee for the Reduction of Infant Mortality of the New York Milk Committee expresses itself as satisfied with the results obtained by the allied agencies in their warfare against diarrheal diseases this summer. It will now turn its attention to the prevention of infant deaths due to congenital troubles. These cause about 17 per cent. of all infant deaths. The committee is now giving special attention to 1,000 expectant mothers in an endeavor to bring to bear all of the community's resources which may enable the mothers to bring children into the world who shall be strong enough to combat the many foes that await them. An arrangement has been made with the Russell Sage Foundation by which a special nurse will be detailed to devote her time to this work. In addition to medical care and instruction in hygiene, help will be provided for the mother in case she is overworked. No midwives will be allowed to handle any of these cases. After confinement rest will be provided for the mothers and the children will be referred to milk stations. Last year about one-third of all infant deaths occurred among children not yet one month old; it will be the endeavor of the committee to prove by these 1,000 cases that this death rate can

be materially lowered. If this study proves that this is possible an active campaign will be undertaken along these lines next summer.

State Board Examinations.—There were 147 applicants who presented themselves before the Board of Registration of Massachusetts; of these 96 passed and 53 failed; that is 36 per cent. of the applicants failed. In the State of Oregon 96 applicants presented themselves before the State Medical Board, of whom 61 passed while 35 failed. At the recent examinations before the State Licensing Board of Alabama 86 applicants presented themselves and all passed and were given licenses to practise medicine.

Mrs. Harriman Endows Laboratory.—Dr. F. K. Ainsworth, chief surgeon of the Southern Pacific Railroad system, announces that Mrs. E. H. Harriman has given $50,000 for the establishment of a bacteriological and pathological laboratory in San Francisco for the benefit of the employees of the company.

Red Cross Seals.—If expectations for the sale of Red Cross Christmas Seals this year, as announced by the National Association for the Study and Prevention of Tuberculosis to-day, are realized, one hundred million of the holiday stickers, or a million dollars' worth, will be sold. Postmaster-General Hitchcock has approved of the design of the seal. Owing to the fact that many people last year used Red Cross Seals for postage, the Post Office Department has given orders that letters or packages bearing seals on the face will not be carried through the mails. This will be the third year that the seals have been sold on a national basis. In 1908 over $135,000 was realized from the sale; in 1909, nearly $225,000; and in 1910 nearly $310,000.

The Medical Section of the American Life Convention is to hold its annual meeting at the Hotel Schenley at Pittsburgh on September 20, the day before the opening of the convention. At this meeting some papers of great interest to medical directors and life insurance examiners will be read, and all medical directors, examiners, actuaries, or officers of companies who are interested are cordially invited to attend and to participate in the discussion of the papers. The following is the program of papers to be read at the meeting: (1) "The Transmission of Tuberculosis During Fetal Life," Dr. Harold A. Miller, Medical Director Pittsburgh Life & Trust Company; discussion opened by Dr. Victor C. Vaughan, Jr., Associated Medical Director Michigan State Life Insurance Co. (2) "The Healed Tuberculous Lesion from a Life Insurance Standpoint," Dr. George W. Parker, Medical Director the Peoria Life Insurance Company. (3) "Blood-Pressure," Dr. Henry Wireman Cook, Medical Director Northwestern National Life Insurance Company. (4) "Nervous Diseases as Applied to Life Insurance," Dr. John S. Turner, Medical Director Southland Life Insurance Co.; discussion opened by Dr. J. H. Florence, Medical Director Great Southern Life Insurance Company, Houston, Texas. The secretary of the section is Dr. F. L. B. Jenney, Marquette Building, Chicago.

Consolidation of Medical Colleges.—Announcement is made that the College of Physicians and Surgeons of Memphis and the Medical Departments of the University of Nashville and of the University of Tennessee have united to form one medical school in affiliation with the University of Tennessee. The school will be located in Memphis and will be liberally equipped with the contributions of the three colleges. The registrar of the newly consolidated institutions is Dr. E. F. Turner, 879 Madison avenue, Memphis, Tenn.

Medical College Will Reopen.—The University Medical College of Kansas City, which closed its doors last spring, announces that it will reopen this fall and will be run henceforth as a clinical school of medicine and surgery. The requirements for admission have been raised so that they include a degree from a reputable college and two years in a medical school. Arrangements are being made whereby this institution may cooperate with universities and colleges in nearby States. The hospital in connection with the college will be improved.

The new addition to the Margaret Fahnestock Training School of the New York Post-Graduate Medical School and Hospital is completed and provides accommodation for 139 nurses. The former building accommodated sixty-seven, and was inadequate for the needs of the medical school and hospital building, now nearing completion.

Radium Institute Opened.—A radium institute has recently been opened in London. This has been made possible through the generosity of Viscount Iveagh and Sir Ernest Cassel. It is reported that the institute is the possessor of 15 grains of radium and will be able to treat thirty patients at one time.

Medical Building Burns.—The west side of the old medical building on the campus of the University of Michigan was destroyed by fire on the night of August 12.

Addition to Hospital.—Work has been begun on a four-story addition to St. Joseph's Hospital, Denver, Col. The new building will be constructed on strictly scientific lines and will contain forty-four rooms and eight suites of rooms. The estimated cost of the building is $100,000.

State Home for Mental Defectives.—Colorado is solving the problem of what to do with mental defectives who should not be placed in an insane asylum and do not fit in any other institution by erecting a large state institution which will provide a proper environment for this class of unfortunates.

A Hospital for Divers.—A report comes from London that a portable hospital has been devised for divers. This "hospital" is just large enough for the patient and a physician and is so constructed that the atmospheric pressure can be adjusted to the needs of the patient. It is said that there are only two of these decompression hospitals in existence, one being the property of the English Admiralty and the other belonging to the Russian Government.

A Detention Hospital for Topeka.—The City and County of Topeka, Kan., have begun the erection of a detention hospital which will provide room for forty beds and private quarters for those willing to pay for them.

New Children's Hospital.—Contracts have been awarded for the construction of a children's hospital for contagious diseases for Kansas City, Mo. Work will be begun at once and it is hoped that the building will be ready for occupancy by spring.

Annual School for Health Officers.—The annual school of instruction for health officers of the State of Vermont convened on August 21 in Burlington, Vt., and remained in session four days.

Department Store Helps Fight Infection.—As a part of the movement to abolish the public drinking cup in New York City, a department store announces that it will make a free distribution of several hundred thousand pocket drinking cups to school children. The reason for discriminating in

favor of children is because children suffer far more than adults from the evils of the common drinking cup.

Stray Animals in New York City.—The Society for the Prevention of Cruelty to Animals has been employed since June 1 in collecting stray dogs and homeless cats. During this period 113,186 cats and dogs have been captured; the record for a single night has been as many as 886 cats. This work has been undertaken not only as one of mercy in behalf of the animals, but as a protection to health, it being generally acknowledged that the stray cat may be a potent disseminator of disease.

Dr. C. O. Probst, of Columbus, Ohio, secretary of the State Board of Health, resigned his office on August 24.

Dr. John W. Russell has been appointed first assistant at the Matteawan State Hospital to take the place of Dr. Amos T. Baker, who recently resigned.

The Medical Society of the Missouri Valley, of which Dr. Donald Macrae of Council Bluffs is president and Dr. Charles Wood Fassett of St. Joseph secretary, will hold its twenty-fourth annual meeting at Omaha, Neb., on September 7 and 8.

The Late Dr. Matheson.—At a recent meeting of the Norwegian Hospital Alumni Association the following minute was adopted: "It is with feelings of sorrow that the Norwegian Hospital Alumni Association is called upon to record the death of Dr. Sewell Matheson, who died at his home on July 9, 1911, in the forty-second year of his age. In his death the association is deprived of one of its most esteemed and respected members. As one of the founders of the association he had always taken a most active share in its success, contributing much to its interest by the value of his experience and the amiability of his disposition and comradeship. He was a valuable asset to the association, to the medical profession, to science and art, and to the community in general. His professional career was marked by unusual devotion, fidelity, charity, loyalty, and enthusiasm. His personal character was distinguished by a high sense of integrity and ideals; he possessed a general personality which endeared him to all his coworkers, each of whom feels in his death a sense of personal loss."

Obituary Notes.—Dr. Henry Kay Kerr of Watertown, N. Y., a graduate of the Toronto School of Medicine in 1881, a member of the American Medical Association and the Watertown Medical Society, died suddenly of heart disease, August 22, aged 52.

Dr. Theophilus Steele of New York City, a graduate of Lexington Medical College, Ky., in 1852, died suddenly, August 24, aged 77.

Dr. George S. Foster of Putney, Vt., a graduate of the University of Vermont Medical College, Burlington, in 1874, died August 18, aged 63.

Dr. Joseph Nisbet LeConte of Atlanta, Ga., a graduate of Bellevue Hospital Medical College in 1898, died at his home August 13, aged 38.

Dr. J. H. Lester of Crudup, Ala., a graduate of the University of Pennsylvania, Department of Medicine, in 1878, died at his home August 14.

Dr. James Sullivan of Manchester, N. H., a graduate of Yale Medical School in 1875, died in Boston August 16, aged 58.

Dr. James M. Whittaker of Milledgeville, Ga., a graduate of University of Georgia, Medical Department, Augusta, in 1870, died August 12, aged 65.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

DENTAL CONFERENCES, INTERNATIONAL AND BRITISH—ORAL SEPSIS—MOUTH BREATHING, CARIES, ETC.—SANITARY INSTITUTE—OBITUARY.

London, August 11, 1911.

The dental branch of the profession has been much in evidence and its conferences have been of interest beyond the specialty. First came the International Dental Federation's meeting, which was held this year at the Royal College of Surgeons and was cordially welcomed by the British Dental Association. In fact, the two organizations might, for the time being, have been regarded as united. Mr. W. P. Paterson, F. R. C. S., was president of both. The federation members were the guests of the association, as were a number of foreign visitors, both as to the social functions and scientific proceedings.

The president delivered an inaugural address in which he criticised the action of the State in regard to the protection of the public from unqualified persons and the inefficiency of the managements for the army and navy. Further, he maintained that the whole world would have to adopt school clinics.

Sir H. T. Butlin addressed the meeting at the college on the conditions of the mouth that were likely to be mistaken for cancer. The diagnosis he admitted was often difficult and he gave some striking illustrations. The state of the teeth bore an important relation to the health of the nation. He hoped to see the day when every dental practitioner would be a qualified physician or surgeon.

At the association's meetings there were a number of special papers. One was by Dr. Bardswell, superintendent of King Edward's Sanatorium, who said a good digestion was the best asset a consumptive could possess and the mouth was the first line of defence. At all dispensaries and sanatoriums skilled dental treatment should be a matter of routine. Not only so, but such treatment should be available for all classes, though he was afraid the time was not ripe for asking the State to provide it.

Mr. F. Harrison had a paper on the ill-effects produced by faulty breathing and excessive sucking of teats and "comforters" by infants. He would destroy all such things and institute nose drill three times a day. As early as eight years of age children in civilized countries suffered from decayed teeth.

Mr. Rushton followed up this subject with a paper on the "effects of mouth breathing on the facial contour." He declared dental irregularities increased of late and were accompanied by changes in the jaws, so that we were becoming an ugly nation, the round face giving place to the long, thin one and the mandible being protruded instead of retracted.

Dr. Cryen showed the value of *x*-rays. Dr. Cunningham described the Cambridge Dental Institute for Children. Mr. Wallis looked for benefit to the public health from school clinics, and Dr. Bogue presented a paper on the "Prevention of Dental Deformities." Closely related to these discussions were others at the recent Birmingham meeting, where oral sepsis and dental caries bulked largely in more than one section.

In the odontological, Mr. Erskine Young of Liverpool, said oral sepsis struck at the root of

national health. He attributed to this cause cases of anemia (septic), appendicitis, tuberculosis, and other diseases. Microbes gained admission through carious teeth and exposed pulps. Sir V. Horsley declared 750,000 London children needed dental treatment and school clinics only could deal with them effectually. Mr. Wallis said the County Council needed conversion and education. He advocated public lectures. Mr. Brooks spoke of the financial difficulty which would only be met by State Dentistry, the scheme of the Insurance Bill being extended to the dental branch.

Mr. Herbert Smale, of London, had a joint paper with Dr. Carmalt Jones on the "Bacteriology of the Tooth Brush," which might well give thought to many. Once used the brush was septic and every bristle might be looked at as an inoculation needle, ready to be the cause of anemia, gastritis and any microbic disease. To render the brush aseptic it would have to be boiled for 5 minutes after using. A new brush could be had for a penny and so a new one every day was available. They recommend trikresol, 1 per cent., for rinsing the brush, and when not in use that it should stand in formalin solution, 10 per cent. The mouth was a septic cavity, but that was no reason for driving the microorganisms into the tissues. There was considerable discussion on this subject, and Mr. Hopewell-Smith said india-rubber brushes could be thoroughly cleansed under a stream of water, and mechanical cleansing of the mouth was quite sufficient in ordinary circumstances. Antiseptics in the mouth were only needed in diseased conditions. This was the opinion of other speakers. It was generally agreed that the weak antiseptics found in various washes for the mouth had no effect on pathogenic organisms.

Dr. Sim Wallace took up the bread question, of which so much has been made, and said that bread did no harm except by lodging in crevices where it could ferment.

Mr. Hopewell-Smith spoke of the "abuse of sweets," and said their ill-effects were known to every practitioner. Some, as hand-bake, actually cracked the enamel. Others were colored with harmful dyes, and so on. Chocolate and coffee were specially bacteriophile. Professor Bostock Hill thought they would have hard work to persuade the rising generation that sweets were injurious. As a public analyst he found it very rare for dangerous dyes, etc., to be used.

Dr. Woods Hutchinson, a New York visitor, interposed by saying it was getting dangerous to be alive. He was not himself afraid of bread and he was strongly in favor of sweets, or as they called them in America, candies, for they helped to build up the bodies of young people. His views have been mentioned in the newspapers to the delight of the youngsters in many a household and the confusion of not a few doctors who have been forbidding such luxuries.

In connection with the Sanitary Institute's Congress a women's meeting on hygiene was held at which Dr. Eric Pritchard proposed the state endowment of motherhood, which if well organized, he held would eliminate many causes of death, due to poverty. He had been a strong believer in the sanctity of the home until his work with school children brought him into contact with thousands of mothers who had no conception of discipline, order, or obedience. Muddle, dirt and stupidity ruled in many such homes. The insurance bill did not safeguard the babies. Endowment should provide every lying-in woman with a capable midwife and health visitors, who could dispense free food, clothing and other necessities. In the discussion some thought it was proper to limit the number of children to reduce the great mortality of infants. Others held this would be against the welfare of the state.

In regard to other conditions of infantile mortality and disease several speakers strongly urged compulsory notification of disease, and one made out a rather good case from his point of view, for placing among the diseases to be compulsorily notified, ptomaine and food poisoning.

Dr. Samuel J. Gee, consulting physician to St. Bartholomew's Hospital, has died suddenly at Keswick, at the age of 71. He was honorary physician to the Prince of Wales (now King George). He was a distinguished student of University College, taking the M. D. and the University medical scholarship in 1865. He became Fellow of the Royal College of Physicians in 1870, and served as censor in 1893-97. He was a frequent contributor to medical literature. His "Auscultation and Percussion" reached a fifth edition in 1906. His "Medical Lectures and Aphorisms" went to a second edition in 1907. He delivered the Gulstonian Lectures in 1871 and the Lumleian in 1899. He wrote many articles in Allbutt's "System," Reynold's "System," and Quain's "Dictionary of Medicine."

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

BURNS OF THE CRANIUM AFTER ELECTROCUTION—FOREIGN BODIES IN THE URETHRA—LUMBAR RACHINOVOCAINIZATION—GENERAL ANESTHESIA WITH REDUCED CIRCULATION OR EXCLUSION OF THE FOUR LIMBS IN GENERAL ANESTHESIA—DR. CHARLES NÉLATON.

PARIS, July 30, 1911.

At a recent meeting of the Société de Chirurgie Quénu reported several observations of Guinard (of Saint-Etienne) on burns of the skull after electrocution. Accidents of electrocution occur generally as a result of touching cables which serve to carry motor force. These cables carry often 35 to 40 ampères under 10,000 volts. The electrocution which results from touching such a cable produces burns with black eschars, true carbonizations which often necessitate amputations. Guinard has seen cranial eschars of considerable size which would not permit a complete resection of all the burned bone. Here he has trephined as early as possible in the center of the eschar in order to guard his patient against encephalic accidents. Rochard has also observed burns of the skull in a woman who fell into a fire and had one half of the head completely burned. Rochard did multiple trephining and could obtain cicatrization only by means of grafts. Cure was obtained after some months, but some parts of the brain were protected only by osseous crusts. Routier observed a patient of 42 years of age in whom very severe symptoms resulted from the presence of foreign bodies which had existed for five years in the urethra. The patient had an elevation of temperature, a dry tongue, and a vast phlegmon of the entire scrotal region and the half of the abdomen below the umbilicus, with a fistulous orifice at the penoscrotal angle from which issued pus and infectious gas. The exploration of the urethra allowed of feeling 6 cm. from the orifice a stony scrotching which resulted from the presence of three large hairpins, which were ex-

tracted with forceps. Five years before, in a leisure day, the patient, a gardener, introduced the three hairpins into the urethra successively without being able to withdraw them. He suffered for some days and then ceased to feel them. He continued his work without interruption. A short time afterward abscesses formed and produced fistulæ, but it is curious to consider that this man was able to carry three long hairpins in his urethra for four years without being severely incommoded.

Forgue of Montpellier defended lumbar rachinovocainization before the Academy of Medicine. This method of anesthesia has not found among the majority of surgeons of France the success and appreciation that it deserves. It seems that the introduction of a new agent of slight toxicity, novocaine, should give in rachianesthesia as good results as in local anesthesia. From the point of view of technique, Forgue uses the sterilized solution of novocaine "Creil," 4 per cent.; the injection is made in the lumbar region and the dose varies from 5 to 10 centigrams, according to the age of the subject. Forgue has done 320 operations with lumbar anesthesia using novocaine; he obtained 306 good anesthesias in the 320 cases, a proportion of 95.5 per cent. Anesthesia begins generally five minutes after the injection; it invades the anoperineal region, the lower limbs, and progressively reaches the pelvis and even the thorax; after ten minutes it is complete. The average duration is 40 to 50 minutes. In the course of the operation there are no accidents; the pulse is generally slow, from 50 to 60 per minute; there is sometimes a paralysis of the sphincter which allows feces to pass from the bowels during the operation, but this little incident is rare and unimportant. The accompanying phenomena are unimportant; the operative shock is almost nil; secondary vomiting is absolutely exceptional, so that the patient can be fed normally very soon. No immediate or secondary bad result has been seen. Thus we see that rachinovocainization in the lumbar region has produced an excellent result and presents an almost absolute harmlessness which makes it preferable to general anesthesia. Pinard reported a case in which rachianesthesia gave an excellent result in a woman who was able to be delivered by cesarean section and have a living child extracted, thanks to this method of anesthesia.

Delagenière brought forward a method of anesthesia with reduced circulation by exclusion of the limbs in general anesthesia. This method, invented by Klapp in 1907, consists in using a narcosis in which the circulation has been artificially reduced in extent. Struck with the ease with which we can anesthetize subjects who have had a considerable loss of blood, Klapp had the idea of causing constriction of the limbs by means of elastic bands placed at the root of the limb, so as to exclude from the circulation the mass of blood contained in the members. One notes that the quantity of anesthetic needed to put to sleep a patient is proportional to the quantity of blood and the weight of the subject. Delagenière has collected 1,144 observations of general anesthesia with reduced circulation. The technique consists in applying a band of rubber at the root of each limb sufficiently tight to cause venous stasis. After a few minutes, when the limb is turgescent, we apply a ligature like an Esmarch band, or a simple rubber band drawn progressively tighter, so as to arrest at the same time the venous and arterial circulation. As soon as the bands are applied the respiration becomes more rapid and the movements of respiration become less deep. This phenomenon is due to the lessening and slowing of the circulation, which causes a diminished hematosis. The advantages of this method are a more rapid anesthesia, which comes on in two or three minutes; the sleep is deeper, the dose of chloroform needed is less, the awakening is more rapid, the accompanying organic troubles are less, vomiting is seldom abundant and disappears during the first day. Hepatics avoid icterus by retention and eliminate better the chloroform which they have taken. The inconveniences of the method are of slight importance; they are formication in the excluded members for some hours, and small ecchymoses of the skin, sometimes a slight weakness, or paralysis.. Perhaps the method exposes the patient more than the ordinary one to phlebitis of the limbs.

Nélaton, surgeon of the hospitals, member of the Surgical Society, died suddenly in the fullness of his powers and talent at hardly 60 years of age. He bore one of the greatest names in French surgery, for his father was one of the greatest French surgeons, and had a brilliant reputation. Charles Nélaton was excessively modest because of bearing the name of his illustrious ancestor. He was a conscientious surgeon and was especially interested in affections of the bones and articulations and in autoplastic surgery. In the Surgical Society his authority was great for he was well known as never advancing an idea until he was certain. Charles Nélaton died before his time surrounded by the unanimous affection and regrets of all who had known him.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

BISMUTH PASTE—PARALYSIS IN CIRRHOSIS OF THE LIVER—TREATMENT FOLLOWING OPERATION IN CARCINOMA—DISEASE OF THE CHROMAFFIN SYSTEM ASSOCIATED WITH EXOPHTHALMIC GOITER.

VIENNA, August 15, 1911.

THE treatment of cold abscesses by means of bismuth paste was the subject of a discourse before the Practitioners' Society by Emil Beck of Chicago. He described the rationale and technique of his method in the diagnosis and treatment of fistulous tracts and cold abscesses, referring particularly to the good results that he had obtained in cases of spondylitis and coxitis.

A lively discussion followed the reading of Dr. Beck's paper. Dr. Schmidt stated that he had employed this method with success in fifty cases in Eiselsberg's clinic. Dr. Stiasny reported that he had obtained favorable but transitory results in the treatment of anal fistula. Dr. Lotheisen had obtained the best results in the treatment of tuberculous spondylitis. For necrotic cavities he used, instead of iodoform emulsion, a novoiodine paste which gives a good *x*-ray shadow and which is nontoxic. Professor von Eiselsberg remarked that twenty years ago a French surgeon had recommended the injection of paraffine into cold abscesses. One disadvantage of this method was the fact that the paraffine would persist in the tissues, from which it could not be removed. Beck's method was valuable not only for diagnosis but also for treatment.

Paralysis of the extremities resulting from a neuritis occuring in the course of cirrhosis of the liver was observed in a male 34 years old by Hans Eppinger in van Noorden's clinic. The patient had

worked ever since his fourteenth year with lead dies, but had never given any manifestations of lead poisoning until three months before his admission, at which time his illness began with colic, vomiting after eating, and emaciation. Physical examination revealed marked anemia, the lead line on the gums, and urobilinuria. The pulse varied around 100, the blood-pressure was not increased, the second aortic sound was not accentuated, and at one time a slight glycosuria was noted. For a long time the patient had experienced a feeling of weakness and trembling in his hands and feet. After a short stay in the hospital the symptoms improved, but twenty days previously on awakening in the morning he could not move his arms and could barely walk. Many muscle groups of the arms and abdomen were paralyzed and some were atrophic with loss of both galvanic and faradic irritability. For a long time the patient had had dyspnea; the diaphragm responded but slightly to stimulation of the phrenics. The abdominal and cremasteric reflexes were absent but the patellar reflex was exaggerated. The presence of urobilin in the urine was evidence of a cirrhotic condition of the liver. Eppinger had observed in van Noorden's clinic the occurrence of sudden paralysis of neuritic origin in several cases of cirrhosis of the liver, and he regarded the above case as one belonging to this group.

Energetic treatment following operation in cases of carcinoma is recommended by Professor Hochenegg. For a long time he has been convinced that operation fulfilled only one indication: it removed the new growth but not the predisposition thereto, which predisposition consists in some unknown alteration in the organism and of its metabolism. Since this condition continues after the operation, recurrences are common; these have been regarded as relapses, but, according to certain observations made by the author, the so-called relapses are really independent of the first manifestations and are new expressions of the underlying causes. Hitherto he has had no means of confirming this hypothesis, but the discovery of the carcinoma reaction of Freund enabled him to demonstrate the presence of the cancer predisposition. The application of this test to cases before and repeatedly after operation by Arzt showed the presence, the continuance, and the disappearance of the cancerous predisposition. Hochenegg recommends that, if the reaction is positive, energetic solar and other light cures should be administered, for these have been effective in changing the positive into a negative reaction.

Disease of the chromaffin system associated with exophthalmic goiter was observed in a female patient by N. Lindenfeld. Four months previously the patient had noticed that her skin took on a brown coloration, which later disappeared but returned after a lapse of seven or eight weeks. These pigmentary changes were noted as follows: Large, dark areas appear on certain portions of the body and afterward fade; soon appear at many different parts of the body pigmentary spots as if caused by a spray of ink, which, however, like the larger blotches, are only transitory. There was marked tenderness in both renal regions, particularly on the left side, while there was none apparently in the epigastric region. Below one kidney an indistinctly defined resistance was felt. The blood-pressure varied but was not low and the patient lost in weight. This case was probably not one of pigmentary Graves' disease, that is, one associated with hyperfunction of the adrenal system, but was a combination of disease of the thyroid and that of the adrenal apparatus.

Progress of Medical Science

Boston Medical and Surgical Journal.

August 17, 1911.

A Report of Sixty Cases of Syphilis Treated with Salvarsan. J. H. Cunningham, Jr.
Boston's Hospital School for Tuberculous Children. E. A. Locke and T. J. Murphy.
Skin Grafting in the Repair of Contractures Due to Burns. B. Vincent, R. M. Green, J. F. Tomkies, and W. T. Graham.
Tree Cancer. A Striking Analogy Between Certain Vegetable Tumors and Malignant Animal Tumors. H. Packard.
An Unusual Monstrosity. G. R. Torbert.

Salvarsan.—J. H. Cunningham, Jr., reports satisfactory results in the treatment of sixty cases of syphilis with this drug.

Hospital School for Tuberculous Children.—E. A. Locke and T. J. Murphy describe the work of the open-air school and hospital established for tuberculous children in Boston, and controlled jointly by the Boston Consumptives' Hospital and the Boston School Department. The general results of treatment have, on the whole, been extraordinarily satisfactory. After admission the children show, almost without exception, an immediate improvement in their physical condition in response to the life in the open air, rest, and feeding, and the teachers have frequently noted a striking development in the mental powers also. As a rule the children enter into the routine of the school with enthusiasm, and the authors have never observed any hardship from the life in the open air, even during the most severe winter weather. On several occasions, when discharged, the child begged to be allowed to remain.

Skin Grafting in Repair of Contractures Due to Burns.—B. Vincent, R. M. Green, J. F. Tomkies, and W. T. Graham report four cases, showing the favorable result of skin grafting for cicatricial contractures due to burns, and suggest that this is a valuable method, with wide possibilities of application.

Tree Cancer.—H. Packard refers to the striking analogy between vegetable and animal tumors, particularly exemplified in the tumor growths on the red oak trees of Cape Cod. These show a localized primary infection, enormous multiplication of the host cells, metastasis to neighboring parts, and death of the host.

An Unusual Monstrosity.—J. R. Torbert describes a specimen of monster belonging to the type of uniovular twins, which are always of the same sex, and which communicate with each other by means of the vessels of the umbilical cords, near to or in the single placenta. One of them is usually fairly normal in structure, while the other shows an amount of deformity which is always considerable and may be extreme.

New York Medical Journal.

August 19, 1911.

Modern Vitalism. C. E. Woodruff.
National Insurance Against Sickness and Invalidity. G. P. Forrester.
The Regressive Psychosis of Alcoholism. A. D. Bush.
Arteriosclerosis; Points in Its Treatment. B. Robinson.
Remarks on the Pathology and Surgery of Renal Infections. A Report of Three Cases. I. Collica.
Secondary Tumors of the Heart. H. LeB. Peters and L. S. Milne.
A Strange Case of Anaphylaxis. B. Kaufman.

Modern Vitalism.—C. E. Woodruff states that chemistry reduces vitality to very simple terms, the unstable combination of enormous numbers of molecules of three very stable atmospheric gases (N, CO_2, H_2O). Modern vitalism merely states that if protoplasm is alive so are the nitrogen compounds composing it, and so was the most primitive form of nitrogen compound, which was the ancestor of the modern compounds. The chemistry of the evolution of this primitive one, therefore, prepares on

for the final starting plunge taken by a few modern thinkers. The change from nitrogen to the living nitrogen compound was very gradual and extended over millions of years, so gradual indeed that no one can say when the function could be called vital. Therefore it is boldly asserted by these men that if the end products were alive so were the beginnings—so was the nitrogen itself.

National Insurance. By G. P. Forrester. (See page 491.)

Alcoholism.—A. D. Bush notes the power of alcohol as a subtle poison, acting upon the cells of the nervous system in the inverse order of their evolution.

Treatment of Arteriosclerosis.—B. Robinson states that the larger his experience and the more he watches cases of pronounced arteriosclerosis, especially in men and women past middle lift, the less frequently does he prescribe either digitalis or the iodides. If a cardiac tonic or stimulant is required, strophanthus, caffeine, and nux vomica are preferable by far and are not liable, in small or moderate doses, to do positive injury. They require also judicious watching and suppression at times, but not to the same degree as digitalis. To lessen supertension, where it is clearly indicated by reason of headache, fainting attacks, pallor, and general nervous irritability, sweet spirits of nitre in small or moderate doses, added to water, is the least injurious and most useful drug the author knows of, not excepting nitroglycerin and the nitrites. Supertension in arteries, like the physical changes upon which it depends and with which it is allied, is highly conservative and should not be combated by any unwise attempts to control or modify it. Important measures in the treatment are change of scene and occupation; fresh air; good diet, with limitation in the amount eaten daily, and avoidance of excess of meat, sweets, alcohol, sauces, fats, uncooked fruits, or vegetables; and abundance of water internally. Physical exertion should be moderate, the skin should be kept in good condition, and mild saline laxatives should be administered twice a week.

Renal Infections.—I. Collica reports three cases of surgical kidney and discusses the pathology and surgery of renal infections.

Secondary Tumors of the Heart.—H. Le B. Peters and L. S. Milne report three cases of secondary malignant tumor of the heart, two of carcinoma and one of lymphosarcoma. They state that tumor metastases in the heart occur as a result either of direct extension by the lymphatics from neighboring structures or via the blood stream either by direct implantation upon the endocardium or by embolism of the coronaries. The symptoms of tumor of the heart are exceedingly varied, no pathognomonic sign being recognized. Palpitation, precordial pain, cardiac distress, dyspnea, arrhythmia, cyanosis, and other signs of loss of compensation are sometimes noted.

Anaphylaxis.—B. Kaufman reports the occurrence in himself of extraordinary swelling of one arm, which was also the seat of intense pain and itching, following an injection of 1,000 units of diphtheria antitoxin. There were also nausea and general urticaria. The author had seven months previously been injected with 500 units of antitoxin.

Journal of the American Medical Association.

August 19, 1911.

The Fundamental Principles of Pediatrics. H. D. Chapin.
New Mechanical Devices for Closing Wounds. E. W. Andrews.
Gonorrheal Osteoperiostitis of the Long Bones. S. H. Watts.
Aims in Medicine. C. F. Stokes
Some Tendencies in Medical Education in the United States. L. F. Barker.
Anatomical Conditions Bearing on the Relations Between Diseases of the Eye and Diseases of the Accessory Sinuses. W. E. Sauer.
Eye Complications Arising from Diseases of the Nasal Accessory Sinuses. A. H. Andrews.
Operative Treatment of Suppurative Sinus Disease Producing Orbital Complications. J. H. Bryan.
Gangrene of Finger Caused by 5 per Cent. Phenol Ointment. O. F. Schussler and M. A. Stern.

Fundamental Principles of Pediatrics—By H. D. Chapin. See MEDICAL RECORD, July 29, 1911, page 249.

Mechanical Devices for Closing Wounds.—E. W. Andrews states that he has constructed several forms of forceps by means of which one can sew the skin and deep layers more smoothly and rapidly than by hand. He also describes new forms and new applications of metal clips. The advantages noted for these are speed of application, asepsis, rapid healing, absence of pain, absence of scars, a ridge-shaped or folded up suture line, and no perforation of the skin. The only disadvantages are lack of strength and want of flexibility, causing pressure, irritation, or ulceration. The author recommends the use of clips in intestinal work. As a substitute for artery forceps and ligatures, the small clips are of great value. The metal used for outside work is German silver. To secure absorption of the little metal staples after these are placed deep in wounds, the author has tried aluminum, zinc, and magnesium. The last is ideal in being quickly absorbed, but is so brittle that it breaks easily. An alloy of these metals is now being used, and promises well for rapid absorption.

Gonorrheal Osteoperiostitis of the Long Bones.—By S. H. Watts. See MEDICAL RECORD, July 8, 1911, page 100.

Aims in Medicine.—C. F. Stokes states that the two kinds of conscience as distinguished by Norman Bridge provide food for thought as regards the aims of the medical profession. Bridge calls one kind of conscience the personal or individual, the other the collective or class conscience. The individual standard is perhaps the higher, but the collective or group conscience is the standard of the community or society, based on the feelings and emotions of the race, and a neglect of the collective standard to too great an extent may impair progress. What bearing has the so-called crowd or collective conscience on one's aims in medicine, the author asks, and answers by saying that with the growth of this standard the appalling record of 600,000 lives annually sacrificed to preventable diseases would dwindle into comparative insignificance. Results can come only from an awakening of the crowd conscience through education, team work, and convincing demonstration.

Medical Education.—L. F. Barker states that the greatest need of medical schools at present is that of school-controlled hospitals, in which the students can actively participate in the work of diagnosis and treatment under skilled direction, and there is probably not a single medial school in the country that has a perfectly satisfactory condition in this regard.

Sinus and Eye Disease.—W. E. Sauer describes the anatomical conditions that favor the involvement of the orbit in cases of disease of the accessory sinuses.

Eye Complications of Nasal Accessory Sinus Diseases.—A. H. Andrews describes the following complications: orbital cellulitis, dacryocystitis, lacrymal abscess, epiphora, conjunctivitis, corneal ulceration, and muscular imbalance.

Sinus Diseases.—J. H. Bryan discusses the operative treatment of suppurative sinus diseases producing orbital complications.

Gangrene of Finger.—O. F. Schussler and M. A. Stern report a case of this condition caused by the application on a closed dressing of a 5 per cent. ointment of phenol.

The Lancet.

August 12, 1911.

Psychoneuroses. E. D. Macnamara.
The Present Position of Radium-Emanation Therapy in Germany. W. Engelmann.
Institutional Hydropathic Treatment as Compared with Spa Treatment for Certain Types of Invalids. T. D. Luke.
A Case of Complete Gastrectomy. R. G. A. Moynihan.
After-Care. H. W. McConnel.
Excessive Local Perspiration. An Account of the Successful Treatment of Fifteen Cases. A. H. Pirie.
A New Form of Trochiscus. Sir James Sawyer.

Psychoneuroses.—E. D. Macnamara states that the psychoneuroses are not, as their title might lead one to expect, affections combining the symptomatology of the psychoses with that of the neuroses, but, in fact, form a sub-group of the psychoses in which the clinical phenomena are non-mental, but in which those phenomena have been produced by incidents in the mental life of the patient.

Radium Emanation Therapy.—W. Engelmann alludes to the increasing interest displayed by German clinicians in this form of treatment, which is administered by three different methods: by the drinking of radioactive water, by bathing in the latter, and by means of inhalations. The conditions for which the treatment is indicated include gout, chronic rheumatism, sciatica, neuralgia, neuritis, as well as exudates and growths which need energetic means to promote absorption.

Institutional Hydropathic Treatment.—T. D. Luke discusses the advantages of this method of treatment as compared with spa treatment.

Complete Gastrectomy.—B. G. A. Moynihan reports the later history of a patient on whom he had in December, 1907, performed a complete gastrectomy for carcinoma. The patient was perfectly well until the early part of 1910, when he began to show evidences of a profound anemia. In January, 1911, he died. Autopsy showed a complete absence of any recurrence or dissemination; the very profound anemia; and absence of any striking jejunal dilatation at or near the site of anastomosis.

After-Care.—H. W. McConnel emphasizes the necessity of looking after a patient and his surroundings after he has left a sanatorium or hospital.

Excessive Local Perspiration.—A. H. Pirie states that excessive local perspiration cannot be classed as a disease, but to one afflicted with it it is a real infirmity. A surgeon with perspiring hands runs a risk of infecting a wound. A physician with perspiring hands leaves his patent's wrist wet after feeling the pulse, and has the chagrin of seeing his patient drying the wrist. When the armpits are affected clothes are soiled and rotted by the perspiration, and the patient is uncomfortable from wearing wet underclothing. Cold feet from socks wet with perspiration is another form of annoyance. All these conditions can be cured by *x*-rays. In the author's experience every case which has been fully treated has been a complete success, and he can thoroughly recommend the treatment. When the treatment is perfectly carried out the patient suffers no discomfort and there are no bad after-effects.

A New Form of Trochiscus.—Sir James Sawyer calls attention to a new vehicle for the preparation of medicinal trochisci, which he has found useful in practice, namely, the "chocolate cream."

Berliner klinische Wochenschrift.

August 7, 1911.

Acromegaly and Dystrophia Adiposo-Genitalis.—In the course of an article on tumors of the hypophysis Melchior discusses the two trophic affections which result from such neoplasms. The former has never yet been known to occur save as a result of adenoma of the hypophysis. It is too well known to be discussed in detail and only a few salient points require mention. The patient sometimes first consults the eye specialist for the pressure symptoms which may first be manifested in that organ. Females sometimes seek the gynecologist for the characteristic suppression of the menses. Hence both these specialists should be on the alert to recognize the incipient case. The course of the malady shows the widest variation and is eminently chronic—so much so that an acute case so-called does not end fatally inside of three years. At present the view of Benda that acromegaly is due to hypersecretion of the anterior lobe of the hypophysis has not been seriously controverted. The other syndrome—dystrophia adiposo-genitalis—seems the antithesis of acromegaly and is believed to be due to hyposecretion of the same lobe. It has been known since 1901 and consists of a form of infantilism, but the latter does not result necessarily from any arrest of development since it appears as a rule in the thirties or forties and is therefore retrogressive in character. There is a general accumulation of adipose side by side with atrophy of the genitals and abolition of their function. When the condition appears before puberty the latter state never supervenes. The actual causes of this syndrome appear to be sarcomas or cysts in the region of the duct. That is to say, this dystrophy, unlike acromegaly, has nothing specific about it. The patient resembles a castrated subject or a victim of myxedema and like these should be favorably influenced by organotherapy.

Pituitrin as an Oxytocic.—Stern has used hypophysis extract in several cases in which an oxytocic action was indicated. The first was an example of severe pulmonary and laryngeal tuberculosis in which it was desired to induce premature labor for the sake of both mother and child. Six mgs. of the extract were injected, the woman being in the thirty-sixth week of gestation, doubtless twins. Twenty minutes after the injection labor pains began and lasted two hours, the os becoming patent to two fingers. A second injection had a similar result, and a third and fourth were given before the uterus was evacuated. Two infants were born living and nonasphyctic. In a second case of the same character labor was induced in the thirty-second week but the injections did not accomplish the desired result and metreurysis was required to complete the dilatation of the cervix. In a third case, a nephritic, the extract was sufficient to dilate the cervix, between three and four days being required for the purpose.

Pituitrin in Obstetrics.—Bondy, like Hofbauer and Stern, is somewhat enthusiastic over pituitrin as an oxytocic. He has used it in eight cases in which labor was tedious from weakness of uterine contractions. While labor had lasted an average of 36 hours before the injections the latter caused evacution of the uterus in about half an hour (from 10 minutes to an hour). The long period before the injection corresponded naturally to the opening of the cervix while the brief period after injection agreed in a measure with the second stage of labor, but even at that the latter lasted but a quarter of the usual interval and the stage of dilatation was two or three times the average length.

Münchener medizinische Wochenschrift.

August 8, 1911.

Peroneus Phenomenon as Evidence of Spasmophilia.—Lust lays great stress on the presence or absence of this phenomenon in the diagnosis of tetany in children. It may be present when other specific tests give negative results. The author naturally relies on the incidence of laryngospasm, eclamptic attacks, increased cathodic excitability, the facialis phenomenon, etc., as far as practicable; but in so-called latent spasmophilia, as evidenced by the negative result of these standards, he finds the peroneus phenomenon almost invariably present. Although it may be the sole evidence of spasmophilia, the author is not inclined to belittle its significance. He rates it as much more conclusive than either Trousseau's or Chvostek's sign. In fact if he fails to obtain this sign he would exclude spasmophilia. The peroneus sign seems to have been elaborated independently by the late Prof. Escherich and the author. It rests upon the question of the increased mechanical excitability of peripheral muscles. Other pediatrists had noticed the association and naturally the facialis phenomenon is of the same type.

Labor and Anaphylaxis.—Von der Heide seeks to bring the inauguration of labor under the head of anaphylactic phenomena. This view is based largely on animal experiment. The maternal organism becomes anaphylactic to fetal serum, so that the latter acts as an oxytocic. This line of argument is in full harmony with the anaphylactic origin of eclampsia.

Anaphylactic Phenomena in the Cornea.—Wessely, who has experimented on the rabbit's cornea, concludes that the latter is peculiarly susceptible to anaphylactic influence, despite, or because of, the natural sluggishness of its metabolism. Parenchymatous keratits he regards as an anaphylactic phenomenon. He asks: "may a general supersensitiveness develop as a result of corneal anaphylaxis?" and "given a general anaphylaxis, may the cornea participate to the extent of giving a local reaction?" Experimenting on the rabbit's cornea with heterologous serum, he finds that, after securing a reaction in one cornea, an injection into the opposite cornea—after an interval of two weeks—causes a violent reaction which shows plainly that a general anaphylaxis must have been set up.

Experimental Causation of Malformations of the Eye.—Pagenstecher has studied the effects on unborn rabbits of feeding the mothers with naphthalin. After many failures he succeeded in causing congenital cataract. He gave the drug throughout gestation at about regular intervals. All forms of cataract were noted—stratified, central, capsular, cortical, etc. Malformations were also produced in the lens, cornea, etc. The animals seemed otherwise healthy. The author lays great stress on the significance of his work, for he claims to have shown that malformations may have a purely toxic origin, and that such terms as "anomaly of the germ plasm" can no longer be used indiscriminately to explain the origin of congenital defects.

Fate of Sanatorium Consumptives.—Reiche has traced the outcome of a large number of patients treated between 1895-1904 as far as 1910. So many questions come up as to the condition on admission, length of treatment, state when discharged, etc., that figures might in general be very misleading. It appears that the death rate for those admitted year by year shows a steady decline, which of course might be due largely to increasing care in the selection of cases. The percentages of those able to earn their living show a steady increase, and this, too, might be thus explained. Nevertheless, the figures must admit of a favorable construction.

Deutsche medizinische Wochenschrift.

August 10, 1911.

Inheritance of Disease.—Pick discusses Mendelism in relation to disease and states that thus far the material available is not in shape for use. We know that whites and negroes give rise to mulattoes, but cases are said to occur in which one negro mother has borne to a white father a white child, a black child, and a mulatto. Biometricians claim that by application of their methods the seemingly white and black offspring in such cases may really be shown to be mulattoes. In other words Mendelism is a matter of illusional resemblance and not of facts. Questions of this sort have a decided medical interest, for true hybrids tend to short life and infertility, while the pure offspring of a mixed marriage should be free from these handicaps. The chief interest of Mendelism in disease must consist largely in the great and ever-increasing number of multifamilial diseases and malformations. Many of these have already been studied from the Mendelian point of view, and, generally speaking, the influence of such a factor as Mendelism is qualitatively apparent, but when we seek quantitative ratios we are doomed to disappointment. The number of factors which might interfere with these ratios is large. Phenomena encountered may be explained in various ways. Given a multifamilial disease or deformity, no one would be able to prophesy offhand the incidence of the affection in a given brood of children. We do know that transmission along the line of six is often an assured fact.

Lead Poisoning.—Straub discusses the general subject of chronic intoxications with special reference to plumbism. As a result of animal experiment he concludes that the mineral is first deposited in a given locality from which it slowly and continuously enters the blood and attacks structures which are physiologically sensitive to its action. Injected into the muscles of animals, the drug, after absorption and on its way to be excreted, is capable of causing the most varied nervous disorders. These range from neuritis of motor nerves to paralysis of the bulb; while, between the two, numerous forms of myelitis are in evidence. The phenomena are almost entirely functional in nature. In rare instances an anatomical substratum was found. Lead poisoning at present means a supersensitiveness of nervous tissues to the action of this metal.

Bacterial Calculi in the Kidney Pelvis.—Neumann relates the case of a young woman who appeared to have developed a puerperal parametritic abscess or pyelonephritis, or both, on the right side. The symptoms subsided without the need of recourse to exact methods of diagnosis. Two months later she returned to the clinic with what might have been a high degree of acute pyelonephritis. The evidences of calculus formation were negative throughout, but it was surmised that bacterial concrements had formed and that the condition of the kidney pelvis was due rather to calculi than to an essential pyonephrosis. This conclusion was reached chiefly through the history of the patient, which pointed to renal calculi in girlhood. An operation confirmed the justice of the surmise. The kidney itself was practically normal. Pyelitis was present along with concrements of a peculiar character, resembling gallstones. These were shown to consist of the *Bacillus coli*. Such a state of affairs is so notably rare that its nature must be obscure. The author knows of but three recorded examples and these throw little light on his own case. Other material exists, not classed specifically under this head but perhaps best explained thereby. The author assumes that some of these cases are of hematogenous origin, since they cannot be explained by a urogenous theory. We can only infer that, while bacterial calculi may form in the kidney pelvis, their relation to suppuration is far from clear. They are assumed to be secondary to pyelitis, yet there may be nothing to account for the latter, while there may also be a history of kidney stones.

Pneumothorax from Pulmonary Echinococcus: Differential Diagnosis from Tuberculosis.—Patella presented the case of a young man operated upon for pulmonary disease caused by the presence of echinococcus in the right lung, which by rupture had produced a pyopneumothorax with extensive pulmonary atelectasis. This is the third case seen by him caused by the rupture into the pleural cavity of an echinococcus cyst. He advocates early diagnosis in order that the operation which is demanded by the condition may be done early. If the condition is caused by tuberculosis the treatment should be quite different. The differential diagnosis points are as follows: Residence in a region where the echinococcus infection is frequent; biological examination of the blood; eosinophilia; urticarial eruption after the occurrence of the pneumothorax; occurrence after exertion after the forma- of hydopneumothorax, due to the emptying of the contents of the cyst into the pleural cavity; slow appearance of pus in the fluid due to the relative aseptic condition of the lung.—*La Riforma Medica.*

Insurance Medicine.

A "Conservation Department" has recently been established by the Equitable Life Assurance Society, an object of which is, in conjunction with the Medical Department, to assist by educational and perhaps other methods in the conservation of human life. In a letter outlining the aims of this movement, Dr. Franklin C. Wells, Medical Director, calls upon the examiners of the company for such support and assistance as they are in position to give. Since, he says, the examiners are in touch with the leaders of public opinion, and with the most influential elements of the communities in which they reside, they are in a position to render invaluable service to the policyholders of the company and to humanity in general by urging active support of official and unofficial movements and measures wisely designed to conserve human life. The medical profession and public health officials should be backed by a strong and intelligent public sentiment in their efforts to secure improved health conditions, and it is the intention of those in charge of this department, by every consistent means of publicity, to stimulate and develop this sentiment in support of the public service rendered by the medical profession. It is not intended to enter into the consideration of treatment or remedies, but efforts will be directed solely along the lines of prevention. As a means to this end, Dr. Wells says that policyholders and the public in general, in order to get the full benefits of the science of preventive medicine, should get in the habit of going to their family physicians for health examinations with reasonable frequency, in order that the doctor may have an opportunity to guide them into healthful modes of life and to detect disease in its incipient stages when it may be checked or cured, and further, while taking no part in any contention as to the merits of the different schools of medicine, or the various methods of relieving or curing disease, the department is opposed to quack remedies and unwholesome nostrums which do much harm and are chiefly designed to draw financial tribute from human weakness and ignorance, and the society will advise its members accordingly.

National Insurance.—G. P. Forrester describes the system of national insurance as established in Germany, and presents the following data based on the imperial statistics for 1909: Of a total population exceeding 63,000,000, there were 12,519,785 persons insured against sickness. The average expenditure for medical attendance for each head of the insured amounted to $1.43, or an increase of 165.1 per cent. since 1885, when it stood at 54 cents. The payments to hospitals on behalf of insured persons averaged 83 cents for each head, again an increase amounting to 122 per cent. since 1892. The average incidence of sickness coupled with incapacity for work and therefore necessitating the payment of sick pay amounted to 40.3 per cent. of all persons insured, the figures being 42.2 per cent. in the case of males and 35.2 per cent. for females. The average duration of each case of illness of this kind was 20.5 days, or 19.4 days in the case of males and 23.8 days for females. This difference is interesting. The mortality among the insured amounted to 0.75 per cent., and reckoned for the male members the percentage of deaths was 0.81, and among the females 0.58. The average cost for drugs and appliances amounted to 89 cents for each person insured, an increase of 110.1 per cent. since 1885.—*New York Medical Journal*, August 19, 1911.

Injury or Carcinoma of the Pancreas?—Stempel gives in detail the history of a patient who died six weeks after a fall. At autopsy a very soft pancreas, surrounded by adhesions, was found, and carcinoma of the organ diagnosed. No microscopical examination was made. Accident indemnity was accordingly refused. An expert called in on appeal of the widow pointed out the impossibility of final decision because of incomplete history and autopsy. Because of the previous good health of the patient, the absence of jaundice, the softness of the pancreas, the absence of metastases, etc., another expert thought that hemorrhage into the pancreas with consequent necrosis was the more probable explanation, and a corresponding settlement was made in regard to indemnity.—*Zeitschrift für Versicherungsmedizin*, March, 1911.

Proof of Simulation of Unilateral or Bilateral Deafness.—Müller says that one ear may be made insensitive to other sounds, if a continuous loud noise is made just in front of it or within it. Bárány has constructed a clockwork for the production of such a noise. Voss simply sends a stream of air into the ear, while Müller uses the instrument constructed for vibratory massage of the ear drum, applying the apparatus not completely air-tight to the ear. If a normally hearing person is asked to read aloud, and a noise as described above is suddenly produced in both his ears, his voice at once becomes louder. He loses for a while the ability to judge the intensity of the voice. If his ears are simply shut by the examiner's fingers, his voice becomes lower. When a person complains of unilateral deafness, he is made to read aloud and suddenly a noise is produced in his good ear. If the voice does not become louder, the deafness is simulated. If bilateral deafness is alleged, no change in voice should take place when a sudden noise is produced in both ears. This method disposes of all necessity of cooperation on the part of the patient, or of speaking to him at all, and thus is free from subjective influence.—*Zeitschrift für Versicherungsmedizin*, March, 1911.

Physicians and Agrarian Reform.—Eisenstadt discusses the agrarian reform views of Ebeling and points out why physicians should be interested in the problem. Economically they belong to the middle class, and it is in their interest not to lose too much of their income as rent. Physicians, too, are unpaid officers of the state, for they furnish birth and death certificates, notify the governmental bodies of the existence of infectious diseases, serve in hospitals, give free advice to poor patients, etc. The government should return in kind by making such land regulations as would ease their rent burden. Social conditions, too, are at the bottom of much infectious disease, and reform in this respect should be welcomed by physicians, who are directly interested in the health of the community. The author states various other reasons why such a reform propaganda as that of Henry George should find adherents among the medical profession.—*Zeitschrift für Versicherungsmedizin*, March, 1911.

The First Line of Defence in the Workmen's Compensation Act.—R. J. Collie presents a somewhat elaborate criticism of the British Workmen's Compensation Act, or rather of parts of it, and especially of those parts which affect insurance companies. The act embraces every kind of employment, including persons engaged in clerical work up to a certain point. No fewer than 20,000,000 people come under it. It is therefore obvious that from a commercial point of view employers must see to it that they engage young and healthy workers. The majority of employers insure against the risk of financial loss in case of accidents with insurance companies, by paying a premium which covers the employer's risk. Collie points out many defects in the act from the medicolegal standpoint and strongly advocates that all candidates for employment should undergo a medical examination. It may be said that insurance companies in Great Britain have entered into an agreement with the Home Office to exercise no discrimination and not to reject workmen over sixty years of age, but they can fix any premium they may think fit.—*Transactions of the Life Assurance Medical Officers' Association*, London, 1910.

A London School Clinic.—M. D. Eder states that gen-

eral dissatisfaction has arisen when the doctor's work in the schools has been limited to inspection. Medical inspection may do well enough for the unborn children of the next generation or the one after, but it will not help those who are going to school just now unless inspection is supplemented by medical treatment. The existing agencies for furnishing this are the private doctor and the voluntary hospital. The private practitioner does not meet the case because in England the people receive an insufficient wage to pay the doctor decently. Those defects which the author especially considers require prolonged or skilled treatment, or both. Some diseases may require treatment for months; other diseases, such as ringworm, may require special instruments; defects of sight require accurate testing. As regards hospital treatment, when this involves regular visits over a long period of time, it is noted that a journey to the hospital involves much loss of time to the parent; much loss of time for the child; much loss of time for the teacher; and considerable expense. Moreover these cases are not welcomed at the hospital. There are too many of them and they are not exciting. The inadequacy of these agencies is shown by the fact that in Bradford, despite fifteen years of medical inspection, the majority of the children remained untreated. The author describes the types of clinics that have been established in England to furnish adequate treatment for the children of the poor. First the clinic, as the one established at Poplar, in the school itself. Second, the centralized clinic, exemplified by the one at Bradford, to which center the children come from all the schools to be treated. In London it has been found best to establish several local clinics receiving the children of adjacent schools. The school clinic is able to do little for very delicate children—for those suffering from severe anemia, enlarged glands, chorea, pulmonary tuberculosis, and heart disease. The cases especially adaptable are eye defects, external or internal; ear discharges; skin diseases, including ringworm; adenoids, enlarged tonsils, and other causes of mouth-breathing; dental diseases; slight spinal curvatures, and similar deformities. In one of the school clinics, of 338 cases, 264 have improved or have been cured. Cases requiring operation are sent to some hospital. The treatment is entirely voluntary. The parents are not threatened with a fine or other form of punishment if they do not look after their children's defects. They are notified in writing that these defects are present and are asked to sign a consent to have these defects remedied. They are then requested to accompany the child to the school clinic at a certain hour on a specified day. Consent is granted in almost every case. Parents do not require coercion; if the facilities are provided, the parents will gladly avail themselves of these. At Deptford, one of the local school clinics of London, the following forms of treatment are carried out: dental treatment, treatment of diseases of the skin, nose, throat, and eyes; remedial drills for spinal curvatures, and for postoperative cases. Out of 365 children examined at Bradford, 94 proved to be in an infectious condition and unfit for school attendance. The following is the estimate of the annual cost of a school clinic: Nurse, $565; two doctors, each devoting two half-days each week to the clinic, $500; dentist, whole time, $1,500; teacher, $250; caretaker, $200; rates and taxes, $60; drugs, $100; sundries, $100; rent, $215. The total expense is $3,500. Over 2,000 children can be treated by the medical staff yearly, working two half-days a week, and at least 3,000 children by the dentist, working full time.—*The British Journal of Children's Diseases,* May, 1911.

Phenolsulphonephthalein Test in Estimating Functional Activity of the Kidneys.—Charles Goodman notes the difficulty attending any method of determining the index of capacity of the kidney. One of the recent methods involves the use of phenolsulphonephthalein, which is administered by preference subcutaneously, a dose of one-tenth of a grain being injected into the arm. In a healthy individual the drug appears in the urine in from three to ten minutes after administration. It is possible to measure the amount excreted. The drug is eliminated only by the kidneys, and in healthy people from 60 to 70 per cent. is recovered at the end of two hours. No reaction occurs eight hours after the injection is given. In pathological conditions of the kidney the excretion of the dye is considerably delayed. The author reports cases in which he has found the test of distinct clinical value. One of these was a case of multiple calculi of the left kidney with a calculus impacted in the right ureter. Administration of one-tenth of a grain of phenolsulphonephthalein was followed by the appearance of only traces of this drug from the left kidney at the end of two hours. In cases of enlarged prostate it was possible to determine the functional capacity of the kidney preparatory to operation. The test was also valuable in chronic interstitial nephritis, from the viewpoint both of diagnosis and treatment. The author states that it is possible to measure accurately the amount of drug eliminated. In a case of diabetes insipidus the patient passed 1,150 c.c. of urine within two hours and the drug recovered showed almost the entire amount of the dye. The presence of pus or other matter does not interfere with the estimation of the amount of drug recovered. The technique is as follows: The injection is given, the time noted, and the patient is asked to void urine every five minutes in order that one may establish the time when the drug first appears in the urine. Or the patient may be catheterized at the end of the first hour and also at the end of the second hour, and the amount of drug eliminated is accurately measured. The drug may be identified in the urine by its brilliant scarlet color in alkaline solution, the alkalinity being obtained by the addition of a few drops of sodium hydroxide in solution.—*American Medicine,* May, 1911.

Reporting of Accidents by Physicians.—In Wisconsin physicians are required by law to report to the Bureau of Vital Statistics all accident cases coming under their care, but the observance of this law is not at all general among the physicians of the State.

The Development of Life Insurance in Germany.—The following figures show the growth of life insurance in Germany:

Business Year.	Amount of Insurance (in million mks.)	Business Year	Amount of Insurance (in million mks.)	Business Year	Amount of Insurance (in million mks.)
1897	509	1901	561	1905	772
1898	535	1902	572	1906	859
1899	551	1903	647	1907	935
1900	554	1904	713	1908	941

Business Year.	Number of Policies. Maturing Through Death	Amt. (in million mks.)	Business Year.	Number of Policies. Maturing Through Death	Amt. in million mks.)
1902	22,992	89	1906	24,535	106
1903	24,193	96	1907	25,920	108
1904	25,289	100	1908	27,277	120
1905	26,016	105			

At the end of the year 1908 there existed in Germany 2,066,743 insurance policies for the sum of 9,700,888,852 marks.— *Blätter für Vertrauensärzte der Lebensversicherung,* January and February, 1910.

A Trap for a Malingerer.—The *British Medical Journal* states that in the Marylebone County Court a man claiming compensation for personal injuries said that in consequence of his collarbone having been broken, though reunited, he could not close his fist, and his grasp had become less firm. He was called up to the bench beside His Honor (Sir W. Lucius Selfe). Dr. Oldfield, for the Accident Insurance Company, directed the applicant to place his left hand in the judge's right, palm to palm, push his own right hand well into his trousers pocket, and stand tiptoe on both feet. Having assumed this position, the surgeon gave him a slight push forward, and, to save himself from falling, the claimant clinched the judge's fist so firmly that His Honor squirmed, and called out, "That grip is firm enough," at which there was much merriment.

Book Reviews.

HIERONYMUS FRACASTOR'S SYPHILIS, FROM THE ORIGINAL LATIN. A Translation in prose of Fracastor's immortal poem. Price $2.00. St. Louis: The Philmar Company, 1911.

THE treatise on syphilis in Latin hexameters was first published by Fracastor in 1530 and at once attracted attention, not only as a medical treatise on a new and terrible disease, but as a creditable literary production. The present prose rendering is excellently done, and the publishers have rendered a service to literary medicine in putting it forth. It is printed on hand-made paper, with buckram library binding. It is a pity that the original poem was not reprinted in the same volume, for it is difficult to obtain, and many physicians would be glad to possess it.

THE HUMAN ATMOSPHERE, or The Aura Made Visible by the Aid of Chemical Screens. By WALTER J. KILNER, B.A., M.B. Cantab., M.R.C.P., etc., late Electrician at St. Thomas' Hospital, London. Illustrated. Price, $4.00; with Colored Screens, $9.00. New York: Rebman Company, 1911.

THIS is an odd but very interesting medical book, one that would suggest occultism, except that the author employs colored screens to prepare the retina for the strange things that it is to see, just as Baron Reichenbach employed absolute darkness to sensitize the retina so that it could see the light rays emanating from a magnet. The author claims that every person is surrounded by a mist or aura varying in density and thickness in different individuals, at different ages, and in different conditions of health. This mist is ordinarily invisible to the normal eye, but the eye can be so sensitized by gazing for a certain period through a thin layer of a solution of dicyanin that the aura becomes visible. Space forbids a description of the aura or the changes which it undergoes in varying stages of health and disease. The reader is referred to the book itself for such description, and doubtless he will be interested not only in reading what the author so confidently states but in trying for himself to see the aura of his patients and friends, with or without the screen. The reviewer will confess that he has not been able to see the aura as depicted by Dr. Kilner, but possibly that was because he failed in some particular to follow the author's directions. The aura, as described, is very similar to the appearance described in theosophical books, in which there is the etheric double next the body, surrounded by the astral body. The book will therefore no doubt be welcomed by occultists as furnishing scientific evidence—or shall we say evidence of a scientific man—of the truth of one part of their age-long teachings.

THE MEDICAL DISEASES OF CHILDREN. By REGINALD MILLER, M.D. (Lond.), M.R.C.P., Physician to Out-Patients, Paddington Green Children's Hospital; Lecturer in Pharmacology and Therapeutics, St. Mary's Hospital Medical School; Late Medical Registrar and Pathologist, Hospital for Sick Children, Great Ormond Street. Price $4.00. New York: William Wood & Company, 1911.

IT would be impossible within the limits of a short review even to indicate all of the excellent features of this book. Written primarily as a teaching manual, available for both student and practitioner, it presupposes a working knowledge of the diseases of adults, and dwells particularly upon the phases and peculiarities of disease as manifested in children. The omission therefore of the mass of details on disease in general that is found in most textbooks on pediatrics enables the author to present the subject matter in a form that is both compact and complete, and to include accurate descriptions of practically all of the most recent contributions to pediatric science, such as the diseases of Meckel's diverticulum, congenital acholuric jaundice, adrenal hemorrhage, adrenal hypersecretion, cleidocranial dysostosis, the various clinical types of acidosis and acid intoxication, etc. One original feature of this book is the classification of infective diseases according to the infecting organism, thus anticipating the time when this method of classification will predominate in all textbooks on medicine. Thus, under pneumococcal infection are taken up in order the subjects of pneumococcal pneumonia, pleurisy, empyema, pericarditis, endocarditis, meningitis, peritonitis, nephritis, etc. The same plan is followed with the other types of infection. The rheumatic group is presented in a manner that helps to clear up many misty conceptions regarding this type of infection: the significance of subcutaneous nodules, of rheumatic pleurisy and pneumonia, the non-rheumatic character and separate identity of erythema nodosum, the close relationship between rheumatism and rheumatoid arthritis are all thoroughly described. The subject of differential diagnosis is presented fully and clearly. An example of this is illustrated in the diagnosis of intussusception from intestinal colic, acute ileocolitis, Henoch's purpura, and invagination of Meckel's diverticulum. There are numerous excellent photographic illustrations and comparative tables, both of which contribute to the didactic value of this book. The typography and binding leave nothing to be desired.

REMEDIAL GYMNASTICS FOR HEART AFFECTIONS, used at Bad-Nauheim, being a translation of "Die Gymnastik der Herzleidenden" von Dr. Med. JULIUS HOFMANN und Dr. Med. LUDWIG PÖHLMAN, Berlin und Bad-Nauheim, by JOHN GEORGE GARSON, M.D., Edin., etc., Physician to the Sanatoria and Bad-Nauheim, Eversley, Hants, with Fifty-one Full-Page Illustrations and Diagrams, $2 net. Paul B. Hoeber, 69 East 59th Street, New York, 1911.

THIS small book of 128 pages, of which less than one-third is text, is a compendium of instructions for carrying out the Bad-Nauheim treatment of remedial gymnastics for heart affections. The translator made himself familiar with the author's methods and sanatorium, which, of course, are founded on those originated by the late August Schott, who did the work of elaborating these "resistance exercises" into a system of therapeutics.

Three such systems of remedial gymnastics are alluded to, that of the Austrian Herz, the exercises of the Swedish Zander and those developed by Schott. A fourth, the Oertel Terrain method, is mentioned to show its inappropriateness to most cases; for the walking (up hill) a definite time may place the patient unfortunately when the fatigue, indicating rest, overtakes him and he is far from home.

The CO_2 bath feature of the treatment is discussed adequately; the collateral action of diet and waters, stimulants, breathing, etc., is considered; the indications and details of method are covered and the testing of results on the patient is properly valued. Emphasis is well put upon the necessity of medical supervision, for the subject is not one for the patient himself to apply, and therefore the book is one distinctly for the physician. The plan of representing the exercises by a full page illustration of each, shows the operator with the patient and gives a brief note of instruction. These constitute more than two-thirds of the treatise. It is a helpful handbook for the physician wanting to apply the treatment, and this would be more often done here, without the difficulties encountered in advising a trip to Germany, if Americans physicians were more familiar with the method, knew its field in therapeutics ("initial heart disease, not advanced arteriosclerosis nor chronic nephritis") and how easily it could be carried out at the patient's home.

EINFÜHRUNG IN DIE EXPERIMENTELLE THERAPIE. Von Dr. MARTIN JACOBY, fr. a. o. Professor der Pharmakologie a. d. Universität Heidelberg; z. Zeit Leiter des biochemischen Laboratoriums am Krankenhaus Moabit, Berlin. Berlin: Julius Springer, 1910.

IN the presence of the flood of medical textbooks, that make choice and recommendation an exceedingly difficult task, the reviewer is seldom warranted in saying, "Here is a book for which there has been a need." With the unexpected results that have been obtained by experimental therapeutics during the past few years, almost every physician has felt the necessity of acquainting himself more thoroughly with the elements of this subject. The practising physician in his time has had no course of lectures on this subject as a part of his curriculum, and even the student of to-day has the opportunity, in a few universities, to attend one lecture on a single theme of this broad domain. The weeklies alone are left, and these are naturally deficient in providing the necessary explanations. The author has endeavored to fill this gap, and he has done so with unusual success. That the entire subject has been exhaustively covered is indicated by the headings of the various chapters: Immuno-, sero-, chemotherapy, therapy of neoplasms, inflammation, diseases of the blood, diabetes, gout, fevers, circulatory disturbances, derangements of the gastrointestinal canal, the therapy of fatigue, the therapy of chemical and functional antagonisms, and substitution therapy. Within the limits of only 174 pages the author has succeeded in presenting with exceptional precision and forceful language a clear survey, such as investigators who completely control their subject, are capable of doing. The compactness of the book, and the plainly evident effort of the author to make its therapeutic value in practice the final goal in every piece of work, both combine to make this book a welcome one to the busy practitioner.

L'Anaphylaxie. Par Charles Richet, Professeur à la Faculté de Médecine de Paris. Price 3 fr. 50. Paris: Félix Alcan, 1911.

This volume is a succinct review of the many recent contributions that have been made to the subject of anaphylaxis. The author was the first one to describe this important phenomenon and it was he who invented the term anaphylaxis. It is noted that as long ago as 1839 Magendie observed that rabbits that had been injected with albumin were unable a few days later to tolerate a similar dose. Nevertheless the significance of this phenomenon was not understood until Richet's contribution in 1902. In this book the author describes in detail his own experiments and those of numerous other workers, and presents an extensive bibliography. In therapeutics, legal medicine, and hygiene, as well as in general biology, anaphylaxis plays an important rôle requiring exact information.

Bismuth Paste in Chronic Suppurations. Its Diagnostic Importance and Therapeutic Value. By Emil G. Beck, M.D., Surgeon to the North Chicago Hospital, Chicago, Ill. With an Introduction by Carl Beck, M.D., and a Chapter on the Application of Bismuth Paste in the Treatment of Chronic Suppuration of the Nasal Accessory Sinuses and the Ear, by Joseph C. Beck, M.D. With Eighty-one Engravings, Nine Diagrammatic Illustrations, and a Colored Plate. Price, $2.50. St. Louis: C. V. Mosby Company, 1910.

The use of bismuth paste in surgery has passed beyond the experimental stage. This monograph presents the subject in its present state of development, bringing it within the reach of the general practitioner, who can easily avail himself of its simplicity of technique in a multitude of conditions. The uses of bismuth paste are considered in detail as follows: in anatomical diagnosis; as a means of revealing diagnostic errors; its therapeutic effects; the treatment of sinuses due to spondylitis, and those following osteomyelitis, joint diseases, and abdominal and kidney operations; the diagnosis and treatment of rectal fistulæ; the treatment of fecal fistulæ, empyema, and lung abscess; the conservative treatment of cold abscesses; the limitations and causes of failure; bismuth poisoning and its prevention; bismuth paste in the treatment of chronic suppurative diseases of the nose; accessory sinuses, ears, and mastoid process, and its use in dentistry. This summary of its contents fully indicates the usefulness of this book.

Die Massenverhältnisse des Herzens Unter Pathologischen Zuständen. Pathologisch-Anatomische Untersuchungen. Von Sofus Wideroe. Zwei Tafeln, 1 Textfigur, 17 Kurven. Christiana: In Kommission bei Jacal Dybwad, 1911.

In the experimental investigation described within the pages of this monograph the object of the author was to study the gross features of cardiac hypertrophy and dilatation. The reaction of the heart in various pathological conditions of other organs was studied by measurement of the cardiac chambers, and the results are indicated by means of graphic charts.

Urine Examination Made Easy. A Plan of Examination With the Common Tests Fully Described. By Thomas Carruthers, M.D., M.B., Ch.B. Second edition. Price, 60 cents. London: J. & A. Churchhill; Philadelphia: P. Blakiston's Son & Co., 1911.

This little manual of 47 pages is made up of notes that were supplied to nurses with the view of simplifying their study of urinary analysis. The entire subject is reduced to its simplest terms. The various tests are described in schematic form. This book should prove helpful to students as a means of rapidly reviewing the subject.

The General Practitioner as a Specialist. A Treatise Devoted to the Consideration of Medical Specialties; a guide to the development of office practice. By Jacob Dissinger Albright, M.D. Fourth edition, revised, enlarged, and illustrated. Price $3.00. Philadelphia: Published by the Author, 1911.

Why general practitioners should want to become specialists we do not know, nor does the reason become more apparent after perusal of this volume. Several subjects are "treated" in this book, presumably after the manner that obtains among specialists, but in the limited space at our disposal we can only draw attention to a few of the specialists' stunts. In the chapter on Hernia there is no reference that we can find to Bassini's operation or to any of its modifications, but there is much on trusses and injection fluids, and, incidentally, both are manufactured by the author of this book. In dealing with cancer we find nothing that can aid in an early diagnosis and consequent removal of the tumor, but a paste or plaster or cure for nearly every letter in the alphabet. There are some pages on the "Philosophy of Orificial Surgery"; it is all philosophy, the surgery or practical part seems to have been omitted; probably the loss is but small. The chapter on Mental and Magnetic Healing ("A Complete Exposition of Vital Magnetism, Suggestion, and Mental Therapeutics; the Basis of All Popular Pathies, and the Essentials of All Courses of Instruction on These Subjects") was "sold to physicians and others for fifty dollars." Now physicians and others can obtain it for a paltry three dollars. This chapter contains some rare therapeutic gems; for example, "Mental effort is a complete panacea for constipation"; we can quite believe the possibility of this if the unfortunate sufferer paid fifty dollars for the "mental effort"; but now that its price has been reduced the chances are that the efficacy is reduced likewise. Further on in the same chapter we read that "cold feet may be relieved by imagining that there is a hot brick near them and repeating mentally: 'now they will soon get warm,' etc." The author does not say how much imagination it will take to heat a modern apartment. The book concludes with two chapters calculated to turn out specialists on "sexual incompetence" and genitourinary diseases. There are also several other topics, such as Tapeworms and Tobacco, Goiter and Gynecology, but the foregoing will give a sufficient idea of the book.

A Manual of Physical Diagnosis by Brefney Rolph O'Reilly, M.D., C.M. (F.T.M.C., Toronto; M.R.C.S., Eng.; L.R.C.P., Lond.). Demonstrator in Clinical Medicine and in Pathology, University of Toronto; Assistant Physician to St. Michael's Hospital, Toronto; Physician to Toronto Hospital for Incurables. With 6 plates and 49 other illustrations. $2.00 net. Philadelphia: P. Blakiston's Son & Co., 1911.

This book is an extremely useful one, both for the student and the general practitioner, as it presents a difficult subject in a simple, concise, and lucid manner. Chapters III and IV, "General Inspection" and "Special Inspection," are particularly helpful. Here the logical arrangement, which characterizes the entire book, is most valuable. The appendix describes the ordinary laboratory methods which are in use in the routine examinations of patients of St. Michael's Hospital, Toronto, Canada.

Hughes' Practice of Medicine, Including a Section on Mental Diseases and One on the Diseases of the Skin. Tenth Edition, Revised and Enlarged. By R. J. E. Scott, M.A., B.C.L., M.D., Attending Physician to the Demilt Dispensary; formerly Attending Physician to the Bellevue Dispensary, New York; Author of "The State Board Examination Series," etc., etc. With 63 illustrations. $2.50 net. Philadelphia: P. Blakiston's Son & Co., 1911.

This book has been revised, the subject matter rearranged, and new sections have been added. Four hundred prescriptions have been included in the sections devoted to treatment. The book has been well brought up to date, and while it is by no means exhaustive its very conciseness will recommend it to many who are seeking the general principles rather than the detail work.

Outlines of Psychiatry. By William A. White, M.D., Superintendent Government Hospital for the Insane, Washington, D. C.; First Lieutenant Medical Reserve Corps, United States Army; Professor of Nervous and Mental Diseases Georgetown University, Washington, D. C.; Professor of Nervous and Mental Diseases George Washington University, Washington, D. C., and Lecturer on Insanity U. S. Army and U. S. Navy Medical Schools. Third Edition, Revised and Enlarged. Price $2.50. New York: The Journal of Nervous and Mental Disease Publishing Company, 1911.

This is the third edition of the book that has appeared within a period of less than four years. It has apparently fulfilled the function of a helpful guide to students by describing in as clear a manner as possible the principal types of mental disease. The present edition is more elaborate than the former editions. The additions consist of the introduction of foot-note references to the literature, and the more extended discussion of the nature of mental disease, of heredity, and of psychotherapy. There have been added a discussion of certain additional symptoms, as the "complex" and Ganser's symptom or the symptom of approximate answers, and a scheme for a standard minimum examination of mental cases for use in hospitals. A short description of the work of Sérieux and Capgras on the delirium of interpretation and delirium of revindication, and descriptions of the psychoses of pellagra and of the compulsion and anxiety neuroses have been added.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Seventy-ninth Annual Meeting Held in Birmingham, July 26-28, 1911.

(Special Report to the MEDICAL RECORD.)

(Concluded from page 450.)

SECTION ON MEDICINE.

THE PRESIDENT, DR. A. H. CARTER OF BIRMINGHAM, IN THE CHAIR.

First Day—Wednesday, July 26, 1911.

Address of the President.—Dr. A. H. CARTER in his opening address offered a cordial welcome to both members and visitors. He thanked those who had provided papers for the occasion, especially those who prepared for the fixed discussions. He did not think the annual meeting a suitable occasion for bringing forward new theories or original work. Rather it offered a good opportunity for discussing those clinical questions which had to be answered by every general practitioner in his daily experience. This observation of the president was an appropriate introduction for the first discussion of the session, the subject of which was:

Asthma.—DR. GEORGE A. GIBSON of Edinburgh in opening the discussion began with a sketch of the general anatomy and physiology of the parts involved in respiration, noticing especially the arrangements—mechanical and nervous—for carrying on the aëration of the blood simultaneously with the respiration. He dwelt briefly too on the protective mechanism of the air tubes, the distribution of the erectile and muscular tissues in the larger and smaller respectively, and the nervous influences brought into play. The function of warming and purifying the (inspired) air in the nasal fossæ and upper tubes was mentioned and the importance of the extensive distribution of erectile tissue in this region pointed out. Then followed remarks on the nervous mechanism. It had been established that the smallest tubes contain muscular tissue and the vagi convey both constrictor and dilator fibers to them so that the finest bronchioles are under complete nervous control. With regard to the various explanations of the asthmatic paroxysm. Dr. Gibson declared that he still adhered to the theory of spasm of the finer tubes, which had been held so long by distinguished observers. This was of course brought on by some excitant of the nervous system occurring suddenly. At the same time other observers have been dissatisfied with this view and proposed very different explanations, such as spasm of the diaphragm or a vasomotor neurosis, acute exudative bronchitis, and one calling in asthenia instead of spasm of the bronchi.

Dr. Gibson then spoke of the prevailing confusion caused by careless nomenclature and read a letter by Sir Clifford Allbutt on this point. Cardiac asthma was a misnomer. There was only one true asthma, however many forms of secondary dyspnea might resemble it. The real disease was a neurosis, although other factors might be thrown in. It could be produced by a nervous excitant which could occur periodically. It had been proved by Heberden that an extosis pressing on the vagus could set up the *status asthmaticus*. Certain irritants of the nasal, laryngeal, and tracheal mucous membrane, *e.g.* fogs, pollens of grasses, etc., had long been recognized as capable of causing the paroxysms. Reflex irritants arising in the alimentary or pelvic organs were also recognized generally as excitants of the paroxysms. Some thought cutaneous irritation might be equally to blame in patients predisposed to attacks. Among the consequences of asthma must be considered the overdistention of the lungs, sclerosis of the pulmonary vessels, and dilatation of the right side of the heart, the degree of these complications of a case being largely dependent on the frequency of the paroxysms.

Treatment must be directed to the avoidance of catarrh and at the same time of digestive troubles. Dietetic and climatic influences were therefore important and were often exceedingly difficult to arrange on account of individual peculiarities. As to drugs, ether, chloroform, and atropine held the first place. Lobelia was often most effective though its influence did not last long. Nitrites had done good service. He used morphine as sparingly as possible. Cocaine was dangerous, though it was a constituent of various proprietary drugs.

Dr. ROBERT SAUNDBY agreed that the disease was a neurosis but would not unduly narrow this conception. He said asthmatics were liable to fatal anaphylaxis after ordinary doses of diphtheria antitoxin. This he seemed to think in some way analogous to bronchial irritation and urticaria after antitoxin.

Dr. SAMUEL WEST of London admitted the neurosis but asked where the irritating agent was seated. He thought epilepsy afforded an analogy with asthma. Like epilepsy true asthma mostly developed in childhood. Late cases were probably counterfeits.

Dr. WILLIAM HUNTER of London thought the spasm more important than anything. He treated most cases with potassic iodide.

Dr. STACEY WILSON of Birmingham laid stress on the reflex cases. He doubted the value of nitrites and said the spasm might be compensatory and then they would be hardly suitable even if justifiable.

Dr. WILLIAM EWART of London spoke of peripheral spasm limited to the respiratory and alimentary tracts. The great variety of types of irritants was the key to the diversity of remedies employed.

Dr. O. F. F. GRUNBAUM of London believed that some cases had been much improved by vaccines.

Dr. A. H. CARTER, president of the section, emphasized the view that true asthma was a neurosis. It might be associated with local or general instability of the nervous system. Treatment should be directed to the cause when possible, not to symptoms only.

Syphilis of the Lung.—Dr. J. DOUGLAS STANLEY of Birmingham read this paper, in which he described the lesions met with in the lung and illustrated their pathology and course by fifteen cases which had come under his observation. Syphilis might affect the lungs and pleura only, or the trachea and bronchi alone, or all together. In the tertiary stage the trachea commonly underwent ulceration, and this ulceration might go on to perforation or produce very marked stenosis. A similar condition in the bronchi often caused bronchiectasis. The early changes in the lung were an intense cell proliferation filling the alveoli and infiltrating the surrounding structures. The vessels showed the typical changes of syphilis. In certain cases there was an early diffuse sclerosis, the lung tissue being tough with great increase of connective tissue. Miliary gummata were numerous. In still other cases there was a dense sclerosis leading quite often to contraction. Large gummata might occur in syphilis of the lung, but miliary gummata were much the more common. The symptoms of lung syphilis were more definite the more chronic was the case. Hemoptysis was suggestive of slow ulceration of a bronchial surface. Cough was irregular. Fever and sweats, when they occurred, were due to a mixed infection; their presence might easily give rise to an error in diagnosis since they suggested tuberculosis so strongly.

Dr. WILLIAM HUNTER of London thought syphilis of the lung must be a very rare condition, for he had failed to find it in a thousand consecutive autopsies.

Dr. L. E. SHAW of London had never found the lesion

of pulmonary syphilis at autopsy though he had seen them in museum specimens.

Second Day—Thursday, July 27.

Obscure Cases of Fever Without Physical Signs.—Dr. Hale White of London opened the discussion on this topic. He said that it was necessary to remember that various nonmorbid causes might greatly affect the thermometer. Some simple chemicals had the property of raising the temperature to the fever point. An excess of carbohydrate food had been known to produce the same effect. So had walking or any form of physical exercise. He thought that the effect of the nervous system on the temperature was not sufficiently appreciated, especially in young patients—for the stronger they were the more easily was pyrexia induced. Fracture of the spine in the cervical region was specially considered and damage to the corpus striatum was a cause of grave pyrexia. Hysteria was also a cause of variation. The importance of examining the blood and the cerebrospinal fluid was pointed out. Sometimes an explanation of an obscure pyrexia was found in the urine even though no blood, albumin, or casts were present. Malignant disease as a cause of high temperature was often overlooked, as was also cirrhosis of the liver. Malignant endocarditis, early or latent tuberculosis, and typhoid fever were fertile sources of difficulty or error; but the most frequent mistake was that of overlooking small collections of pus. Empyema of some extent was also a frequent cause and *x*-rays were most valuable in locating it.

Sir Willliam Osler of Oxford said that a few cases were neurotic, mostly those of young people and especially fat children. There was another group of undetected tumors. A much larger number of cases were tuberculous. Although no physical signs were ascertained to be present he had found bacilli in the blood. These, with other cases, were grouped as infectious. He instanced chronic septic endocarditis, syphilis, and infectious organisms in the colon, etc.

Dr. E. C. Hort of London advocated the doctrine of the unity of fevers. This was based on the theory that cell destruction would always set up pyrexia. The absorption of the detritus of the dead cells excited the febrile reaction. He showed diagrams to illustrate this view.

Dr. Tyson of Folkestone remarked that in toxemic conditions the respiration rate should be watched, as it often indicated abnormality when the temperature was normal. The age and sex of the patient were also both important points.

Dr. Stacey Wilson of Birmingham believed in raw meat feeding, combined with antiseptics, such as the sulphocarbotates, which he alternated with quinine, in the treatment of rheumatic pyrexia.

Dr. Rudolph of Toronto had made experiments from which he concluded that Wunderlich was right in regarding the normal temperature as a rather elastic point, varying between 97.2° F. and 98.8° F.

Dr. Hobhouse of Brighton said that in children a slight rise of temperature might be physiological—a mere hastening of metabolism. A few cases were never explained, even in the post-mortem room.

Dr. C. O. Hawthorne of London said that many cases in children were of rheumatic origin, although without joint symptoms. Neurotic children often had a rheumatic inherited tendency.

Dr. Melland of Manchester thought malignant endocarditis had greatly altered in type in recent years and was therefore apt to be misleading. He also observed that unrecognized malaria might explain some cases.

Dr. William Hunter of London said the most important cases were infective. Some of these were specific fevers, as typhoid; the others were due to pyogenic organisms. The infection might originate in any part of the alimentary canal. An example was fever in gastric ulcer, for the ulcer was in reality an open wound.

Third Day—Friday, July 28.

Inhalations of Carbon Dioxide.—Dr. William Evart demonstrated an apparatus for use in the clinical employment of carbon dioxide by inhalation. He said it had been shown that the respiratory movements were affected by this gas in a way not formerly realized. It acted as a cardiac stimulant and indirectly as a sedative. By his apparatus the percentage of carbonic acid could be graduated, and not more than 4 per cent. should be used. A syphon of soda water discharged into the container, to which a tube with a mask for inhalation was attached, was a handy source always available. The papers read were:

Colon Indigestion.—Dr. T. Stacey Wilson of Birmingham, in this paper, held that many cases which pass as gastric were really colonic and might be diagnosed by palpation. The colon was hard and tender, probably from excessive muscular activity. Perhaps this was excited by microorganisms. Some general nervous instability was usually observable. Local pain in the colonic region with mental depression and various so-called dyspeptic symptoms were noted. Treatment was dietetic combined with intestinal antiseptics.

Recent Advances in Cardiac Therapeutics.—Dr. F. W. Price of London described some investigations on the action of digitalis and its congeners which had been made in the Mount Vernon Hospital for diseases of the chest. Out of thirty-six cases observed sixteen were of auricular fibrillation. Tincture of digitalis was administered in 20-minim doses three times daily until distinct reaction was obtained and then it was stopped. The speaker held this method to be better than beginning with small doses. Relapses were apt to occur in some of these cases, but not in those with normal cardiac rhythm.

Treatment of Morphinism.—Dr. Oscar Jennings of Paris read this paper. He insisted that the first thing was to convince the patient that he could certainly be restored if he would devote himself for sufficient time to carry out effectually the necessary treatment—hygienic, dietetic, and therapeutic. It was useless to try to deceive a patient with substitutes for his dose. To render him half comatose with bromides was futile. Dr. Jennings did not believe that any benefit resulted from large doses of hyoscine. The chief aim should be above everything to restore self-control. As a precaution against relapse exercise (cycling was excellent) and the use of the Turkish bath were recommended.

Mania Following Pneumonia.—Dr. J. W. Tyson of Folkestone read this paper. The condition, he said, usually occurred in distinctly neurotic patients under forty years of age who were also suffering from insomnia. The attack came on mostly after the crisis and was probably toxic. The prognosis was favorable. For the obstinate insomnia preceding the attack food was the best treatment.

Subcutaneous Emphysema.—Drs. Goodall and Kingsbury of London presented this communication. The causes were considered and a case related of a child twelve months old who had pneumonia and after about fourteen days the emphysema set in over the manubrium and the left side of the neck and face. The child died and at the autopsy there was found a congested state of both lower lobes and of the dorsal part of the upper ones. The liver was greatly enlarged. The author regarded this observation as confirmatory of Kieth's theory that expansion of the lower lobes and of the dorsal portion of the upper ones was effected by the action of the diaphragm.

The Sphygmooscillometer.—Dr. Halls Dally of London demonstrated this instrument, devised by Pachon,

which furnished information regarding both the systolic and the diastolic blood-pressure.

SECTION ON DISEASES OF CHILDREN.

Wednesday, July 26—First Day.

THE PRESIDENT, DR. OTTO J. KAUFFMANN OF BIRMINGHAM, IN THE CHAIR.

Diagnosis, Prognosis, and Treatment of Tuberculous Peritonitis.—Dr. H. D. ROLLESTON said that the various forms of abdominal tuberculosis should be separated as far as practicable in discussions on this subject as the prognosis varied considerably in the different groups of cases. Since most statistics failed to observe this differentiation their value was much impaired. Dealing first with the diagnosis of tuberculous peritonitis the chief difficultes were met with in early cases. For instance, the onset of a hernia might be the first sign of the disease. Again the development of a hydrocele with thickening of the spermatic cord might be the earliest symptom. In another group acute intestinal obstruction might develop in the absence of any definite signs of tuberculous peritonitis and yet might be due to that condition. In babies under one year of age the disease was rare and was very difficult to diagnose from other causes of abdominal distension. The onset of the disease was generally considered as usually insidious but in at least one-third of the cases it was sudden. In acute cases the diagnosis had to be made from acute appendicitis, pneumococcal peritonitis (general and localized), and from enteric fever. In the first of these it must be remembered that the tuberculous infection might predominate in the cecal region. When ascites was present the likelihood of the condition being one of tuberculous peritonitis was very much increased, other causes of ascites being rare in childhood. Cirrhosis of the liver, a very uncommon disease at this age, might simulate tuberculous peritonitis closely; jaundice and marked enlargement of the superficial abdominal veins favoring a diagnosis of hepatic cirrhosis. Tuberculin tests were of more value if negative than if positive, as they were of no avail in localizing the site of the tuberculous infection. Rectal examination might lead to the discovery of enlarged tuberculous glands. An examination of the ascitic fluid was of considerable help, an increase of lymphocytes being present in the tuberculous cases. In syphilitic cirrhosis of the liver of the Wassermann reaction of the blood and ascitic fluid would probably be positive. Abdominal malignant disease and polyorrhomeningitis or multiple serositis (itself sometimes tuberculous) might simulate the ascitic cases of tuberculous peritonitis. Where the fluid was encysted urachal or ovarian cysts might lead to a mistake in diagnosis but such were very rare, and ran an afebrile course. The prognosis in childhood, apart from infancy, was better than in adults, probably due to the frequency of hepatic cirrhosis and tuberculous salpingitis in the latter. Recovery was more common in the ascitic than in other types, but the case might change from an ascitic to an adhesive type and so lead to a good prognosis being falsified. Bad signs were persistent diarrhea or the presence of a fecal fistula. The more acute the onset the worse the outlook, although some observers did not agree with this statement. Pleurisy developing early made the prognosis bad; developing later it was less serious. Relapses were less frequent in children than in adults. Complications, particularly those associated with generalization of the infection, were common in children although not always easily recognizable clinically. Turning to the treatment of the condition the speaker thought general hygienic treatment, absolute rest, fresh air, and sunshine were most important. For drugs potassium iodide, guaiacol, iodoform and creosote were of value. The external application of mercurial ointment to the abdomen was of use. It had been suggested that this was merely due to the bandaging of the abdomen promoting local rest. In feeding, the avoidance of flatulence was of great importance. The results of tuberculin treatment were very conflicting at present. *X*-rays had probably no beneficial effect; if used in excess they might produce leucopenia. The subject of surgical treatment was still a very vexed one. Agreement might probably be claimed for the following propositions: (1) Operation was contraindicated in generalized or widespread infections, so commonly found in infants; (2) it was unnecessary in the adhesive form of the disease; (3) it was necessary in cases developing an abscess or obstruction. The chief difficulty was therefore on the subject of the ascitic cases, which it was acknowledged were the most easily cured by any means. An operation, by which was meant an open incision rather than paracentesis, had the advantage of enabling a localized area of infection to be removed. Statistics on the moot point of treatment were not satisfactory, as they were far too conflicting.

Professor G. A. WRIGHT of Manchester said that of the cases seen on the surgical side of the hospital the diagnostic points were usually distension, pain, and a local palpable mass to which might be added diarrhea or constipation, foul motions, wasting, and fever. Operation was contraindicated in cases showing an external fecal fistula. It was easier in the ascitic type, but the various forms of the disease could not be separated by any hard and fast lines. He found that above 50 per cent. of the cases lived to grow up; many died within two years. Tuberculous glands could be easily removed at the time of operation and this should be done. Summing up he thought that surgical treatment was of more value in relieving any secondary symptoms that might arise than in the actual cure of the disease.

Dr. CHARLES H. MELLAND of Manchester spoke as one who had been most favorably impressed formerly by the results of surgical treatment but was now equally gratified by the results of medical treatment, which he had latterly used almost exclusively.

Dr. WALTER JORDAN submitted that the differences between the opinions of physicians and surgeons depended to a large extent upon the differences in the types of cases which they saw. Where a surgeon worked with a physician who had all his cases operated on the results of surgery appeared to be brilliant, but where a physician sent only late and unfavorable cases to the surgeon the results of operative treatment must appear very poor. In this way discrepancies were caused in statistics. Again surgeons appeared to find ascitic cases very common, whereas in his opinion, speaking as a physician, they were far outnumbered by the other varieties.

Mr. MACADAM ECCLES advocated the application of a 1-1,000 solution of adrenalin to the peritoneum after an open operation. Other advantages of operative treatment were that the diagnosis was confirmed, foci of infection might be removed if present, strict rest and bandaging were enforced more successfully if an incision had been made and various symptoms might be relieved.

General Edema Following Gastroenteritis in Children.—Dr. W. E. HUME of Newcastle-on-Tyne read a paper based on the consideration of 13 cases. The symptoms of the group consisted of edema, coldness, cyanosis, and feeble circulation, the urine being free of albumin or casts. The coagulability of the blood was no different from that of control cases. In two fatal cases he had found fibrotic changes in the medulla of the suprarenal glands, while the kidneys were normal microscopically. Excluding renal disease the condition might be thought to be due to retention of salts in the blood but he had discarded this view, as he had found that increasing the

salt in the diet had led to no increase in the edema. He suggested that the changes in the suprarenals were etiological factors in the disease and this he thought to be confirmed by the good results he had obtained by the hypodermic administration of 5 minims of a 1-1,000 adrenalin solution twice daily.

Dr. H. D. Rolleston said that he had seen a diminution of the edema in these cases follow a deprivation of salt in the diet, although such might only be a coincidence. He pointed out that albuminuria might be present from renal edema in this group of cases.

Dr. Kauffmann suggested that the edema might be classified as neurovascular.

Dr. Hume replied that if due to suprarenal disease the edema would probably be of the type called neurovascular.

Infantilism Associated with Chronic Interstitial Nephritis.—Dr. Leonard G. Parsons of Birmingham described a case of this type. Physical growth was much impaired, the child being the height of one of 3 years of age although in reality 6½ years old. The mental condition could be best described as unduly childish. The patient had suffered from thirst and polyuria since birth. The urine contained a faint trace of albumin. Death occurred from bronchopneumonia. The kidneys showed marked interstitial changes, more severe in degree than those usually found in adults. The left ventricle of the heart was hypertrophied. The uterus was unduly ill developed. Such a condition of infantilism with renal disease might be regarded as due to loss of an internal secretion of the kidneys or might merely be due to the persistent excessive elimination, comparable to that due to severe and long-lasting diarrhea.

Dr. J. E. H. Sawyer of Birmingham did not think that all cases of contracted granular kidney in children showed a mental condition which could be called infantilism although many were physically much dwarfed.

Dr. H. D. Rolleston emphasized the importance of inherited syphilis in the causation of this form of renal disease in children. Dr. Reginald Miller instanced a case under his care exactly corresponding with Dr. Parsons' type, the child being shorter at the age of 9 years than his brother aged 4. He had given a course of thyroid for two months without any improvement in the child's growth.

Dr. Parsons in reply said that there were no signs of syphilis clinically or pathologically in the case reported and Dr. Morley Fletcher had recorded a case of a similar nature in which the Wassermann test had been negative. The thyroid gland in his own case had been found post mortem to be normal.

Thursday, July 27—Second Day.

The Diagnosis and Treatment of Chronic Pulmonary Affections of Children.—Dr. Samuel West of London stated that tuberculous processes in the lungs were usually acute in children. Such a condition as could be regarded as analogous to phthisis of adults was very rare in children. Even subacute tuberculous processes were rarely seen in children under the age of 5 years, although occasionally they were found even in infants. Similarly an hemoptysis of any severity was rare in young subjects. Chronic tuberculous pleurisy was rare in comparison with the frequency of chronic tuberculous peritonitis. Infected mediastinal glands were of course common, but the conditions originated by them in the lungs were more often acute than chronic. Such glands might give rise to recurrent attacks simulating those of asthma, or might set up pulmonary collapse or bronchiectasis. Skiagraphy was of great value in the diagnosis of enlarged mediastinal glands. Stridor and dyspnea of indefinite origin should suggest the possibility of a foreign body in the air passages. Bronchitis was usually acute in children. What was sometimes called chronic bronchitis in them was often merely a succession of acute attacks. Chronic bronchitis as seen in adults was rare in children. Genuine atrophic emphysema was uncommon and was probably due to nutritional changes and was not mechanically produced. No antecedent bronchitis was essential for its production. In the emphysema of children cyanosis was usually absent. Collapse of the lung was one of the most important pulmonary conditions in children. In infants it was produced by very slight obstruction owing to the weak state of the chest wall and the feeble character of the respiratory movements. Bronchitis was a common cause. The collapse was probably due to absorption of the air from the pulmonary alveoli, although it was difficult to understand how the nitrogen could be thus absorbed. Extensive collapse might cause considerable displacement of the heart. Bronchiectasis and bronchiolectasis in their chronic forms were associated with pulmonary fibrosis. Such conditions in children were probably always acquired and not congenital. In treatment, prevention was both easier and better than cure. Recovery from acute conditions tended to be more complete in children than in adults. In chronic cases treatment must be general and symptomatic. Disease of the mediastinal glands should not be overlooked, as by means of treatment in the early stages of this condition good results might be obtained.

Dr. J. E. H. Sawyer of Birmingham fully endorsed what Dr. West had said as to its rarity and computed, from an examination of his own figures that the proportion of phthisical children came to roughly 1 in 1,000.

Dr. Barty King of London regarded this figure as unduly low and suggested increasing it to 3 or 5 per thousand.

Dr. D. Stanley of Birmingham thought that perhaps 10 per cent. of children had phthisis.

Dr. N. C. Haring of Manchester regarded subacute phthisis as not uncommon in children although its course differed from that of adult life. He held that many such cases recovered temporarily but relapsed later, causing death at the age of 18 or 20 years. He had also found tubercle bacilli in the sputum of children regarded as suffering from bronchitis. The frequency of chronic pulmonary tuberculosis as reported by the medical inspectors of schools has varied enormously in different parts of the country, and the discussion showed well that the personal factor of the physician was a most important cause of these variations, while possibly confusion in nomenclature helped to exaggerate the differences in the results. On the whole the general opinion appeared to coincide with that of Dr. West, who had stated that phthisis was rare in children.

Dr. J. E. H. Sawyer alluded to those cases so commonly met with in children where there was a persistent cough in the absence of any abnormal physical signs in the chest. The nature of such cases was often very obscure, and he usually labeled them as "bronchial catarrh."

Dr. E. C. Myott of Newcastle attributed these cases to mouth-breathing and emphasized the possibilty of overlooking such a cause since many such children only adopted mouth-breathing after exertion and breathed normally during an ordinary medical examination.

Dr. Barty King of London emphasized the importance of the development of crepitations in a previously clear lung after a dose of tuberculin. Such he thought of great diagnostic value.

Dr. N. C. Haring of Manchester advised the routine use of mixed human and bovine tuberculin for subcutaneous injection.

The Value of the "Eustace Smith Bruit" in the Diagnosis of Enlarged Mediastinal Glands.—Dr. J. E. H. Sawyer of Birmingham from a careful consideration of his own cases concluded that the bruit was caused by the

stretching of the internal jugular vein against the transverse processes of the cervical vertebræ. He denied the diagnostic value of this sign.

Dr. S. West of London regarded the presence of this bruit as an aid to the diagnosis of enlarged mediastinal glands.

Nervous Influences in the Causation of Angiomata.—Mr. D. C. L. Fitzwilliam of London presented some interesting figures founded upon 700 cases observed in hospital practice. These included nevi and nevoid conditions (port wine stains and spider marks), circoid aneurysms and dilated venules being excluded. The sex incidence showed that 34 per cent. occurred in males and 65 per cent. in females. The preponderance of the latter was not to be accounted for by reasons concerned with the appearance of the patient in after-life as the sexes were represented in this proportion where the nevi were upon the unexposed parts of the body. These figures, therefore, probably represented the true sex incidence of angiomata. As to the age at which nevi made their appearance the speaker thought that, contrary to both lay and medical opinion, the vast majority were present at birth. In this connection two interesting facts were brought forward. First, nevi upon the face or hands were said almost invariably by the patients' mothers to have been present at birth. Secondly, of those which were said to have developed at a later date a very large number were stated to have appeared at the end of the second week, at such a date when the mother herself would wash the child for the first time. It was therefore highly probable that most of such nevi were in reality present at birth. The speaker's own figures showed that 83 per cent. were congenital. Of those appearing later "spider marks" were the most common. The distribution of the nevi were as follows: head and neck, 49 per cent.; trunk, 29 per cent.; limbs, 21 per cent. Many photographs were shown of nevi corresponding in area with the distribution of various superficial nerves. The nevus was usually darkest at the point where the nerve became superficial.

Disturbances Arising from Milk Feeding After the First Year.—Dr. Vogt of Strassburg stated that the chief of these disturbances was the exudative diathesis of Czerny, a tendency to various eruptions of the skin. Breast-feeding was no protection against this diathetic weakness. Rickets was to be attributed to milk-feeding, and the constipating effects of a milk diet were often overlooked.

Friday, July 28—Third Day.

The Epidemiology of Acute Poliomyelitis.—Dr. F. E. Batten of London said that the first known epidemic occurred in Sweden in 1881, and the first to be definitely investigated was that of Stockholm in 1886. In America small epidemics occurred from 1890 to 1900. Large outbreaks were reported in Boston and Massachusetts in 1906 and in more recent years further severe epidemics had occurred. In England epidemics occurred in 1905; a small one in Bristol in 1909, and a more extensive outbreak in various parts of the country in the following year. In Australia the first outbreak occurred in 1894. It was interesting to note that the maximum case-incidence was found in the months of March and April in Australia, corresponding to the summer months (July to September) in England. The speaker knew of cases which had occurred in South Africa although as yet unreported there. From the well-known Trästena school epidemic it appeared that the disease could be communicated not only by direct contact but also through the agency of a third person. The possibility of transmission through some carrier, such as an insect, was discussed; the evidence strongly suggested such an agent, but there was as yet no proof of the proposition. The speaker showed a map of London showing the distribution of the cases he had seen in 1904, and Dr. Leonard Parsons exhibited a similar map for 1909. In both maps it was seen that the cases were widely distributed over the London area. In conclusion the speaker emphasized the importance of recognizing the infective nature of the disease and urged that it should be made notifiable in the large towns. [Since this paper was delivered the disease has been made notifiable in London.—Ed.]

Spinal Anesthesia in Children.—Mr. H. Tyrrell Gray of London dealt with the value of this procedure in abdominal operations, an important section of the small group of cases in which it was of particular use. Speaking generally the advantage of spinal anesthesia lay in the fact that it was an adaptation of the "nerve-blocking" principle as opposed to the method of suspending the activity of the higher centers alone, as in general anesthesia. He deprecated the routine use of either procedure and emphasized the importance of adopting spinal or general anesthesia, or both, according to the needs of the particular case under treatment. The paramount factors in influencing the choice of spinal anesthesia were the age and condition of the patient. By this method the shock was very materially diminished and, since the younger the patient the more unstable the nervous system, spinal anesthesia was of particular value in dealing with children. In short, the younger the child the greater the indication for the use of this procedure. Similarly the less satisfactory the physique of the patient the greater the value of spinal anesthesia. The state of health of the patient must also be considered. Where an abdominal operation were necessary in a child suffering from pneumonia or some other disease, spinal anesthesia should be employed, or, again, where a great degree of toxemia was present the same procedure was indicated. In other words, there were many cases in which the administration of a general anesthetic materially increased the risk of the operation and in these spinal anesthesia might be employed with excellent results. In abdominal work spinal anesthesia led to increased manipulative ease and hence to more rapid operating and more satisfactory exploratory measures, while the risk of shock was much diminished. This method of producing anesthesia had been of particular value in acute abdominal conditions such as infective lesions of the peritoneum, intestinal obstruction (intussusception, etc.), and abdominal injuries.

Oxypathy and Uric Acid.—Professor Stoeltzner of Halle read a paper on this subject. He discussed the diatheses known as lithemia and arthritism, and their treatment with sodium citrate and sodium phosphate. In gout there was a retarded excretion of uric acid. Oxypathy was as common in children as gout was rare.

AMERICAN PEDIATRIC SOCIETY.

Twenty-third Annual Meeting, Held at Lake Mohonk, N. Y., May 31-June 1, 1911.

The President, Dr. Henry Dwight Chapin, in the Chair.

(Special Report to the Medical Record.)

(Concluded from page 453.)

The Preservation of Health in School Children.—Dr. Rowland G. Freeman of New York called attention to the great difference in the care bestowed upon infants and that given older children. The child attending school usually received attention only when he was sick and few of the protective measures applied to younger children were extended to him. On account of this neglect of children of school age fairly complete physical examinations of children beginning school life should be made. When such examinations were made it was surprising how many defects were found. The first year of school the

child should have but one hour in school and that should be interrupted by periods of rest and exercise. The duration of the school day should be gradually lengthened. At the age of ten years the child should not be in school more than four hours and should have no home studies. It was true of children, as of adults, that worry, not work, broke down their nervous systems. The student, whether ambitious or stupid, should not be pushed too hard. In the effort to eliminate the conveyance of contagious disease, the separation of the children and the ventilation of the school room played an important part. Children would do better in a room whose temperature was 50° or 60° F. and properly ventilated. The schools were the chief means of conveying contagious diseases. The speaker illustrated this statement by charts. The nose and throat affections were the diseases most frequently communicated. Every child with a cold should be excluded from school. Every child exposed to a child taken sick at school during the period when the disease was apt to be developed should also be excluded from the school. The school authorities should be held responsible for epidemics. The speaker said that the following were essentials for the preservation of good health among school children: Short school hours; frequent recesses; open or well-ventilated and cool school rooms; roof playgrounds. There should be individual study for backward children. A medical supervisor should have control of the preservation of the health of school children.

Dr. Graham of Philadelphia said he would like Dr. Freeman to include in his paper a reduction in the number of studies in the public schools. Girls of ten or twelve had seven or eight set studies, were in school from nine in the morning to four in the afternoon in Philadelphia, and then had to prepare lessons at home. Dr. Graham thought that tests or examinations should be done away with. When children were subjected to a test every two or three weeks their nervous systems were kept in a fever of excitement.

Dr. Blackader of Montreal said that he wished to emphasize the points Dr. Graham had made. He thought it would be wise for this society to come to some definite expression of opinion on the subject and to have it published in the papers.

Dr. Charles Herrman of New York, discussing the question of preventing the spread of contagious diseases in schools, said that many things which were possible in public schools could not be carried out in private schools. The value of the work of medical school inspection varied greatly in different cities; in New York City the system was very complete. The results obtained depended very much on the individuality of the inspector and the amount of cooperation on the part of the principal and teachers; the latter was indispensable. The possibility of preventing the spread of different contagious diseases differed greatly. While it was practically impossible to prevent the spread of measles, he believed that in New York City, at least, the public schools could not be held responsible for the spread of scarlet fever.

Dr. Morse of Boston reminded them that in considering the breaking down of young girls in school they should not forget that it was not the school work alone; they should remember the dancing lesson, the music lesson, and the French lesson.

Dr. Kerley of New York thought they should also take into consideration that fact that in cities like New York when the children were not in school they were on the street, and schools for play with paid instructors should be provided, which should be open not only during the week but on Saturdays and holidays.

Dr. Samuel Adams of Washington agreed with Dr. Morse that more blame should be placed upon the parents than upon the schools. Sufficient calories should be provided for the child to work upon, and then they would get better work and less breakdown. Dr. Adams spoke strongly against the parents permitting children to go to school without a good breakfast. It was not overwork so much as improper feeding that accounted for these troubles. The dancing school and parties were also a means of transmitting contagious diseases.

Dr. Jacobi said that if many children went to school without breakfast the question was a social one. There were 600,000 children in the public schools of New York and many of them had no breakfast or a very poor one. The same thing applied to the teachers. There were a great many of these girls, 18, 20, and 22, teachers, who were starved. In the interest of the country these children should be properly fed. If Dr. Freeman referred to the children of the better classes he was right, but he had failed to cover the case entirely for the majority of the 600,000 children with whom they had to deal. Theoretically they were pretty well off in regard to school inspection. However, a great deal of imperfect work was done. The Health Department should have an appropriation that would enable it to do its work properly.

Dr. Chapin of New York said that this matter of breakfast had come up several years ago and he had been one of those appointed to investigate conditions. The result was that they had found that no such dire condition existed as had been pictured. If children went to school without breakfast it was because sufficient care had not been exercised by the parents. It happened oftener from ignorance than from poverty. Not so many went to school without breakfast as was supposed.

Dr. Freeman said that it might be of interest to state in this connection that a great many of the public school children in New York were now being provided with cheap lunches.

The Surgical Management of Acute Suppuration of the Lymph Glands in Infancy.—Dr. Thomas S. Southworth of New York presented this communication. He said that no surgical dictum had a broader application than that which predicated that where pus existed it must be evacuated. It was, however, worth considering whether this surgical canon had not been interpreted too broadly in the extent of its application to localized collections of pus in situations that involved little or none of the danger associated with the rapidly spreading necrotic types. In acute suppurative processes in the lymphatic glands in infancy they were dealing with suppuration beginning within the capsule; this rarely extended outside except in the search of an exit along some line of easy resistance. This latter tendency was a conservative process. When the lymphatic gland found the task too great suppuration ensued within the gland. Upon extension of the suppuration toward the periphery of the gland and the destruction of its parenchyma, a second line of defensive inflammation was established about the capsule which limited the destructive process except at the point which might be chosen for the spontaneous evacuation of the pus. At this stage they had a periadenitis; the gland was less movable, and the presence of pus was practically certain. Their procedure, therefore, in incising such an abscess was not to check the destructive process by heroic measures, but to give the requisite aid to complete a conservative process. Incision of the gland that had only partially broken down into pus delayed rather than hastened the period of healing. There were contraindications to the advisability of waiting until there was distinct fluctuation before undertaking surgical relief. The only indication for a large incision in acute abscesses was to secure drainage; such free incisions in acute abscesses in infancy were not only unnecessary from a surgical standpoint, but were unnecessarily mutilating. The smallest incision that would allow gentle expression of the pus and the smallest drain-

age tube that would permit of the continuous escape of the seropurulent discharge from the cavity were all that were required. The incision should not exceed five-sixteenths of an inch. The dressings were changed at the end of forty-eight hours and by that time the walls of the abscess cavity had contracted and there were evidences of granulation. The tube could then be dispensed with and subsequently a dressing of ichthyol ointment, 10 to 20 per cent., could be employed. This was continued until cicatrization was complete.

Which Is Preferable in Colon Irrigations—the Long or the Short Tube? A Comparison Based on Two Hundred Irrigations.—Dr. Henry T. Machell of Toronto said that he had felt for several years that in giving rectal irrigations to children the use of the small short rectal nozzle was preferable to the rubber catheter or the flexible rectal tube. In a number of instances he had seen the tip of the catheter appear when he had flattered himself that it was 10 or 12 inches up the colon. Another objection to the catheter was that it must be introduced by a number of pushes or shoves; the more of these the more uncomfortable the sensation, especially when it was practised for some inflammatory condition of the rectum or colon. The possibility of traumatism should also be considered. The speaker presented records of 200 cases of irrigation done during the winter of 1909. He thought that they showed that for the amount injected the short nozzle had the advantage whether the cases were acute or chronic, or whether the age and weight were considered or not. The fluid was retained for a longer time when the short nozzle was used. The amount permanently retained was larger when the short nozzle was used. That the fluid could be made to go up as far as the cecum with the use of the short nozzle could be readily proven by the stethoscope; that the long tube ever got past the cecum was not so easily proven.

Dr. Jennings of Detroit said that Dr. Yates had made some interesting investigations along this line. He had shown that it was practically impossible to introduce a long tube into the colon. With the *x*-ray he had shown that the tube could not be introduced above the sigmoid; it simply folded over and remained in the lower part of the bowel.

Dr. Jacobi of New York said that the paper and remarks of Dr. Jennings had covered the case entirely, but they might have told why it was impossible to put the long tube into the colon. It was possible to bring the tube into the colon with adults, but not with children. In children they simply lifted the sigmoid flexure. Dr. Jacobi had not attempted to use the long tube in babies for thirty years. In order to facilitate the operation in giving an irrigation it was better to raise the hips of the baby and to have it lie a little toward the left, rather than toward the right, and then the fluid would run in spontaneously.

Dr. Henry Dwight Chapin of New York thought that this paper and discussion put on record would do a great deal of good and add to the comfort of many babies. He had taught this for many years, although he had not performed the experiments that Dr. Machell had.

Dr. Machell of Toronto said, in closing, that he had gotten his idea at home when one of his own babies had ileocolitis and he had ample opportunity to do colon irrigations. He had concluded that the writers who advocated the long tube had not tried to use one themselves in their own homes.

A New Method of Calculating Milk Percentages.—Dr. L. Emmett Holt of New York presented formulæ obtained from milk containing different percentages of fat and an infant feeding card which he used in the Department of Diseases of Children, College of Physicians and Surgeons, reference to which would easily enable one to make out the formula required. Dr. Holt also gave statistics showing the good results obtained with these formulæ.

Dr. Blackader of Montreal asked Dr. Holt just what gain he got in the average case.

Dr. Holt replied that 61 children gained on the average one pound and ten ounces during an average stay of forty-seven days.

Dr. Churchill asked whether the one pound ten ounces was the gain above the weight when admitted or above the lowest point while in the hospital.

Dr. Holt replied that it was the weight above the lowest point during their stay in the hospital.

Dr. Churchill asked why they did not use partial breast feeding; whether it was because they did not have wet nurses. In his service they kept several nurses for this purpose and it was astonishing what an amount of milk they could furnish. One gave five quarts daily. They pumped off the milk and did not permit the nurse to incur the risk of infection.

Dr. John Ruhrah asked Dr. Holt whether he had noticed any difference with the children that came in with gastrointestinal disturbance. Did they do better than the others?

Dr. R. G. Freeman thought that the only disadvantage was that they would have to carry the booklet around with them. Most of them were getting down to simpler dilutions and not depending upon such accurate percentages. It was better for the general practitioner and for the medical student.

Dr. Henry Dwight Chapin of New York thought it was wise for institutions to compare results, but it should be remembered that the personal equation counted for much and what one would call good another would call bad. They must distinguish the cases in which there was gastrointestinal irritation and those of pure marasmus. The latter would all die in the hospital.

Dr. Koplik of New York said that he was glad that Dr. Holt had shown that infants did gain in American hospitals. There was an impression abroad that they did not gain in hospitals here.

Dr. Knox of Baltimore said that he was glad that Dr. Holt had told them that he began his cases of malnutrition with mixtures derived from whole milk. Except in very young babies they did not use the cream mixtures.

Dr. Holt said the reason they did not give more breast feeding was because they did not have the wet nurses. Only 27 of the cases got wet nursing, hence the figures did not show that the majority of the gain was due to wet nursing. Two-thirds of those classed as improved made their gain on artificial feeding. The gastric cases were comparatively easy to control, but the intestinal cases did not yield to treatment so readily, and those were the ones they lost. The caloric method had not helped them much; he had calculated it more as a matter of amusement than anything else. The percentage method furnished the best indication of exactly what they were giving a baby.

Dr. Chapin of New York said he was glad to hear Dr. Holt speak as he had about the caloric method. Personally, the more he used it the less he thought of it.

Dr. Morse of Boston thought they should use the percentage method as a basis for feeding, but they should use their calories as a check to know if they were giving enough food in calories or not.

Dr. Cowie of Ann Arbor agreed with the statement just made by Dr. Morse.

Dr. J. P. Crozer Griffith of Philadelphia said that he should like to maintain the position taken by Dr. Holt and Dr. Chapin. He thought the caloric method was a useful check; but what were sufficient calories? The caloric need of one child differed from that of another.

Dr. Kerley of New York said that he had been about to say just what Dr. Griffith had said. The activities of the child determined the caloric requirements.

The Use of Malt Sugar and High Percentages of Casein in Infant Feeding.—Dr. John Lovett Morse of Boston read this paper. He said that Finkelstein and Meyer believed that the diarrheal diseases of infancy originated in functional weakness of the intestines and that this weakness was kept up by fermentation. If this was the case the first step in the treatment was to stop the fermentation. This had been done in the past by cutting down the amount of food and giving a food not susceptible to fermentation. Fat, sugar, and proteid were all susceptible to fermentation. Meyer and Finkelstein concluded that casein had an antifermentative action. Milk sugar must, by exclusion, be the cause of fermentation. The speaker reviewed the process of reasoning by which they arrived at their conclusions and described the development of the food which they used to combat these indications. Dr. Morse expressed himself as not prepared to accept the statement of these men regarding the treatment in all disturbances of nutrition in infants which were accompanied by diarrhea. It seemed to him that they had made out a strong argument against sugar as an etiological factor in fermentation, and that the treatment of fermentative conditions by a food very low in sugar and high in proteids was, therefore, rational. The substitution of dextrin-maltose mixtures for lactose also seemed rational. It seemed to him that they might take advantage of what was best in this method of treatment, and at the same time avoid the disadvantages of a routine food and the superfluous buttermilk by applying them in the modification of the milk by the percentage method. By the use of cream containing a high percentage of fat it was possible to reduce the amount of unprecipitated casein to a very low percentage. The precipitated casein was prepared according to the method of Finkelstein and Meyer, the casein from one quart of milk being made into an emulsion with sufficient water added to make one pint. This method of treatment was tried only in cases of intestinal disturbance associated with indications of fermentation and in which there was none or little vomiting. Only sixteen cases were available. Eight of these had to be excluded. A detailed account of these cases was presented and the speaker felt certain that this method of treatment of intestinal disturbances associated with fermentation in infancy by the withdrawal of lactose and by raising the percentage of casein, followed by the addition of dextrin-maltose, was a valuable one.

Dr. Koplik said that in justice to Finkelstein they should, if they were going to talk about Finkelstein's methods, follow out exactly his methods. As soon as they began to modify the method it was no longer his. Dr. Koplik agreed that it was one food to fit all cases and was too much of a routine method. The material that they worked with was not so completely controlled as that of Dr. Finkelstein. There were a considerable number of milder cases in with the severer ones and the statistics were drawn from these. Another point that Finkelstein made was that he did not starve the babies too long and he maintained that this food could be given when the baby was very sick. Finkelstein said that with older children he could get the same results by other methods.

Dr. Jacobi pointed out that the method had several advantages, little fat, little milk sugar, and more of other carbohydrates. Some of them had followed this method for fifty years. The great principle in the treatment was little fat, little milk sugar, and more of other carbohydrates.

Dr. R. G. Freeman of New York said that the children would not gain much on Finkelstein's method unless more sugar or fat was added.

Dr. Holt thought they could hardly call it a low fat food as it gave 3 per cent. fat.

Dr. Morse of Boston said he hoped that he had made it clear that he was not using Finkelstein's method, but had merely adopted some of his suggestions and applied them.

Pyloric Stenosis in Older Children, with a Report of a Case of Pyloric Spasm, Ending Fatally in a Boy Six and One-Half Years Old.—Dr. Edwin E. Graham of Philadelphia presented this communication and said that it was his intention to consider stenosis of the pylorus in children who had passed the period of infancy. The etiology had been attributed to some disturbance of gastric secretion and consequently gastric indigestion and hyperplasia. The classical symptoms were vomiting, constipation, loss of weight, scanty urine, and a peristaltic wave; sometimes a tumor was found at the site of the pylorus. The treatment consisted in proper feeding, washing out the stomach, the administration of opiates, the application of poultices to the epigastrium, saline enemata, nutritive enemata, etc., and, if indicated, operation. The author thought the following conclusions regarding hypertrophic pyloric stenosis seemed justifiable: (1) That pyloric stenosis was present in children and young adults longer than was supposed. (2) The age at which it manifested itself depended upon the degree of the stenosis present. (3) Pyloric stenosis might be latent for years. (4) It had been found that during childhood and young adult life the early recognition by the physician was very important from the standpoint of early medical or, if necessary, surgical treatment. (5) The entire disappearance of all the classical symptoms of congenital pyloric stenosis and the apparent health of the infant during its subsequent early childhood being restored, no gastric dilatations might develop later in life. The speaker gave the history of a case of pyloric stenosis in a boy six years of age, whose general health during infancy and childhood had been first class until a few months before death. During life he presented the typical picture of pyloric spasm. No disease of the pylorus, stomach, or other portions of the intestinal tract was found postmortem. The case was not connected with any organic disease of the stomach or with any changes in the normal gastric secretion. Pain was absent. Vomiting was one of the prominent symptoms. The loss in weight was extremely rapid. The loss of weight and the violent and persistent vomiting made the case differ from those described by most of the writers on this subject. In this patient enucleation of an eye was necessitated because of an accident; sarcoma subsequently developed. The case seemed to belong to a group of cases of so-called reflex vomiting associated primarily with disease of the eye, and later aggravated by a sarcomatous metastasis in the liver. The speaker thought that a clear understanding of this condition in infants would help them in the recognition and study of the condition in older children.

A Discussion of Mikulicz's Disease, with a Report of a Case of Lymphatic Leucemia in a Child with Marked Enlargement of the Salivary Glands.—Dr. Wilder Tileston of New Haven, Conn., read this paper, in which he stated that in the year 1891 Mikulicz described a new disease characterized by chronic bilateral painful enlargement of the lacrymal and salivary glands. In the case which formed the basis of his report the blood was normal and there was no enlargement of the lymphatic nodes or spleen. The histological picture resembled that of a lymphoma. After a complete extirpation there was no recurrence. Since that time cases had been reported in which the pseudoleucemia was accompanied by a similar enlargement of the lacrymal and salivary glands. The speaker reported a case of lymphatic leucemia of a leucemic type in a child two years of age; there were large tumors in both of the parotids, and both submaxillary glands, the lacrymal gland not being involved. At autopsy it was found that there could be but little doubt but that this case could be classified as above, that was to say, without an increase of the leucocytic count. The case fitted in

with the Mikulicz syndrome. The histological appearances of the salivary glands were identical with what had been described in many cases of Mikulicz's disease without involvement of the blood or lymphatic system. A search through the literature showed that the association of leucemia with the Mikulicz syndrome was extremely rare. The speaker offered the following conclusions: (1) The term Mikulicz disease should be reserved for those cases of chronic bilateral enlargement of the salivary and lacrymal glands in which the pseudoleucemia and leucemia could be excluded. (2) The cases occurring in the last-named disease should be classified as pseudoleucemia or leucemia with the Mikulicz syndrome. (3) The cause of Mikulicz's disease was probably some infectious agent in the widest sense of the word. It was likely that a number of different organisms might cause the symptoms of the disease.

AMERICAN ORTHOPEDIC ASSOCIATION.

Twenty-fifth Annual Meeting, Held in Cincinnati, May 15, 16 and 17, 1911.

(Concluded from page 352.)

Further Experience with Volkmann's Ischemic Paralysis by the Method of Robert Jones.—Dr. Reginald H. Sayre of New York City stated that Volkmann's ischemic paralysis was the result of a myositis set up by obstruction of the supply of oxygen by pressure by either bandages or splints, and sometimes by position and pressure of bone fragments. Shortening of the affected muscles resulted, the muscles of the forearm being those usually affected, those of the hand occassionally. Massage was too intermittent to produce good results. Shortening of the contracted muscles produced results when massage failed, as it was constant, instead of intermittent. In some cases bone growth at a faster rate than muscle growth might cause a recurrence of the deformity in a way analogous to the recurrence of equinus in cases of paralysis, and a second stretching might then be necessary.

Dr. Leonard W. Ely asked whether there had ever been any evidence adduced to show that the cause of this paralysis was a tight band. If the paralysis was caused by a tight dressing he did not see why one did not get constriction in the parts distant from the dressing.

Dr. Alexander R. Colvin had seen in the last year two cases of severe ischemic paralysis following fracture, though no dressing had been used at any time.

Dr. Stern had recently seen what appeared to him to be a typical case due to the misuse of a bandage, which had been applied tightly a little above the elbow and kept on twenty-four hours.

Dr. Davis thought that perhaps in the majority of these cases the cause was not so much the muscular as the nervous element. In the case of claw-hand exhibited he thought that the ulnar nerve was affected. In many cases of ischemic paralysis the proper treatment would be to clear the nerves, as well as isolate the muscles.

Dr. Sayre, closing, said that he had drawn attention to the fact that all these causes might act to produce ischemic paralysis. The experiences of different observers were somewhat at variance, as well as the results of animal experimentation. He also stated that these patients did have symptoms of constriction, but that they were usually disregarded. The reason that ischemic paralysis was so much more freqnent in children was that the adults removed the dressing, but the children could not do so. Anything that cut off the blood-supply might produce it.

Exercise Treatment of Paralysis.—Dr. C. H. Bucholz of Boston stated that exercise held a prominent place in the treatment of paralyses. Its main indications were the stimulation of the affected nerves, the education of new nerve tracks, the training of muscles, the prevention and cure of articular complications, the stimulation of the development of the growing bones, and the care for the general conditions of body and mind. The relation of exercise to tendon transplantation and postoperative treatment was considered, and the necessity of saving the muscular tissue. Particular attention should be paid to the position, the angle of the movement, and the support. The stretching exercises which were indicated in cases of hemiplegia and similar types of paralysis needed a fine and subtle technique. Overexertion, both local and general, was to be avoided. The experience of the last two years had offered us much encouragement to pursue these exercises and attempt to improve them, and had given results that he had been unable to obtain in any other way. Dr. Bradford said that these cases were all so hopeless unless something was done that every means possible should be taken, and one of the means was this, which has caused improvement even months and months after the onset of the paralysis.

Dr. Osgood also bore witness to the value of this work of Dr. Bucholz, who saw these cases in a clinical way, many of them being patients that he and Dr. Bradford had felt quite discouraged about. The results of this treatment, though slow, had in the end been the most brilliant of any that they had had anything to do with. The work, however, involves a patience and a detail that are enormous.

Dr. Truslow stated that if there was deformity present it should be corrected by mechanical means before this treatment was instituted.

Dr. Cone referred to a case of paralysis of the throat. The patient was unable to use the involuntary muscles in swallowing, and had to be fed through a stomach-tube. After an education of some months she was able to use the voluntary muscles in place of the involuntary, and now she has practically a new throat.

Dr. Bucholz, closing, thought that overexertion of the patient was allowed too frequently by even well-trained men, and some very bad results had been caused by it.

X-Ray Studies of Arthritis Deformans.—Dr. George R. Elliott, of New York City, had selected these cases from a large number of cases of chronic arthritis. The *x*-rays showed new bone-formation about the joint and distant from the joint, and also along the shafts of the long bones. They also showed holes cut out of the bones, general atrophy of the bone, ankylosis, subluxations, dislocations, transparent areas, areas of density of bone, fusion of bone, etc.

Dr. Ely thought it a mistake to regard these as cases of bone disease. In all these lesions the bone played merely a passive part, forming a mere frame-work to the changes going on in the marrow. Some infection was at the bottom of them all.

Dr. Goldthwait said that the joint manifestations did not represent the primary disease, but were manifestations of something else wrong with the system. One should find the cause first and attend to the joints after that had been removed.

Dr. Elliott, closing, said that he regarded the trouble in the joints as purely secondary and that chronic arthritis was undoubtedly in a fair way of being cleared up from an etiological standpoint.

Treatment of Scoliosis (Illustrated by Stereopticon).—Dr. Edward H. Bradford of Boston said that in all cases it was essential that careful records should be made not only of the curves and contour of the back but also of the spinal flexibility. Spinal curves resulted from the inability of the spinal column to carry the superimposed load. They varied greatly in degree according to the varying strength of the back body and leg muscles and also according to the strength of the bone tissues of the vertebræ, and in treatment it was important that the right measures should be used at the right time and in weak backs only the weakened

muscles should be strengthened. Class work was to be avoided and each case was to be treated individually. In curved backs with a commencing localized stiffness, flexibility exercises which stretched only the stiffened regions should be employed and not those which made the flexible parts more flexible and left the stiffened parts unaltered. In twisted backs the constant use of the correcting force was needed until the bones were strong enough not to be altered in shape and structure.

Results of Treatment of Scoliosis at the Boston Children's Hospital.—This paper, which included a lantern demonstration, was written by Drs. Robert W. Lovett and J. W. Sever of Boston and read by Dr. Lovett, who gave a presentation of the results of treatment in lateral curvature by means of photographs showing postural or functional curvature and its treatment by gymnastics, as well as structural or organic curvature and the treatment of moderate and severe cases by forcible jackets either permanently worn or worn for a short time and followed by removable jackets and gymnastics. He stated that the problem of severe lateral curvature was a bone problem and not a muscle problem. The treatment advocated was addressed to the reshaping of bone. A demonstration by lantern slides of methods and cases before and after treatment was given.

Dr. Truslow thought that there were cases of functional scoliosis that needed supportive treatment as well as exercise. He preferred to change the jacket every time there was a change in the condition of the patient and to try to get as much correction in every phase of the deformity as possible. Accurate measurements were necessary to give an accurate idea of the changes.

Dr. Bradford, closing, said that he considered photographs as notes, but not as true records. He had been impressed by the results accomplished by the constant pressure, night and day, of a light apparatus. In private practice one could not apply plaster constantly for three or four years, and some cases needed it as long as that.

What Is to Be the Attitude of the Orthopedic Surgeon with Regard to the Child with Congenital Ptosis of the Abdominal Viscera?—Dr. Joel E. Goldthwait of Boston said that the type of child he wished to consider was the one who stood in an incorrect attitude. Such children had the arrangement of the visceral supports found in quadrupeds. One person in every five was born before the embryological changes that differentiate the human species from the quadruped had taken place, as these occurred in the latter part of embryonic life. They had bilious attacks and difficulty in their nutrition and later had neurasthenia, with round shoulders and various other deformities. If one could give a little support to the viscera the children would stand better. The force of gravity should be used in such a way that instead of its constantly making the position worse it pulled the parts to where they should be.

Dr. Compton Riely of Baltimore stated that if the pelvis was tilted forward it was a mechanical impossibility to get the ribs separated and the lungs expanded. In the treatment one should make an effort to have the patient tilt the pelvis backward. This had to be done largely by means of exercise, especially of the leg muscles, doing away with heels on shoes, if possible.

Dr. H. L. Taylor reported that it had occurred to him that the old knee-chest posture of gynecology might be a good one to have the patients assume. He had seen plenty of neurasthenics that had none of these faults in posture, and numbers of persons who had them were not neurasthenics and had no arthritis deformans.

Dr. John Dunlop of Washington, D. C., had found the stomach of such patients in the knee-chest position to be five or six inches higher than when they were trying to stand.

Dr. Goldthwait, in closing, stated that a good exercise was to have the patient crawl off the edge of the bed, letting his head hang to the floor, keeping this attitude long enough for the muscles to tire and the organs to sag back. The knee-chest position had the disadvantage of causing an additional sacroiliac strain.

The Anterior Heel: A Further Contribution to the Question of Balance.—Dr. Ansel G. Cook of Hartford said that the anterior heel was a triangular prism-shaped strip of leather about two inches in width and from 2-16 to 5-16 of an inch in thickness at its center. This strip of leather was placed obliquely between the inner and outer soles, and lay just behind the anterior arch or ridge formed by the heads of the metatarsal bones. The shoe was provided with a heavy steel shank which was supported behind by a low, broad heel, and in front by the anterior heel. The anterior heel, when studied in connection with the steel shank and the posterior heel, was an important element in the balance of the shoe. The anterior heel afforded instantaneous and efficient relief from all troubles of the anterior part of the foot, whether considered singly or collectively. The common cause of all these troubles was undue pressure; and the anterior heel, by removing this pressure, removed the cause and placed the injured parts in a position where recovery was possible. Shoes and instep supports made in this manner and worn indefinitely would in no way injure normal feet.

Pathological and Symptomatic Weight-Bearing: A Consideration of the Prevention and Cure of Foot-Strain.—Dr. Robert B. Osgood of Boston said that included under the name of foot-strain were those conditions in which faulty weight-bearing affected the anatomical structures of the foot that were designed to protect and maintain its arches and regulate its circulation. The tarsus and the first metatarsal with its phalanges were the portions of the foot actively concerned in progression. The muscular anatomy was the most important factor in mnintaining proper weight-bearing lines. The most common predisposing cause of foot-strain was abnormal muscle balance; and the most common exciting cause, the modern ready-made shoes. An important point in reaching the diagnosis was the examination of the patient's well-worn shoes. If the muscle balance was nearly or quite normal, the symptoms being due to bad footwear, various flexible-shank shoes might be used. In other cases rest in some form was the most rational immediate treatment.

Dr. Davis felt that a flexible-shank shoe had ordinarily no advantage over a stiff-shank shoe. The latter was more stable and less liable to distortion.

Dr. Cook asked whether Dr. Osgood referred to flexible shank shoes, with or without heels.

Dr. Ryerson thought that unless the tibia were firmly fixed, no estimation of the power of the abductors and the adductors of the foot could be made.

Dr. Osgood, in closing, said that it would be better if one could get rid of shoes altogether, because almost no shoe was absolutely nature-shaped. Flexible shoes allowed freer foot action and overcame to a certain extent the disadvantages of shoes in general. What he had said referred to the flexible-shank shoe without a heel. It did not seem as necessary as one would think to rule out the hamstring muscles in calculating the power of the foot-muscles. The point was to measure the pull in one direction and in the other under the same conditions.

Further Observations on the Operative Plan for the Correction of Relapsed and Untreated Cases of Equino-Varus.—Dr. Michael Hoke of Atlanta described the anatomical and mechanical details of several very bad cases that were corrected. The plan consisted in remodeling the metatarsus, the tarsus and the ankle so that the skeleton would be balanced, there being thereafter no occasion for disturbance of muscular balance. The meta-

tarsal operation consisted in osteotomies of the shafts of the metatarsal bones, correcting their inward inclination. The tarsal operation consisted in remodeling the three cuneiform bones, the cuboid and the astragalus so that these bones would be as near their normal shapes as possible. In the deformity, the external malleolus was twisted backwards so that it held the os calcis in a position of outward rotation and prevented the body of the astragalus from gliding backwards when dorsal flexion was attempted. The plan of the ankle operation was to bring the external malleolus forward, widening in this way the ankle joint, thus permitting the body of the astragalus to be received between the two malleoli.

Dr. Cone felt sure that almost any child's club-foot could be remodeled properly without cutting. If, however, cutting should be necessary, the Phelps operation would be satisfactory.

Dr. Riely asked whether this operation allowed of more elasticity than the other operations and whether it ever caused metatarsalgia.

Dr. Davis thought that a foot corrected by Dr. Hoke's method would be corrected for good, as an ankylosis would practically fix the foot in the corrected position.

Dr. Hoke, in closing, said that he did not see any more harm in doing osteotomy of the tarsus than in doing a linear osteotomy for bowlegs. There was no ankylosis of the foot after these operations, which were followed by the development of the foot. Regarding the Phelps operation, he did not see why smashing everything in the foot was a rational procedure to correct bone deformity.

Psoas Abscess from Retroperitoneal Lymph-Glands.—Dr. Mark H. Rogers of Boston gave a report of seven cases of psoas abscess from suppuration of the lumbar retroperitoneal lymph-glands without spinal involvement. The anatomy of the abdominal lymph-glands was discussed to show the probable etiology of these cases, and to show that this condition was entirely separate from tabes mesenterica, a distinction that was not well recognized in the various text-books.

Dr. Cone stated that a knowledge of the pathology and anatomy in these cases would help orthopedic surgeons and, through them, the general surgeon in working out the proper treatment of these difficult so-called retroperitoneal abscesses, which were often due to infection of the glands.

Dr. E. G. Brackett of Boston thought that these cases emphasized the need of orthopedic surgery; for they were apt to go unrecognized, except through that medium.

Dr. Ely hoped that Dr. Rogers would repeat the diagnostic points in closing the discussion.

Dr. Rogers, closing, said that the conditions liable to come up in making the diagnosis were appendix and kidney abscess, hip and spine disease and pelvic abscess. In most of these cases a lesion of the spine was suspected. It was hard in a number of cases to get the general surgeon to look for a psoas abscess first; he usually wanted to open the abdomen.

Orthopedic Treatment of Fractures of the Humerus.—Dr. Frank E. Peckham of Providence said that the general surgeon of to-day was intensely interested in abdominal surgery and not in fractures. Fractures were mechanical problems, and hence of very great interest to the orthopedic surgeon. The humerus was selected simply to show illustrative cases. Any other bone would have answered as well. The *x*-ray was valuable in showing the condition before reduction, and of double importance after attempted reduction in verifying the condition. Mobilization was important in hastening the restoration of function. The operative treatment should be the last resort, as the skill and mechanical ability of the orthopedic surgeon should overcome most difficulties, thus rendering the open operation seldom necessary.

Dr. B. E. McKenzie of Toronto wanted to know whether Dr. Peckham, in making the motions of extension, abduction and circumduction for fractures of the surgical neck, did so with the intention of making motion at the point of fracture or to keep the fracture in place.

Dr. Ely remarked that fractures about the head of the humerus sometimes occurred with dislocations of the shoulder joint. They were usually reduced and put up in the adducted position, and one got a pronounced degree of Dupre's bursitis. If the joint was put up in the extreme abducted position and kept that way for a month, the greater tuberosity, which had been broken off and slipped up, giving rise to this lesion, would go down into its place.

Dr. Brackett said that in many cases the time came when one could employ surgical procedure with safety, and possibly a little more surety than with the simpler method. The use of bone-plates and hardware prevented having to keep the patients in bed for two or three weeks or to confine the extremities, giving security that the fracture would not slip during the treatment.

Dr. H. L. Taylor stated that in some cases it was necessary to put in plates, but that the surgeon should not think first of using these. It was rational to lock the bones by serrations and indentations and to keep them in position by means of posture.

A Removable Plaster Corset for Structural Scoliosis.—Dr. David Silver of Pittsburg considered that the advantages of the removable plaster corset were its cleanliness and its freedom from pressure, allowing the opportunity for frequent inspection and permitting the use of corrective exercise (in recumbency) either during the entire period of treatment or in the later stages. The neck portion came well up on the base of the neck. Instead of carrying the plaster up to the neck it might be stopped at the shoulders and a metal neck and shoulder attachment used.

Dr. Truslow stated that the neckpiece was extremely uncomfortable and that patients did not like to wear it. He preferred a corset made of celluloid, with a single opening in front. It could be reinforced with strips of metal.

Dr. Stern said that celluloid was objected to by many on account of the danger of fire, but that if crystals of the chloride or iron were added to the celluloid for the middle layer of the jacket the material would be be made practically non-inflammable.

Dr. Silver, in closing, said that he did not think the neck-piece uncomfortable, especially the metal one, because it could be bent until it fitted comfortably.

The Operative Approaches to the Hip-Joint.—Dr. E. G. Brackett of Boston said that it was impossible to fully expose the hip-joint by any one incision. It needed to be approached by the different avenues, according to the part of the joint to be attacked. The hip-joint differed from all others in its depth; its peculiar covering of overlying muscles with the danger of destruction of the nerve supply; and also in the fact that the joint itself could not be exposed by any avenue of approach. The surrounding bone structures only could be reached. It became important, therefore, to carefully choose the entrance according to the special conditions for which operation was undertaken, and the special part of the joint or its surrounding structures it was intended to attack; and that it was necessary to effect an approach by one of the intermuscular routes. The different avenues of approach were considered with the special parts of the joint to be reached by each and some of the special operations for which these different routes might be used. Special consideration was given to the approaches for the use of modified Gant and for arthrodesis of the hip-joint.

Dr. Davis wished to know how Dr. Brackett fastened the upper extremity of the trochanter after it had been

loosened and replaced. If the trochanter were not removed, as good access could be obtained anteriorly as laterally.

Dr. BRACKETT, in closing, stated that his operation did not interfere with the muscular attachments. The patients stayed in bed a few weeks and the trochanter was healed.

Traumatic Arthritis as a Late Complication of Fractures of the Upper Extremity.—Dr. PRESCOTT LE BRETON of Buffalo said that this was a form of arthritis of the hand and wrist beginning several weeks after fracture had occurred. It was characterized by pain, edema, and stiffness of many joints. The course was slow and the recovery imperfect. The lesion was confined to the extremity in which the fracture had occurred. This form of arthritis was not described in literature. He gave the histories of four cases and showed photographs of them.

A Röntgenological Study of Some Brittle Bones.—Dr. ROLAND HAMMOND of Providence stated that osteopathyrosis was divided into two classes, symptomatic and idiopathic. The former included cases of fragility of the bone from various causes; the latter was a congenital condition, probably identical with osteogenesis imperfecta. It was only by a microscopic examination that one was able to make an absolute diagnosis in a given case: but, as not all cases could be investigated histologically, röntgenography afforded a valuable method of studying them. The prognosis for life was good in all these cases. The treatment should be directed to the upbuilding of the general health. It was usually necessary to continue artificial support for the legs by means of braces for many years, and practically permanently. Deep massage or vibration and the use of some form of electricity stimulated the circulation and tended to restore tone to the muscles.

The Adolescent Tibial Tubercle: an Anatomical and Pathological Study.—Dr. JOHN DUNLOP of Washington, D. C., stated that lesions of the tibial tubercle were far more frequent than the literature would go to show and included strains or sprains as well as fractures. From a thorough study of the literature and personal observations it would seem that the border line between the so-called inflammatory lesions of the pretibial tubercle and the actual separation of the tubercle was one of convenience. The usual type of development was in three sections: proximal, medial, and distal. The form or development had a bearing on the nature of the injury. The right side was more open to an injury than the left, owing to the more advanced development of the muscles of the right side. The etiological factor seemed to be a quick muscular action on a thin layer of cartilage and most frequently at a period in development when the cartilaginous space was least before union had taken place. Girls, as well as boys, might be affected; and they were more liable to affections at a somewhat earlier period on account of the earlier development of the tubercle. The symptoms were pain at the tibial tubercle, usually confined to a small area, and decreased ability to use the limbs, especially where much muscular activity of the thigh muscles was required. The *x*-ray was indispensable in the diagnosis and correct understanding of the case. The treatment was partial fixation and general toning up of the joint, and required from six weeks to several months, depending upon how soon after the accident the lesion was recognized.

An Unusual Pathological Condition of the Sacroiliac Joint, Causing Sciatica.—Dr. SYDNEY M. CONE of Baltimore said that there were various pathological conditions of structures neighboring on the sacral plexus and sciatic nerve itself which caused symptoms of sciatica. Besides confirming several of these conditions he added two new cases, one of osteophytic growths following a railroad accident to a healthy man aged 34, in which he injured his left pelvic region, and after lying up a long time was treated for sciatica and sacroiliac loose joint for several years. *X*-ray examination and physical examination showed bony growth about the sacroiliac joint. At operation several bony growths were removed at this joint and about the great sacrosciatic notch. The patient was promptly relieved. The second case was treated for a year or more for a loose sacroiliac joint. The *x*-ray showed thickening (a cloudiness) of the tissues above the acetabulum of left hip. Exploratory operation showed the joint to be normal, but the periosteum was thickened and chronically inflamed. Operation revealed a thickened periosteum and a small osteophytic growth at the great sacrosciatic notch. Curetting of this resulted in complete relief from all symptoms.

Further Study of the Lumbosacral Articulations, with a Consideration of the Importance of the Articulations Formed Between Transverse Processes of the Fifth Lumbar and the Sacrum.—Dr. JOEL E. GOLDTHWAIT of Boston reported that three cases were seen within one year, one of which was operated on by him, with the result of correcting the condition, which was very common. He considered this joint as definite as any in the body. He stated that as people became heavier they often got sciatica; because the weight of the body pressed upon these articulations. Anything that increased lordosis would bring the spinous processes nearer together and pinch the nerves. If by means of exercise, one could get heavy people to stand correctly, so as to pull these processes apart, one could relieve their symptoms. Otherwise one could cut the process off, which was not a difficult thing to do.

Peroneal Spasm.—Dr. CHARLES F. PAINTER of Boston stated that the rigidity of the peroneal muscles was very difficult to overcome. He had found in the tendon sheath, just where it began to play into the groove, an articular facet, which was not a part of the groove; and in the tendon there was a body that could be distinctly felt, causing the tendon to expand in both directions. He dissected this body out and left the tendon intact. He afterward left the foot entirely free. The second day after the operation he could move the patient's foot in any direction and there had been no recurrence. In view of the anomalies that anatomists had found to exist in the tarsus, he thought that this might be a possible explanation of the condition.

Dyschondroplasia.—Dr. CLARENCE E. COON of Syracuse said that the patient was normal on one side. The right arm was shorter than the left. There was no interference with the joints in any place except on the tip of the olecranon and the tip of the acromion, where there were growths. The right lower extremity was three inches shorter than the left, but no masses could be felt on this extremity. The right foot was slightly smaller than the left. By means of the *x*-ray much more extensive bone changes were observable than could be seen on a surface examination. There were three distinct bone changes present in the same individual: cartilaginous tumors, exostoses and changes in the bone presenting the appearance of striations.

Mutton Tallow and Iodine as a Substitute for Bismuth Paste.—Dr. DAVID SILVER of Pittsburg said that mutton tallow had been used because it was felt that an animal substance would be a better material to inject into the body than a mineral. It was generally supposed that mutton tallow became rancid easily, but a specimen that he had had for a long time in his desk had failed to show any evidences of this. The sinuses in which this substance was used were distinctly drier than are those injected with bismuth paste. This fact also made the tallow better than vaseline.

Pathogenesis of Spur Formation on the Os Calcis.—Dr. Roland G. Meisenbach of Buffalo exhibited the radiograms of a series of cases showing spurs in different stages. A careful interpretation of the radiogram of the foot might assist in the diagnosis of the cause of the spur. The symptoms were not due to the size, as was generally supposed, but to the cause. When the spurs were in the advanced stage and large, removal of the spur by excision was indicated. The spurs seemed to be actual bone formations and not periostitis. The symptoms were not due to the size of the spur, but to the cause producing it, which might be thymus infection, osteoarthritis, or syphilis.

Dr. Philip Hoffmann of St. Louis believed that these spurs were often the residual product of an inflammation, possibly a periostitis, of the os calcis, which was frequently accompanied with a periostitis of other bones. He considered it unwise to remove the spurs as long as there was tenderness anyhere else about the bone.

Dr. J. P. Lord of Omaha said that if one observed this remarkable specimen, it would be noticed that it was a diffuse and general process and must have had its origin in the periosteum. That the muscle traction did have its influence, however, could not be denied; though it would seem to be only a minor traction in cases of this general diffusion of the process.

Dr. Truslow stated that many patients objected to undergoing an operation, and that by carefully hunting out the tender plants many of these could be relieved by means of proper foot-plates.

Dr. Albert H. Freiberg, of Cincinnati, had seen a good many of these cases that he thought were of traumatic origin, and others that he considered inflammatory. He had had to operate on but one, however. He had found that after wearing an athletic shoe with the heel removed, for several months, the patients were able to discard this style of footwear without producing a return of the symptoms.

Dr. Kiely said that any one that had worked in the dissecting room would recognizze the fact that there was a great variation in the size and form of the tuberosity.

Dr. Colvin stated that Achilles bursitis was occasionally accompanied by spur formation. The spurs were end products, and did not harm. The advanced cases of this bursitis, however, were not cured until the bursæ were removed.

Dr. Cone remarked that wherever there was a functional use of a part there would be bone formed, if there was a congestive condition present.

Dr. Ryerson had operated on a number of these cases. At first the results seemed so promising that he thought the operation would be universally curative. One patient, however, had been operated upon for the third time for this condition, and was awaiting an operation for a fourth spur which had formed in the same place as the others.

Dr. Virgil P. Gibney of New York City felt a little skeptical as to the value of shaving off these spurs.

Dr. Freiberg asked Dr. Ryerson whether he had made any attempt at a wide excision of the soft parts around the spur. If this were done the metaplasia might not be reproduced.

Dr. Ryerson said that it was difficult to take off a spur without excising a little tissue around it. He believed that a great many of these cases were due, not to the gonococcus, but to the *Bacillus coli communis*.

Dr. Meisenbach, in closing, stated that it was difficult to determine whether the condition was one of periostitis or bone-growth.

An Operation for Severe Grades of Contracted or Clawed Toes.—Dr. Philip Hoffmann of St. Louis said that the operation that he had used for the correction of this deformity was not so formidable as it appeared, and he thought that they would have no cause to regret giving it a trial. He sewed the wound up with catgut and put on a sterile dressing. In a week or so the tendons were found relaxed and there was perfect movement.

Dr. Clarence L. Starr of Toronto asked whether practically all of these cases were not paralytic. He thought that some cases might be purely traumatic and not have the condition that these feet presented.

Dr. Ryerson said that this operation seemed most rational. He had done fifteen of the Sherman operations, with various modifications. The results in several cases were good, but in others not so good. While this operation at first sight seemed rather formidable, he thought that one could accept Dr. Hoffmann's results as pretty conclusive.

Dr. Freiberg asked Dr. Hoffmann to tell him whether he would prefer this operation in cases in which claw deformity had resulted from infectious arthritis, and in which the toes grew stiff in the extended position.

Dr. Hoffmann, closing, stated that he did this operation only in those severe grades of the condition in which one could bring the toes and the bases of the phalanges into contact with the distal surface of the metatarsal bone. He thought it adapted to all severe grades of the deformity, from whatever cause, either infectious arthritis or paralysis. Only two out of eight cases were due to the latter. The operation was simply to get rid of the metatarsal heads. For milder grades of contracted toes he would not advise it.

Suggestions as to Notes and Records in an Orthopedic Hospital.—Dr. Virgil P. Gibney of New York City said that at the orthopedic hospital at Canton, near Boston, which he had visited recently in company with Dr. Brackett, the doctor in charge showed them the complete system of keeping records. He was much impressed with the value of the system. After returning to New York he visited Bellevue Hospital, and found there also a most admirable system. This system was copyrighted, and any number of the sheets used in it would be furnished to any hospital that chose to take it up.

Dr. H. Augustus Wilson of Philadelphia was especially interested in this subject, because Dr. Coplin, the medical director of the Jefferson Hospital, had made a similar tour of inspection, and had found the expense of establishing such a system to be so great as to be for the present prohibitory. Dr. Wilson mentioned this in the hope of being able to take back to him a statement that his figures were too high.

Dr. Gibney, closing, thought that the expense would largely be controlled by having an efficient superintendent of the hospital. He could often utilize the assistance of convalescents in doing some of this work. The superintendent of Dr. Gibney's hospital had said that it would not be nearly as expensive as had been expected.

A Simple Splint for Snapping Knees.—Dr. A. J. Steele of St. Louis said that in this condition, in which the epiphysis was separated from the diaphysis, he presumed that the ligaments were too long, so that the bone slipped out and was forced back again. It had occurred to him that it must be a lateral slip, and that it would be a simple matter to put a small brace that would not interfere with motion on each side of the knee. He had devised a small sole-leather splint, which his patient had worn continually for five or six months, and the snapping had nearly passed away.

Pott's Paraplegia of One Year's Standing; Laminectomy; Almost Complete Recovery.—Dr. Emil S. Geist of Minneapolis stated that the location was the third and fourth dorsal vertebræ. Laminectomy was done, and an extradural abscess communicating with the posterior mediastinum was found. Drainage was allowed to remain in for three months. A beginning return of sensibility was noted for months after the operation. Motion and sensi-

bility had entirely returned by the end of nine months after the surgical procedure. A brace was applied, and walking begun. The patient had an attack of pneumonia and pleurisy two months later, which ended in death. Dr. Geist exhibited the pathological specimens, gross and microscopic.

Dr. Ruth remarked that it was interesting that a paralysis lasting as long as this could have been followed by entire recovery. He had had a case of nearly duplicate history, in which various means of straightening were tried, covering a period of two years. Each time the procedure was followed by a remission of the symptoms of paralysis. Finally, he did a laminectomy, and hoped to get results as brilliant as Dr. Geist's, which should encourage surgeons to open up these cases otherwise absolutely hopeless.

Dr. Cone said that the textbooks on orthopedic surgery stated that bony pressure was not the usual cause for the paralysis, but that there was inflammation along the membranes. He wished to know whether in this case the cause was bony pressure or the abscess itself.

Dr. Geist, in closing, stated that the larger portion of the abscess was in the posterior mediastinum. As soon as the chisel had penetrated into the spinal canal a drop of pus spurted out at every inspiration. It seemed probable that the abscess was the cause of the paralysis, especially as the cord at that point was much smaller than normal. Such patients would lose very little by submitting to a laminectomy, even if they lost their lives, and they perhaps had a great many chances in their favor if such an operation was performed.

A Modified Genuclast.—Dr. Philip Hoffmann of St. Louis said that it was a great advantage to have a genuclast that was compact and easily sterilized, and could be manipulated and adjusted after it was on the limb. This one answered these requirements and was an improvement in this respect over the models formerly used. The one objection to it was the leather straps. He had thought of using chains, which could be boiled, instead of the straps. However, he boiled the straps. Of course, this spoiled them, and a new set was needed for the next operation. In place of the strap, sterilized gauze might be used.

Election of Officers.—*President,* Dr. Virgil P. Gibney, New York City; *First Vice-President,* Dr. George B. Packard, Denver; *Second Vice-President,* Dr. T. Halsted Myers, New York City; *Treasurer,* Dr. G. G. Davis, Philadelphia; *Secretary,* Dr. Ralph R. Fitch, Rochester, N. Y.; *Member of the Executive Committee,* Dr. Ansel G. Cook, Hartford; *Delegate to the Congress,* Dr. Joel E. Goldthwait, Boston; *Alternate Delegate,* Dr. R. T. Taylor, Baltimore.

Causes Determining the Sex.—L. Billon says that embryological facts show how the spermatozoid and ovule encounter one another, each charged with a certain quantity of sex. From their union life is born. Physiology shows that the ovule is detached and becomes fecundable at the moment of ovulation, about the epoch of menstruation. The elements brought by spermatozoid and ovule are opposite; the testicle is female, the ovary male. Greater quantity of sex in the ovary gives a male, in the testicle a female. Clinical facts show that whenever on account of sickness, age, war, etc., the male is inferior boys are born; but the woman may not be superior to the man on account of sickness, amenorrhea, or the premenstrual period, and conception will be feminine. There are two consequences; the child will resemble morally and physically the stronger parent; the second consequence is autoregularization; the number of increases among animals will be proportional to their mortality; there will be always perfect equilibrium. The child will have the vitality of its strongest parent and the sex of its weaker one; the sex of the weaker will be not only spared but fortified. The generator which is stronger at the moment of conception gives sex to the product, and it is the opposite sex.—*Journal de Médecine de Paris.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended August 26, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	463	145
Diphtheria	190	19
Measles	129	9
Scarlet Fever	72	4
Smallpox	—	—
Varicella	11	—
Typhoid Fever	143	31
Whooping Cough	43	15
Cerebrospinal Meningitis	5	5
Malarial Fever	—	
Totals	1,056	228

Pertussis and Spasmophilia.—W. Wernstedt notes the resemblance between the attacks of pertussis and those of laryngospasm and the frequency of convulsions in the course of pertussis. On the basis of an increased galvanic excitability in all of these conditions, he concludes that there is a close relationship between pertussis and spasmophilia.—*Monatschrift für Kinderheilkunde.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended August 25, 1911:

Places	Date	Cases	Deaths
CHOLERA			
Austria-Hungary: Campodistria	July 23–30	1	..
China: Hankow	July 22	..	Present
Hongkong	July 2–15	5	4
Nanking	Juy 22	..	Present
Swatow	July 22	..	Present
India: Calcutta	June 25–July 1	..	25
Madras	July 9–15	2	1
Indo-China: Saigon	July 3–9	1	..
Italy		..	..
Total for all Italy, Aug. 1-12; Cases, 2,374; deaths, 947.			
Continental Italy		..	..
Outside of Naples Province: Cases, 1,347; deaths, 537.			
Provinces—Naples	Aug. 1–12	297	162
Naples city	Aug. 1–12	172	56
Sicily (outside of Palermo)	Aug. 1–12	287	62
Palermo	Aug. 1–12	71	36
Palermo city	Aug. 1–12	200	94
Java: Batavia	July 2–8	20	6
Philippine Islands		..	..
First quarter, 1911: Manila, no cases. Provinces, 199 cases and 160 deaths.			
Straits Settlements: Penang	June 18–July 1	1	4
Singapore	June 25–July 1	8	9
Tunis: Tunis	Aug. 1–7	..	6
Turkey: Constantinople	July 16–24	3	1
YELLOW FEVER			
Brazil: Manaos	July 16–29	..	3
Venezuela: Caracas	July 23–29	4	..
PLAGUE			
British East Africa: Kismayu	June 28–July 3	6	1
Nairobi	June 28–July 3	4	1
China: Hongkong	June 25–July 15	43	34
India: Bombay	July 2–15	58	53
Calcutta	June 25–July 1	..	43
Kurrachee	July 9–15	13	13
Indo-China: Saigon	June 25–July 2	63	19
	July 3–9	20	5
Java: Pasoroean Residency	July 2–8	40	12
Philippine Islands		..	..
First quarter, 1911: Manila, no cases; Provinces, no cases.			
Straits Settlements: Singapore		..	..
No cases reported since June 17.			
Venezuela: Caracas	July 23–29	1	..
SMALLPOX			
Brazil: Ceara	June 1–30	..	1
Canada: Ottawa	Aug. 1–5	2	..
Quebec	Aug. 6–12	1	..
China: Hongkong	June 25–July 5	5	5
Shanghai	July 10–16	1	2
Deaths among natives.			
Egypt: Alexandria	June 1–30	15	4
Cairo	July 2–8	1	..
Port Said	July 2–15	4	2
Great Britain: Dundee	July 23–Aug. 5	3	2
India: Bombay	July 2–15	16	12
Madras	July 9–15	5	3
Indo-China: Saigon	July 3–9	7	3
Naples	July 23–29	9	1
Java: Batavia	July 2–8	2	1
Mexico: Ciudad Juarez	July 6–12	1	..
San Luis Potosi	July 23–29	3	2
Philippine Islands		..	..
First quarter, 1911: Manila, Cases 93, deaths 0.			
Russia: Moscow	July 16–22	9	5
Odessa	June 29–July 2	1	..
Spain: Seville	July 1–31	..	1
Straits Settlements: Singapore	June 25–July 1	19	4

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Original Articles.

ACTION OF COLLOIDAL PLATINUM UPON THE BLOOD IN MYELOGENOUS LEUKEMIA.*

By HUGHES DAYTON, M.D.

NEW YORK.

ASSOCIATE ATTENDING PHYSICIAN, NEW YORK HOSPITAL.

THE action of colloidal metals upon the blood has been studied by a number of investigators, some of whom have employed the chemically prepared colloids, particularly collargol, and others the electrically prepared. Those who have used the latter are divided as to the efficiency of various preparations, some, including Robin,[1] de Laire,[2] Foa and Agazzotti,[3] Bardet,[4] and others, insisting that only those are active which are prepared by Brédig's [5] method without stabilization. Many others, including Achard and Weil,[6] Charrin, Gompel, Monnier-Vinard, Chirié, David, Gaillard, Gompel, and V. Henri,[7] Iscovesco,[8] Stodel,[9] Auboyer,[10] Malaquin,[11] Bourguignon, [12] and Ascoli and Izar, [13] believe that only stabilized, isotonic preparations are active. While Hamburger [14] holds that through the presence of stable colloidal substances, the albumins of the blood serum, collargol does not lose its colloid form when introduced into the circulation, Iscovesco [15] has shown that the addition of blood-serum *in vitro* to non-stabilized colloidal silver causes its immediate precipitation. Stodel [16] claims that, unless made isotonic, colloidal metals are hemolytic. It is now quite generally conceded that colloidal metals are precipitated by salts—electrolytes of opposite sign—and hence by blood-serum. This action may be avoided by the addition of a small amount of a stable colloid, such as gelatin, which renders the colloidal metal equally stable. The preparation may then be made isotonic to human blood by adding sodium chloride, without causing precipitation of the colloidal metal. The advocates of non-stabilized preparations contend that the stabilized are inactive, while the large majority who insist upon the use of the stabilized maintain that this is true of the non-stabilized because of the action of the salts in the blood. The only data concerning the permanence of the injected colloidal metals in the circulation are those of Gompel and Victor Henri,[7] who found more than one part of silver to eighty thousand in the blood of a dog twenty hours after they had injected intravenously 40 c.c. of isotonic, stabilized, electrical colloidal silver. This can, however, hardly be assumed as absolute proof that the metal still retained its colloidal form.

Robin and Weil,[17] using non-stabilized electrically prepared colloidal metals, find that they cause a leucolysis, beginning after one to two hours, and rarely lasting over twenty-four hours, slight in healthy persons, but often intense in affections accompanied by leucocytosis. This is followed by a secondary leucocytosis, usually slight, or by a return to the former level. The leucolysis affects chiefly the polymorphonuclear neutrophiles; secondarily these return to their former proportions, sometimes with eosinophilia. R. de Laire[2] has confirmed these observations with silver, palladium, and gold, noting no individual differences with these metals. Achard and Weil,[6] employing collargol intravenously, found an immediate leucopenia followed by polymorphonuclear leucocytosis lasting about five days, which is substituted by a secondary mononucleosis with eosinophilia. Rodolico,[18] using colloidal silver, did not always find the leucolysis evident or present, and did not constantly observe a leucocytosis later. What increase he did note was in the polymorphonuclears. Bousquet and Roger [19] assert the occurrence of leucolysis, often intense in affections accompanied by leucocytosis, then a secondary leucocytosis. Joltrain [20] notes merely the occurrence of considerable leucocytosis.

On account of this action upon the blood of normal persons and of those with a simple polymorphonuclear leucocytosis, the writer has studied the effect of colloidal platinum on the blood in myelogenous leukemia, having in view the possibility of modifying the blood count and perhaps altering the course of the disease. No cases of lymphatic leukemia have yet been available for such observation. Oettinger, Fiessinger, and Saupher [21] quote Menetrier and Aubertin [22] as stating that the usual reaction to *x*-ray treatment of the spleen in myelogenous leukemia is a short period of polymorphonucleosis, followed by a rapid fall in leucocytosis, and that at the same time the myelocytes and eosinophiles diminish and are replaced by polymorphonuclears. Though the altered blood picture seen in leukemia is probably only a secondary manifestation of an underlying abnormal condition, the fact that exposure to *x*-rays causes in some cases a coincident improvement of symptoms and approach of the blood count toward the normal suggests at least a possibility that the improvement may be dependent upon the blood change.

The writer has employed electrically prepared colloidal platinum made in the Laboratory of Surgical Pathology of the College of Physicians and Surgeons with the cooperation of Dr. William C. Clarke. The distilled water was made in a steamed block-tin still and received in a flask of Jena glass which had been washed with acid and thoroughly steamed to remove salts. The colloidal platinum was prepared by passing a current of about 5 to 6 ampères, 110 volts, between two platinum wires whose ends were placed just below the surface of the distilled water. The platinum wires and the

*From the Medical Division, New York Hospital, and the Laboratory of Surgical Pathology, College of Physicians and Surgeons, New York

inclosing glass tubes, by which they were insulated excepting at their free ends, had been cleaned and sterilized by repeated boiling in freshly prepared distilled water. The colloidal platinum was stabilized by the addition of 0.03 per cent. of gelatin which had been sterilized under seventeen pounds pressure for one-half hour or more on three successive days, and was made isotonic to human blood by the addition of sodium chloride, 7.5 grams per liter. These precautions are necessitated by the fact that heating colloidal metals causes their precipitation, so that all sterilization must be done before their preparation. The colloidal platinum was administered hypodermically in doses of 5 c.c.

The following cases of myelogenous leukemia were observed at the New York Hospital in the service of Dr. L. A. Conner: —

Case I.—P. G., medical number, 19,561, a Russian girl, 18 years of age, single, with no occupation, was admitted March 17, 1910. Her family history was negative. With the exception of measles and scarlet fever in childhood, she had been in good health until three months before admission. At that time she began to have constant pain in the left side of the abdomen, usually dull, occasionally sharp. At the same time she noticed "a lump" in the left side of the abdomen, which had gradually increased in size. She had lost ten or fifteen pounds since the onset of symptoms, and had grown very weak.

Physical examination showed good nutrition, a moist, clear tongue, and enlarged tonsils. The cardiac apex beat was the 5th intercostal space, 8.5 cm. to the left of the median line and quite forcible. Relative dulness extended 2 cm. to the right of the median line; the left border was obscured by the breast. At the apex the first sound was accentuated, followed by a faint blowing systolic murmur transmitted a short distance toward the left; the second sound was short and snappy. The pulmonic second sound was accentuated. A systolic murmur was heard over the whole precordia. The radial pulses were equal, frequent, regular, of fair force and moderate tension. There was some thickening of the radial arteries. Below the left clavicle were slight dullness and sibilant râles on inspiration. Posteriorly, at the left apex were slight dulness and occasional fine subcrepitant râles. At both bases, below the angle of the scapula, were dulness merging into flatness, diminished fremitus, breath and voice sounds (liver and spleen). The abdomen was soft, not tender, with slight dulness in the flanks. Liver dulness extended from the 5th rib to 4 cm. below the costal margin in the nipple line. Splenic dulness was present from the 6th intercostal space to 12.5 cm. below the tip of the 10th rib, and extended anteriorly beyond the median line at the umbilicus. The lymphnodes were not enlarged. The extremities were normal. Examination of the eyes on March 28, by Dr. Colman W. Cutler, showed hyperemia of the right optic nerve; the veins enormously dilated and tortuous, the arteries much less so. Numerous severe flame-shaped hemorrhages were present about the disc. The macula appeared normal. About the same conditions were seen in the left eye, with many small hemorrhages. The urine (March 18 to May 9) was of specific gravity 1.017 to 1.020, acid, amber, with a faint trace of albumin, no sugar, and a sediment of urates.

On March 20 Fowler's solution was given for two days and Beebe's leukemia serum from March 26 to 28. The latter was given again from April 3 to 9, inclusive, and was discontinued on account of a rise of temperature to from 104° to 105° on three successive days, with chill and feeling of extreme illness on April 9. Fowler's solution was again administered in doses gradually increasing from 2 to 4 minims after meals from April 19 to 30. The blood counts on four days during this time are shown in Table I for the purpose of demonstrating the variability in the leucocyte and differential counts. Examination of the spleen on April 16 showed that it extended downward to within 7 cm. of the level of the anterior superior iliac spine, and to 3 cm. below the umbilicus; anteriorly it emerged from beneath the costal margin at a point 5 cm. to the left of the median line, and at the level of the umbilicus extended 2 cm. to the right of that line. On April 29 the general condition was practically the same as on admission, except that the weight had fallen from 96.5 to 91.5 pounds, and the patient complained of frequent tinnitus and also of dizziness when sitting. During her entire stay in the hospital she suffered from frequent headache, pain in the splenic region, and weakness.

From April 29 to May 6 she was given stabilized isotonic colloidal platinum, 5 c.c. hypodermically daily, and from May 7 to 13 the same dose every other day. During this time there was no change in subjective symptoms; and no constant effect on temperature, pulse, or respiration followed the administration of the individual doses of colloidal platinum. During this course of treatment and for a week subsequently the temperature ranged about 1° lower than at any time previously, running, with the exception of a single rise to 102.2°, between 98° and 100.4°: whereas its former range had been 98° to 102° if we disregard the changes due to the leukemia serum. The highest temperature was recorded between 3 and 9 P. M., regardless of the hour at which the colloidal platinum was given. The respiration, previously 24 to 28, ranged between 24 and 36 during this time; the pulse, previously 92 to 116, varied from 80 to 120. Like the temperature changes, these variations were independent of the individual injections of colloidal platinum. The spleen increased progressively in size until discharge on May 20, when it filled practically the entire left half of the abdomen and extended into the right, and was still painful.

The blood was examined on April 30, just before giving the first dose of colloidal platinum, and six hours later; on May 7, six hours after administration; on May 9, forty-nine hours after the injection; on May 17, four days after the last dose. The counts, which, to avoid personal variation, were all made by Dr. H. E. B. Pardee of the House Staff, are shown in Table I.

The variation in the total leucocyte count at times before giving colloidal platinum and at periods six hours, two days, and four days after its administration is less than that which occurred during the preceding serum treatment. There was a slight reduction in the count six hours after the first dose of colloidal platinum, and subsequently a rise during the course of treatment; but the count four days after the last dose was approximately the same as two months before. The polymorphonuclear leucocytes, which were 43.5 per cent. before the injections of colloidal platinum were begun, showed a fall to 33 per cent. six hours later, with a corresponding rise of neutrophile myelocytes from 46 to 61 per cent. One week later, after daily administration of colloidal platinum, the polymorphonuclears had risen to 37 per cent., and after a period of

Table 1.

			Beebe's Serum Mar. 26-28.	Same Apr. 3–9	Before Colloidal Platinum.	6 hours After Colloidal Platinum.	6 Hours After Colloidal Platinum.	49 Hours After Colloidal Platinum.	4 Days After Colloidal Platinum.
	Mar. 18.	Mar. 23.	Mar. 29.	Apr. 11.	Apr. 30.	Apr. 30.	May 7.	May 9.	May 17.
Red cells	2,828,000	....	.....	.....	.....	.....	.....	.....	.....
Leucocytes	832,000	....	632,000	928,000	780,000	706,000	832,000	872,000	824,000
Hemoglobin	70%	....	.....	65%	.....	.....	.....	.....	.....
Polymorphonuclears	49%	41%	52%	42.5%	43.5%	33%	37%	41%	41%
Lymphocytes	....	....	6	1	1.5	1.5	1	2	...
Eosinophiles	7	5	...	1	....	1	2	1	1
Neutrophile myelocytes	38	50	35	50.5	46	61	52	50	52
Eosinophile myelocytes	1	1	2	2	2.5	1.5	2	0.5	2
Mast cells	5	3	5	3	6.5	2	6	5.5	4
Nucleated red cells	....	Occasional	....	....	....	....	...	....	...

forty-nine hours more without an injection, to 41 per cent. The same percentage was present four days after the last injection and corresponded closely with that, 43.5 per cent., recorded before the treatment was begun.

Case II.—T. L., medical number, 19,093, a married Italian woman, 45 years old, with no occupation, was admitted April 15, 1910. Her family history was negative. She had often been constipated, but otherwise healthy until three months before admission, when she noticed a large swelling in the left side of the abdomen, which gradually increased in size. She had had little pain, but constant dragging sensation in the region of the tumor. She had grown weaker during the past three months but had noticed no loss of weight.

Physical examination showed some emaciation, skin wrinkled and yellowish; mucous membranes pale; tongue moist and coated, the scleræ subicteric. The cardiac apex beat was felt in the 4th intercostal space, 9.5 cm. to the left of the median line. Relative dullness extended from the right border of the sternum to 10 cm. to the left of the median line. The heart action was regular. At apex the first sound was fairly loud, followed by a loud blowing systolic murmur transmitted a short distance to the left and heard all over the precordia. The pulmonic second sound was slightly accentuated. The radial pulses were equal, regular, rather small, of fair force and moderate tension; the radial arteries were not thickened. The chest was narrow, with a depression above and below the right clavicle. There were some impairment of motion of the right side and, anteriorly, impaired resonance below the right clavicle. Posteriorly there was dulness at both bases (liver, spleen). The abdomen was soft, prominent, slightly tender in both upper quadrants. Liver dulness began in the 5th intercostal space. The sharp, hard edge was felt 10.5 cm. below the costal margin in the right nipple line 10 cm. below the ensiform. The surface of the liver was smooth. The spleen, hard, smooth, and tender, occupied the whole left side of the abdomen, extending to within 3 cm. of Poupart's ligament. The lymphnodes were palpable in the groins and posterior cervical region. The extremities were normal. Examination of the eyes on April 25, by Dr. Colman W. Cutler, revealed very large and tortuous veins in the right eye, the arteries relatively not dilated, and a few very small retinal hemorrhages near the nerve, the edge of which was somewhat blurred on nasal side; the nerve was not swollen. The left eye showed the same condition. Between the nerve and the macula was an oval hemorrhage with white center. Another similar patch was present. The urine from April 16 to May 10 was of specific gravity 1.017 to 1.026; acid; amber; usually turbid; always with a variable trace of albumin; no sugar; usually containing a sediment of urates; with an occasional hyalin cast in one specimen. From April 16 to 26 the urine was at times clear; at others it contained blood clots, or a clear catheterized specimen was reported as followed by the passage of a clot. A few days later the stools were blood-streaked. The rectum showed internal hemorrhoids and blood clots.

Stabilized isotonic colloidal platinum, 5 c.c. hypodermically, was given daily from April 16 to May 4, inclusive. No change occurred in subjective symtoms, excepting that the patient said that she felt better after the injections. Fowler's solution, 3 minims three times a day, increasing 1 minim each day, was then ordered. The patient was discharged on May 15. The spleen was gradually increasing in size, very hard, and tender. The general condition was gradually becoming worse. Weight, 90 pounds on admission, reached 100.5 one week later, and was 99 at the time of discharge.

The colloidal platinum was given at various hours between 6 A. M. and 8.45 P. M. No definite relation was noted between the time of administration and the temperature curve, which ranged between 98° and 103°, always rising above 100.2° and usually above 101° between 12 M. and 9 P. M. The highest afternoon temperature (102.6° to 103°) occurred on the four days following discontinuation of colloidal platinum, subsequently running between 100.4° and 102°. Respiration was usually 20 to 26, rarely up to 32 or 36; pulse 72 to 100, rarely higher (116). No change in either constantly followed the administration of colloidal platinum.

The blood counts are shown in Table II.

Table 2.

	Before Colloidal Platinum.	6½ Hours After Colloidal Platinum.	24 Hours After Colloidal Platinum.	24 Hours After Colloidal Platinum.	2 Days After Colloidal Platinum.	11 Days After Colloidal Platinum.
	April 16.	April 16.	April 17.	April 27.	May 6.	May 15.
Red cells	2,768,000	2,730,000	.....	2,470,000	.....	.....
Leucocytes	312,000	404,000	376,000	400,000	334,000	550,000
Hemoglobin	75%	.....	.....	75%	.....	.....
Polymorphonuclears	36%	27%	41.5%	44%	42.5%	35%
Lymphocytes	...	2.5	3.5	3	3	3
Eosinophiles	1	1	1.5	....	1	2
Neutrophile myelocytes	47	60	45.5	51	46	53
Eosinophile myelocytes	3	3	2	....	1.5	1
Mast cells	13	6.5	6	2	6	6
Nucleated red cells	Many	....	..	Present	...	Many

Comparing the blood changes in the two cases reported, the only correspondence in results is a fall in polymorphonuclears from 43.5 per cent. to 33 per cent. in the first, and from 36 per cent. to 27 per cent. in the second, about six hours after the first injection, with a simultaneous increase of neutrophile myelocytes from 46 per cent. to 61 per cent. and from 47 per cent. to 60 per cent., respectively. In the former case the total leucocyte count was slightly diminished; in the latter it was distinctly increased. In both there was a coincident temporary fall in mast cells. In both cases a tendency was shown to return to the condition preceding the injections two days after they were discontinued. In Case I the differential count on May 9 was practically identical with that of March 23, and nearly the same as that of April 30, and this persisted two days later. In Case II the percentages on May 6, two days after the last injection, were practically the same as regards neutrophile myelocytes as before the first injection, and showed a slight rise in polymorphonuclears; nine days later the polymorphonuclears were about the same as at the time of the first count, though the total count and neutrophile myelocytes had increased and the patient was gradually becoming weaker.

The temporary fall in polymorphonuclears after injection of colloidal platinum corresponds with the results observed by others in normal blood and in cases with polymorphonuclear leucocytosis, but there were no uniform coincident fall in the total count and no subsequent marked polymorphonuclear leucocytosis.

Summary.—Temporary leucolysis followed by polynuclear leucocytosis is reported as caused by injection of colloidal metals into normal blood or that showing polymophonuclear leucocytosis. If polymorphonuclear leucocytosis could be induced in this manner in myelogenous leukemia by such injections, one might cause replacement of myelocytes by polymorphonuclear leucocytes, which change is said to accompany the improvement in this disease under x-ray treatment.

The writer has administered isotonic, stabilized, electrically prepared colloidal platinum, in doses of 5 c.c. hypodermically daily or every two days, to two patients with myelogenous leukemia. No constant effects upon temperature, pulse, respiration, or subjective symptoms were noted, and the disease apparently progressed as usual. The only correspondence in the blood changes with those reported as occurring in normal blood or that with polymorphonuclear leucocytosis was a temporary fall in the percentage of polymorphonuclear leucocytes, but this was not accompanied in both cases by a fall in the total leucocyte count. The neutrophile myelocytes coincidently rose and the mast cells fell. Aside from these changes, the variations in the blood were no greater than are common in this disease.

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CLINICAL USES OF THE SPHYGMOGRAPH.*

By RICHARD VAN SANTVOORD, M.D.,

NEW YORK.

In attempting to demonstrate the practical utility of the sphygmograph to an audience, many of whom are presumably a little rusty on the subject, it seems desirable to begin with some elementary considerations. Arterial pressure is the lateral thrust of a column of fluid compressed between a force consisting of the ventricular contraction and postsystolic arterial recoil acting on a mass of blood and a resistance due mostly to the friction of the blood in the vessels. It is obviously proportioned directly to this friction, which increases and diminishes with the rapidity of the blood current. This rapidity depends on two factors, the cardiac output and the size of the blood channel. An arterial sphygmogram is an approximately accurate record of the variations of arterial pressure during

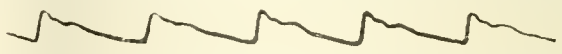

Fig. 1.

several successive cardiac cycles. A sphygmograph consists of a lever, the short arm of which is pressed over the vessel to be tested, the long arm carrying the recording apparatus. The amplitude of the tracing depends on the relative lengths of the arms of the lever, the size of the vessel, the variations in the arterial tension, the exactitude of the placing of the receiving pad over the vessel, and the degree of pressure exerted on the vessel. Too great pressure tends to suppress the weaker elements of the tracing, too light pressure fails to develop the stronger. The best results are to be obtained by varying the pressure during the application of the instrument. Apparent contradictions in its renderings are due to lack of skill in its adjustment. The length of the tracing depends on the frequency of its ventricular contraction and the rapidity of the motion of the recording paper.

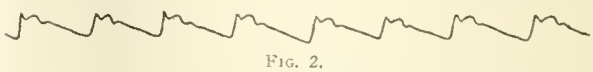

Fig. 2.

There are four factors which influence the shape of the tracing, viz., the amount of blood thrown into the aorta at each ventricular contraction, the condition of the aortic valve, the elasticity of the great vessels, and the state of the peripheral circu-

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lation taken as a whole—not only that distal to the vessel under examination. Relaxation of the splanchnic vessels for instance, will lower the tension in the radial artery, just as opening a faucet in the kitchen will lessen the water pressure in the second story. A normal radial sphygmogram (Fig. 1) consists essentially of an almost vertical upstroke, a somewhat acutely rounded primary wave followed by a notch and a second elevation, known as the tidal wave, at a considerably lower level, a second notch (the dicrotic) marking the end of the ventricular systole, and a third well-marked elevation, produced by the recoil of the great vessels, known as the dicrotic wave. All the tracings used for illustration were taken with the Dudgeon instrument.

Increased peripheral resistance causes lessened amplitude of the tracing from lessened variation in the tension and often lessened diameter of the artery. The tidal wave and the dicrotic notch appear higher in the tracing and the line of descent is

Fig. 3.

gradual. The tracing shown (Fig. 2) is from a case of nephritis in a young subject. The sphygmomanometer in such a case would show abnormally high tension, which the sphygmograph shows to be postsystolic as well as systolic. A tracing taken from a case of tetanus (Fig. 3) shows the faintly indicated tidal wave at a higher level than the primary and the high position of the dicrotic notch, characteristic of high tension from increased friction of the blood current in contracted normal vessels. Lessened peripheral resistance shows an increased amplitude of the curve from increased variation in the tension and larger size of vessel, after an ob-

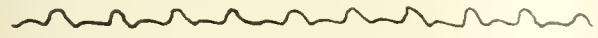


Fig. 4.

literation of the tidal wave, low position of the dicrotic notch, and increase in size of the dicrotic wave, as shown in this tracing taken from a case of acute lobar pneumonia (Fig. 4). The sphygmomanometer may show a low normal or even increased systolic pressure. Diminished elasticity of the great vessels produces a flat-topped systolic tracing or one in which the primary and tidal waves are fused into an obtuse rounded curve (Figs. 5 and 6). The flat-topped tracing is often initiated by a sharp point due to an oscillation of the spring of the instrument caused by the very sudden rise in tension. The dicrotic notch is low down and the

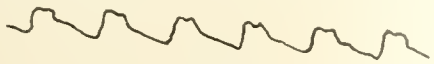


Fig. 5.

dicrotic wave greatly lessened or suppressed, owing to the small amount of blood forced into the periphery by the inelastic great vessels. The sphygmomanometer in such cases, provided the cardiac output remains normal, shows an abnormally high pressure because, owing to the lessened distensibility of the great vessels, a larger portion of the blood mass is forced into the peripheral vessels during ventricular contraction, resulting in increased velocity of the blood stream. The sphygmogram shows that the postsystolic tension falls rapidly below normal.

The effect of a narrowing of the aortic orifice (Fig. 7) is to cause obliquity of the first line of the tracing, as in the example shown. Lesions of the aortic valve capable of causing systolic murmurs are very common, but stricture sufficient to cause an influence on the sphygmogram are not often seen. A tracing taken from an artery into which the flow of blood is impeded from any cause, as so frequently happens in the left radial in cases of aneurysm of the thoracic aorta, shows a similar tracing

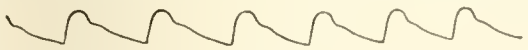


Fig. 6.

contrasting markedly with that taken from the other radial. Aortic regurgitation shows a tracing of large amplitude, low position of the dicrotic notch, and the diminished indication of the dicrotic wave, the extent to which these latter characteristics are developed furnishing a measure of the leakage. In the tracing shown (Fig. 8) the sphygmomanometer showed a pressure of 245 mm. of mercury. The postsystolic portion of the tracing falls off because the postsystolic arterial recoil forces back a large percentage of the blood into the heart instead of into the vessels. This case is an illustration of increased arterial pressure due to increased ventricular output. In a case of compensated aortic regurgitation the left ventricle is dilated and the blood mass thrown into the aorta is abnormally large, friction, and, therefore, pressure rises during the cardiac systole. But this increase is offset by the lessened postsystolic pressure. A tracing taken

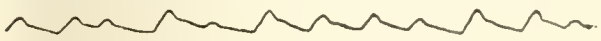


Fig. 7.

from a case of aortic regurgitation in which compensation was failing (Fig. 9) shows the sharp summit due to oscillation of the spring of the instrument, badly sustained systole, low position of the dicrotic notch, barely indicated dicrotic wave. The effect of aortic regurgitation an the postsystolic portion of the tracing is the same as lessened elasticity of the great vessels. In this case probably both conditions were present. The sphygmomanometer shows a systolic pressure of 200 mm. of mercury. When the heart weakens and the cardiac output becomes abnormally small blood-pressure and its variations may become too slight to overcome the inertia of the instrument and it may be impossible to take a satisfactory tracing.

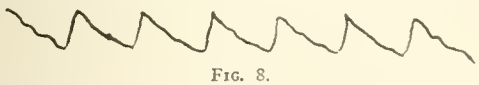


Fig. 8.

After the above exposition we are in position to state that low postsystolic pressure may be due to three factors: low peripheral resistance, inelastic arteries, aortic regurgitation, or any of these combined. The following case illustrates the necessity of recognizing the condition and of diagnosing its cause. This sphygmogram (Fig. 10), taken from a man of 70 without valvular lesion, shows a low

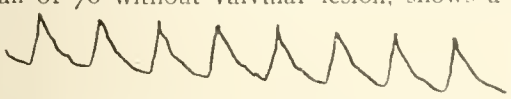


Fig. 9.

postsystolic tracing with a dicrotic wave suggestive of the low tension being due in part at least to relaxation of the peripheral vessels. The sphygmomanometer showed a pressure of 180 mm. of mercury. Three days' treatment with bromide of sodium and ergot relieved him of all his unpleasant symptoms, slowed his pulse from 80 to 60, and

produced the following change in his sphygmogram (Fig. 11) to show the primary and tidal waves on the same level and very marked rise in the postsystolic portion of the tracing, which could be due to nothing but a material increase in his peripheral resistance and was accompanied by a reduction of his systolic pressure to 159 mm. of mercury. The explanation of this apparent contradiction probably is that the high pressure with relaxed vessels was due to increased cardiac output, rendered necessary in order to maintain adequate average pressure in the vessels. When normal contraction of the vessels at fault was brought about the cardiac output was reduced more than

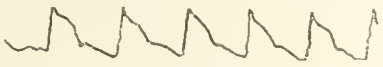


Fig. 10.

enough to offset the effect of the contracted vessels. The heart works with least effort when a certain medium contraction of the vessels exists. Excessive vascular relaxation calls for excessive cardiac output to maintain adequate pressure in the arteries, as seen especially in pneumonia and other acute infections. Excessive vascular contraction calls for excessive exertion of the ventricles with each systole.

As the question of cardiac irregularities will presumably be considered in connection with jugular tracings, I will not go into it. In the above scanty outline of my subject I hope that I have made it clear that the sphygmograph enables us to recognize three distinctly contrasted types of arterial high pressure. One confined to the systole followed by postsystolic low pressure with feebly developed or absent dicrotic wave and due to inelastic great ves-

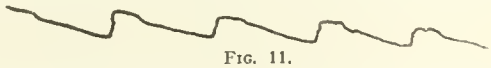


Fig. 11.

sels, aortic regurgitation, or both. High pressure in these cases is distinctly compensatory and to be let alone. Next a high systolic pressure with low postsystolic pressure and good preservation of the dicrotic wave, due to increased cardiac output called for by undue relaxation of peripheral vessels. As in the illustration given this pressure may be reduced by restoring the peripheral vessels to their normal tonicity. Compensating cardiac output is not, however, always found in this connection, especially in acute maladies. The third type shows an increase of pressure throughout the cardiac cycle due to contraction of peripheral vessels, and forms a distinct indication for treatment. These fundamentally important distinctions the popular sphygmomanometer, which indicates with reliability only the maximum pressure, does not make for us. Without the interpretations of the sphygmographic tracing, its renderings may be positively misleading.

10 West One Hundred and Twenty-second Street.

Torsion of the Pedicle of Ovarian Cysts.—P. Gorse finds that torsion of the pedicle in ovarian cysts is not very infrequent, especially in the dermoid variety. The causes of this condition are not really known, but seem in great part to be mechanical. They result in a sudden and agonizing set of symptoms, ending in gangrene or peritonitis, if the twisting is acute, or a slower and less painful and dangerous condition, with edema of the cyst and in some cases intestinal obstruction. Adhesions may be a serious obstacle in dealing with this condition. Appendicitis may be simulated. If it comes on rapidly we get all the symptoms of shock, and gangrene may follow rapidly. Operation should be done at once, since on its early performance depends the life of the patient.—*Le Bulletin Médical.*

MICHAEL SERVETUS AND THE DISCOVERY OF THE CIRCULATION OF THE BLOOD.

By JOHN KNOTT, A.M., M.D.,
DUBLIN.

By one of those curious coincidences of dates, with which the observant reader cannot fail to be impressed after a certain range of experience, the same year of grace—1509—witnessed the birth of Miguel Serveto and of Jean Chauvin, who are probably recognizable by the intelligent man in the street only when set forth with their Latinized cognominal labels of Servetus and Calvin[us]. The Spanish province of Aragon claims the former as a native. The latter first saw the light in the old French province of Picardy, and the story of his life career displays the continuous influence of his native Gallic clearness of thought and restless energy of action, unhappily tinted—and far too deeply—with an atrabiliary and unfading personal hue which gave a painfully characteristic color to all his conceptions of Christian doctrine and ideas of social duty. The lives of Servetus and Calvin were spent in an epoch of seething—even violent—intellectual unrest, which wound up every mainspring of human thought and action to a state of the highest tension, that threw all the more violent and explosive mental and social forces into states of abnormal, and even convulsive, activity. Calvin changed his original career of lawyer for that of theologian. Servetus was very evidently formed by fate for the life of a lonely and mysterious wanderer, who lived only for the sake of the knowledge which he so enthusiastically labored to accumulate. The *learned* were then few in number, and formed a class (very much, indeed) apart from the almost equally illiterate groups of the *nobility* above and the *vileings* beneath. Learning then occupied a position of lofty and acknowledged dignity, which has been sadly lowered by the growth of mechanical knowledge and materialistic principles. The University of Paris was then a focus of intense intellectual activity and curiosity, and the insatiable intellectual greed of Servetus would seem to have been the determining factor in his choice of the study of medicine—as the widest and most fertile field available for the unstinted application of the special abilities and industry of the enthusiastic votary of knowledge in all its aspects. By one of the gloomy freaks of Fate, Calvin "was about" during a part of the period of the medical curriculum of his Spanish contemporary: argumentative, logical, and self-confident, as subsequent events showed that he was specially constructed and foreordained to be throughout the course of his earthly pilgrimage. The ardent intellectuals managed to collide and a challenge to public debate was issued, but Servetus seems to have evaded the tournamental display. The facts were, however, never forgotten by either party. Calvin adopted a theological career, but the unrestrained independence and originality of his views soon made his residence beyond the French border an essential condition of "survival." So he settled in Geneva, the most central of cities of refuge, where his unrivaled devotion to his calling and skill in logic, as well as enthusiasm in dogma, established his position of "Protestant Pope" in the course of a few years. The more orderly of the weirdly incompatible human ingredients of Geneva

society found it advantageous to avail themselves of his leadership. His legal knowledge was found specially useful in the preparation of a new code of law for the community of whose protective shelter he had availed himsef. He reformed the mediæval and semi-barbarous system which had been submitted for his supervision, but—was it his prophetic spirit (or demon) or the evil genius of Servetus which induced him to leave the diabolical clauses and provisions of the text of the pre-existing law of *heresy* quite intact, in all their blood-curdling severity?

Michael Servetus was a votary of knowledge for its own sake, if there ever was one. He, of all men of his generation, could, I believe, most truly say of himself that he "had taken all knowledge for his province," and with a degree of success which attained a higher standard than that of any of the other candidates in the same field. Like other enthusiasts in the persistently successful pursuit of the deadly apple, he seldom failed to bring upon his shoulders the censure of teachers, individual and corporate, who were specially interested in the maintenance of the scientific and logical *status quo* by the exercise of unyielding and uncompromising "authority." Thus, as a newly fledged Doctor of Medicine, he called down upon himself and his novelties of view the red-hot ire of the senior sages of the great Lutetian University, at which he had been an arduously industrious student but a short time before. He deviated soon after into theology, and produced a volume which contained views so erratic on the subject of the Trinity and other sacred questions, that the calorific effect on the French atmosphere become so conspicuous that he found it very necessary to cross over the Swiss border. But his fate there was less auspicious than that of Calvin; his views were as inacceptable to the Swiss heretical doctrinaires as they necessarily had proved to be to the French representatives of orthodox authority. His case was then rather a desperate one; and, as he was very anxious to settle down to the useful practice of the profession to which he was devoted, he assumed the disguise of a new name, recrossed the Helvetian border, and settled down to professional work in the quaint and quiet little town of Vienne; where he was fortunate enough to have a kind and friendly host and patron in the Catholic Archbishop. There he practised the profession of his choice with enthusiastic zeal as well as dutiful attention for some dozen years under the assumed name of Michel Villeneuve (Villanovanus). The *originality* of his theological opinions made it, as he well knew, dangerous to have his identity recognized (under the patronage of a zealous member of the orthodox hierarchy); while, as the event will show, a flight across the border to the general *refugium peccatorum* might prove more dangerous still. But the restless genius of Servetus spurred him continuously along the varied lines of his universal as well as unremitting researches and speculations. He prepared a volume which he very evidently meant to be the crowning labor of his life, and had it privately printed. The subject—and object—were well indicated by the title of "De Christianismi Restitutione." With the sincerity of a candidly honest antagonist he sent a copy of the first few leaves to his old theological opponent, who was immured in the stronghold of his Genevan sanctuary—whence his theological opinions and missives radiated over all Western Europe; for the position which John Calvin had made for himself was a very remarkable one indeed. Servetus reopened the old dogmatic sores, and contradicted the saintly Pontiff of Geneva with the unlubricated emphasis which characterized the controversies of that explosive century.

The Genevan reformer had the specimen leaves of Servetus's book, with all the incriminating private correspondence of the author, placed in the hands of Cardinal de Tournon, who then controlled the machinery of the Inquisition in France. To the highest credit of that Prince of the Church (the fact should be specially noted by all readers interested in the history of human opinion and human prejudice) he laughed to scorn the idea of seriously acting upon the information lodged by a notorious archheretic against a quiet and generally unobtrusive speculator in theological opinion who had never broken with the Church. But the saintly John was far too legally, as well as theologically, bent in mind to allow himself to be permanently held up by an obstructive check of that kind. And his legal knowledge enabled him to utilize the evidence at his disposal by forcing it under the notice of the officials who carried on the work of the Holy Office in France; and in such a way that, as representatives of their function, they were obliged to take notice of his documents and act upon the information which they contained. Accordingly, Dr. Villeneuve was arrested on a charge of heresy and the investigation of his case at once opened. The proceedings seemed to advance briskly for the first few days; then they began to flag. Archbishop Paumier had no feelings toward the studious and inoffensive physician (who had so long been his trusted medical attendant) than those of warm friendship and grateful confidence. The same relationship and feelings had existed between Servetus and the governor of the prison in which he had come to find himself immured through the zealous and skilfully directed efforts of John Calvin. A couple of weeks passed on without very obvious progress, and the prisoner began to feel the *want of exercise*. He asked his gaoler for the key of the garden door, which was given him as a mere matter of friendly civility. There was a terraced series of rising garden beds close to the investing wall, which brought the highest of them to within a few feet of the level of the parapet. And outside there was a convenient buttress. The prisoner ascended by the one and descended by the other, and the interior of the prison of Vienne saw Michael Servetus no more!

Servetus, thus thrown upon the highway of the world, wandered about rather aimlessly for some weeks. We learn that he had thought of going to Italy and there placing himself in temporary contact with the great thinkers of the time. But a curiously fatal fascination drew him toward his old protagonist, the Pope of Geneva, with whom he had "longed long" to break a controversial lance at short range. He entered the Swiss stronghold city of refuge in the darksome evening quiet and immured himself completely for some three weeks. Perhaps his prophetic soul gave foreshadowings of a danger which his own innate ideas of honor and rectitude could not permit him to prefigure. The presence of the new refugee was reported without a moment's delay to John Calvin, who, in his turn, proceeded directly to the public prosecutor and had a warrant made out with all necessary formality. Michael Servetus was condemned and sentenced to the extremest punishment for major heresy known to the darkest legislation of the much-abused Inquisi-

tion. By a curious historic coincidence, to which I have already referred, the Municipal Council of commonwealth of Geneva had chosen the energetic reformer to reform the rather barbaric code of laws by which they had previously been governed. And the fact is well worth noting in this connection that, while he actually wiped out many of its brutalities and softened manifold asperities of its lay practice, he avoided any attempt to repeal the law relating to the extreme penalties for heresy. His prophetic soul was said by many to have foreseen its most desired application, and the blood-curdling fact is authentically recorded that he arranged the place of execution, through his obedient agents, in such a way that he was able to gloat over the scene from the window of the bedroom to which he was confined by the accumulating effects of his life-long *cholelithiasis!* That congenital biliousness, that cumulative force of attack of the ever-recurring *gall-stone colic*—how appropriate a constitutional condition to fostering of the most luxuriating germs of the proverbial *odium theologicum!* Michael Servetus was slowly roasted at the stake with a small supply of fagots, which were purposely chosen *greenish* in quality (so as to insure *slow combustion*). He was *crowned* with a *straw* wreath sprinkled with *brimstone*—which was *first* fired by the executioner's torch. *Tied to his thigh* was the volume which contained his cherished theological doctrines, and the *first printed description of the circulation of the blood* in the human body. Thus was effectively silenced the bearer of the scientific message for the promulgation of which the world was then left to wait for another three-quarters of a century. The *clôture* has rarely been so effectively applied, in the whole of the recorded period of the thorny and stony pathway of the progress of human enlightenment.

Thus did the devoted enthusiast and truthseeker sink below the horizon of human ken, and a definite description of the *pulmonary* circulation went with him into the regions of unknown and unexplored obscurity for a period of seventy-five years. One of the special collateral aims of the present communication is to show that an approximately accurate conception of the *general* circulation remained (as it had been time out of mind) an item of general knowledge. I will now proceed to glance at some items of testimony.

The name (and cosmopolitan fame) of Rabelais must ever retain their magnetism for the inquisitive student—both lay and medical; and the allusion to the same in the discussion of an interesting, and rather tangled, skein of medical history and collateral scientific attainment will surely attract attention—while probably presenting the aspect of an unexpected novelty. To the reader who has some close acquaintance with the history of the dawn and early development of modern science and literature, the name of this (often far too broadly comic) writer at once vividly recalls the restless and curiously inquiring spirit of the age in which he performed his earthly pilgrimage—when the recent introduction of printing, and the almost simultaneous exodus of Greek scholars and Greek manuscripts from Constantinople, which followed the capture of that city by the Turks, had sown all Western Europe with "dragon's teeth." The series of earthquake waves of thought—literary and scientific, political and social, theological and philosophical (moral and immoral)—which immediately arose, and swept the western section of this continent, quickly resulted in the development of intellectual, and consequent social, friction to so great a degree as to raise the temperature of the whole mental, and even political, atmosphere far above the boiling point. And, as invariably occurs during every process of violent ebullition, a large proportional quantity of the veriest intellectual dregs was brought to the surface, and mingled its leaven with the froth and scum which formed the uppermost, and most prominently visible, layer. At the same time the general intellectual activity was necessarily increased to a vast extent; some wonderfully inspired (or inflated) bubbles were thrown up to a great height—and of these a certain proportion flashed forth richly artistic colors before they burst or disappeared; while, during the whole time, the really valuable and wholesome portion of the seething medium was that which remained excluded from the general gaze. François Rabelais was born in 1483, the year in which Martin Luther first saw the light; and he died in 1553, the year in which Michael Servetus was burned for *heresy* at the prosecution of the Protestant pope, John Calvin. Thus his life pilgrimage was performed in a period of which the movements and results were typically characteristic of the Renaissance—its newly awakened Gargantuan freshness and vigor, often spasmodic and even convulsive in the riotous (and therefore inevitably ill-directed) display of the consciousness of its Herculean and Mercurial faculties. The invasion of Europe by the Turks furnished a very ruggedly convincing experience of the possibilities of contact of East with West—a contact which an examination of coincident dates would almost seem to suggest had furnished the impetus that projected the Iberian explorers from the opposite border of the continent on the voyage which resulted in the discovery of the "New World." It unquestionably generated the *diaspora* of Greek scholars and Greek manuscripts, which had the effect of metaphorically realizing the fulfilment of the time-honored Cadmian prophecy. Then directly on the crest of the seismic wave of this epoch-making movement came the invention and universal diffusion of printing with movable types—in the historic wake of which directly followed the series of explosive demonstrations of intellectual unrest that led to the collective result which is historically connoted by the general term *Reformation*. Add to these the introduction of a new (more probably, I believe, a new and foreign edition of an old and worn-out Western) disease, the nature and source of the infection of which made it more cosmopolitan than any other known to the annals of the healing art, and we have displayed a nexus of physical and intellectual conditions which contributed more effectively than all the others known to the history of the human race to the genesis of the primordial germs of our so-called "modern" civilization!

The ordinary lay reader who goes to the works of the famous monk-physician for enjoyment of the buffoonery and obscenity in which, unhappily, a large proportion of his written thought and diction much too largely abound, is seldom cognizant of the fact that the author was one of the most learned men of his generation, and that he had turned from theology and law to the study and practice of medicine, as offering the widest and most fertile field for the cultivation of genuine knowledge which this world offers. Still the fact seems to the present writer not a little remarkable that even

the medical men, who occasionally while away an otherwise heavy evening hour over the fantastic creations of François Rabelais, seldom notice, or but rarely remember, that his great work includes the best compendium of the physiological knowledge of that age that has descended to our twentieth century. I quote from the reprint of Ozell's version which was brought out in 1738 by a prominent Dublin printer and bookseller, Philip Crampton (whose name has been deeply stamped on the topography and professional, as well as literary, history of this city):

"The intention of the Founder of this Microcosm is to have a Soul therein to be entertained, which is lodged there as a Guest with its Host, it may live there for a while. Life consisteth in Blood, Blood is the Seat of the Soul; therefore the chiefest work of the Microcosm is to be making Blood continually At this forge are exercised all the Members of the Body; none is exempted from Labor, each operates a-part, and doth its proper Office. And such is their Hierarchy that perpetually the one *borrows* from the other, the one *lends* the other, and the one is the other's *Debtor*. The Stuff and Matter convenient which Nature giveth to be turned into Blood is *Bread* and *Wine*. All kinds of nourishing Victuals is understood to be comprehended in these two, and from hence in the *Langue Goth* is called *Campanage*. To find out this Meat and Drink, to prepare and boil it, the Hands are put to work, the Feet do walk and bear up the whole Bulk of the Corporal Mass; the Eyes guide and conduct all; the Appetite in the Orifice of the Stomach, by means of a little sourish black Humor (called Melancholy) which is transmitted thereto from the Milt, giveth warning to shut in the Food. The Tongue doth make the first Essay and tastes it; the Teeth do chaw it, and the Stomach doth receive, digest, and chilify it; the Mesaraick Veins suck out what is good and fit, leaving behind the excrements, which are, through special conduits for that purpose, voided by an expulsive Faculty; thereafter it is carried to the Liver, where it being changed again, it, by the Virtue of that new Transmutation, becomes *Blood*. What Joy, conjecture you, will then be founded amongst those Officers, when they see this *Rivulet of Gold*, which is their sole Restorative? No greater is the Joy of Alchimists, when after long Travel, Toil, and Expense, they see in their Furnaces the Transmutation: then it is that every Member doth prepare itself, and strive anew to purify and to refine the Treasure: the Kidneys through the emulgent Veins draw that Aquosity from thence which you call Urine; and there send it away through the Ureters to be slipt downwards, where in a lower Receptacle, and proper for it (to wit the Bladder), it is kept, and stayeth there until an Opportunity to void it out in his due time. The Spleen draweth from the *Blood* its terrestrial part, *viz.* the Grounds, Lees, or thick Substance settled in the bottom thereof, which you term *Melancholy:* the Bottle of the Gall subtracts from thence all the superfluous *Choler:* whence it is brought to another Shop or Workhouse to be yet better purified and refined, that is the Heart, which by its agitation of Diastolick and Systolick Motions so neatly subtiliseth and inflames it, that in the *right side* Ventricle it is brought to Perfection, and through the Veins is sent to all the Members; each Parcel of the Body draws it then into it's self, and after it's own Fashion is cherished and alimented by it: Feet, Hands, Thighs, Arms, Eyes, Ears, Back, Breast, yea, all; and thus it is that who before were *Lenders,* now become *Debtors*. The Heart doth in its *Left-side* Ventricle so thinnify the Blood that it thereby obtains the name of Spiritual; which being sent through the Arteries to all the Members of the Body, serveth to warm and winnow or fan the other Blood which runneth through the Veins: The Lights never cease with it's Lappets and Bellows to cool and refresh it; in Acknowledgment of which good the Heart through the Arterial Vein imparts unto it the choicest of it's Blood: At last it is made so fine and subtle within the *Rete Mirabile,* that thereafter those *Animal Spirits* are framed and composed of it; by means whereof the Imagination, Discourse, Judgment, Resolution, Deliberation, Ratiocination, and Memory have their Rise, Actings, and Operations."

This extract forms what I believe there are good grounds for regarding as the turning point in the historical curve of the discovery of the circulation of the blood, and the most definite connecting link —as well as distinctive landmark—between the medieval physiology and the modern. The skilled reader will readily admit that the *concentrotion* of ideas displayed in the contents of that single paragraph is really amazing. And the charitable critic will not fail to remember that, having regard to the date of its dictation, it was a matter of absolute necessity that a certain proportion of gaseous semi-nonsense should be mixed up with its science. But the wonder surely is that the proportion of the same with which its contents are diluted is actually so small. I venture to express the belief that the skilled reader will regard this paragraph as representing satisfactory proof that Rabelais had very definite ideas, indeed, of the continuous activity of the processes of waste and repair—of absorption, assimilation, and elimination—as they take place in the living human body. Also, that he had a definite notion of the continuous movement of the blood—which was the sole and efficient vehicle of the nutritive pabulum. With regard to the cause of the flow of the moving blood, the knowledge of Rabelais was that of Hippocrates, as then construed by scholars and scientists. There is utter darkness in the room of the "*pulmonary* circulation," and he would seem to have thought that the *veins* conveyed the blood—at least upon occasion—*from the heart* to the distant organs and tissues of the body. But that view must ever remain largely a question of words; the nomenclature of physiological anatomy then abounded in ambiguities, and the reliable medical lexicon of polyglott range and capacity had to wait for some more centuries to be permitted the privilege of exposure to light and air.

The wide gulf in the knowledge of the general or "*systemic* circulation" of the blood which does not appear to have been quite successfully bridged over by any of the ancient investigators, undoubtedly was the *direction of the current in the veins.* But it must be remembered by the open-minded critic that we have hardly sufficient data in the present day to enable us to decide a vexed question regarding the terminology of Hippocrates and the long series of successors who treated his text as *the* infallible authority on matters medical. That the apparent references to *veins* and *arteries* carried the same clearly cut definition of ideas which is conveyed to the mind of the modern anatomist by the connotation of these terms, is a question which might well be raised by a critical opponent of the

affirmative view. The general impression is probably inevitable: that the *veins* also acted—at least, upon occasion—as distributing canals. Of the "*pulmonary* circulation," it may at once be said with the fullest confidence that everything we know of their attainments goes to show that the ancient physicians had formed no conception. And it is on these two heads only: *The continuous direction of the current in the veins* and the existence of a *special pulmonary circulation* of the vital fluid that the "circulatory" ideas of Harvey can be confidently said to have displayed an unquestionable advance upon those of Hippocrates. Accordingly, it cannot fail to interest the inquiring reader, as a true lover of his profession, to have the principal landmarks indicated that were gradually established in the course of the very prolonged pilgrimage which led to the opening of this common gateway of modern physiological knowledge.

The fact that Solomon possessed a competent knowledge of all the details of both animal and vegetable life necessarily included a degree of familiarity with that which forms the subject of the present discussion. Accordingly, as the date of the popularization of the knowledge of the circulation of the blood was also one in which the literal infallibility of the Biblical text was most ardently defended, it is not a matter for surprise that several of the continental European critics of the genuineness of William Harvey's right to the credit of the "*discovery*" vigorously defended the thesis that the latter had really found out nothing that the most learned, as well as wisest, of men had not known thousands of years before. Almeloveen, Bontekoe, Braunius, Hottingerus, Scheuchzer, Witsius and other learned authors of that period which succeeded the publication of the *De Motu Cordis* (in 1628), all rushed into the breach for the avowed purpose of defending and restoring the posthumous scientific reputation of Israel's most accomplished ruler. Some affirmed that he had written fully and lucidly on the subject, but that his physiological publications had inevitably perished; others doubted whether he had really discussed this item of his universal knowledge in written characters, and even undertook to find justifying excuses for the apparent negligence displayed in not doing so.

Curiously enough, Almeloveen also offered (in 1684) an excuse for the comparative negligence of the great "Father of Medicine" in not furnishing to his contemporaries and for the benefit of posterity a more definitely explicit description of the *circulation of the blood*, with which he was surely familiar. His apology for the master is, indeed, a decidedly plausible one; having so many practical subjects and theoretical views to discuss he would not waste invaluable energy and irrecoverable time in the description of details which were really matters of common knowledge. We surely should remember, indeed, when called upon to scrutinize this question with special care, that writers of textbooks and medical monographs in the present day do not include in the texts of their volumes special descriptions of the circulation of the blood. One of the most learned and diligently critical of all the editors of Hippocrates, and one of the most accomplished bibliographers that our profession has ever produced, was J. Antonides van der Linden, and he uncompromisingly upheld the view that Hippocrates was perfectly familiar with the course of the circulatory blood. Indeed, I would suggest that it is very difficult to reconcile the presence of such a passage as the following with any other view (van der Linden's version; *Leidæ*, 1659); "Venæ per corpus diffusæ, spiritum et fluxum, ac motum exhibent, ab una multæ germinautes, atque hæe una unde oriatur; et ubi desinat, non scio; *circulo* enim facto, principium non invenitur." Another passage conclusively proves his knowledge of the origin of the arteries from the heart, and his conception of the action of the latter as the mainspring which furnished the originating central impulse for the movement of the contained fluid: "Radicatio orteriarum cor . ex his aberrant in omnia sanguis, et spiritus, et calor per hæc meat." These passages surely prove the fact that it was not left for Galen to discover that the arteries of the body were not "merely air pipes," as has been ignorantly stated by shallow historians of medical discovery and progress. The first of the preceding quotations, of course, represents Aristotle as believing that the blood, after being carried back to the heart, is "sent by it through the veins over the body." This statement is now familiarly known to be the reverse of physical truth. But if, as is more than probably—almost demonstrably—the case, the good old Stagirite actually used the term there translated "*veins*" for "*arteries*," his knowledge of the cause of the circulating blood was absolutely unquestionable. Indeed, as he applied the word φλεβς, which is habitually rendered by the English equivalent *vein*, to the main arterial trunk (to which he would appear to have been the first to give the name of *aorta*, by which it is now universally known to anatomists), there can be no doubt that he indulged (or was made to by his transcribers) in a careless transposition of terms, which has left the precise degree of his knowledge of the circulation a permanently debatable quantity. But surely the following passage displays a degree of familiarity with the central facts of the mechanism of the circulation as complete as the average physiologist of the present day could well include in the same number of words: "Nam è lateribus venæ magnæ et arteriæ, exiles venæ utrinque derivantur, per obliquum scilicet, et venæ cui libet arteria sua est adjuncta. Quod autem venæ, et arteriæ inter se committantur, sensu quoque ipso manifestum est" (*De Partibus Animalium*, Lib. III). This surmise regarding the variable use of the term "vein" (φλεβς) by Aristotle is rendered still more demonstrable by the fact that Aristotle's former tutor, the "divine" Plato, in a well-known passage of the *Timæus*, refers to the *heart* as the *origin of the veins:* "Cor vero venarum originem, fontemque sanguinis peromne corpus impetu quodam manantis." The term *impetu* (σφοδρως) was surely never applied by the most poetic of philosophers to the slow and undemonstrative movement of the blood in the *veins* —as this term is employed by the modern English-speaking anatomist.

After the immortal Stagirite had been gathered to his fathers his anatomical mantle descended on Erasistratus and Herophilus (whose name is made familiar to every medical student on his early introduction to the osteology of the occipital region). In their day the city of Alexandria, which still bears the name of Aristotle's famous pupil, developed a flourishing School of Medicine, theoretical and practical. And there those two anatomists, under the liberal patronage of the Ptolemies, would appear to have investigated the structure and functions of the human frame with a degree of energy quite unprece-

dented. We read that those pioneers of scientific anatomy and physiology "taught that, while the veins conveyed blood from the heart to the members, the arteries carried a subtle kind of air, or spirit." The statement seems to represent the general belief of what the author of the *Religio Medici* elected to distinguish as the "Learned Vulgar." Indeed, it represents a great deal more than was, I believe, meant by that gifted and earnest writer to be comprehended in the connotation of that highly (and happily) expressive compound term. For I have even this year observed, and with even more pain than surprise—there was, indeed, a good deal of each—that one of the most important of the medical journals of the British Empire states, in a very highly *specialized* article loaded with Italian, and Greek, and historical, and physiological, and philological, and other varieties of learning—medical, scientific, and literary—that "Aristotle believed that the veins alone (not the arteries) contained blood." (!) Such is fame, as interpreted by highly responsible persons in highly representative localities. Such statements and views which are ever and anon being displayed by the "leading" representatives of what is still *nominally* a "learned" profession, and was for centuries one of the most so in existence, has tended to make at least one non-member rejoice in the firm stand against *Modernism* which has been made by the Catholic Church. How utterly the teachings of Aristotle and of his greatest interpreter, St. Thomas Aquinas, have been lost sight of in these countries, since the precocious stripling, Francis Bacon, conveyed to England what scraps and samples of the noisily iconoclastic preaching of Peter Ramus that he had picked up during his two and a half years' sojourn in France, is one of the phenomenal records of negative achievement in the history of the "march of intellect." And the reputation of that amateur reformer of philosophy is based, too, on one of the greatest of the negative achievements of iconoclastic interference—not to say colossal intellectual fraud, and boundless intellectual assumption. How few members of the so-called "learned" section of the citizens of the British Empire at the present day seem to know that Bacon never even mastered the Aristotelian and scholastic philosophy, of which the overthrow was the ultimate goal of his intellectual ambition; and that many of the very best judges of the facts and collateral data now before us are disposed to deny that the famous "Father of Experimental Philosophy" and "Founder of Inductive Logic" was at all capable of accomplishing that intellectual feat even if he had expended all his best efforts in trying! In the departments of *Experimental Science* and of *Natural History*, the present writer hopes that he can lay claim to some little ground for confidence in the expression of his opinion, and he does not fear contradiction in pointing out that the attainments of the famous Lord Chancellor in each of these departments were *too far below* those of the monarch of philosophy, against whom he organized so successful a revolt, to lend themselves to serious comparison. They were not developed even on the same intellectual plane, and no scientific common measure will apply. And after giving what attention and powers of perception that he has found available to the estimation of the relative stature and power of grasp of those intellectual giants, in the departments of the higher philosophy and logical and metaphysical reasoning, he has come to a very similar conclusion. And thus it was that British science and philosophy were originally emancipated, and permitted to develop spontaneously along the lines of amateurish culture. And the new air of *freedom* had, it must be admitted, a certain invigorating quality of its own. Thus the new plants grew rapidly; and, in process of time, all—ran to seed! Probably Robinson Crusoe was a much healthier man after the years of his sojourn in his lonely island monarchy. Nobody will dispute the fact that he was a very much handier one, and dowered with probably unequaled gifts of resourcefulness. But, although his tailoring capabilities gave most effective, as well as picturesque, results at home in his insular residence, they could hardly be profitably floated on the Bond Street Market. Yet such was the strictly comparable result that was realized by the philosophic innovations of England's most famous Lord Chancellor!

It is, of course, well known to inquiring readers that one of the horrors of social, as well as of medical history, is centered in the fact that the indulgent patronage of the Ptolemies placed the living bodies of the very numerous criminals of their misgoverned dominions at the disposal of the anatomical enthusiasts to whom I have already referred, Erasistratus and Herophilus; and that the scientific scandalmongers of the period credited the latter of these—and, I much fear, with far too close an approximation to actual facts—with having *vivisected* no less than six hundred human beings in the course of a single year, I have no hesitation in expressing, with fullest confidence, the opinion that he could not have remained ignorant of the fact that the arteries were filled with blood during life—not merely with *spirit*, in the modern sense.

The main object of these preliminary remarks on the existing evidence of the attainments of the physiologists of ancient times—which, of course, included those of the long series of medieval centuries that accepted their *"authority"* without question—has been to place the views of Michael Servetus in the proper perspective, and against a clearly defined background. These are thus expressed in the volume which initiated the final stage of the author's deplorable fate:

"Ad quam rem est priùs intelligenda substantialis generatio ipsius vitalis spiritus, qui ex ære inspirato et subtilissimo sanguine componitur, et nutritur, vitalis spiritus in sinistro cordis ventriculo suam originem habet juvantibus maximè pulmonibus ad ipsius generationem. Est spiritus tenuis, ut sit quasi ex puriori sanguine lucidus vapor, substantiam in se continens aquæ, aeris et ignis. Generator ex facto in pulmonibus mixtione inspirati aeris cum elaborato subtili sanguine, quem *dexter ventriculus cordis sinistro communicat. Fit autem communicatio hæc, non per parietem cordis medium, ut vulgo creditur; sed magno artificio a dextro cordis ventriculo, longo per pulmones ductus, agitatus sanguis subtilis: à pulmonibus præparatur, flavus efficitur, et à vena arteriosa in arteriam venosam* transfuditur. Deinde in ipsa arteria venosa inspirato aeri miscetur, *et expiratione à fuligine repurgatur.* Atque ita tandem *à sinistro cordis ventriculo totum mixtum per diàstolem attrahitur,* apta suppellex, ut fiat spiritus vitalis.

"Quod ita per pulmones fiat communicatio, et præparatio, docet conjunctio varia, et communicatio, venæ arteriosæ cum arteria venosa in pulmonibus. Confirmat hæc magnitudo insignis venæ arteriosæ, suæ nec talis, nec tanta facta esset, nec tantam à corde ipso vim purissimi sanguinis in pulmones emitteret, ob solum eorum nutrimentum, nec cor

pulmonibus hac ratione serviret: cum præsertim antea in embryone solerent pulmones ipsi aliunde nutriri, ob membranulas illas, seu valvulàs cordis, usque ad horam nativitatis nondum apertas, ut docet Galenus. *Ergo ad alium usum effunditur sanguis à corde in pulmones hora ipsa nativitatis, et tam copiosus.* Item, *à pulmonibus ad cor non simplex acr, sed mixtus sanguine mittitur, per arteriam venosam: ergo in pulmonibus fit mixtio.*"

After its return from the lungs to the left side of the heart, Servetus pursues the blood in its passage along the arteries. He then loses sight of its course, or, rather, allows it to go—he was *not* writing a treatise on physiology. On this account the majority of makers of text books seem to have held the view that he had really no definite idea of the *systemic* circulation. This objection has been reproduced, I venture to assert, in at least 98 per cent. of the cases of its repetition, on second-hand, or hearsay evidence. The conception of the circulation was, as will readily appear to the thinking mind, an *abstract* idea. The mind which could conceive—and so clearly describe—the course of the blood in the *pulmonary* circulation was, most assuredly, capable of conceiving the *systemic*. And I think the reader who has taken the trouble of examining the evidence which I have placed before him, and following the lines of my argument, will have before now agreed with me that there had been some notion of the latter before the medical world ever since the days of Hippocrates; while there has not hitherto been found a trace of the faintest conception of the former. Thus the only reasonable question that can be asked by the intelligent and well-informed skeptical inquirer in this connection, and at this present stage is: *Did he know that, throughout the whole system of venous canals, the blood always flowed in the same direction?* There is, I fear, little likelihood that a completely satisfying reply to this query will ever be furnished. The horrible—and peculiarly isolated—fate of poor Michael Servetus; the almost complete destruction of his "*heretical*" book; the danger signal so clearly flashed forth in its title—all combined to consign the volume to oblivion. Indeed, the wonder really is that the passage which I have quoted was ever disinterred. It thus appears that the fiery zeal of John Calvin, whose atrabiliary enthusiasm recognized no *lawful* restraint in the confident assertion of his own othodoxy, registered the stupendous record of having successfully arrested the course of the indicating hand on the dial of progressive science for exactly three-quarters of a century.

Another pioneer of medical and physical discovery in that generation was the Italian, Andrea Cesalpino (1519-1603), who published (*Venice*, 1571) a remarkable and interesting volume entitled *De Quæstionibus Peripateticis;* wherein the author enunciates with a brevity of expression, too, which only a master of his subject can afford to employ, brilliantly clear ideas of the movements of the blood; but in which he cannot with either justice or accuracy be said to display any substantial advance on the teaching of Servetus. That writer, indeed, does actually apply the now universally recognized technical term to the "pulmonary" *circulation*, which had been so well described by poor Servetus eighteen years before:

"Huic sanguinis *circulationi* ex dextro cordis ventriculo per pulmones in sinistrum ejusdem ventriculum optimo respondent ea, quæ ex dissectione apparent."

The whole paragraph which contains the above sentence is a peculiarly brilliant and interesting one. But a still more remarkable statement appears in another work of the same author (*In Quæstionibus Medicis*); where, after the inevitable discussion of the views of Aristotle, he adds:

"Pro cujus loci explicatione illud sciendum est: Cordis meatus ita à natura paratos esse, ut ex vena cava intromissio fiat in cordis ventriculum dextrum, unde patet exitus in pulmonem: ex pulmone præterea alium ingressum esse in cordis ventriculum sinistrum; ex quo tandem patet exitus in arteriam aortam, membranis quibusdam ad ostia vasorum appositis, ut impediant retrocessum: *sic enim perpetuus quidam motus est ex vena cava per cor, et pulmones, in arteriam aortam*: ut in quæstionibus peripateticis explicavimus."

Every intelligent critic must agree that the passage now quoted contains as perfect a description of the principal nuclear facts of the circulation as any physiologist of the first decade of the twentieth century could possibly include in a corresponding number of words. The writer was, most assuredly, thoroughly acquainted with all the essential phenomena of this, the most important of all the vital processes of the higher animal organism. And, accordingly, having regard to the fact that the enunciation of the same proposition by Michael Servetus was recorded in a document which appears to have then been absolutely lost to the scientific world, and to the supplemental fact that there does not appear to exist a particle of (even circumstantial) evidence which could be brought to prove that Cæsalpinus knew anything of the views of Calvin's victim, I have no hesitation in affirming that his countrymen were able to establish a fair claim for the brilliant Italian, as the first *publisher* of the fact of the circulation of the blood, if not actually its original discoverer. Indeed, the above quotation embodies important items which are not to be found in the incidental reference of Michael Servetus; although, I feel bound to add, the probable reason is that the reference really was *incidental—only*. The single item of uncertainty that remains, in regard to the knowledge of Cesalpino is, as in the case of Servetus, of the *definite direction* of the blood current in *all* the *veins*. And this item of haziness is by no means the important one which a special advocate might readily lead a skilled jury to believe. The general law of the uniform rise and fall of the sea level in all contiguous oceanic areas is not at all affected by the curious physical fact that, in the Menai Strait, the water flows continuously in one direction during the flow of the tide and in the opposite direction during the ebb; although theoretical considerations would lead one, at first thought, to expect that the surface level would rise and fall simultaneously at both ends of the channel. Curiously enough, in the work of Cesalpino from which the above quotation has been taken, is to be found the interesting coincidence of an allusion to a far more monstrous tidal phenomenon, that of the *Euripus*. Its importance is emphasized by the fact that the reference is introduced in the course of a discussion of some of the opinions of Aristotle. It is, of course, well known to the curiously learned that one of the many accounts of the mode of termination of the earthly pilgrimage of the immortal Stagirite is associated with the unique tidal currents of that strait. Having conquered the whole of the known intellectual world as completely as his pupil Alexander did the geo-

graphical, the monarch of philosophy found himself one day, toward the close of the "grand climacteric year," loitering on the shore of the "fret of Negropont;" along which the tide ebbed and flowed, diurnally, no less than seven times. With all the unrivaled intensity of his intellectual powers he concentrated his cogitations on the endeavor to discover the unknown cause of that unique phenomenon. But "the master of those who know" was predestined to find that after laborious and prolonged mental effort, he had still failed to make any perceptible progress toward arrival at the wished for solution; and, as the practical aspect of his philosophy does not appear to have included the stoicism necessary to bear the unprecedented experience of intellectual failure with the appropriate epicurean *tranquillitas*, he walked to the rock-bound margin of the inexplicable gulf, and with the words *si quidem non capio te, tu capies me*, threw himself headlong into its waters. And I would here call emphatic attention to the peculiar suggestiveness of Cesalpino's happily appropriate allusion to the *crux* of the Euripus current. It is very doubtful whether his views, or those of the martyred Servetus, included a solution of the curiously similar Euripus problem of the circulation of the venous blood—as their contemporaries, and perhaps themselves, regarded the alternating direction of its currents in at least some of its containing vessels. Most assuredly, it is *only* in this region that an unsolved problem remained; and, as I venture to trust that I have already convinced the reader, it was the only section of the "systemic" circulation which does not appear to have been grasped by the Father of Medicine himself.

Thus I believe that the only item now remaining for discussion is that of the intravenous *valves*: the discovery and demonstration of their existence, and the assignment of their function. They appear to have been known to the eccentric anatomical genius, Jacobus Sylvius, the teacher of the still more celebrated Andreas Vesalius; but he does not seem to have transmitted any definite account, or even a suggestion, of their function. And here we come face to face with a specially interesting item of this strange, eventful history. Readers of ecclesiastical lore are, very necessarily, familiar with the name of Fra Paolo Sarpi (1552-1623), another restlessly inquiring genius, who, like his junior contemporary, the English Lord Chancellor Bacon, took for his province everything knowable, but with far more real success, as is well known to the skilled inquirer who is curious in these matters. We are assured by Johannes Leonicenus that the famous historian of the Council of Trent was thoroughly acquainted with the use, as well as position, of the intravenous valves; that they opened *like sluice-gates*, to permit the onward passage of the blood, and closed to prevent its return. This very representative authority also informs us that Sarpi communicated that knowledge to Fabricius ab Aquapendente—then Professor of Anatomy at Padua. The latter certainly described the valves—and figured them beautifully—in his great folio work on human anatomy; but he does not seem to have clearly grasped the physiological function which seems to stand out in so vivid relief from his "pictured page." Indeed, he refers to "flux and reflux of the blood" in a way which readily recalls the old, old Euripus problem and necessarily suggests that the latter still remained unsolved. However there are good reasons for believing that in the riper years of his life Fra Paolo would not have been very openly communicative in the matter of any of his more specialized secrets; the radicalism of his opinions upon many important subjects, and his candor in the expression of the same, had, again and again, brought him into very serious trouble with the Church.

Whether the statement that Fabricius ab Aquapendente owed his first knowledge of the valves of the veins to Fra Paolo Sarpi be accurately true or otherwise, the fact is undoubted that he was acquainted with their structure, and was particularly fond of demonstrating their presence and arrangements in the course of his anatomical lectures. The fame of the University of Padua, "Nursery of Arts," was then in its zenith; that of its school of anatomy far overtopped the reputation of all others of the kind then existing. William Harvey proceeded to Padua for the purpose of studying the structure of the human body under the guidance of the greatest living exponent of its mysteries. He attained the Doctorate of that University in 1602. He had seen the valves of the veins demonstrated by his master. He returned to England to practise his profession. Some time after his return, when taking a leisurely walk with an engineering friend, the discussion turned on the mechanics of the newly discovered valves of the veins —then the great and "very latest" novelty of biological information. Professor Fabricius had not given a clear account of the function of the interesting structures; Dr. Harvey professed himself unable to divine the private designs of nature in producing and placing them. But his engineering friend readily supplied the explanation; that, placed as they were, with their *free edges directed toward the heart*, the only possible function of the aggravating valves was to prevent regurgitation of the moving fluid in which they floated—the current of which, on account of the very presence of these structures, *must* flow *continuously toward the heart!* The missing—or doubtful—link in the circular current was forged at last! The Euripus riddle had found its Œdipus! But, horrible to relate, William Harvey had *discovered* simply—*nothing at all!* Such is reputation. Well may the Iagos cynicize!

But, on the other hand, the claims of William Harvey on the gratitude of posterity should never be disputed in this connection. The Italians of that date were by no means prone to cast their scientific and philosophic pearls before the intellectual swine of a semi-barbarous age—which surely accounts for the fact that this "discovery" had not become public property long before. Harvey published his epoch-making volume in 1628—not in England, be it specially noted—but in Germany! It contains a very elaborate account of the circulation, with all necessary demonstrative details. He had, however, been teaching those details for some nine years before. He had made a very full series of experiments for the purpose of completing the chain of demonstrative evidence. This required a good long period of time, by itself; and would almost account for the whole period of the delay in publication, as experimental methods and machinery went in those days. But pretty surely, his "prophetic soul" warned him of the explosive danger of a new doctrine so far-reaching in its association and consequences. For the appearance of his book had a truly thundering effect! Senior metropolitan physicians thenceforward refused to

meet him in consultation. (They very usually have done so, when possible, under corresponding circumstances. The consultant whose knowledge is far in advance of our own is one whose advice is oppressive to any one of us—especially when given with unquestionably honest and efficient candor, in presence of both patient and friends.) The publication of the immortal *De Motu Cordis* marked the ruin of William Harvey's consulting practice. Let Englishmen boast of their liberty of ("reformed," and thereby emancipated) thought and speech and action, and point to the treatment of Galileo by the authorities of the Inquisition—almost at the same date! If his medical contemporaries had been endowed with powers corresponding with those of the Inquisition, most assuredly William Harvey would not have escaped so lightly from the consequences of his "discovery" as did Galileo Galilei from those of *his* innovations!

I began the scrutiny of evidence corroborative of the assertion of an old-time acquaintance with the "general" or "systemic" circulation of the blood with definite reference to the testimony of Hippocrates (not omitting a glance at the probable attainments of the wisest of kings), the items of ancient testimony selected ended with Galen—but the continuity of the chain derived from the unquestioned authority of the latter cannot be disputed. Novel modes of inquiry, and views of education and intellectual subordination, blossomed with the expansion of the Renaissance; and the first mention of the available cloud of witnesses on the present topic was the contemporary of Michael Servetus, the roystering monk-physician whose name is so seldom associated by the average reader with either medicine, or physical science, or general education. Yet the fact is that François Rabelais was both a pioneer and an expert in each and all of those three departments. He was, indeed, not only a gifted, but a thoroughly earnest, representative product of the highest intellectual stratum of that most interestingly complex of all the recorded periods of the progress of human thought and scientific conquest. It is somewhat soothing to the reflective mind of the earnestly sympathetic student to find that the thorny pathway which has evermore been trodden by the foremost of the leading pioneers in the previously unexplored areas of the boundless forest of thought and discovery does not seem to have been beset in the case of Rabelais, with the average number of the poisoned pricks which made so bitterly painful the pilgrimages of others—and proved so horribly fatal in the case of Michael Servetus. But as to the coveted niche in the Temple of (scientific) Fame! In this super-educated generation of ours, who ever thinks of François Rabelais as one of the most important—and effective—of the pioneers of *modern education*, or of Michael Servetus as the rightful claimant to the credit of the discovery of the circulation of the blood? Echo (alone) answers!—at least in all English speaking communities. That such is not what should be will, I have considerable confidence in hoping, now be admitted by every reader who has taken the trouble of pursuing the story, and the argument, of this tortuously prolonged communication. Knowing, as I do, that it is only the members of the elect—even among the earnest—who have persisted in so doing, I appeal, without hesitation, to the charity which is the most characteristic endowment of all such, for forbearance in their final sentence on the writer who has, so long and so ruthlessly, taxed their patience. And with corresponding confidence I would appeal to the enlightened scientific citizens of the vastly greater—and infinitely more liberal—Geneva of the Western Hemisphere, to contribute as they best (most independently and effectually) can to the tardy justice which is surely due to the memory of one of the most earnest and single-minded votaries of science; one of the most stainless practitioners of the one profession which was practised and consecrated by the Saviour of mankind himself, during the troubled course of His earthly pilgrimage!

CANCER.

A SUGGESTION AS TO ITS CAUSE, AND ITS RELATION TO DISPLACEMENTS, FUNCTIONAL DISORDERS, AND THE NERVOUS SYSTEM.

By E. ATLEE, M.D.,

PHILADELPHIA, PA.

Neurasthenia is considered a contributory cause of displacement of the uterus. Contrary to this view, may it not be a *consequence* of this displacement; or, in other words, may not perfect health and functional integrity of pelvic viscera and floor depend upon perfect position of the uterus?

A displacement of the uterus may be due to a fall, strain, or other violence which produces an injury to its ligaments. To counterbalance the consequence of this accident, the muscular tissue will become tense, giving a temporary additional support to the uterus pending repair. The acquisition of this extra force in the abdominal and pelvic muscles, in response to nervous impulses, may be accompanied by a loss of force elsewhere, showing itself by functional disorders. Additional injuries to the ligament, with possibly a still further weakening of the support (due to ill-timed expenditure of force), finally result in sufficient malposition (irrespective of the *direction* or of the *degree* of the angle of deviation) to interfere with delicate nerve mechanism (by a bending, twisting, or stretching of the nerve, or by a pressure on the nerve structure). In consequence of this interference, nervous impulses can no longer be conveyed to or from the scene of the accident. The result may be: (1) that the tense muscles resume their normal tonicity; (2) that the nerve action of the rest of the nervous system returns to its normal equilibrium, with apparent perfect health and strength and maximum weight; (3) that the organ, still remaining displaced with a crippled nerve function, develops later a malignant growth.

Forms of cancer other than uterine may be the result of some local weakness dependent upon an initial pelvic injury. In those that might be called *sequential* forms of cancer we have in the incipient stage the history of concomitant poor or indifferent health.

The two causal factors of cancer probably are: (1) accidental injury; (2) ill-timed expenditure of force (subsequent to an internal injury) in muscular activity, ill-advised consumption of food, mental strain.

Excessive expenditure of force accounts for the following demonstrable (W. R. Williams, "Natural History of Cancer," pages 21, 66, 67) conditions: (1) excessive number of cancer cases found in temperate zones over that found in torrid zones; (2) excess of cancer found in civilized countries over that found in savage tribes; (3) excessive

amount of cancer in well-to-do localities where people are energetic, over that found in quarters where the inhabitants are not thrifty; (4) excessive cancer cases found, not within workhouses and asylums, where the inmates are taken care of, but among the self-supporting.

In the first stages of uterine cancer the uterus is (in most cases) freely movable and is frequently acknowledged to be out of normal position; while a dislocated uterus is held fixed. How can we account for the comparative freedom from cancer in those uteri which, besides being out of normal position, happen also to be fixed (by other than old adhesions, or extension of the disease)? Probably, in the incipient stage of uterine cancer, women previously subject to abnormal deliveries may go to full term and have easy labor, owing to normal tonicity of muscles. Because of the natural periodic increased weight of the organ, extra force is required monthly for an additional temporary support, creating still greater functional disorders at the period. After the menopause the extra supply of force is no longer periodically required, and the woman becomes stouter and stronger (other conditions being equal).

Many disorders now ascribed to causes other than displacements may in reality be the result of a lack of normal stimulus dependent upon a withdrawal of a part of the normal supply from its prescribed channel. The treatment of the resultant functional disorders should be rest, simplicity of diet, and happy mental attitude.

Neurologists and gynecologists, as well as other specialists, are prescribing the rest cure. Should this not prove entirely efficacious, then gynecological treatment might alleviate, or even cure, the symptoms.

If disorders, instead of being purely functional, have become organic, amelioration of symptoms would not immediately follow treatment, or even surgical intervention. If functional disorders are relieved by gynecological treatment, may not similar treatment cause a retrogression of the sequential forms of cancer?

In reference to the operative treatment of cancer, will not the excision of the area of the injured nerve insure the best results?

DIFFERENTIAL DIAGNOSIS OF LYMPHOMATA OF THE NECK.*

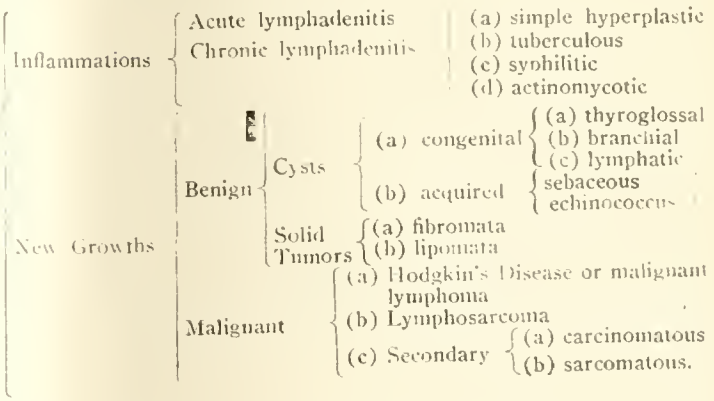
By EDWARD ADAMS, M.D.,

NEW YORK.

ASSOCIATE ATTENDING SURGEON HAR MORIAH HOSPITAL; INSTRUCTOR IN SURGERY, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

In order to make a correct diagnosis one must have a certain plan or scheme to follow, and in dealing with lymphomata of the neck the following division and subdivision of the subject seem most practical to my mind. First of all, lymphomata are divided into two great classes—inflammations and new growths.

I shall describe only very briefly the common difficulties met with in various regions in the neck. Around the ear there are several possible mistakes which must be avoided. Over the mastoid process there is a small lymphatic gland which is frequently



enlarged and often suggests at first sight mastoid disease. When the gland has broken down and becomes simply an abscess cavity the diagnosis may be difficult, but the absence of signs of middle ear disease and of edema of the upper and posterior walls of the external auditory meatus, combined with absence of constitutional disturbances which accompanies mastoid disease, usually leaves little doubt as to the diagnosis. In the parotid region it is sometimes very difficult to differentiate between an enlarged gland and a simple tumor of the parotid. The history of the case, the slow and increasing size, and the fact that the parotid gland is situated beneath the deep fascia should be the diagnostic points in favor of the parotid tumor. Cystic swellings of congenital origin are frequently met with, which at first simulate glandular abscesses, but their walls are smoother, the texture is more regular, there is no chain of smaller glands extending from them, and the mobility is much greater than would be found in an abscess of a similar size. Tumors in the sternocleidomastoid muscles are sometimes mistaken for glands, but the diagnosis can be made when the exact situation of the swelling can be determined and glandular tumors are not found within the substance of the muscle itself. In the newborn, in whom enlarged glands are rarely met with, sternocleidomastoid hematomata are occasionally seen.

In the submaxillary region, especially with cases of salivary calculus, the diagnosis at times is extremely difficult, inasmuch as the secondary lymphatic glands are usually enlarged as well. The affection of the salivary gland is usually accompanied by swelling along the side of the floor of the mouth, caused by inflammation of the salivary duct, which lies in such close relationship to the mucous membrane of the mouth that any swelling is readily apparent. Adenomata of the thyroid gland occasionally suggest glandular tumors. This occurs especially when the enlargement is restricted to the upper part of one lateral lobe or to an accessory thyroid. The attachment of the capsule of the thyroid to the pretracheal fascia, and hence to the trachea, causes the tumor to move distinctly on swallowing and this does not occur in the case of lymphatic glands, the fascia around which is attached to the carotid sheath rather than to the fascia of the trachea.

Acute lymphadenitis of the neck follows various infections of the teeth, mouth, gums, nares, tonsils,

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etc., the superficial glands being chiefly affected. The diagnosis can be readily made by the history of the acute onset and pain on pressure, and the glands are so soft that they seem to fluctuate. They usually disappear in a few days, although suppuration frequently takes place.

Chronic lymphadenitis: A. *Simple hyperplastic lymphomata.* This term includes those lymphnodes that do not enlarge beyond the size of a bean to that of a hazelnut. This enlargement is produced by chemical or bacterial irritants entering by way of the lymphatic vessels from the periphery. The enlarged gland may undergo no change for years and show no tendency to suppurate or form adhesions. Caries of the teeth is the chief cause. A positive diagnosis can only be made by the microscope or bacteriological examination of the enlarged glands, because the initial stage of tuberculous glands differs very little clinically from that of simple hyperplastic lymphomata. B. *Tuberculous lymphomata.* The diagnosis of this condition can usually be made from the consideration of some of the following points: (a) The history of having existed for quite some time; (b) the size varying from that of a pea to an egg; (c) the fact that the glands are present in chains which consist of a number of glands of different sizes connected together; (d) some glands are freely movable while others are more or less fixed, the one caused by the tuberculous process being intracapsular, the other case where the gland has broken through the capsule, producing a periadenitis; (e) the presence of scars, showing that one or more of the glands have broken down, forming an abscess which has discharged through the skin, or has been opened by a small incision; (f) the tuberculous scars are usually characterized by irregular shape, never smooth, and are adherent to the underlying parts; (g) the glands are usually painless and there is little or no fever unless a general tuberculosis is present.

Syphilitic lymphomata: The diagnosis is made as follows: The primary stage should disclose an initial lesion of the face or the mouth, and the glands are large and painful. In the secondary stage the glands are small, freely movable, painless, never break down, and a single gland is involved, not a chain or group of glands. Tertiary stage: Gummata are extremely rare. They grow slowly, are painless, and have a firm, elastic consistency. When present they are at first not adherent to the skin, but when they break down and suppurate they become adherent to the skin, showing the typical syphilitic ulceration. In doubtful cases a Wassermann reaction will be of aid.

Actinomycotic lymphomata: The diagnosis in these cases can be made on the history of the slow growth and the tendency to form sinuses. The finding of the fungus in the discharge and tissues establishes the diagnosis beyond a doubt.

New growths—Congenital cysts: The thyroglossal tract sometimes forms cystic tumors instead of fistulæ. The chief diagnostic points are the location in the middle and lateral regions where congenital fistulæ occur and histologically the presence in the walls of the thyroglossal cysts of thyroid follicles. *Branchial cysts*: These are observed in the anterior region of the neck, in the middle line, or at the side. The diagnosis is very difficult and is made in doubtful cases by aspiration and examination of the contents in conjunction with the kind of epithelium found. In branchial cysts the lining is epithelial. *Lymphatic cysts*: These form large, thin walled sacs in the posterior triangle, and are frequently termed hydroceles of the neck. They may be single or multilocular, and consist of dilated lymph spaces. Formation of secondary cysts and a spontaneous tendency to disappear are the chief diagnostic points. The lining is endothelial in lymphatic cysts.

Acquired cysts: Sebaceous cysts of the neck. These can readily be diagnosed by their relation to the skin, their benign growth, and the fact that they remain stationary for years. *Echinococcus cysts of the neck*: These are rarely found in the neck, for out of a total of one hundred and ninety-six cases reported only two were found in the neck. The diagnosis is extremely difficult, and at times impossible, but an exploratory puncture may show the presence of hooklets in the cystic contents.

Fibromata of the neck: These may be either superficial or deep, and the diagnosis can easily be made on the history of the slow growth, by the consistency of the tumor, and the fact that they remain stationary for a considerable time. *Lipomata of the neck*: The diagnosis can usually be made upon the location of the tumor and the clinical picture of a diffuse as well as of subcutaneous circumscribed capsule being present and the fact that these tumors are usually single instead of multiple.

Malignant lymphomata of the neck, otherwise known as Hodgkin's disease, or pseudoleukemia: In the early stages it is extremely difficult to differentiate this condition from that of tuberculous lymphomata of the neck, but malignant lymphomata increase steadily in size, and sometimes attain the size of an orange. The diagnosis is made on the fact that they never break down nor invade the capsule, and do not form adhesions to the surrounding parts. Constitutional symptoms and glandular masses in other regions, as the axilla, inguinal region, etc., can also be made out. The blood shows very little change, and in doubtful cases a gland should be excised for diagnostic purposes. The slightly enlarged spleen in such cases points also to Hodgkin's disease.

Lymphosarcoma of the neck: Primary sarcoma of the lymphnodes is diagnosed clinically by the fact that it always occurs as a single tumor and rarely suppurates, spreads rapidly not only to the surrounding glands, but also to all the adjacent organs, and extends to all parts of the lymphatic system. Microscopically these glands show the structure of a true sarcoma.

Carcinomatous glands of the neck: These occur frequently when the primary focus is in the region of the lips, tongue, jaw, tonsil, etc. The left side of the neck receives metastases from the abdomen by way of the lymphatic duct, especially in carcinoma of the stomach. This is known as Virchow's sign. *Sarcomatus glands* are found as metastases, especially in angiosarcoma of the carotids, submaxillary, salivary glands, thyroid gland, etc. In both carcinomatous and sarcomatous glands they are at first freely movable, but later on become adherent to the surrounding parts. In conclusion I wish to state that at times it is extremely difficult to make a correct diagnosis clinically, and when possible a gland should be excised and examined by the microscope in order that the correct diagnosis may be ascertained.

300 Central Park West.

THE IMPORTANCE OF CORRECT HOSPITAL RECORDS.*

By ROBERT E. COUGHLIN, M.D.,

BROOKLYN, N. Y.

When the first hospital was instituted it is probable that history taking of cases treated was begun. At any rate, no matter how old an institution is, the keeping of records seems to have been a necessity, and a due appreciation of records kept was manifested in the early history of medical writing. Therefore by a process of evolution we should be in the best possible condition regarding this very important detail in medicine. Each medical staff representing a particular institution may use a little introspection to find out whether or not this evolution has brought out the best possible results. If perfection has been attained then no suggestions are necessary, but for the others who have found something wanting this paper is intended.

In the first place, let us decide who are benefited by hospital records. In the order of importance we should consider scientific medicine, the hospital, the attending staff, the interne staff, the patient, and the public at large.

One can easily understand how important to the scientific medical world is the careful recording of cases in large institutions where opportunities of all kinds are afforded for the consideration and grouping of large numbers of cases, so that conclusions may be drawn upon which the future treatment of similar cases may rest.

The hospital itself benefits in no small degree by such correct records, and as a rule hospital managers appreciate the importance of the subject by providing books, stationery, and everything to encourage the work. Many dollars have been saved to certain institutions where suits for damages were brought in court, and careful records showed that the officers were not at fault.

Carefully written hospital histories of cases are indispensable to a visiting hospital staff. In fact without such records of cases treated the attending staff fails in its duty in a most lamentable way. Not only are they as individuals realizing no benefit, but all other interests suffer and scientific medicine lags. With such men there can be no progress.

The interne staff is benefited in many ways that they do not as a rule fully realize. In the first place they come into close touch with the patient very much like a father confessor. The age and habits of the patient are gone into; in the family history, which is very important, any hereditary taint is jotted down as well as family traits in character and constitution; all previous history of disease and accident is recorded; the beginning of the illness under consideration, the signs and symptoms of the same illness or injury, all making a complete epitome. When this duty is performed properly it helps the interne to think clearly and accurately as well as inculcating the habit of careful observation, so necessary in a medical mind. It may be said that the interne who does not avail himself of this occasion to improve himself misses a golden opportunity which cannot be overestimated.

To the patient a history of his case is valuable in that a correct diagnosis of his condition may be reached in this way, not only at the time under consideration but at a subsequent admission to the hospital, when a change in the visiting staff may have occurred. It is certainly due to the patient that all means be taken to bring about a correct diagnosis of his condition.

To the public, who really support our hospitals, correct records of cases treated are deemed important, for how would the public know how the money donated by the people generally was used to the best advantage? They should know the cause of death where patients die under treatment, also the chances for the recovery of patients under treatment, and if the percentage of recoveries compares with that of other institutions under the same conditions. For instance, if the mortality rate be 2 per cent. in appendicitis cases operated upon in one hospital, where many cases of that disease are admitted, and 20 per cent. in another, where many or as many cases are admitted, then the people who are maintaining the latter hospital may ask the hospital managers why such a difference should exist. Other benefits to the public might be mentioned, but this one illustration will be sufficient to show that hospital records do benefit the public. Nothing will produce a feeling of distrust of hospitals in general, a feeling that we as physicians should not allow to occur, more inevitably than inaccurate or false hospital records.

A case has lately come to light where a physician was accused of falsifying the hospital records for the purpose of substantiating his claim in public that he had performed a certain operation a great many times, many or all of these operations occurring in a certain hospital. With the aid of an accomplice, it is said, he tampered with the hospital records to prove his contention. Expulsion from his county society by a unanimous vote was letting him off too easily. A man who will tamper with hospital records that were correctly written is as guilty or more so than he who would deliberately falsify the records in the beginning. In this case there is a great moral principle involved, and integrity is probably the greatest element to be considered in the making of hospital histories.

The question naturally comes up: How are we going to secure correct histories? In the first place the attending physician and the attending surgeon should see that each and every history has been properly written within twenty-four hours from the admission of the patient to the hospital.

A complete history should be demanded, including hereditary and previous history of illness and injury; also if the patient has ever been rejected or refused insurance by any insurance company or society. The slightest surgical condition should receive the same consideration as the serious condition requiring a major operation. A trivial ailment should be given as much attention in the matter of history taking as the most serious medical condition, for who has not seen a mild medical case become a very serious one after a few days in the hospital? The fact that they are admitted as hospital cases is insufficient reason to believe that something serious may be found after a careful examination.

Constructive and not destructive criticism should be employed and a little patting on the back will produce better results than a destructive critical analysis. Terseness along with clearness of diction is desirable, but too full a history is better than a short account of the case in which the essentials are not mentioned.

The visiting staff should encourage the taking of

*Read before the Norwegian Hospital Medical Staff, May 22, 1911.

histories by referring to the files and showing interest by offering suggestions, etc. In this way improvement in the system in vogue may be effected from time to time.

Complete and accurate pathological reports are indispensable in making a full history of any case. A hospital without a good pathological laboratory staff is very much handicapped. All reports should pass through two, or preferably three, hands before the final report is made in any given case. Mistakes are thereby made next to impossible. A hospital without a competent pathologist is at a standstill as regards its contribution to scientific medicine. Autopsy reports are invaluable to the working of a hospital along scientific lines. It seems as if some original work should be done in hospital pathological laboratories along with the regular routine of hospital pathological work.

In one of our most progressive hospitals the pathologist is paid a salary. In this way very efficient service is secured. Certainly it seems too much to expect a man to devote four or five hours daily to routine laboratory work without compensation. The time may come when the attending staffs of the different hospitals will have to create a fund for the expense of their laboratory, including the salary of the pathologist. It may mean pay a pathologist and be in advance or maintain no laboratory and remain at a standstill as regards scientific progress.

Complete *x*-ray reports should be made in suitable cases, and this means that every up-to-date hospital should have an *x*-ray machine. Correct pelvic measurements should be recorded in every obstetrical case and the use of the pelvimeter becomes a necessity.

No medical man attached to an institution should resort to any derogatory statement in the presence of assistants, internes, nurses, or others relative to history taking and hospital records in general or in particular. Such a destructive policy breeds indolence and indifference on the part of all concerned in the management of this detail of hospital work. In other words, their morale is gone. If an interne feels that the history he is taking is worthless or is bound to be considered so, he will not put his best into the same for obvious reasons. The same applies to his daily notes.

A condition which should not be allowed to exist is that in which the daily notes of both the interne and the nurse agree or tally even to composition. In such a case it is easy to see that one is doing the thinking and observing for the other.

Undoubtedly many or nearly all of the suggestions referred to are well known to physicians and surgeons composing different hospital staffs, but the reiteration of truisms may produce results where other means might not avail.

FRACTURE OF THE INFERIOR MAXILLA COMPLICATED BY COMPLETE DIVISION OF THE FACIAL ARTERY.

By WALTER C. CRAMP, M.D.,

NEW YORK.

ASSISTANT VISITING SURGEON, BELLEVUE HOSPITAL.

Fractures of the inferior maxilla are relatively frequent in occurrence and as a rule excite no unusual interest, the main consideration being the proper and efficient maintenance of the fragments in apposition in order to prevent deformity; and yet the following case is such a unique one with such an unusual complication that it seems to me to justify publication. In fact, a fairly careful and complete search into the literature pertaining to the subject fails to reveal a similar condition. I have never seen the subject mentioned in any of the textbooks on fractures and Dr. Lewis A. Stimson of New York, whose broad experience in dealing with fractures is unequaled, informs me that no such case has ever come to his attention, either by personal knowledge or by perusal of medical literature. The following case occurred on the Third Surgical Division of Bellevue Hospital in the service of Dr. Joseph D. Bryant, who saw the patient with me, and through whose kindness the report of the case is published.

D. S. was admitted to Bellevue Hospital on October 13, 1908, with the diagnosis of acute alcoholism and fracture of the lower jaw. He was a well-built man, thirty-eight years of age, accustomed to moderate inebriety, free from previous injuries and chronic diseases, and stated that while descending the elevated steps on the night of admission he fell about fifteen steps, striking on the left side of his face and left shoulder. Following the accident he was unconscious for a few moments and bled about a cup of blood from the mouth. On admission to the hospital there was nothing of unusual moment revealed by examination; the face was moderately swollen on the left side in the region of the lower jaw and there were contusions over the left shoulder and arm. Examination of the mouth revealed a fracture of the inferior maxilla on the left side about the junction of the body with the ramus, from which a slight amount of blood was escaping. During the night, however, there developed over the left side of the face and jaw a well marked tumor which extended well down in the neck, accompanied by a marked edematous condition reaching to the chest. There was also present some difficulty in swallowing. On account of repeated hemorrhages from the mouth, varying from one to four ounces, an operation was decided upon and the patient anesthetized. An incision parallel to the inferior maxilla was made over the prominence of the tumor on the left side, which corresponded with the submaxillary region. The tissues everywhere were infiltrated with blood and a large clot was evacuated in the neighborhood of the fracture, which proved to be a vertical one, with considerable displacement of fragments and running obliquely from behind forward and inward, leaving on the anterior fragment a thin, sharp projection of bone which had completely severed the facial artery as it turned over the jaw in front of the masseter muscle and had also slightly torn the vein. The bleeding was controlled by ligatures, the artery and vein being both tied, the projection of bone removed, the wound packed and partially closed by suture, no attempt being made to repair the fracture on account of the desperate condition of the patient which necessitated the performance of a high tracheotomy. The wounds healed kindly and the fracture was subsequently treated at the New York College of Dentistry.

This interesting case brings forward the fact that the facial, like other arteries situated close to bones, is susceptible to injury in certain fractures of the lower jaw and, though rarely injured, should not be lost sight of in dealing with them. This freedom from injury may possibly be explained by the absence of sharp projecting irregularities or spicula in fractures in this region.

349 West End Avenue.

NOTE ON A CASE OF ANEURYSM OF THE THORACIC AORTA TREATED BY ABRAMS' METHOD.

By M. L. TURNBULL, M.D.,
SAN FRANCISCO, CAL.

Dr. L. St. John Hely reported in the Medical Record, May 21, 1910, the remarkable and expeditious results attained in the treatment of a large aneurysm of the thoracic aorta which had perforated the chest wall by the method first advocated by Dr. Albert Abrams of San Francisco and fully detailed in his recent book on "spondylotherapy." I am informed by Dr. Abrams that, up to the present time of writing, he has a record of 39 cases in his own practice of thoracic and abdominal aneurysms which have been symptomatically cured within a few weeks by concussion treatment with absolutely no other adjuvant measures (not even rest) and that there was no break in the continuity of successful results. Some of his patients were seen after two or three years with absolutely no recurrence of symptoms.

The report of the following case I believe to be indicated, for the reason that we have heretofore regarded aneurysms of the aorta among the incurable diseases.

A. D., age 28 years. Sent to California by his physicians in Chicago for supposed pulmonary tuberculosis. Seven years ago contracted syphilis. Entered Dr. W. C. Voorsanger's service at the Mount Zion Hospital for dyspnea, pains in the chest, and a constant cough and expectoration which permitted him no sleep at night without the use of narcotics. Slight dysphonia. Veins of the neck very prominent and dilated. Slight tracheal tugging. Pronounced dulness on percussion of the upper chest corresponding to the arch of the aorta, which measures 6 cm. in diameter. Systolic murmur over aorta propagated toward the left shoulder. Palpation reveals a diastolic shock over the region corresponding to the orifice of the pulmonary artery. A skiagraph shows an immense aneurysm of the thoracic aorta chiefly implicating the arch. Examination of the sputa negative. A vigorous course of inunctions was without effect on the symptoms. At this time the patient presented an anemic appearance and his weight was 118 pounds.

Treatment by concussion daily of the seventh cervical spine was commenced on April 26, 1911. After the first séance of concussion lasting ten minutes the systolic murmur over the aorta almost disappeared. On April 29 the aneurysmal dulness measured transversely 2.6 cm. May 1 the aneurysm measured 2 cm. and the patient's weight was 123 pounds. May 3, 1911, there was absolutely no dulness over the site of the aneurysm, the pains in the chest were gone, expectoration was reduced about 50 per cent., but the cough continued with less frequency and severity.

On July 1 the patient's weight was 135 pounds. He had absolutely no symptom beyond an occasional slight cough, which might be attributed to a nasopharyngeal catarrh.

Workingmen's Endowments.—The German Reichstag is actively debating schemes for the mutual endowment of workers. The main topic will be the measure consolidating the present compulsory insurance laws. A report in several volumes, containing over 2,000 pages, has been prepared by the committee appointed to investigate the matter.

Remote Results, Functional and Obstetrical, of Pubiotomy.—Albert Peralta Ramos has made a study of the cases of pubiotomy done at the hospital at Canton (South America), from 1904 to date. This includes 18 cases from which an answer has been received to the questions asked, a considerable number having been lost sight of by removals, etc. These 18 cases included 13 multiparæ, and 5 primiparæ. The time since operation is from seven months to five years. Histories of these cases are given. All of these patients expressed themselves as satisfied by the remote result of the operation, all being able to do their work and to walk naturally. None of them had any trouble in walking after the first few days out of bed. In three cases there was slight pain in the leg of the operated side for a short time. In one case there was a slight sciatic neuritis from pressure of the sacroiliac synchondrosis. There were no bladder troubles. As to whether there was a permanent widening of the pelvis after the operation: there were three osseous unions, three fibrous unions in process of ossification, and seven completely fibrous unions; one case was without union after one year and nine months, having formed a pseudoarthrosis. Thus we see that fibrous union predominates. In literature the author has found records of 30 cases of labor after pubiotomy. Of these 18 labors terminated spontaneously or by version or extraction with living children; in 12 a fresh pubiotomy had to be done or a cesarean section performed. Of the author's cases eight had labors after the operation; 7 terminated spontaneously, and one required a renewed operation. The conclusions offered are that functional impotence does not generally result from pubiotomy; that fibrous union is the rule; and that the normal diameters are restored, any permanent dilatation being the result of a bad union of the wound.—*Annales de Gynécologie et d'Obstetriques.*

Intoxication with Nitroglycerine Among Operatives in the Powder Factory at Liri.—Duilio Balestra has made examinations of a considerable number of operatives in the powder factory at Liri, who were suffering from intoxication from nitroglycerine used in the process of manufacture of solanite and balistite. The symptoms produced were headache, vertigo, ringing in the ears, amblyopia, nausea, etc. In the process nitration, separation, and washing are used, in all of which the materials are agitated, so that vapor is evaporated and inhaled by the workmen. It may also be imbibed through the skin. An examination of the blood of the operatives was made, as well as a complete physical examination. The symptoms observed were due to nitroglycerine circulating in the blood; there were found characteristic spectra of methemoglobin. Brief histories of twelve cases were given. The author was surprised at the small number of cases affected by the drug. It was noted by the laborers that the use of alcohol made the symptoms more likely to occur, and they avoided the use of alcoholic drinks. In acute poisoning there is a lowering of arterial tension, by dilatation of the small arteries, due to weakening and paralysis of the vessel walls; the pulse is large and soft; this causes changes in the cerebral circulation. In chronic cases there were slow pulse, almost bradycardia, and a hard radial pulse. This would suggest that there is an action in the system such as to neutralize the phenomena of vasodilatation. The most important symptom is headache, of a dull type, in the frontal and occipital regions. The alterations in the reflexes were not notable. Gastrointestinal symptoms were next in order of frequency; they were pain in the abdomen and meteorism due to a slight paresis of the muscular coats of the intestine. In two individuals there was a slight diminution of hemoglobin. No other appreciable changes were found in any of the cases. There were permanent alterations in none of the organs.—*Giornale di Medecina Militare.*

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THE PATIENT OF MODERATE MEANS.

A STRIKING anomaly in medical practice, which has frequently furnished a text for comment by both physicians and laymen, has been the fact that, whereas the wealthy and the poor are able to command the most expert medical service, this privilege is apparently denied to the person of moderate means. This fact is brought into sharp relief when the case is an obscure one, requiring the services of many expert diagnosticians and laboratory investigators. In his delightful book entitled "One Hundred Surgical Problems" James G. Mumford, in discussing a case of this kind, vividly presents the situation regarding this class of patients in the following words:

"I have long held that our present method of dealing with persons of small means who are the subjects of obscure illness is unsatisfactory. Patients of the poorest class can secure expert examination and advice by entering a large hospital, where they have the benefit of numerous consultations with different experts. Much in the same way wealthy persons can employ the services of numerous experts to determine their ailments while they pay large fees for such information. Persons of limited means, however, must not expect to be treated as paupers, nor can they afford numerous expert opinions. Such was the case with Mr. M. He lay in bed many months without a satisfactory investigation of his case. His family physician, although a man of excellent attainments, was unable to provide several expert opinions, and the patient suffered from that fact.....I believe the time will come when it will be possible for groups of physicians, acting in concert, to investigate and treat diseases of persons in small circumstances and at moderate fees. As the situation stands at present most of those unfortunate patients are cut off from the best of modern scientific medicine."

This is a situation the reality of which must impress every practitioner. The remedy suggested by Dr. Mumford is an admirable one. Surely in every large community there will be found a number of men engaged in special lines of practice who would be willing to cooperate for the benefit of the patient of moderate means, without loss to themselves or hardship to the patient. Such cooperation would be particularly feasible in the case of physicians having offices in the same building.

PSYCHOGENOUS AFFECTIONS WHICH ARE NOT HYSTERICAL.

NOTHING is more needed at the present day than a monograph on psychogenous affections in subjects free from hysterical stigmata who do not present symptoms of major hysteria. Such conditions are of daily occurrence. Nothing is more common than psychic and somatic disturbances following violent outbursts of temper or thwarting of the will in vigorous women; lovesickness, with all that it implies, is seldom mentioned in textbooks, nor is jealousy. Monographs exist on these subjects but they are among the curiosities of medical literature. Sudden grief or other psychic trauma may play pranks with the soundest individuals, yet there may be no suspicion of hysteria and no syndrome of nerve exhaustion. The manifestations may consist in the simulation of organic disease, especially phthisis—rapid loss of weight, night sweats, a hacking cough, etc. This picture may shift suddenly to something quite different, but after a variable interval the original state of good health returns spontaneously. In order to study the literature of such phenomena it is necessary to read works of a psychophysiological bent, for we do not find them among clinical writings.

At the recent annual meeting of the Deutsches Verein für Psychiatrie (*Deutsche medizinische Wochenschrift,* August 3) Bonhöffer takes up this subject, but unfortunately he deals with psychic psychogenous affections only and the more interesting somatic disorders are not discussed. He considers merely all psychic affections on a degenerative basis which have no known organic substratum and which stop short of the major psychoses. He does not mention the phenomena usually considered under psychasthenia (phobias, obsession, fixed ideas), and his object is evidently to separate from hysteria many severe psychic psychogenous affections which have usually been confounded therewith. Some of these are epileptic twilight states, hallucinations of prisoners, paranoid states in degenerates, poriomania, etc. Elsewhere he speaks of depressive states in constitutionally depressed individuals, which result from distressing experiences and may develop into paranoid states.

PRECOCIOUS TERTIARY LESIONS FOLLOWING TREATMENT OF EARLY SYPHILIS BY 606.

SINCE tertiary lesions occur in a relatively small proportion of syphilis cases and then as a rule in connection with some accessory factor, they have not been looked upon as an integral part of the disease. Were they such any remedy which tends to shorten the course of the disease might be expected to cause an early appearance of gummatous lesions which ought naturally to pursue a mild course. Neither mercurials nor iodides, however, have ever been accused of hastening the development of syphilis in this manner. On the contrary, their early and persistent use in the secondary period has usually been regarded as the best guar-

antee against the appearance of tertiary lesions, the latter being regarded in the light of occasional and preventable sequelæ. From another viewpoint malignant syphilis is characterized in part by early supervention of tertiary lesions, sometimes in spite even of vigorous and timely treatment.

It is therefore a matter of surprise to find that Wehner of Berlin has placed on record a series of cases in which the early use of Ehrlich's remedy appeared to precipitate the development of tertiary lesions (*Münchener medizinische Wochenschrift*, August 8). The first patient, a young man, who had relapsing papules in the throat after a course of inunctions, received one intramuscular injection of 606 which caused the papules to subside rapidly. Three months later a gumma appeared in the tongue. The patient was placed on mixed treatment and promptly recovered. He was next given a second injection of salvarsan and has since remained well. The other cases were similar and the author finds such material in literature by no means rare.

Wehner believes that arsenobenzol, usually so efficacious against tertiary lesions, is, nevertheless, somehow able to hasten the evolution of the latter in exceptional cases. He suggests that in destroying the bulk of the spirochetes it may reach a few of the latter in such minute quantities as to irritate and activate them. He would, therefore, always employ mercurials with salvarsan, whether jointly or alternately. The latter should also be given in a second injection if there is any suspicion of tertiary accidents.

BACCELLI'S PHENOL TREATMENT OF TETANUS.

A BRIEF abstract of Prof. Baccelli's article on the results of the application of his carbolic-acid method of treating tetanus in nearly two hundred cases appeared in a recent number of the MEDICAL RECORD. The percentage of recoveries is startling. Some years after the introduction of the antitoxin treatment an analysis of a hundred cases or thereabout showed a mortality of over one-half; but the objections were made that many cases included were mild and would have ended in recovery under any plan of treatment, while many cases had never been reported; and further that serotherapy could not be looked upon as essentially and inevitably curative when merely superadded to the symptomatic treatment already in vogue for years. The prophylactic value of the serum, on the other hand, has hardly been seriously questioned.

The combined fatalities under Baccelli's method are only a little over 17 per cent., a remarkable showing from any point of view. There may be some objection to the validity of the conclusions suggested by these figures. It may be argued that in tetanus one is morally bound to use antitoxin and sedatives, and as a matter of fact it is nowhere claimed that the patients recovered on phenol injections alone, while it is sometimes stated expressly that serum was also employed. It will naturally be charged that scores, perhaps hundreds, of fatalities have been suppressed for some alleged reason, or were never placed on record. Baccelli has anticipated this criticism by the very careful classification of his material into mild, medium, severe, and foudroyant cases.

It is usually assumed that between 10 and 20 per cent. of all cases of tetanus have some tendency to spontaneous recovery. These cases are classed by Baccelli under mild and medium and make up a little over 20 per cent. of all his material. None of this series was lost. At the other extreme are the fulminating cases, none of which was saved with the exception of one recovery after intraspinal injections of phenol. To judge of the value of the treatment we must depend on the outcome in the severe and very severe cases. Of the latter eleven are eliminated by Baccelli because the phenol was not employed in sufficient dosage. The net material comprises one hundred and twenty-one cases, of which ninety-four are termed severe and twenty-seven very severe. Of this number but seven patients died, a mortality of less than 6 per cent. for a type of disease in which there is absolutely no tendency to spontaneous recovery, and upon which even antitoxin and the most heroic sedative treatment have made but little impression. For the present the surgeon can hardly refuse to employ Baccelli's method by the full technique, in addition to all other remedies of proved value in every case of severe tetanus. We should then, before long, be in position to answer the question "is tetanus conquered?"

THE MERITS OF A RELATIVELY LOW PROTEIN DIET.

A DISCUSSION dealing with the merits of a relatively low protein diet took place at the recent meeting of the British Medical Association at Birmingham. Among others who spoke was Professor Chittenden of Yale. Dr. Chalmers Watson of Edinburgh in reviewing Chittenden's address said, in part, that at the present time the great desideratum was not the mere reassertion of views previously regarded as established, but the attainment of new facts, the critical analysis of the same, and the exercise of due caution in applying the results of experimental data to the conditions obtaining in everyday practice. The speaker's clinical experience led him to accept the conclusions of Chittenden that the ordinary conceptions of the protein requirements in man were exaggerated. However, no general statement could be laid down for universal application, for in the case of tuberculous individuals a somewhat higher standard of protein was necessary, gouty people on the contrary required less protein. Even in such cases caution was needful with regard to the indiscriminate giving up of the animal portion of the dietary. Too large amounts of farinaceous foods were not indicated for the gouty. Watson referred to his experimental work carried on during the past eight years in the physiological laboratory of the University of Edinburgh, in which his observations dealt not only with the absolute quantity, but also with the source and nature of the protein food given. It was pointed out that there had been a great increase in the consumption of animal food during the past fifty years, the increase in Great Britain having been from 3 pounds per head per annum to

50 pounds. A too exclusive protein diet interfered with the proper growth and development of an animal. C. B. Paul had shown that a meat diet diminished the size of the reproductive organs, and other organs, notably the mammary gland, suffered in a similar way, while the thyroid gland was hypertrophied. On the whole, therefore, Watson agreed with the main contentions of Chittenden, that a reduction in the protein content would increase the power of resistance in a small mammal. There are those, of course, who carry this teaching too far by advocating a diet entirely free from meat. It would seem to have been proven in a satisfactory manner that the majority of people eat more meat than they need, but it has not been proven that no meat is required by the human animal. A mixed diet is best adapted to the majority of people and some need less protein content than others. A person usually thinks he knows the diet best suited to him, but his conclusions are very apt to be based upon his appetite, and unbiassed medical advice on the matter is indicated, though even this, for obvious reasons, is often difficult to get. The old saying still holds good to some extent, that what is one man's meat is another man's poison.

Muscular Atrophy of Traumatic Origin.

From the number of neuroses which are constantly coming to light one might conclude with justice that the nervous system of mankind is still in the active evolutionary period, a conclusion also warranted by many other phenomena—for example the relative recency of paresis and locomotor ataxia in comparison with the much greater antiquity of syphilis. To ascribe some of these phenomena to retrogression is to introduce no new element, since many evolutionary changes are virtually defects, and a given change may represent an asset or deficit according to the point of view. Quite recently several cases of limited muscular atrophy following trauma have been placed on record, and are generally regarded as new in type. They also differ among themselves. Schuster's case was free from other trophic disturbances and from vasomotor complications and because of fibrillary twitchings and increase of tendon reflex on the affected side he ascribed the condition to a spinal lesion. The atrophy was transitory, but returned many years later. A different type was described by Cassirer before the Berlin Society for Psychiatry and Nervous Diseases last May (*Berliner klinische Wochenschrift*, July 31), and similar cases have been reported by Sudeck. A man stumbled and threw all his weight violently on his left foot. This became painful and the patient had to walk with two canes, finally taking to his bed. There was no external injury. The entire musculature of the extremity atrophied, including some focal rarefaction of the bones, and various vasomotor and trophic symptoms came in evidence. The traumatic nature was manifested in the fact that recovery slowly set in after prolonged rest, although a high degree of atrophy persisted. The injury appeared to have affected the trophic function of the nerves, which is known to be amenable to peripheral influences. In the discussion of these cases the point was made that ordinary progressive muscular atrophy might begin locally from traumatism and then become generalized, but in the cases cited there was no progressive involvement.

Function of the Spleen.

The function of the spleen is practically unknown, although the organ has been generally believed to be connected with the genesis and destruction of the erythrocytes. The fact that the organ can be removed without any apparent injury to the economy has furnished a stumbling block to investigators. It was known that the organ stood in some relationship to digestion, since it enlarges after a meal; that the passage of its blood through the liver must have some meaning, and finally, as hinted above, that it appeared to be a blood-making as well as a hemolytic organ; but no real correlation could be deduced from these facts. Ascher (*Deutsche medizinische Wochenschrift*, July 6) has invoked biochemistry to shed light on the nature of the splenic functions. It has long been known that the organ is rich in iron, a substance essential to life through its connection with oxidation. Experiments tend to show that the organ is essential for iron metabolism. A splenectomized man excretes more iron than his intact control. The spleen clearly takes up and retains iron set free during metabolic processes, *i.e.* as a result of cytolysis. In splenectomized animals the number of red corpuscles is decreased, provided the food is poor in iron. The newly born child is richer in iron than the adult, so that milk, its natural food, may be poor in iron without detriment to it. Many similar facts have accumulated which tend to support Ascher's theory.

News of the Week.

Cholera Spreads.—A despatch from Milan, Italy, dated August 31, states that cholera is spreading and that its ravages have become alarming. Premier Giolitti is quoted as saying that 800 towns and villages are stricken. Newspapers declare that three-fourths of the population of Leghorn, where over 800 cases have been reported since June 7, have fled. The epidemic is severe in Liguria and the Genoese Riviera. Conditions in Calabria and Sicily are represented as serious. The peasantry are convinced that the Government is poisoning the wells and are preparing to wreak vengeance on the officials. The villagers of Gricola have murdered the tax collector, holding him responsible for the cholera outbreak in that locality. Reports from Constantinople are likewise disheartening. Returns up to August 31 showed 75 cases and 31 deaths from the disease in Constantinople. There has been a heavy mortality in the Turkish garrison and at the Albanian camps. At Uskup, in the vilayet of Kossovo, there is an average of 50 cases daily, while at Monistir, in Macedonia, the disease is equally virulent. As a precautionary measure against the spread of infection all the old houses in the ghetto district of Constantinople have been ordered burned.

Killed by Automobiles.—The National Highways Protective Society reports that in the State of New York for the past three months 74 persons were killed and 522 injured by automobiles, while during the same period of 1910 there were 51 killed and 222 injured. This is an increase of more than 45 per cent. in the number killed. During the month of August 26 persons were killed by vehicles in the streets of New York City and more than 200 seriously injured: in the State outside the city 24 persons were killed and 192 injured. The report states that deaths and injuries

by taxicabs have decreased from 33 per cent. to 1 per cent. and that most of the accidents were caused by careless owners or private chauffeurs.

New Pavilion for Measles.—The Department of Health has closed a contract for the erection of a pavilion, at a cost of over two hundred thousand dollars, for the isolation of measles on the grounds of the Willard Parker Hospital at the foot of East Sixteenth street.

Gifts to Charity.—Under the will of Mitchell Valentine the Presbyterian and Hahnemann Hospitals are the largest beneficiaries. Each of these institutions will receive a percentage of the estate amounting to about $1,146,826. The Presbyterian Hospital gift is to be known as the "Isaac E. Valentine Memorial Fund," and that to the Hahnemann Hospital as the "Stephen Valentine Memorial Fund." The Peabody Home receives $100,000, which is to be known as the "Alexander Valentine Fund."

The contest filed against the will of the late Walter E. Duryea has been withdrawn and the will admitted to probate, thus making possible a distribution of the funds bequeathed to philanthropic institutions. Among these bequests are: Nassau Hospital, Mineola, L. I., $25,000 outright and $75,000 upon the death of the testator's sister; Children's Home, Mineola, $5,000; Roosevelt Hospital, $15,000, to establish three memorial beds in the men's, women's, and children's wards; Mountainside Hospital, Montclair, N. J., $7,000; Montclair Convalescent and Fresh Air Home, $2,000.

Medical Society Purchases Journal.—The Iowa State Medical Society has authorized the purchase of the Iowa *Medical Journal* from Dr. Edward E. Dorr of Des Moines, its editor and proprietor. The official journal of the society will be under the editorial management of Dr. David S. Fairchild of Clinton.

Dr. Walter H. Fuchs and Dr. James B. Pritchard have been appointed members of the St. Louis Board of Health.

Dr. Charles Chassaignac has been appointed chairman of an executive committee of five to map out plans and carry forward the work of cleaning and sanitation, the need of which has become imperative in New Orleans, in cooperation with the city and health authorities.

Hospital for New London.—The Lawrence Free Hospital, made possible by the generous gift of $500,000 from the late Sebastian Duffy Lawrence, is rapidly nearing completion. The building is thoroughly modern in every respect and the equipment is said to be the finest in the State of Connecticut.

Seattle's New Hospital.—The new Providence Hospital of Seattle, which has cost approximately $1,000,0000, will be opened on September 23. The building contains five hundred rooms and accommodations for 300 patients.

Many Cases of Rabies.—Since January 1 the Health Department has examined 3,469 animals for rabies and 326 have been found to have the disease, while for the corresponding period of 1910 3,010 animals were examined and 172 cases of rabies found, thus showing an increase of 154 cases of rabies for this year. During the same period 279 people have received the Pasteur treatment in New York City and 479 from villages and small towns outside the city. During 1910 180 persons received the treatment in the city and 437 outside. In other words the Health Department has administered the Pasteur treatment to 899 people thus far this year as against 626 for the corresponding time in 1910.

Good Typhoid Record for Boston.—From January 1 to August 25 there have been only 225 cases of typhoid fever reported in the City of Boston, the smallest number for the corresponding period in any of the past five years. Since the second week in July 58 cases have been reported against 73, 103, 117, 125, and 160 in the preceding five years.

Less Typhoid Fever in New York.—For the week ending September 2 there were 121 cases reported, as against 158 for the same week last year; the average for this week is 125 cases. No new cases have developed at the Roman Catholic Asylum in the Bronx, where 31 cases were reported for the previous week. In the 56 days previous to September 2, 1,042 cases of typhoid fever have been reported to the Health Department from all boroughs, an increase of 241 cases over the same period of 1910.

Drs. L. Haynes Buxton and A. L. Blesh, members of the faculty of the Oklahoma University Medical School, have resigned. They allege as the reason for tendering their resignations that the school is governed by politicians and is being used to further political ends.

Dr. Fred H. Albee was recently appointed Professor of Orthopedic Surgery, Vermont Medical College.

To Placard Typhoid Fever in Philadelphia.—By order of Dr. Joseph S. Neff, Director of Public Health, all houses in Philadelphia containing cases of typhoid fever are hereafter to be placarded. It has been found that many cases result from infection through milk and also by importation through persons returning from vacations. Certain regulations with regard to the distribution of milk to houses conntaining cases of typhoid fever and the care of the used receptacles have been operative for some time, but the additional precaution of placarding is thought necessary to make other measures effective.

Professor Georges Dieulafoy died in Paris on August 18. He was one of the leading clinicians of France, a pupil and worthy successor of Trousseau. He was born in Toulouse in 1839, but passed all his medical life in Paris. He was professor of clinical medicine at the Faculté de Médecine, attending physician to the Hôtel Dieu, and member of the Académie de Médecine. His "Manuel de Pathologie Interne," of which sixteen editions have been published in France, has recently been translated into English.

Proposes a Health League.—Dr. G. B. Young, Health Commissioner of Chicago, is advocating a general citizens' health league in order to arouse public interest and enhance the efficiency of the health departments. Dr. Young would form such a league by uniting all minor organizations interested in public health work.

Colorado State Medical Society held its forty-first annual meeting at Steamboat Springs on August 15, 16, and 17, when the following officers were elected for the ensuing year: *President*, Dr. W. A. Jayne of Denver; *First Vice-President*, Dr. W. F. Senger of Pueblo; *Second Vice-President*, Dr. H. C. Dodge of Steamboat Springs; *Third Vice-President*, Dr. F. D. Dennis of Colorado Springs; *Fourth Vice-President*, Dr. B. D. Beshoar

of Trinidad; *Secretary*, Dr. Melville Black of Denver; *Treasurer*, Dr. George Miel of Denver.

The American Hospital Association.—The thirteenth annual conference of this association will be held at the Murray Hill Hotel, New York City, September 19, 20, 21, and 22, 1911, under the presidency of Dr. Warren L. Babcock of The Grace Hospital, Detroit. The secretary is Dr. J. N. E. Brown of Toronto, Ontario.

Health Work Among the Indians.—The Indian Bureau has inaugurated a plan by which it hopes to reduce the high mortality among the Indians. The reports show that the death rate is two and a half times as great among the Indians as among the white race, and that the average mortality for tuberculosis is 256 per cent. higher for Indians than for whites. The plan which the government has in view includes a house to house campaign by physicians, such as already has been started on the White Earth Reservation in Minnesota with apparently good results, open air sleeping at the Indian schools and sanatoriums, and moving picture shows demonstrating sanitary methods of living.

Smoke Nuisance Abated in New York.—Since the sanitary law in regard to the smoke nuisance was amended two years ago last July, the Department of Health has been instrumental in making more than 2,000 arrests for violation of this law. In nearly all the cases convictions were obtained and $6,000 has been collected in fines. The practically smokeless condition of New York has been secured, not by forbidding the use of soft coal, but by compelling the use of smoke consumers.

Dr. P. G. Spinelli, Professor of Gynecology at the University of Naples, was entertained at the Italian National Club on September 4 at a dinner at which 150 physicians from New York and Philadelphia were present. Dr. Spinelli is in this country studying the hospital conditions here.

Obituary Notes.—Dr. George Faulkner of Jamaica Plain, Mass., a graduate of Harvard Medical College in 1847, founder of the Faulkner Hospital in Jamaica Plain, member of the Medical Society of the State of Massachusetts, died at his home August 27, aged 92.

Dr. Walter Henry Maynard of New York, a graduate of New York University in 1898, died September 2.

Dr. John Duke Waller of Oak Park, Ill., a graduate of Rush Medical College, Chicago, 1883, died at his home August 22, aged 59.

Dr. Henry Arnold of Foster Center, R. I., a graduate of Vermont Medical College in 1880, member of the State Medical Society, died at his home August 24, aged 57.

Dr. Joseph Hensley of Oklahoma City, a graduate of Hahnemann Medical College and Hospital of Chicago in 1871, died at his home August 21, aged 70.

Dr. Thomas J. Jones of Des Moines, Ia., who graduated in medicine in 1884, died suddenly August 21, aged 57.

Dr. Charles T. Remme of St. Louis, Mo., a graduate of the Missouri Medical College, St. Louis, Mo., in 1877, died at his home August 25, aged 62.

Dr. Guy Clifford Powell of Peoria, Ill., a graduate of the Louisville Medical College, Ky., in 1898, died in Chicago, August 24, aged 43.

Dr. Jehiel T. Moore of Minneapolis, Minn., a graduate of McGill University, Montreal, Can., in 1874, died at his home August 19.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE NEW RADIUM INSTITUTE—RADIUM RESEARCH AND THERAPY—HOSPITAL REFORM AND THE INSURANCE BILL—CREMULE OR LOZENGE—OBITUARY.

London, August 18, 1911.

The Radium Institute is now an accomplished fact. This is the week of its opening for the reception of patients. You probably know that the idea of establishing it arose with King Edward, who mentioned it to Viscount Iveagh and Sir Ernest Cassell. They took up the matter at once and determined to build and equip such an institution, and they have carried out their determination. The building is in two parts, one for the necessitous, the other for paying patients. Everyone admitted must be sent by his usual attendant as suitable for the treatment. The amount of radium in the institute is estimated to be worth some £50,000. Probably no other establishment owns as much, and apart from that fact it is doubtful whether another radiotherapeutic establishment as proposed is in existence. On the ground floor there are both light and dark consulting rooms completely equipped. On the first floor are twelve rooms for treatment, each furnished with a couch and easy chair for the patient to occupy during each application. On the second floor are the laboratories with all up-to-date appliances for research, as well as for separating the radium from pitchblende and mounting it in various ways for use. Everything seems to bode well for the institute, and had King Edward lived to see the realization of his idea he might have been as surprised as he must have been pleased with the prospect of what may be achieved.

Radiology has engaged so many enthusiastic students that the literature of their researches is becoming almost oppressive in quantity. In all directions we are continuously offered new contributions. There were quite a number at the Birmingham meeting; perhaps the most important was by Professor Saubermann of Berlin, for he passed in review all the work on which is founded radium-therapy. He showed a number of tables which gave the results of absorption of the emanations by the fluids of the body, the effect on the tissues of the passage through them, and the disintegration products. A great deal of apparatus was also shown and the chairman expressed the sense of those present when he told the author they were much indebted to him for his valuable contribution and demonstration. Certainly, from his careful review, it appears that there is a very close connection between the radium emanation and the human organism—or rather one should say certain processes which take place in that organism. One of the most remarkable of these is the increase in the action of various ferments, as the peptic, lactic, diastatic, glycolytic, etc., as to each of these and other actions the professor gave the name of the worker who proved it and the date of his contribution. Blood-pressure, cardiac activity, secretion, etc., are also influenced; in fact, the entire field of metabolism. An increase of metabolism, secretion and excretion without depression, but rather with a nerve sedative and tonic effect, should go far to explain the therapy, and these effects would appear to be brought about by the disintegration products

—radium A, B, C, etc., which are left for a time in the tissues. It has been stated by several observers that in the pitchblende mines, where the air is highly radioactive, gout, rheumatism, and neuralgia are unknown. Observations have also been made as to the relation of winds to the relative activity. Similar differences have also been shown at various springs.

Dr. Sequeira gave an account of his experience at the London hospital, where he has treated over 400 cases with radium. In early cases of rodent ulcer a cure was to be obtained, but it could not be maintained that all these ulcers were amenable to the treatment. Involvement of cartilage and bone and the spread of the disease into the orbital cavity were likely to prove fatal. Several speakers testified that much good has been done with a small dosage of radium.

Dr. Armstrong of Buxton reported good results from the use of radium water by drinking, inhaling, or bathing, the two latter in conjunction with oxygen. In gout and rheumatism, various neuroses, and other conditions he had employed high dosage without any ill effect. He found an increase of excretion, of digestion, and, in fact, of metabolism generally.

Professor Farr of New Zealand related some interesting observations on the effect of radioactive water on fish. It was seen that ova placed close to the opening of certain artesian wells soon died, but not when placed at a considerable distance. Careful examination showed that the waters gave off a gas resembling the emanation from radium.

In the section of "Medical Sociology," whatever that may mean, the hospital administration and reform were discussed by non-medical contributors. Among these was Mr. Neville Chamberlain, who described the efforts that have been made to improve the out-patient department at the General Hospital. He had found that the medical staff were indisposed to select cases suited for this form of relief and to exclude those who should go to their private doctor or to a provident dispensary. Such an institution had been founded in Birmingham for the express purpose of improving the conditions of the out-patient departments of hospitals, and the appointments on the staff were open to all qualified men. Mr. Chamberlain favored the State aid of voluntary hospitals and some subsequent speakers agreed with him, but others were reluctant to allow the Government to claim a right to interfere.

Dr. L. Shaw of the General Hospital discussed hospital reform in relation to the Insurance Bill. He asserted that in future they would not need to provide checks to keep out unsuitable cases, but attractions to bring in suitable ones, so that the reformers might become either hospital enders or hospital menders. The first wanted to municipalize the hospitals, the others to continue the voluntary system. He held that insured persons would have to be dealt with at the hospitals only in consultation in cooperation with their insurance doctors. Therefore, hospitals could not admit them for such treatment as their insurance provided.

Sir J. Sawyer, who has at times evinced interest in pharmacological questions, proposes in The *Lancet* to make our lozenges more like sweetmeats. In shape he prefers a small globe, as I know others do. He suggests as a base for such a ball chocolate cream, which should be an encouragement to prescribers to employ their own formula. The fruit basis is pretty freely used, especially that of black currants, but there is room for chocolate. He states that this is made by triturating in a heated mortar Theobroma cacao (freed from lumps) with sugar (saccharose), adding water to make a paste, and flavoring. The cream is made by filling a small globular envelope of this mixture with a little milk mixed with sugar and evaporated to a paste. It is this latter paste which he recommends as a base for our prescriptions. Menthol, eucalyptus, borax, zinc sulphate, and many other drugs could be thus used, simply or in combination. To distinguish them from trochisci, he proposes the term "cremules," baptizing it "cremulæ." In a hurry he says a simple cremule could quickly be medicated by injecting into its center a minim or so of the drug needed with a hypodermic syringe. I suppose he has tried this, but the drug should not be one which would spoil the confection by taste or otherwise.

The death has occurred in London of Deputy Surgeon-General John Jones, M.D., late of the Indian Medical Service (retired since 1885). He served during the Mutiny, was with the field force after the capture of Delhi, and present at the actions of Narnone, Karkarala, and Mehndee; also at the capture of Bareilly and the operations in Oude, for which he was awarded the medal. He was M.R.C.S., 1853, M.D. St.And., 1856, M.R.C.P., 1860.

Another Deputy Surgeon-General, Robert Walter Clifton, died on the 16th inst. He qualified in 1857, and of course had retired for several years.

The death of Lieutenant Denis E. C. Pottinger, R.A.M.C., has taken place at Barlilly, India. He took the M.B., Ch.B. at the University of Edinburgh in 1907 and entered the Army Medical Service in the following year. He was only 30 years of age.

The death is also announced at Swatow, China, in his 46th year, of Dr. C. H. D. Morland, M.B. Durh., 1890, F.R.C.S. 1897.

Dr. John Sellars, who was M.O.H. and Coroner for Dundalk, has died in a private hospital in Dublin. Outside his professional work he was a familiar figure at the meetings of the National Rifle Association. For several years he was regarded as the Irish champion. He shot with the Irish eight for the Elcho Shield and won the Lord Lieutenant's prize. His last appearance at the ranges was at Bisley in July, 1910.

Dr. Charles William Low, M.O.H. for Stowmarket, has died there at the age of 50. He was a Bart's student, took his M.R.C.S. in 1884 and M.B. Durham, in 1886.

Dr. Ouston, F.R.C.S., Surgeon to the Newcastle Throat and Ear Hospital, though only 42 at his death (on the 1st), had established his position as a skilful specialist and was highly esteemed as a consultant by the profession in the North of England.

Influence of Altitude on the Treatment of Eczema in Infants.—A. B. Marfan lauds the favorable influence of altitude in the treatment of the severe generalized forms of eczema, when the itching and irritation are intense, and the child cannot sleep and loses appetite. If such a child be sent up into a mountainous place at an altitude of 1,000 to 1,500 meters, after a week or so the child will be able to sleep and eat, the eruption will become dry, and soon the little patient will be able to go home without having more than a transient return of his trouble. Since this disease is generally self-limited at about two years of age this treatment allows us to tide over until that favorable period has been reached—*Le Bulletin Médical.*

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

THE EPIDEMIC OF TYPHOID FEVER IN OTTAWA—REPORT OF COMMITTEE OF CONSERVATION OF CANADA—REPORT OF MEDICAL OFFICER OF HEALTH OF TORONTO—RATS IN MONTREAL AND IN MANITOBA—STATISTICS OF THE MONTREAL HEALTH DEPARTMENT'S ANNUAL REPORT—HEALTH CONDITIONS IN TORONTO—ACTIVITY OF THE ANTI-VACCINATIONISTS OF MONTREAL—COCAINE IN MONTREAL—HAMILTON HOSPITAL FOR THE INSANE DESTROYED BY FIRE—INSPECTION OF SCHOOL CHILDREN IN ONTARIO—THE METAL TRADES COUNCIL OF CANADA AND CHILDREN'S TEETH—DEATH OF DR. CHURCH OF MONTREAL.

Montreal, August 29, 1911.

The report on the epidemic of typhoid fever occurring in the city of Ottawa in the early spring of this year has been issued recently by the committee on public health of the Canadian Commission on Conservation. The immediate cause of the epidemic was the infection of the water supply by polluting matter, which was sucked through joints of the intake, an old aqueduct having been very improperly used as a sewer. The pollution of the water supply began at about the middle of December, and was mainly due to the unusual lowness of the river and to the freezing of the shallow places to the bottom, thus diverting the currents of polluting matter directly into the water supply. The pollution was preventable and was due in the first instance to carelessness, the conversion of an old aqueduct into a sewer, and, secondly, to the neglect of the municipal authorities to follow the recommendation of Mr. Hazen, on October 5, to treat the water supply with hypochlorite of lime. The continuance of the epidemic was due to various causes, the most conspicuous of which were the inefficiency of the hypochlorite to effectually sterilize the water until about February 22; to contact with persons ill of the disease; to preventable insanitary conditions; to defective plumbing. The lessons taught by the epidemic were that water is generally the chief mode by which typhoid fever is spread. The epidemic in Ottawa was plainly proven to be entirely due at first to a contaminated water supply. The investigation brought out the fact that in Ottawa there were filthy slums in which all the conditions favorable to the spread of typhoid fever were present, and lastly, that hypochlorite of lime is an efficient temporary purifying agent of water, but that in order to insure a pure water supply a reliable filtration system must be installed. The case of Ottawa, like those of Montreal and Toronto, and of many cities of the United States, only goes to show that so long as laxity is observed in the safeguarding of the water supply just so long will typhoid fever prevail. The Commission of Conservation of Canada has published a report during the past few weeks relating to the conservation of agricultural lands, fisheries, game, and minerals. From a perusal of the report it may be gathered that in the agricultural districts of Canada the domestic water supply is mainly procured from wells. That in a large number of instances these wells are unprotected and become polluted, the consequence being that typhoid fever is fairly prevalent in the rural parts of the Dominion.

As in the United States, so in Canada, coal mine accidents are reprehensibly frequent. The death rates per 1,000 men employed in the coal mines of Canada and the United States are greater than in any other country of the world for which accurate statistics are available. Furthermore, the report points out that fatalities in coal mines in the United States and Canada are on the increase, while Great Britain, Belgium, Russia, and France show a gradual decrease.

The report interprets the situation in this way: (1) The danger inherent in the work can never be eliminated, but might be brought down to a minimum, as indicated by the low, constant death rate in Belgium, Great Britain, and France. (2) Coal mine explosions occur very frequently in Canada and the United States. The causes for this loss of life are complex, and neither the operators nor the miners willingly submit to them. The committee recommends that careful investigation of conditions prevailing in Canadian coal mines should be undertaken with a view to remedying, at least, some of the abuses. Recently there has been a somewhat remarkable prevalence of rats in and about the docks of Montreal. The news, too, has come from Manitoba that there has been an invasion of rats on a large scale into Manitoba from the States to the south. This invasion has progressed steadily for some years past, the rats appearing further north each year and always in increasing numbers.

According to the annual report of the Montreal Health Department, issued recently, the death rate of the city increased slightly during last year, while there was a falling off in the number of births. The increase of the death rate, 0.37 per 1,000, is said to have been partly due to an epidemic of measles which occurred at the end of 1910 and to the large number of fatal cases of typhoid fever at the commencement of this year. The decrease of the birth rate amounted to 0.70 per 1,000 and the marriages were augmented at the rate of 0.56 per 1,000. It is shown in the report that the deaths for 1910 numbered 10,221, or 22.40 per 1,000, as compared with 22.08 per 1,000 of the previous year. The births numbered 16,616 or 36.45 per 1,000, as compared with 37.15 for the preceding year. As for marriages, the report shows that they numbered 4,386 or 9.62 per 1,000 inhabitants, as compared with 9.06 of the year before.

Dr. J. E. Laberge, head of the contagious disease department of the Montreal Board of Health, referring to the increase in the number of contagious diseases, stated that in his opinion this increase may be accounted for by the fact that physicians are complying more regularly with the provincial regulations. He also draws attention to the increasing number of cases of tuberculosis which occur in Montreal and thinks it is a matter that requires attention as it constitutes a public danger. The number of cases of tuberculosis registered at his department in 1907 was 919; in 1908, 1,000; in 1909 the registration was 1,114, and in 1910 the number had increased to 1,336. Dr. Charles Hastings, medical officer of health of Toronto, has handed in his report recently to the Board of Control. According to this report the following conditions are to be found to a lamentable extent: "High rents are being collected for small houses, dark rooms, tenement houses unfit for occupation; inadequate water supply; impaired and filthy yards and lands; sanitary conveniences which, by their position or for various reasons, have become a public nuisance, a menace to public health, a danger to public morals, and an offense to public decency." The report also stated that insanitary lodging houses

are increasing in Toronto. From ten to twenty men of foreign birth are often crowded into a small house. There are ninety-two tenement houses in Toronto, 447 people living in basements and cellars. The foreign colony is chiefly composed of Macedonions, Italians, and Jews. In view of the crusade against smallpox which has been initiated by the Provincial Board of Health of Quebec and by that of the city of Montreal, the anti-vaccinationists have caused to be distributed by thousands circulars advising against vaccination. The use of cocaine is on the increase in Montreal. According to the annual report of the Superintendent of Police of that city, one hundred and fifty arrests have been made since July on charges of using or selling the drug. Hamilton Hospital for the Insane was partially destroyed by fire on August 1. Eight of the inmates perished in the burning building.

The Ontario Medical Council passed the following resolution with regard to the inspection of schools at its recent annual meeting. That the council in the interests of school children recommend to the Minster of Education the advisability of taking a physical census of school children with a view to compare the health and physical condition of children in urban and rural districts, and in the meantime further recommend the training, as in Great Britain, of the students in model schools, normal schools, and faculties of education in such a knowledge of school hygiene as will enable them to recognize common defects and diseases of children.

The following resolution was passed by the Metal Trades Council at its meeting on July 25: Whereas, investigations of our schools have shown that children's teeth are in a deplorable condition of neglect and decay, and whereas the preservation of the teeth is essential to good health and good health essential to the enjoyment of life and, whereas, owing to the poverty or neglect of parents, large numbers of children suffer from an insufficiency of medical care and whereas money spent upon the conservation of public health is well invested, the prevention of disease being much cheaper than its care, and the maintenance of a higher standard of industrial efficiency more economical than permitting physical deterioration, to say little about the human side of the matter, be it resolved, that the Metal Trades Union Council of Toronto place itself on record as favoring free medical treatment as well as free medical inspection of school children, and as a step in this direction it call upon the Board of Education to establish free dental clinics in connection with the public schools, the children's teeth to be periodically examined and treated absolutely free of charge.

Dr. Howard M. Church of Montreal died recently, aged 39 years. The late Dr. Church had been demonstrator of anatomy at McGill University during the past ten years.

Progress of Medical Science.

Boston Medical and Surgical Journal.

August 24, 1911.

The Importance of Determining the Causes of Inebriety. B. T. Burley.
Professor Wertheim's Method for the Removal of Cancer Originating in the Uterine Cervix. H. T. Hutchins.
Suggestion in Medical Practice. G. G. Fernald.
A Report of Sixty Cases of Syphilis Treated with Salvarsan. J. H. Cunningham.

The Causes of Inebriety.—B. T. Burley states that inebriety almost always claims a neurotic legacy from its forebears. With this predisposition, the impulse toward intoxication arises from a desire to escape pain or to escape the exhaustion arising from illness, physical shock, lack of food, or the stress and worry of modern life. Another allied cause is the physical unrest which afflicts the neurotic and the idle. Another exciting cause is the influence of occupation. Salesmen become inebriates from the custom of furnishing dinners and wines to put through a trade. Among the psychological impulses leading to inebriety are imitation, the glorification of pleasure or abandon, and the impulse to increase individual sense to the detriment of common sense, *i.e.* the craving for intense states of consciousness. The history of intoxication shows that it has been exceedingly prevalent at times of rapid development, not only of the individual, but of the race.

Wertheim's Operation for Uterine Cancer.—H. T. Hutchins states that in cases of uterine cancer beginning in the cervix Wertheim's operation is the most satisfactory procedure which one has at present, and the surest. By it the most complete removal of cancer of the pelvis can be done and by its technique the attendant complications are most satisfactorily dealt with, the patient is given the greatest possible chance, and is left, in case a cure is not effected, in the most satisfactory postoperative condition.

Suggestion in Medical Practice.—G. G. Fernald states that the cases amenable to treatment by suggestion are obviously mental or those within the realm of neurology which have as a basis some pathogenic idea or association. But not all mental or psychiatric cases are to be included, only those which show a clear mentality and insight into their condition. There must be a desire for relief and the ability to cooperate. Cases of dementia, mania, confusional insanity, and senility are not among the psychotherapeutist's subjects. The melancholiacs have a strong desire for relief and crave reassurance, and those cases whose attention can be secured and held are good subjects, if of a sufficiently high order of intelligence to cooperate. The difficulty of fixing the attention is the greatest one encountered by the psychiatrist who wishes to employ suggestion in his treatment.

Salvarsan.—J. H. Cunningham, Jr., continues his article on the indications and contraindications for the use of this drug in the treatment of syphilis.

New York Medical Journal.

August 26, 1911.

Forty-six Years of Medicine in New York. F. P. Foster.
The Value of Meat Broths. T. Darlington.
Recent Corrective Tenement Legislation. H. A. Smith.
Modern Vitalism. C. E. Woodruff.
Scab Formation in the Nose. W. P. Porcher.
Malpositions of the Liver. F. LeM. Hupp.
The Diagnosis of Benign Stenosis of the Pylorus and Duodenum. M. Gross.
A Case of Mixed Astigmatism Presenting Symptoms of Brain Tumor. A. Bray and M. Staller.

Medicine in New York.—F. P. Foster presents a retrospect of the development of medicine in New York City during the past forty-six years; reviewing three manifestations of professional activity—the hospitals, the medical schools, and the medical societies.

Value of Meat Broths.—T. Darlington refers to the power of meat broths in stimulating the appetite and the flow of gastric juice. They also contain an abundance of inorganic salts, which play a rôle in the protein changes of the body. Another abundant constituent is gelatin, which is readily digestible and is a proteid sparer, and at the same time does not form aromatic decomposition products.

Corrective Tenement Legislation.—H. A. Smith makes a plea for the abolition of the statute compelling the provision of a vent shaft in all tenement houses. This law has made no provision for venting toilets on "open stairs" such as are provided in the new model tenements, including those for tuberculous families, a number of

which tenements are nearing completion in New York City. The intercommunicating shafts are capable of breeding and transmitting disease and are not in harmony with the most advanced tenement construction. A resolution recently enacted by the New York Academy of Medicine stated, first, that the shaft should not be required, but that the open stairs afforded sufficient ventilation for the baths; second, that the periphery is better utilized for bedrooms than for baths; third, that the resolution be forwarded to departments having jurisdiction.

Modern Vitalism.—C. E. Woodruff concludes his essay on this subject in the following words: "It is quite evident, therefore, that the scientific discoveries of the last couple of decades, together with the failure of the theories of the prior half century, are having a profound influence in modifying all our conceptions of group activity, from the atom to that fond dream of philanthropists—the universal brotherhood of mankind. We now know that all are different kinds of life, and that each kind is merely the result of the cooperation of dependent dissimilars of a lower order practising mutual aid, often if not always through juxtaposition, like enzymes or corpuscles. As physicians, dealing with middle forms in the cell and body, we must take due notice thereof and govern ourselves accordingly."

Scab Formation in the Nose.—W. P. Porcher advances the theory that coagulation of the nasal secretions or scab formation occurs as a result of the inflammatory secretions of the lateral sinuses coming in contact with respired air. This assertion is evidenced by the fact that inflammatory secretion from a tracheotomy wound, or any other wound of the upper respiratory tract, coming in contact with the external air, will produce the same coagulation or scab formation. The natural inference from this is that one should first give free outlet to all pent-up secretions in the lateral sinuses and then administer that remedy which will maintain the fluidity of the nasal secretions, as well as correct the inflammatory conditions producing them. Potassium iodide, in gradually increasing doses, up to very large amounts, has been found to produce this result more than any other drug.

Malpositions of the Liver.—F. Le M. Hupp in discussing this subject reports a case of complete left transposition complicated with cholelithiasis, obstructive jaundice, and pregnancy. Operation was successful.

Benign Stenosis of Pylorus and Duodenum.—M. Gross states that this may be caused by tumors, adhesions, and angulation, and by hypertrophy or stenosis of the pylorus.

Mixed Astigmatism Simulating Brain Tumor.—A. Bray and M. Staller state that mixed astigmatism has been known to give rise to various reflex symptoms, headache, dizziness, actual vertigo, nervous irritability, gastric disturbances, twitching of the muscles of the face, insomnia, diplopia, and, in children, symptoms simulating petit mal have been observed as a result of this error of refraction. These symptoms may manifest themselves individually or they may appear in a group as a symptom-complex, simulating some serious lesion. The case that the authors report is one of mixed astigmatism that gave rise to a series of classical symptoms of a tumor of the brain, and only the ophthalmoscopic and retinoscopic examination revealed the nature of the condition of the suffering patient.

Journal of the American Medical Association.

August 26, 1911.

The Advantages of the So-Called Decortication of the Lung in Old Empyema. F. B. Lund.
Plastic Operations on the Face. J. S. Horsley.
A Method for Gradual Automatic Occlusion of the Larger Blood-Vessels at One Operation. J. M. Neff.
Sensibility of the Peritoneum and Abdominal Viscera. J. F. Mitchell.
The Sanitary Record of the Maneuver Division. J. R. Kean.
Report on 140 Recent Cases of Psoriasis in Private Practice Under a Strictly Vegetarian Diet. L. D. Bulkley.
The Use of Cacodylate of Sodium in Four Cases of Pellagra. J. O. Elrod.
The Pathology of Joint Tuberculosis. L. W. Ely.
Tonsil Instruments. R. J. Tivnen.
The Influence of the Thyroid and Parathyroid Glands on the Healing of Fractures. R. L. Thompson and J. L. Swarts.
A Tubular Soft Rubber Nasal Splint Through Which the Patient Can Breathe. M. D. Stevenson.
Lymphangiomata of the Omentum and Omental Cysts. S. Stillman.
Endemic Mediterranean Fever (Malta Fever) in Southwest Texas. T. L. Ferenbaugh.
The Surgical Treatment of Megacolon. W. I. Terry.
The Use of Sodium Hydroxide for Sterilizing Instruments. I. M. Heller.
Perforation of Pregnant Uterus in an Unsuccessful Attempt to Produce Abortion. K. F. Snyder.
Instrument for Passing a Needle Where Space Is Limited. E. Mingus.
Microscopic Diagnosis of Rabies. A Modification of Van Gieson's Method. S. B. Moon.
Aqueous Solution of Iodine in the Treatment of Ulcer of the Cornea. A Preliminary Note. E. L. Meierhof.

Decortication of the Lung for Old Empyemata.—By F. B. Lund. See MEDICAL RECORD, July 1, 1911, page 51.

Plastic Surgery of the Face.—J. S. Horsley states that the general underlying principles of plastic surgery of the face are, first, a careful mapping out of the work beforehand, then gentle handling of the tissues and flaps, and due consideration for their nutrition. The flaps should always be taken a little larger than seems necessary, especially in the case of burns. No dressing should be placed on these wounds unless there is considerable bleeding, and then a dry compress may be used for twenty-four hours. The raw surface should be dusted with boric acid powder, which forms a scab. If a dressing is used, the secretions from nose, mouth, or eyes will be absorbed and a septic poultice result. The suturing should be accurate, tight enough to approximate the surfaces closely, and should be removed as soon as possible.

Gradual Automatic Occlusion of Larger Blood-Vessels.—J. M. Neff reports the results of experiments made with a new method for gradual automatic occlusion of the larger blood-vessels at a single operation. The method consists in the use of aluminum clamps placed on the vessels and exercising pressure at once, with catgut wound around one of the clamps at its open end. An elastic rubber band is placed round both limbs of the clamp outside of the blades, which causes gradual compression of the vessel as the catgut is absorbed.

Sensibility of the Peritoneum.—J. F. Mitchell calls attention to the fact that there is a distinct and constant contrast between the parietal and visceral peritoneum. The parieal peritoneum is extremely sensitive to pain, but not to heat or cold, while the abdominal viscera possess no sense of pain; in other words, the visceral peritoneum and abdominal organs, innervated only by the vagus or sympathetic nerve, are not sensitive to pain, and painful abdominal sensations are transmitted only by the phrenic, the lower six intercostals, and the lumbar and sacral nerves which supply the parietal peritoneum.

Sanitary Record of the Maneuver Division.—J. R. Kean states that the sick-rate for the Maneuver Division up to July 1 was twenty per thousand, as compared with thirty-four per thousand for all troops in the United States for 1910. The largest cause for morbidity was venereal diseases (four per thousand), next came measles and mumps (three per thousand), the latter almost entirely among the newly arrived recruits.

Vegetable Diet in Psoriasis.—L. D. Bulkley believes that, while a strictly vegetarian diet is strongly advocated in psoriasis, and while under certain conditions it is quite possible for the lesions to disappear under its influence alone, with no other treatment, internal or external, it is to be clearly understood that this is not the only element of treatment to be considered, although undoubtedly the most important one. To obtain the best results there is need of constant medical supervision in order to secure the best working of the economy in all directions.

Cacodylate of Sodium in Pellagra.—J. O. Elrod pre-

sents the histories of four cases of pellagra cured or greatly improved by hypodermic injections of cacodylate of sodium.

Pathology of Joint Tuberculosis.—L. W. Ely rejects the theory that joint tuberculosis is of bony origin, and has come to the conclusion that bone tuberculosis is simply a question of red or lymphoid marrow. Wherever one finds this in bone there the bones will be found vulnerable to tuberculosis, and where the red marrow is not found one does not find unmixed tuberculosis. There is more red marrow in the bones of children than in those of adults, and hence more bone tuberculosis. Where primary tuberculosis of the shafts of the long bones has been met with it has been almost always or invariably only in the shafts of children's bones. The yellow marrow appears to be invulnerable unless a secondary infection is added.

Tonsil Instruments.—R. J. Tivnen describes the following instruments that he has devised: tonsil hemostat, tonsil sponge forceps, adenoid hemostat, tonsil-grasping forceps, and tonsil pillar separator.

Thyroid and Healing of Fractures.—R. L. Thompson and J. L. Swarts conclude that, in the limited amount of material which they have studied, the lack of thyroid tissue had no influence on the healing of fractures of the malar bone of the dog. They see at present no exact method of studying the results of complete parathyroid removal on the healing of fractures.

Nasal Splint.—M. D. Stevenson points out the disadvantages of the tampons and hard rubber and metal nasal splints for treatment of conditions in the nose, and recommends a strong, but soft and flexible, soft rubber hollow splint which can be adapted to the location and does not interfere with respiration.

Omental Cysts.—By S. Stillman. See MEDICAL RECORD, July 8, 1911, page 102.

Malta Fever in Southwest Texas.—T. L. Ferenbaugh reports four cases of continued fever of long duration occurring in individuals working at a goat camp. Agglutination tests made with the *Micrococcus melitensis* gave positive results.

Megacolon.—W. I. Terry. See MEDICAL RECORD, July 8, 1911, page 100.

Sodium Hydroxide for Sterilizing Instruments.—I. M. Heller points out the disadvantages of carbonate or bicarbonate of sodium solutions for boiling instruments for disinfecting purposes. Instruments, especially if plated, when boiled in such solution, come out covered with a white scum, are slippery and less quickly dried, and are likely to turn black, especially if they have any blood left on them. He recommends, instead, the use of sodium hydroxide in a 0.25 per cent. solution, which has none of these disadvantages.

Perforation of Pregnant Uterus.—K. F. Snyder reports the case of a patient who perforated her uterus in attempting to bring on an abortion. The abdomen was opened, the infected tract was drained, the patient recovered and was subsequently delivered of a healthy child.

Needle Holder.—E. Mingus describes an instrument which he has devised for the purpose of passing a needle where space is limited.

Microscopic Diagnosis of Rabies.—S. B. Moon describes a modification of the Van Gieson method for staining the characteristic nerve cell inclusions.

Ulcer of the Cornea.—E. L. Meierhof reports good results following the treatment of ulcers of the cornea by means of a solution of iodine, 1 grain; sodium iodide, 3 grains; and 1 ounce of water. Three drops of this solution were ordered to be instilled into the eye three or four times daily. No other treatment was used.

The Lancet.

August 19, 1911.

Housing and Town Planning. F. E. Fremantle.
The Hereditary Tendency toward Twin-Bearing, and the Influences Aiding in the Determination of Sex. J. Oliver.
The Discrimination of Color. F. W. Edridge-Green.
The Pathological Relationship Between the Appendix Cæci and the Uterine Adnexa. J. Birt. (With Notes of Operation by T. C. English.)
Meningitis Following Measles. C. A. Basker.
A Convenient Method to Test the Visual Fields for Color Without the Use of a Perimeter, for Application in Cases Suspected of Increased Intracranial Tension. T. A. Williams.
History of a Swallowed Pin. N. Balgarnier.
Eclampsia in Two Successive Pregnancies. J. H. Nixon.
Fracture of the Fifth Lumbar Vertebra. O. A. R. Berkeley.

Housing and Town Planning.—F. E. Fremantle concludes that the housing problem consists of defects both in quantity and quality of accommodation in relation to a changing standard of requirement. English conditions are considerably better than those in Scotland and Ireland or in foreign countries. There is marked improvement during the past 20 years. The poor will alwys live in the cheapest houses, and the oldest and poorest are essentially the cheapest. Wholesale removal of slums has been done much in the past and leaves little to be done in the future. Closure and demolition of single houses are means much used and of prime importance. New buildings for habitation by the laboring classes involve unnecessary waste of money, but may occasionally be necessary; they will then involve an increased rental. Town planning and the decentralization of industry in garden cities and villages offer a hopeful solution of the problem of congestion. Better administration, not legislation, is required. The main faults in the people's houses depend on their habits, characters, and intelligence. Practical education is the most important factor in improvement.

Twin Bearing and Sex Determination.—J. Oliver notes a proportion of twins of 1 in 104 confinements. The relationship of female to male births as a result of twin conceptions is two to one. This is a noteworthy phenomenon, since in European countries the total number of male births always exceeds that of female. The hereditary tendency to the production of twins is transmitted about equally by males and females. Experiment appears to favor the view that well fed females tend to produce a preponderance of female offspring and badly fed females a preponderance of male progeny.

Discrimination of Color.—F. W. Edridge-Green concludes that when special means are taken to have as pure a spectrum as possible, he can find no method which will enable him to distinguish the colors in a monochromatic region.

The Appendix and the Uterine Adnexa.—J. Birt reports a case the history of which and the pathological condition of the organs affected seemed to point to the appendix being the original source of infection, especially in view of the obvious evidence of recent inflammation in the appendix, and the fact that the left ovary and tube were normal. The organisms may have traveled directly along the appendiculo-ovarian ligament (Clado), or by some other more or less direct route.

Meningitis Following Measles.—C. A. Basker reports the occurrence of six cases of meningitis, probably of meningococcic origin, following an epidemic of measles.

Testing the Visual Fields for Color.—T. A. Williams describes a simple method of testing the visual field for color without the use of a perimeter.

History of a Swallowed Pin.—W. Balgarnier reports a case in which a pin which had probably been swallowed years previously, perforated the stomach and became embedded in the gastrohepatic omentum.

Eclampsia in Two Successive Pregnancies.—J. H. Nixon reports a case of this condition.

Fracture of the Fifth Lumbar Vertebra.—O. A. R. Berkeley-Hill reports a case of this condition, caused by a fall from a horse.

British Medical Journal.

August 19, 1911.

The Surgeon and the Industrial Worker. W. D. Spanton.
Afferent Fibers in Ventral Spinal Roots. L. J. Kidd.
Pancreatic Cyst: Rupture: Recovery. H. Walker.

On the Occurrence of an Intracellular Stage in the Development of Trypanosoma Lewisi in the Rat-Flea. E. A. Minchin and J. D. Thomson.

The Surgeon.—W. D. Spanton states that in the practice of the art of surgery, as well as in that of medicine, he has often been struck by the clear diagnosis which those who possess a good ear for music often make where others have failed for want of it. Others having mechanical gifts will improvise an apparatus, while another man is wondering how soon he will be able to get an appliance from an instrument maker. In the matter of drawing, again, one who has a good eye for it will usually make a neater, if not a better, operator than the one who has not; his lines will be more accurate, and the ends of his incisions will meet at the proper point, and his whole work will be more perfect. So, again, with the sense of touch; this requires a long education, but some never seem to acquire any delicacy of touch—their fingers are "all thumbs," and often they will endeavor to discover by force what can only be made out by the utmost gentleness in manipulation. For example, a movable kidney or other easily displaced tumor can often be made out only by a "surprise touch," and escapes at once from observation with any rough handling. A keen sense of touch is invaluable to the surgeon; a gynecologist especially is very much dependent upon it for success.

Afferent Fibers in Ventral Spinal Roots.—L. J. Kidd has already collected a large amount of evidence—surgical, experimental, histological, and embryological—which seems to lead to the conclusion that afferent fibers, in somes cases algetic, in others reflex, exist in the spinal ventral roots of man and many other vertebrates. In the author's opinion, one ought to divide ventral as well as dorsal roots in cases of intractable pain, except in the case of the third and fourth cervical ventral roots; here division would cause motor palsy of the diaphragm on the side of section; but, in connection with this, one must remember that unilateral phrenic palsy in man and laboratory animals does not usually cause danger to life.

Pancreatic Cyst.—H. Walker reports the case of a laborer, who following an act of unusual exertion experienced a severe pain in the epigastrium. This was accompanied by shock. Rupture of a gastric or duodenal ulcer was suspected, but the patient improved. Following a second attack a few days later the abdomen was opened and a pancreatic cyst was discovered. This had ruptured into the lesser peritoneal cavity. The fluid was withdrawn and the cyst drained. It was twelve weeks before the sinus closed and the patient recovered.

Trypanosoma Lewisi.—E. A. Minchin and J. D. Thomson, in studying the early phases of the developmental cycle through which the rat-trypanosome passes into the rat-flea, have found that the tryanosome penetrates into the cells of the epithelium lining the stomach (mid-gut) of the flea, and there goes through a process of multiplication.

Berliner klinsche Wochenschrift.

August 14, 1911.

Pyonephrosis and Prostatitis Actinomycotica.—Cohn gives a brief monographic account of this subject. A case is narrated in which the patient, fifteen years before consultation, had developed—after exposure to cold—pyuria with occasional hematuria and tenesmus vesicæ. The latter subjective symptom subsided in time but the urine retained its morphological alteration throughout. Four years ago tenesmus and dropwise incontinence set in. Patient had also become cachectic. The thorough examination which followed the first consulation revealed two possible sources of pus, to wit, the kidneys and prostate. The former organs were regarded as the main source of the pus. The condition was strongly suggestive of urogenital tuberculosis, but no tubercle bacilli were found. On the other hand cultures of all kinds revealed the presence of some form of actinomycetes, which was clearly not the same as the cause or causes of ordinary actinomycosis. The author emphasizes the fact that the term actinomycetosis—as distinct from actinomycosis in the older sense of that word—embodies the causation of an entire group of diseases; while the original actinomycosis is limited to the effects of the ray fungus proper, such as commonly attacks cattle, etc. The experience is regarded as sufficiently important to deserve an extended study; so that the present brief communication is only anticipatory.

Remote Results of Prostatectomy.—Casper has now done 54 prostatectomies which enable him to form conclusions as to final results. In 26 cases the normal functions of the bladder were fully maintained. In some of these the conditions before intervention were very unpromising. In but 3 cases did stricture of the posterior urethra develop as a consequence of operation. Cystitis before operation was almost constant (95 per cent.), but after operation 75 per cent. of patients were freed from their cystitis. Some time was often required for recovery and vigorous treatment was added. In regard to the working capacity of the kidneys after operation this is said to have been uniformly good, despite the original presence of certain renal lesions. Casper never operated until he had obtained favorable results as to renal activity as shown by the phloridzin test. Early experience showed him that diseased kidneys could cause postoperative mortality through suppression of their function. An unavoidable accident rarely present is lancinating pain in the legs with impaired gait, due evidently to operative injury of the hypogastric plexus. Another unusual result is prostatic hemorrhage which may fill the bladder with clots. These accidents tend to end fatally, and are to be avoided by doing a right-sided operation. Last but not least comes the question of relapse after prostatecomy. The author has no personal knowledge of this sequence.

Sugar Metabolism in Addison's Disease.—Schirokauer states that adrenalin hyperglycemia and glycosuria are now well known conditions, due to overproduction of adrenalin which seems to interfere with sugar combustion. Hence where there is a lessened production of adrenalin, such as would occur in Addison's disease we should expect to find the opposite syndrome. The finds in this direction, however, are by no means conclusive. The author has therefore made a special study of the sugar metabolism in a case of Addison's disease. It was necessary to perform venesection in order to test for the sugar percentages in the blood. These were of such amounts as to controvert the belief that there is any inevitable lessening of sugar oxidation in the disease in question. It is admitted that hypoglycemia may and often does occur under such circumstances; to such an extent in fact that its inevitableness has been taken for granted by many. It is better, however, to regard hypoglycemia as merely an occasional or inconsistent find in Addison's disease.

Münchener medizinische Wochenschrift.

August 15, 1911.

Puerperal Autoinfection.—Zangemeister states that there are many forms of mechanism for infection of any kind, all of which are practicable for puerperal autoinfection. These are as follows: 1. Inoculation proper, the germ introduced from without or within by a special trauma. This is self-explanatory. 2. The inoculation does not occur in the regular fashion, *i.e.* the germ is not introduced forthwith at the time of injury. Instead, an injury occurs, and latent bacteria improve the opportunity to inoculate the exposed surfaces. In such cases the germs preexist in the infected localities. 3. A wound is made—an aseptic wound—which becomes inoculated from within or without. 4. Germs enter the birth tract

of sufficient power to cause lesions and infections. These distinctions seem academic and inapplicable to practical teaching, but scientifically they are correct. And as long as such conditions are deducible *a priori*, so long the unraveling of the problem of autoinfection will be postponed. In plain language so many factors enter into the possible causation of puerperal sepsis that even an approximate solution of the problem is out of the question.

Effects of Passive Motion on the Circulation.—Veiel and Zahn, after referring to the incomplete knowledge at hand on this subject, give the results of their own experience. They conclude that passive rhythmic movements of the lower extremities cause at once an alteration of the distribution of blood. The supply of the latter in the legs is lessened. As a result the arteries in the arms are narrowed and the blood pours through them more rapidly. But in comparison with active exercise passive motion causes relatively little disturbance of the circulation. Of late years Büdingen has devised an apparatus for passive movements of the legs which is said to be of especial value in bedridden subjects, cardiacs and the like, in that it tends to prevent stagnation with its accompanying evils, such as marantic thrombosis.

Stasis Hemorrhage in the Skin and the Rumpel-Leede Phenomenon.—Strauch has examined 160 healthy subjects in regard to the existence of the Rumpel-Leede phenomenon (hemorrhage above the elbow joint after constriction of the upper arm). No less than 45 per cent. gave positive results, males predominating. To offset these figures 180 diseased subjects were examined. The disease is not stated and the inference is that ordinary hospital patients were tested. The percentage of positive results was 50. This increase can not be explained in any satisfactory way. Scarlatina may be eliminated outright, since positive results were obtained from an entire series of general diseases—erysipelas and diphtheria leading the list. In regard to the diagnostic bearing of this subject on the existence of scarlet fever, it can only be emphasized that absence of the phenomenon excludes the possibility of that affection. That is, in male patients, while not pathognomonic, the absence of the Rumpel sign should have much weight in excluding scarlatina.

Treatment of Gout.—Schmidt attempts to solve the problem of the curability of a disease of alien origin and nature, to wit, the gout. As a rule German writers on the latter affection draw almost wholly on English authorities. The old teaching was that alkalies are the rational treatment for this affection. Certain irregular practitioners in England rebelled against this view to such an extent that acids came to be the mode. Schmidt evidently subscribes to this point of view, for he advocates HCl in constant exhibition. He evidently believes that the sluggish metabolism of gout is evidenced in part by the reduced percentage of HCl as controlled by analysis of trial breakfasts, etc. In more elusive cases he would proceed further into stomach chemistry.

Deutsche medizinische Wochenschrift.

August 17, 1911.

Anaphylaxis in Human Pathology.—Menzer states that at the onset of an infectious disease the bacteria and their toxic products command the situation, the chief factors being the number and seat of the bacteria and the character of the toxins. The formation of an anaphylatoxin from the bacterial alubumin plays only a secondary rôle. In every severe infection the organism has to fight for its existence. It must check the penetration of bacteria and see to it that the toxic products of the latter as well as the catabolic substances formed in the issues are eliminated, including so-called anaphylatoxic products of bacteria. In tuberculosis the soluble products of the bacteria are especially active and engender an opsonic action at the foci of disease. Both the focal reaction and the subsequent general reaction from absorption are in evidence. In tuberculous anaphylaxis the disease foci are sensibilized and have an increased lability. In such cases tuberculin injections themselves may induce this oversensitiveness. Toxic material may be set free in amounts altogether disproportionate to the small quantity of tuberculin injected. The greater the degree of encapsulation of a focus the less the anaphylaxis. There is no true serum disease. What seems such is the aggravated reaction of a local focus with increased absorption of toxic products. Iodine has the power of mobilizing latent foci of disease.

Dangers of Effervescence in the Stomach in Diagnostic Procedures.—Nieden refers to the recently advocated diagnostic use of intragastric effervescence in connection with the Röntgen investigation of the stomach contents. This method goes back many years and might not need to be called to account had not the statement crept into textbooks that it is quite harmless. As far back as 1903 fatalities were upon record. Several patients with ulcer or cancer of the stomach lost their lives as a result of the use of Seidlitz powder or their equivalent for diagnostic purposes. As death did not supervene for a considerable interval the incrimination of the method might have been defective forensically. Morally, however, there is not much room for doubt that the fatal hemorrhages were due unconditionally to the act of effervescence. Whenever there is evidence that an ulcer of any sort is present in the mucosa such a test must be omitted. The question then comes up, may the sudden liberation of CO_2 cause fatal shock? This cannot be answered at present, but such shock might easily prove a contributory cause of death. The methods of insufflation may be too valuable to be given up unconditionally, but the author prefers the employment of "contrast forming substances" such as bismuth, barium, etc., for mapping out the stomach contours.

Pachymeningitis Hemorrhagica Interna in Infants.—Hahn states that quite recently we have obtained coherent information as to the existence of this affection in earliest infancy. He relates a case in detail and sums up what we know to date as follows: The condition represents a genuine pure fibrinous pachymeningitis with incidental hemorrhages. The latter were intradural and not upon an inflammatory basis, being associated with hydrocephalus externus. The localization was shown by the meningeal symptoms, the results of lumbar puncture and especially by the retinal hemorrhages. The entire syndrome appears to depend upon a friability of the blood-vessels, while the efficient cause is represented by traumatism. In the absence of a defective state of the blood-vessels the predisposing cause should lie in the blood itself. The hemorrhagic factor is evidently the source of much controversy; while essential to the syndrome it is not invariably in evidence macroscopically.

The Epileptic Syndrome in the Secondary Period of Syphilis.—Alfredo Rubino says that epilepsy occurring in syphilitics is of the Jacksonian type. It may occur in the secondary period of the disease, and should be considered as a neurosis of toxoinfective origin, with or without lesions of the cortico-motor area. Such lesions may be congestive, hemorrhagic, or inflammatory. There is not necessarily a congenital predisposition to nervous symptoms, but if this does exist there will be more liability to the occurrence of the epileptic symptoms. The epileptic symptoms disappear rapidly under the administration of anti-syphilitic remedies. When this is not the case the disease is either one of epileptic predisposition or of parasyphilitic origin. We should always think of the possibility of a secondary syphilitic epilepsy occurring after the age of 20 years, without previous nervous symptoms, even when syphilis is denied and there is no history or present symptom of the disease. Mercury should always be administered in these cases and its effects watched.—*Giornale Internazionale delle Scienze Mediche.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

OCCUPATION.

THE examiner should always notice carefully whether the occupation is correctly and definitely described in the application and report any dereliction. This precaution is a most important one, as it may be discovered that, in addition to the occupation as stated in the application, the applicant is engaged in some way in handling, selling, or manufacturing alcoholic beverages. The occupation may only appear in such cases as that of hotel keeper, merchant, or proprietor of a store, etc. Having cleared up this point beyond all doubt, the examiner may usually leave the matter for the further consideration of the home office, as every company has adopted its own classification of the relative influences of the various occupations on the duration of life in general. In some cases, however, it becomes his task to determine how far the applicant's particular employment may affect his individual longevity. One man may be so constituted that, though just at or possibly a little below the average physical condition, he is safely insurable provided all the circumstances connected with his occupation and his pecuniary means admit the probability that he will take the requisite care of himself. For instance, to the well-to-do merchant or professional man an occasional attack of catarrh or bronchitis may not necessarily excite apprehension, while the same ailments occurring in a person whose occupation constantly furnishes the exciting cause of such attacks, will suggest the possibility of more serious trouble eventually.

While the question of occupation, aside from the exceptions already mentioned, may usually be left to the decision of the home office, the examiner ought to have a general idea of the treatment of this subject by the different companies. Clergymen, lawyers, schoolmasters, and physicians make the best risks according to the order in which they are mentioned. Physicians are decidedly the poorest of the four on account of the demands upon their strength, irregular hours, and the liability to drug habits. Everything else being equal, outdoor labor is more healthy than indoor. Statistics make it clear that those engaged in agriculture head the scale in life value. Even seamen, though subjected to all kinds of exposure and vicissitudes of temperature, are remarkable for their high state of health. The evils of dusty trades are materially lessened when they are pursued in the open air or under sheds only partially closed. The occupation hazard may be classified into three groups:

1. The risk from increased liability to accident. Many of the iron and tin workers, coal miners, railway laborers, engineers, firemen, workers in electricity, fishermen, seamen, saw-mill operators, etc., are in this class.

2. The hazard on account of the diseases which may be occasioned. Stone cutters, copper and lead miners, grinders, file makers, lead, brass and copper workers, potters, glass makers, plumbers, painters, etc., are included in this group.

3. Occupations requiring the handling of alcoholics. In this class the majority of workers consume a large and constant quantity of alcohol and materially shorten their lives.

It is sometimes remarked that human life is the cheapest thing on earth. While this may still hold true to some extent, a great improvement in the conditions affecting workers has gradually come about through legislation, sanitary laws, political and educational privileges, and advance in wages. Mechanical devices have been adopted which materially reduce the risks incurred by employees, such as air brakes, automatic couplers, blowers for carrying off dust and gases, and various mechanical contrivances for doing parts of work formerly done by hand. Laws and sanitary measures will not, however, remedy all the evils arising from unhealthy occupations for reasons for which the working people themselves are responsible. Notwithstanding the efforts of some lawmakers to fasten all the liability and cost of damages upon employers, thereby ignoring the factor of contributory negligence, it requires no lengthened acquaintance with workmen to discern their recklessness, gross carelessness, frequent neglect of cleanliness, failure to make the most of preventive measures against evident dangers, and, above all, the too widespread habit of intemperance.

Some Auscultatory Problems in Insurance Examinations.—In a paper read at a meeting of the Life Assurance Medical Officers' Association R. A. Young discusses the problems of the insurance examiner which result from those departures from the generally accepted normal standards of auscultatory sounds that are yet compatible with health and those in which slight departures from the normal are the index of commencing disease or the stigma of past attacks, with a definite significance from an insurance standpoint.

Heart.—In cases of rapid pulse a differentiation must be made in its causation between nervousness due to the examination, hurrying after a meal, the toxic action of tobacco or alcohol, functional derangements such as cardiac neuroses and paroxysmal tachycardia, and serious disease such as valvular lesion with broken compensation, myocardial disease, exophthalmic goiter, and beginning tuberculosis. In the differentiation attention must be paid to the character of the heart sounds, the effect of posture, rest, and exercise. In any case of rapid heart action, not manifestly due to nervousness, postponement for reexamination is to be recommended. A slow pulse is of significance only if it is below 60 or if the applicant is no longer young. In all cases, however, the tension of the pulse, the size of the heart, and the character of the cardiac impulse should be noted. As to arrhythmia, a simple irregularity ranging with respiration in young subjects is of no serious importance, even though there may be occasional slight syncopal attacks. Irregularity due to tobacco, tea, or coffee, need not cause rejection if it ceases after abstinence or moderation. Extra-systoles in young and middle-aged applicants are not necessarily of serious import in the absence of arteriosclerosis or cardiac hypertrophy, but should always be regarded with suspicion. Irregularities due to heart-block, to weakened muscular power, or to valvular or other lesions should be regarded as sufficient cause for rejection.

The sounds of the heart may be weak or distant on account of thickness of the thoracic coverings—muscular, fatty, or emphysematous—or of serious myocardial degeneration—inflammatory, fatty, or fibroid. Accentuation of the second sounds at the base may indicate increased tension in the general or the pulmonary circulation, or may be due to uncovering of the heart by retraction of the lung. Loudness of the aortic second sound is of more importance than that of the pulmonary, since increased

tension of the pulmonary circulation may occur temporarily from any insignificant causes, such as simple holding of the breath. Absence of the second sound at the apex may occur in certain cases of mitral stenosis, and this in connection with sharpness of the first sound occurring in the same condition may give rise to an error in diagnosis unless the sounds are timed by the carotid pulse. Sharpness of the first sound may also occur in the nervous, rapid heart. A booming first sound is suggestive of hypertrophy. A high-pitched second sound should lead one to suspect high blood-pressure. A low-pitched and booming aortic second sound suggests the possibility of an aneurysm and should warn the examiner to look carefully for signs of intrathoracic pressure. A weak pulmonary second sound may be indicative of commencing failure of the right ventricle. Reduplication of the heart sounds may indicate organic disease or may be of no significance. A doubling of the first sound may point to ventricular failure in cases of high tension or of chronic interstitial nephritis. When reduplication of the second sound is habitual it is suggestive of pulmonary emphysema or valvular lesion of the heart. Murmurs may usually with care in examination be properly estimated, though it is sometimes difficult to determine the true significance of the murmur associated with mitral stenosis. It may not be audible in the erect position, a fact which accentuates the necessity of examining the heart in the recumbent as well as in the erect position. Functional and exocardial murmurs may cause error in diagnosis, but their origin should be recognized if care is exercised.

Respiratory System.—The problems arising during auscultation of the lungs are sometimes as puzzling as those encountered in the cardiac examination. It should be remembered that the physical signs in corresponding situations in the two lungs, especially at and near the apex, may differ considerably. The young examiner should early learn to appreciate the normal increase of vocal fremitus at the right apex. The breath sounds and the vocal resonance, as well as the percussion note, may be slightly higher pitched over the right supraspinous fossa. The examiner has therefore to form, almost subconsciously it may be, an idea of the normal standard for each side of the chest. In absolutely healthy persons wide variations in the breath sounds may exist over the upper part of the right lung; they may even be bronchovesicular in character, the voice sounds being also distinctly increased and vaguely bronchophonic—a combination which the textbooks give as an indication of early tuberculous deposit or of the scarring from a bygone arrested lesion. The difficulty of diagnosis is still further increased if the patient has a hairy chest or is sweating because of the spurious râles then produced. In such a case much aid may be obtained by inspection of the chest in a good light. Even in very early tuberculosis there may then be seen a slight lagging on the affected side, or the shoulder on the normal side may continue to rise during inspiration after that on the affected side has ceased. The breath sounds heard in some normal persons on the right side would, if heard at the left apex, almost certainly indicate tuberculosis. Weak breath sounds at the right apex with exaggeration at the left are to be regarded seriously. Weak breath sounds at one or other base indicate old pleurisy, fibrosis following on tuberculosis or pneumonia, or collapse; or they may be due to some abdominal disease interfering with the movements of the diaphragm. Cogwheel respiration may be due to forcible cardiac action or may occur in tuberculosis; when heard constantly at an apex it is very suggestive of early tuberculous deposit. Spurious râles, apart from those due to a hairy chest, are not uncommon, and are sometimes confusing. They may be caused by movements of the head or not infrequently by the deglutition of saliva. Fine collapse râles are often heard in normal chests on deep inspiration, and are difficult of explanation. Friction sounds heard over or near the heart, with a cardiac as well as a respiratory rhythm, indicate some pleural roughening; they may be unaccompanied by any other symptoms, but are suggestive of tuberculosis.

The Temptations of the Local Medical Examiner in Making Life Insurance Examinations.—J. E. Dildy of Lampasas, Tex., read a paper before the Section on Medicine and Diseases of Children of the State Medical Association of Texas, at Amarillo, on May 10, 1911, on the temptations of the local medical examiner in making life insurance examinations. Emerson's statement that legally the local examiner is the agent for the company, and not for the solicitor or the applicant, that he is employed to do a certain piece of work for so much money, is quoted with approval, and Dildy proceeds to point out some of the temptations to which a medical man is subject as an examiner for life insurance. The agent is generally a glib, smooth-spoken, affable individual, and the applicant is not infrequently an unhealthy person who has no right to be passed as sound. According to Dildy a doctor should be a good judge of character, and when he believes an applicant is padding his family or personal history he should insist on his telling the truth, the whole truth, and nothing but the truth. Should this insistence fail, the suspicion should be reported to the company; but medical men are tempted not to do it, for it makes more work and brings no more pay. Physicians are tempted to be careless in their methods of examination, are liable to overestimate the risk, and to hurry unduly. They are asked to assist the agent in obtaining new business, which is but a sly form of bribing. Dildy says there are other forms of temptation by which agents and applicants attempt to beguile the medical practitioner from the path of rectitude, but that those mentioned by him will suffice.—*Texas State Journal of Medicine*, July, 1911.

Official Tariff for Medical Attendance.—G. P. Forrester states that there is pending before the German Reichstag a bill requiring that every sick benefit society should draw up a regular agreement with medical practitioners who attend its members, according to which agreement the former are to be paid in accordance with the actual amount of ability and time required for treating any individual case. There is in existence in Germany an official scale of charges for professional services rendered by physicians and surgeons, whose provisions are legally applicable in case of dispute arising between patient and physician. Many sick clubs pay their medical men on the basis of this tariff, the physician agreeing to grant a rebate of from 10 to 20 per cent. of the total amount of his bill for attendance on members of the club. This agreement assures to the physician who engages in contract practice a more just and ample remuneration than generally prevails. The average sick-club doctor of Great Britain and Germany is paid a sum of seventy-five cents to one dollar and a half per annum for every member of the club. The American lodge doctor in many cases is not better off in this respect than his European colleagues. The Prussian scale of charges for professional men, as amended in 1906, contains a maximum and a minimum charge for each kind of service, the latter to be applicable in the case of the obviously poor. It enumerates in all 185 different medical functions.—*The Lancet*, May 13, 1911.

The Status of the Illegitimate Child in the Austrian System of State Insurance.—Korpert states that the Austrian insurance law which was enacted November 3, 1908, provides the same protection to the illegitimate child as to the legitimate if the deceased mother had been insured, or if the deceased father had fulfilled all of his legal obligations toward his child.—*Zietschrift für Säuglingsfürsorge*, Bd. III, 1911.

Book Reviews.

Diseases of the Nose, Throat, and Ear, Medical and Surgical. By William Lincoln Ballenger, M.D., Professor of Otology, Rhinology, and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois, Chicago; Fellow of the American Laryngological Association; Fellow of the American Laryngological, Rhinological, and Otological Association; Fellow of the American Academy of Ophthalmology and Otolaryngology, etc. Third Edition, Revised and Enlarged. Illustrated with 506 engravings and 22 plates. Price $6.00. Philadelphia and New York: Lea & Febiger, 1911.

That three editions of this work should have appeared within three years is a significant record of its popularity. The author has succeeded in presenting a work that fully covers the entire subject of diseases of the nose, throat, and ear in a manner suitable not only for students and general practitioners, but also for specialists. Among the new features in this edition are sixty new drawings and five new plates, of which three are colored. Goldsmith's plastic operation for closure of recent perforations of the septum is described. Vaccine therapy is given prominence. The choice of a sinus operation is fully discussed. The Canfield-Ballenger operation is given as the simplest, most thorough, and most conservative procedure for the cure of chronic empyema of the antrum of Highmore. Fletcher's sphenoidal operation is described. Vincent's angina is given a place that was lacking in former editions. Sluder's operation for the removal of the tonsils with the capsule intact is given due prominence. The chapter dealing with foreign bodies in the larynx, trachea, bronchi, and esophagus has been thoroughly revised by Chevalier Jackson. Labyrinthine infections are presented from a broad clinical viewpoint. The comprehensive character of the contents of this book, together with the large number of illustrations, many of which show the successive steps of nearly every accepted operation, make the volume a combined textbook and atlas.

A Manual of Gynecology. By Thomas Watts Eden, M.D., C.M. (Edin.), F.R.C.P. (Lond.), F.R.C.S. (Edin.); Obstetric Physician, with Charge of Out-Patients, and Lecturer on Midwifery and Gynecology, Charing Cross Hospital; Surgeon to In-Patients, Chelsea Hospital for Women; Physician to In-Patients, Queen Charlotte's Lying-in Hospital; Examiner in Midwifery and Diseases of Women to the University of Oxford and to the Royal Army Medical College. With 272 illustrations in the text. Price $5.00. Philadelphia: P. Blakiston's Son & Co., 1911.

This book has been written with the object of providing for students and general practitioners an account of the diseases of women in their pathological and clinical aspects. Emphasis has been laid upon clinical and practical relationships rather than upon systematic pathology. The book is fairly complete, without being exhaustive. Part I deals with the anatomy and physiology of the female genital organs; Part II with methods of examination; Part III with certain prominent gynecological symptoms; Part IV with disorders of menstruation; Part V with morbid conditions of the uterus; Part VI with morbid conditions of the ovaries; Part VII with morbid conditions of the Fallopian tubes; Part VIII with pelvic inflammation; Part IX with extrauterine gestation; Part X with morbid conditions of the vagina and vulva; Part XI with malformations; Part XII with major gynecological operations; Part XIII with minor gynecological operations; Part XIV with after-treatment of major operations; and Part XV with therapeutic notes. The numerous illustrations are of a high order of excellence. The book may be recommended to students and practitioners as a clear and concise manual of gynecology in its practical aspects.

Foods and Their Adulteration. Origin, Manufacture, and Composition of Food Products; Infants' and Invalids' Foods; Detection of Common Adulterations and Food Standards. By Harvey W. Wiley, M.D., Ph.D. With 11 colored plates and 87 other illustrations. Second Edition, Revised and Enlarged. Price $4.00. Philadelphia: P. Blakiston's Son & Co., 1911.

The subject of foods is one that interests many different classes of readers: the physician and layman, the manufacturer and consumer, the farmer, dietician, sanitarian, institutional manager, legislator, chemist, and scientific teacher. The author has succeeded in writing a book that apparently supplies the needs of all these readers. The cordial reception that had been accorded to the first edition was at once a tribute to the popularity of the author and of the great demand that recent pure food agitation had created for an authoritative work upon this subject. Recent advances in addition to this demand have compelled the writing of a second edition in which many new features have been incorporated. The regulations for inspection and the rules and regulations for the enforcement of the Food and Drugs Act have been omitted, and the space saved has been devoted to an expansion of the article on infants' and invalids' foods and to a section dealing with simple tests for ordinary adulterations. The work is a veritable mine of information on the many phases of the subject of foods: their relative physiological value, their origin, preparation, preservation, industrial aspects, and the effects of their deterioration. The section dealing with milk and its products presents this subject in a thorough manner. Physicians in general and pediatrists in particular will find the section on infants' and invalids' foods a complete digest of modern knowledge upon this subject. The detailed dietaries for special diseased conditions will be found particularly helpful. The fads in dietetics, forced feeding, economy in nutrition, meat-free diet, etc., are all given proper attention. The chapter on the simple methods of detecting food adulterations is a valuable addition to this work, which may be recommended both as a textbook and a book of reference.

A Brief Text of Physiology; for Dental, Pre-Medical, and College Students. By Carl J. Wiggers, M.D., Department of Physiology, University of Michigan. Forty-seven illustrations. Ann Arbor: George Wahr.

This is an elementary book designed for the use of dental students. At the end of each chapter is a useful tabular summary. The explanatory text which accompanies many of the illustrations is so small as to be illegible, and this feature alone should prevent the use of the book in any college or school. Some of the statements are inaccurate, probably from an effort after condensation and brevity.

A Pocket-Book of Treatment. By Ralph Winnington Leftwich, M.D., late Assistant Physician to the East London Children's Hospital, Author of "An Index of Symptoms," "Syphonage in the Large Intestine," etc. Price $1.70. New York: Longman's, Green & Co.; London: Edward Arnold, 1911.

This is a flexible pocket manual bound in leather, and is somewhat like the numerous pocket formularies that have been issued in this country. The first part of the book deals with the armory of healing: symptomatic, nature, and drug treatment; incompatibles, flavorings, new remedies, dietetics, including food values and special dietaries, infant feeding, invalid drinks and dishes, baths and a list of spas, massage, exercises, serum therapy, Bier's hyperemic treatment, operative treatment, and a list of poisons and their antidotes. Part II takes up the diseases in alphabetical order, and gives in each case brief directions as to management, and a list of suitable prescriptions. One notes in the fluid mixtures the English custom of using the fluid ounce as the basis of the dose. This is somewhat confusing to American readers, who are accustomed to the dram as the unit of dosage. Another disadvantage is the unfamiliarity of Americans with the preparations of the British pharmacopœia, many of which appear in the prescriptions. Nevertheless, the methods of treatment are in accordance with the most advanced and up-to-date practice, and their presentation is valuable for their conciseness and for the emphasis laid upon the most essential features. The book bears the impress of the experienced clinician, who appreciates the needs of the general practitioner, and the impress of the accomplished author of condensed manuals.

Enlargement of the Prostate; Its Treatment and Radical Cure. By C. Mansell Moullin, M.D. (Oxon.), F.R.C.S., Vice-President of the Royal College of Surgeons, Consulting Surgeon to the London Hospital, late Examiner in Surgery at the Universities of Oxford and Cambridge, Lecturer on Surgery at the London Hospital, Radcliffe's Traveling Fellow and Fellow of Pembroke College, Oxford, and Hunterian Professor at the Royal College of Surgeons. Fourth Edition. Price $1.75 net. P. Blakiston's Son & Co., Philadelphia, 1911.

On reading this work one readily understands why it appears in a fourth edition. Within its 172 pages the author encompasses his subject in a concise and masterly manner. The description of the mechanical factors involved in prostatic enlargement, their causes and effects, merits especial praise. In the section on treatment he has omitted all details and modifications of operations which have only historic interest, confining himself to those methods of treatment of proven value. Technique of diagnostic and therapeutic procedures is but briefly sketched, full credit being accorded contemporary workers in this field. In all regards the work is excellent.

Landmarks and Surface Markings of the Human Body. By L. Bathe Rawling, M.B., B.C. (Cantab.), F.R.C.S. (Eng.), Surgeon with Charge of Out-Patients, Demonstrator of Practical and Operative Surgery, late Senior Demonstrator of Anatomy at St. Bartholomew's Hospital; late Assistant Surgeon to the German Hospital, Dalston; late Hunterian Professor Royal College of Surgeons, England, etc. With 31 illustrations. Fourth Edition. Price $2.00. New York: Paul B. Hoeber, 1911.

In this work the author presents in a clear and concise manner the more important landmarks of the human body. The book is small, consisting of less than a hundred pages. What is given is well selected, but prospective purchasers will probably think that they can obtain something just as good for less money.

The Johns Hopkins Hospital Reports. Vol. XVI. Price $5.00. Baltimore: The Johns Hopkins Press, 1911.

This is a substantial volume of 670 pages, comprising the results of five important investigations, each of which forms a complete monograph. These studies are as follows: (1) Studies in the experimental production of tuberculosis in the genitourinary organs, by George Walker, M.D. (2) The effect on breeding of the removal of the prostate gland or of the vesiculæ seminales, or of both; together with observations on the condition of the testes after such operations on white rats, by George Walker, M.D. (3) Scalping accidents, by John Staige Davis, M.D. (4) Obstruction of the inferior vena cava, with a report of eighteen cases, by J. Hall Pleasants, M.D. (5) Physiological and pharmacological studies on cardiac tonicity in mammals, by Percival Douglas Cameron, M.D. The first of these studies is described in 222 pages of the text. The object of this study was to determine experimentally the different modes by which the genitourinary organs of the male can be infected, and to observe the spread of the disease from one organ to another along the tract. A limited study of the disease in the female was also made. The author notes the following points of surgical significance: Tuberculous processes in the genitourinary organs have two initial points—the glomeruli of the kidneys and the tubules of the epididymes. For practical surgical consideration these are the only sites which need to be taken into consideration. Primary tuberculosis of the bladder never occurs, and primary tuberculosis of the prostate or vesicles is so rare that it may be discarded. The literature of the subject is exhaustively covered and an extended bibliography is appended. The monograph on scalping accidents is a most scholarly contribution to surgical treatment. It comprises a detailed report of two unpublished cases, historical data, anatomical considerations, definition, etiology, mechanism, case reports with summaries of each, symptoms, complicatory prognosis, treatment, animal experiments, and comments. The author justly states that in textbooks and systems of surgery scalping is generally considered under "lacerated wounds of the scalp," but is undoubtedly a lesion whose treatment requires more careful study and attention than is usually accorded it. The paper is based on a critical review of the literature, the author's experimental work, and on two cases of complete scalping. The monograph on "obstruction of the vena cava with a report of eighteen cases" is a substantial contribution of 186 pages, comprising a complete study of this subject. The paper on cardiac tonicity is concerned with the accurate study of the variations which take place in mammals and in man under psysiological and pathological conditions and under the influence of drugs. This brief summary of the contents of this volume can give no adequate conception of the wealth of data filling its pages. It forms a valuable addition to a well-known and highly appreciated series of volumes.

Feeblemindedness in Children of School Age. By C. Paget Lapage, M.D., M.R.C.P., Lecturer in School Hygiene to the Manchester University, and Physician to the Manchester Children's Hospital. With an Appendix on Treatment and Training, by Mary Dendy, M.A., Price $1.60. New York: Longmans, Green & Co., 1911.

The fact that one out of every hundred children of school age is feebleminded makes the subject of the care of feebleminded children one that public and educational authorities cannot ignore. There is a general recognition of the importance of effective methods in dealing with this class of children. School medical officers, teachers, and social workers will find in this volume valuable information upon this subject. The book further emphasizes the importance to the public of efficient care of feebleminded persons: the rôle of heredity in the causation of feeblemindedness, and the importance of suitable supervision and care which will last during the whole lifetime of the feebleminded person. The book presents detailed statistical information and discusses physical and mental characteristics, defects of speech, special types, diagnosis, prognosis, care, and treatment. The biological aspects of inheritance, the inherited and acquired factors, and the value of preventive measures are fully discussed. The author does not endorse the plan of asexualization, stating that "lifelong supervision, which, though more costly, is so necessary for other reasons, should, if efficient, be an equally good safeguard against the propagation of the taint to future generations." The chapter on the training and treatment of feebleminded children is sufficiently detailed to be of service as a daily guide to those who are put in charge of mentally defective children. There are also directions for the detailed examination of the head and of speech, a suitable school farm and certificate, and a list of homes, schools and institutions in England. The volume may be recommended as a valuable textbook upon this subject.

The Chemistry of Synthetic Drugs. By Percy May, B.Sc. (Lond.). Price $2.25. London, New York, Bombay, and Calcutta; Longmans, Green & Co., 1911.

In this book will be found some account of the main facts concerning synthetic drugs and the principles involved in their production. Further, whenever possible, the reactions which take place between a drug and the organism are dwelt upon. Brief mention is also made of the therapeutic effect of some of the drugs. The chief value of the work lies in its possibility of interesting physicians in the applications of chemistry to therapeutics and pharmacology, and in providing literature more reliable and scientific than that which accompanies each new synthetic from the place where it is manufactured or sold.

Modern Surgical Technique in Its Relation to Operations and Wound Treatment. By C. Yelverton Pearson, M.D., M.Ch., F.R.C.S., Professor of Surgery, University College, Cork; Senator of the National University of Ireland; Fellow and Examiner in Surgery, late Royal University of Ireland; Surgeon to the North Charitable Infirmary and County and City of Cork General Hospital; Surgeon to the County and City of Cork Victoria Hospital for Women and Children; Hon. Obstetrical Surgeon to the County and City of Cork Lying-in Hospital; Hon. Life Member of the Austin Flint Med. Assoc., Iowa, U. S. A. Illustrated with two colored and other plates and 129 illustrations in text. Second Edition, Revised and Enlarged. Price $4.00. New York: William Wood & Company, 1911.

This work is thoroughly representative of the surgical technique of the present day, and, while it can by no means take the place of the standard textbooks, it will form a most useful supplement to any of them. The subjects discussed in this volume are: Surgical Bacteriology; Infection; Disinfection; Standardization of Disinfectants; Germicides and Antiseptics; Antiseptic Solutions, Emulsions, and Pastes; Disinfection of the Hands; the Use of Gloves and Operating Costume; Preparation of the Patient's Skin and Mucous Membranes; Preparation and Sterilization of Instruments, Sponges, Ligature and Suture Materials; Nature of Absorbent Dressings and Their Mode of Sterilization; Antiseptic Dressings; Sterilization of Water; Wounds: Their Nature and Treatment; Prevention and Arrest of Hemorrhage; the Operation; Treatment after Operation; Renewal of Dressings; Operations in Private Houses; and Asepsis in General Practice. To all who do any surgical work, whether much or little, this volume will prove serviceable. It is well printed and well illustrated, and has a good index.

One Thousand Surgical Suggestions. Practical Brevities in Diagnosis and Treatment. By Walter M. Brickner, B.S., M.D. (New York), Adjunct Surgeon Mount Sinai Hospital, Editor-in-Chief *American Journal of Surgery*. With the collaboration of Eli Moschcowitz, M.D., James P. Warbasse, M.D., Harold Hasy, M.D., and Harold Neuhof, M.D., New York, Associate Editors *American Journal of Surgery*. Fourth American Edition. Price $2.25. New York: Surgery Publishing Co., 1911.

Four editions of this work have appeared since 1906, and the number of suggestions has grown from 500 in the second edition to 1,000 in the present edition. The "suggestions" cover the entire domain of surgery, and are classified, according to the various regions of the body and according to various procedures and conditions, as fractures, infusion and transfusion, instruments, sutures, etc. The book, which is well printed and bound, cannot fail to supply many helpful "tips" to the general practitioner and surgeon.

Criminal Man. According to the Classification of Cesare Lombroso. Briefly summarized by his daughter, Gina Lombroso Ferrero. With an introduction by Cesare Lombroro. Illustrated. New York and London: G. P. Putnam's Sons, 1911.

It is a strange circumstance that America, which has been the first country to respond to the ideas of the modern school of criminology founded by Lombroso, as evidenced by the Elmira Reformatory, the Probation System, Juvenile Courts, and the George Junior Republic, does not possess a complete translation of Lombroso's works. In fact, the only works in the English language are the volume on the female offender, the article on criminal anthropology in the "Twentieth Century Practice of Medicine," and the volume on the man of genius. The daughter of the late Italian psychiatrist and criminologist has supplied a distinct want by presenting in a single volume a summary of the conclusions reached by Lombroso on the causes of criminality and the treatment of criminals. The introduction to this volume was written by Professor Lombroso just before his death. The book is divided into three parts. Part I, entitled "The Criminal World," comprises chapters on the born criminal and his relation to moral insanity and epilepsy, the insane criminal, and criminaloids. Part II takes up the subject of the origin and causes of crime, the prevention of crime, and methods for the cure and repression of crime. Part III includes chapters on the examination of criminals and on the discrimination between criminals and lunatics, and in detecting simulations of insanity. The Appendix presents a brief summary of the works of Lombroso, as follows: the man of genius, criminal man, the female offender, political crime, too soon (a criticism of the new Italian penal code; prison palimpsests, studies in prison inscriptions); ancient and modern crimes; diagnostic methods of legal psychiatry; anarchists; lectures on legal medicine; and recent discoveries in psychiatry and criminal anthropology, and the practical application of these sciences. There is also appended a bibliography of the chief works of Lombroso. The theories of the latter, although at first warmly criticised, have not only gained recognition as established facts, but have become the starting point of definite reforms in prison management, in the reformation of criminals in legislation and in legal procedure. The pen of the gifted daughter describes in elegant diction the pith of Lombroso's epoch-making teachings. The latter was the first to perceive in the criminal an example of atavism, which explained the "enormous jaws, high cheekbones, prominent superciliany arches, solitary lines in the palms, extreme size of the orbits, handle-shaped or sessile ears, insensibility to pain, extremely acute sight, tattooing, excessive idleness, love of orgies, and the irresistible craving for evil for its own sake, the desire not only to extinguish life in the victim, but to mutilate the corpse, tear its flesh and drink its blood." The born criminal contributes 33 per cent. to the sum total of criminality. One-half of the criminals are classed as criminaloids, who possess the "virus", so to speak, in an attenuated form. These criminaloids represent the "ultra-violet ray of the criminal spectrum, of which the vulgar criminal represents the ultra-red." These offenders stand in a class by themselves. One very interesting subject in relation to criminal anthropology is that of symbiosis, "the utilization of antisocial elements, thus redeeming them completely and justifying their existence in the eyes of mankind and in the scheme of Nature." As examples of this practice are mentioned the galleries and fortifications cut out in the rocks at Gibraltar and Malta by English convicts and the complete transformation of parts of Sardinia. It is stated that "the colonization of wild regions and all professions (motoring, cycling, acrobatic and circus feats) which demand audacity, activity, love of adventure and intense efforts followed by long periods of relapse and eminently suited to criminals." As regards the exploits of certain modern motorists one may agree that occasional criminal tendencies have found a natural outlet. It will certainly not appeal to the pride and dignity of the militant to be told that "war, the original, perpetual and exclusive occupation of our ancestors, is eminently suited to the tendencies of criminals" that "all the characteristics of the criminal, impulsiveness, cynicism, physical and moral insensibility, and invulurability are valuable qualities in the soldier in times of war, especially when waged against savage and barbarous nations, when cunning and ability have to be employed agaist primitive races who laugh at the rules and ethics of civilized warfare." To the general reader, as well as to the sociologist, jurist, lawyer, educator, and physician, this book cannot fail to provide an entertaining and at the same time most instructive insight into the philosophy of crime.

Diseases of the Stomach and Intestines. By Boardman Reed, M.D., Member of the American Medical Association, American Climatological Association, American Academy of Medicine, Foreign Member of the French Societé d'Electrothérapie; Consulting Gastroenterologist to the Pottenger Sanatorium, Monrovia, Cal.; Consulting Physician to the Corey Sanatorium and Hospital, Alhambra, Cal.; Late Professor of Diseases of the Gastrointestinal Tract, Hygiene, and Climatology in the Department of Medicine of Temple University; Late Physician-in-chief to the Samaritan Hospital; Late Physician to the American Oneologic Hospital, Philadelphia, etc. Illustrated. Third Edition, thoroughly revised and largely rewritten. Price $5. New York: E. B. Treat & Co., 1911.

In this volume of about 1,000 pages nothing of importance in the modern developments of gastroenterology has escaped the author. In the preparation of this, the third edition, the entire text has been revised and largely rewritten, including 230 pages of new or substituted matter. A new chapter has been added on arteriosclerosis in relation to the affections of the gastrointestinal tract. The plan of this work and the thorough manner in which all phases of the subject are treated commend it to the general practitioner. Part I deals with anatomical, physiological, chemical, and diagnostic data. Part II describes methods of examination, and includes an excellent symptomatic guide to diagnosis. Part III discusses the methods of treatment. Part IV is entitled the gastrointestinal clinic, and takes up separately the various functional and organic diseases of the gastrointestinal tract. As an example of the thorough manner in which the entire subject is presented one may cite the chapters comprising the section dealing with the methods of treatment. There is a separate chapter, or, as termed by the author, lecture, on each one of the following subjects: prophylaxis and food requirements; general considerations concerning diet and dietotherapy; the diet in irritative and atonic conditions; sugar, spices, etc., in gastrointestinal cases; the author's and other series of diets; feeding by other routes than the mouth; methods of treatment; exercises; massage and rest; electricity, including high frequency and polyphase currents; electric and hydroelectric currents applied directly within the bowel; mechanical methods of treatment, as vibration; intragastric methods, as lavage and sprays; medicinal treatment; digestants, alkalies, and natural spring waters; tonics, stimulants, and sedatives; antiseptics, astringents, and laxatives.

Technique de Stérilisation. Par Ern. Gérard, Professeur de Pharmacologie à la Faculté de Médecine et de Pharmacie de Lille. Deuxième édition augmentée. Price 6 fr. Paris: Vigot Frères, Éditeurs, 1911.

This book is primarily intended for the manufacturing pharmacist, but contains many facts of interest and value to the general practitioner. Since the appearance of the first edition four years ago the developments in the domain of asepsis have been so great as to demand the addition of new material and the extensive revision of much of the old. The chapter on the sterilization of drinking water by the ultra-violet ray and that on the disinfection of infected rooms or conveyances are entirely new. The chapter on the preparation of sterile ampoules is particularly complete and the directions for the disinfection of books are admirable. A large space is devoted to the sterilization and care of ligature material. The book is attractively published and is of convenient size.

Food and the Principles of Dietetics. By Robert Hutchison, M.D. (Edin.), F.R.C.P., Physician to the London Hospital, Physician with Charge of Out-Patients to the Hospital for Sick Children, Great Ormond Street; author of "Lectures on Diseases of Children," "Patent Foods and Patent Medicines," "Applied Physiology"; joint author of "Clinical Methods." With plates and diagrams. Third Edition. Price $3.00. New York: William Wood & Company, 1911.

The third edition of Hutchison's valuable book has undergone a thorough revision, and the chapters dealing with "Principles of Feeding in Disease" have been considerably enlarged. There is also a new chapter on "Some Dietetic Cures and Systems." The book is well adapted for students and practitioners of medicine, and it will also prove serviceable to anyone desirous of acquiring some knowledge of foods and the problems of nutrition. A feature of the work is the space devoted to patent and proprietary foods, and we notice with pleasure the very fair treatment that these foods receive at the hands of the author. There are few books on this subject which are of much use to the medical practitioner, and fewer still which have reached a third edition.

Society Reports.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting Held April 17, 1911.

The President, Dr. Reynold Webb Wilcox, in the Chair.

An Operation for the Relief of Tuberculous Peritonitis.—Dr. Aspinwall Judd said that several years ago it was his privilege to observe the results obtained in a number of cases of this affection by Dr. Samuel Lloyd with a technique which, in a modified form, he himself had adopted. In Dr. Judd's operation the incision, three or four inches in length, was made through the sheath of the right rectus muscle and, the diagnosis of tuberculous peritonitis having been established, the patient was eviscerated as far as possible. The intestines, caught in a nest of hot moist towels, were thoroughly washed with a 50 per cent solution of hydrogen peroxide, and the abdominal cavity completely flushed with the same, after which the cavity and intestines were thoroughly flushed and washed with normal saline solution. The incision wound was closed with three layers of sutures, and primary union had followed in every case in which he had operated. He said he would like to emphasize the following points: 1, The use of oxygen peroxide, 50 per cent for diagnosis and to destroy the tubercles. 2, The thorough flushing of the abdominal cavity, so that the peroxide might come in contact with all infected areas. 3. The necessity of primary union and the promotion of this by the peroxide. 4, The necessity of getting these patients out of bed at as early a date as possible. They did badly if housed or kept on their backs. 5. The necessity of after-treatment in the form of hygienic environment, hypernutrition, and appropriate drugs. During the past four or five years he had operated upon some 22 patients, 19 adults and 3 children. In almost all cases the primary improvement was very marked, though in some this was only temporary. In four a second operation was required, but the latter was followed by a completely successful result. In four, these being in an advanced stage of the disease, with considerable involvement of the lungs or other organs, there was no permanent improvement. Five were cases of primary tubercular appendicitis, and were operated upon as chronic appendicitis. No general flushing or evisceration was attempted, but the patients were completely relieved of their symptoms by the operation. Dr. Judd said the improvement in his cases had been truly remarkable, most of the patients gaining from twenty to sixty pounds within six months after being operated on. While, of course, it was too early to claim a cure, and while he would not be surprised to meet with relapses, still the results already accomplished, coupled with the cases of Dr. Lloyd, led him to believe that in this method there had been achieved a considerable advance in the treatment of tuberculous peritonitis.

A Review of Methods of Examination in Heart and Blood-Vessel Disease, with Special Reference to the Discovery of Therapeutic Indications.—Dr. Louis F. Bishop said that while until quite recently the examination of the cardiovascular system consisted chiefly in feeling the pulse and in the auscultation of the heart, there had now been added to these methods the measurement of blood-pressure, the more accurate observation of the wave motions in the blood current, the consideration of the properties of the blood, the *X*-ray examination of the heart, and the electrical study of the cardiac contractions, as well as the study of the chemistry of the body as influencing structural and functional disorder of the cardiovascular system. The most elementary point as regarded the therapeutic indications of blood-pressure findings was that low pressure was not necessarily to be raised or high pressure necessarily lowered. Still, high blood-pressure had a profound therapeutic indication, the limitation of the protein content of the food to the actual requirements of the body; and it also called for the ordering of outdoor exercise and the restriction of mental work and worry. Low blood-pressure, as an acute condition, demanded, according to the nature of the case, a vigorous attack upon some existing form of toxemia, the conservation of nervous energy, as in conditions of shock, attention to posture, and the use of stimulants such as external heat, saline infusion, ammonia and alcohol. In chronic cases the observation of blood-pressure led one to be more or less vigorous in our supervision. One established in each instance a certain standard for a possible approach to normal in blood-pressure, and tried to adhere to it. In many cases of severe cardiac disease there existed a condition of the auricle giving rise to a very large number of impulses (fibrillation), and, these being transmitted to the ventricle, whose capacity to respond was not equal to the many contractions, there resulted great irregularity. In such, digitalis, by retarding the transmission of impulses through the bundle and stopping some of them entirely at this point, brought about a slowing of the radial pulse and a functional improvement of the heart's action. Poylgraph tracings enabled one to detect both extra auricular systoles and extra ventricular systoles. These of themselves had no therapeutic indication, but they might be mistaken for other forms of irregularity. The electrocardiogram, as to its therapeutic indications, was much the same as the polygraph, but with some additional things, such as the detection of right-sided hypertrophy by the inverted electrocardiogram. The therapeutic indications discovered by laboratory examinations of the urine, blood and feces in his opinion, were on an equal basis of importance with examinations of the heart and blood-vessels themselves. One thus found the evidence of intestinal putrefaction, which he believed to be the most usual cause of arteriosclerosis. The discovery of intestinal putrefaction indicated the avoidance of alkaline laxatives. The other therapeutic indications were the use of castor oil at regular intervals, the use of the less fermentable carbohydrates, the insistence on outdoor exercise, and, possibly, irrigation of the large intestine; together with the low protein diet. In the blood one discovered the compensatory increase of red blood cells in valvular disease in young people. In many cases of arteriosclerosis also there was a large increase of these cells, though here accompanied with anemia, in the sense of low hemoglobin, indicating plain diet and outdoor life, with the avoidance of all tonic drug treatment. Treatment was to be chiefly directed toward influencing the digestive tract and the composition of the blood. The condition of the heart and blood-vessels would determine the great question of rest and exercise, careful tests of the effect being made. The *X*-ray had been of great value in the more certain diagnosis of the condition of the heart. It was of particular service, in the speaker's opinion, in showing distinctions between essentially valvular cases and those secondary to arteriosclerosis. He next proceeded to speak of inspection, palpation, percussion, and auscultation, and under the last named treated at some length of the heart sounds and the various murmurs. He then took up the study of the pulse, stating that of late years the tendency had been to place less reliance upon the judgment founded solely on the pulse, as felt, and to modify the findings by the actual measurements of the sphymomanometer and the study of tracings. Not very long ago it was customary to treat the high tension pulse systematically with nitroglycerin. One was not to reduce the strength of such a pulse arbitrarily, but always by removing the cause. In the case of a weak pulse with a low pressure reading the general indication was, of course,

to strengthen it, but this was not to be done directly by stimulation, provided there were no side symptoms of defective circulation. In all cases of cardiac or vascular disease the history of the patient, as well as his personality, and the measure of his resources, would naturally influence very considerably the advice given him. In concluding, Dr. Bishop said it was worth something to know that the treatment of cardiovascular disease must be founded upon proper training and experience in the interpretation of one's technical findings as a whole, and in his opinion it was not worth while to seek for very many specific indications in the findings of technical methods.

High Blood Pressure and Its Causes.—Dr. Oliver T. Osborne, Professor of Materia Medica and Therapeutics in Yale University, opened the discussion with some remarks on high blood-pressure. Syphilis and the various infectious febrile diseases, he said, were only incidental causes of this. Why was it that cardiovascular and renal disease were so much on the increase at the present day? Year by year apoplexy was getting younger men, weak hearts were more in evidence, and Bright's disease was increasing. This state of affairs was largely due to the general stress of modern life, including a great variety of sensory irritations, such as light, noise, shock, and fear. Whether one drove automobiles oneself or walked the busy streets one was subjected to a constant strain. Fear was a potent factor, especially in the case of children. So, there was a continually increasing vascular tension. Old and young alike were engaged in both physical and mental competition. Day after day one rushed from one appointment to another. One ate too much meat and drank too much water. While less alcohol was indulged in than formerly, more tea and coffee were consumed. Consequently, more caffeine was taken into the system, and this was a cerebral irritant. The blood-pressure might be lowered by means of rest and a milk diet. Alcohol also had this effect, by flushing the peripheral circulation. Exhaustion and neurasthenia resulted from lowering of the blood-pressure. Normal blood-pressure was principally the result of the action of the suprarenals and, to a less extent, of the pituitary body, while the thyroid and most of the secretory glands had the effect of lowering the pressure. Consequently, anything that would exhaust or tire out the thyroid would tend to raise the blood-pressure. With abnormally high pressure one would have such symptoms as increased urination, flushings, etc., indicating the beginning of cardiorenal disease. When the blood-pressure was too high, what should one do? Not too much. The pathological process could be arrested if taken in time. The patient should be ordered to take rest, the quantity of meat eaten should be reduced, and intestinal putrefaction should be looked after. Frequently a small amount of thyroid, not more than two or three grains a day, would be of service. Or, one might give a little nitroglycerin. According to laboratory results, the action of this agent was extremely evanescent, but clinically this was not found to be the case: 1/200, or even 1/400 grain might be sufficient. One should give just enough to relieve the symptoms. The reason why iodine had been so long in repute in these conditions was simply because it had the effect of stimulating the thyroid, so that it would reduce the blood-pressure to normal. Body-baking was an efficient resource in lowered compensation and arteriosclerosis. It should, however, be employed in moderation: once a week at first, and then every two or three weeks. As to raising the blood-pressure, this could not be done if neurasthenia were present. As an actual remedy digitalis was to be relied upon, and strophanthus was useful in acute trouble. All other cardiac drugs Dr. Osborne would do away with. Strychnine was apt to harm. He believed that it was a mistake to use it, and that it had been too much resorted to. Alcohol might be of service, by dilating the peripheral vessels. Of late the blood-pressure proposition had become a fearsome sort of thing, and this was largely due to life insurance examiners. The ideas concerning it constituted a very bad nervous element. Consequently, Dr. Osborne did all that he could to discourage his patients from thinking about the subject, and he never took the blood-pressure unless he needed it for therapeutic reasons. In concluding he said he would liken our present-day life to the second speed of an automobile. With this, more gasoline and more lubricating oil were used, and more work was required to keep the engine cool. There was also more smoke, and when the car stopped it took quite a long time for the machinery to cool off. This was bad for the engine and bad for the rest of the apparatus, and it was hard work to adjust the fuel and weight.

Clinical Polygraphy: A New Instrument.—Dr. Thomas Satterthwaite described briefly the mechanism of the modern polygraphic machines, and the methods of using them so as to secure records of the jugular, liver, carotid and radial pulses, the apex beats of both right and left ventricles, and the respiratory movements. Allusion was made to the polygraphic instruments of Marey, Gibson, Mackenzie, Barringer, Berkeley, and others. The speaker believed the machine of Barringer to be the best of the kind for hospital work, while the Berkeley, being simple, inexpensive, and portable, was especially suited for ordinary practice. He then described his own machine, which he had been using for more than seven years in his office practice. It was called the Automatic Spring Recorder, because it eliminated the personal equation, as did the electrographic machines, and made use of the spring of the ordinary bath-room scales. The instrument was described as follows: "The pen-arm is actuated by the spring of the ordinary bath-room scales, to the platform or base of which a raised seat is firmly attached. The patient stands or sits upon the scales; or, by elevating the wings of the seat, it is made into a couch on which he may extend himself horizontally. The action of the heart and vessels is communicated to the pen-arm attached to the dial, which records the waves on the smoked paper of the revolving drum. Below it another pen-arm, made of rye-straw and tipped with platinum or celluloid, receives the impulse of the carotid or jugular or liver pulse, or of the apex beat, through a brass reservoir, and writes the curves on the same paper. Still below this, the metal pen-arm of a Jaquet chronograph marks the time on the drum in seconds or fractions of seconds." Illustrations of the recorder and polygrams taken by it were shown. While this instrument was capable of doing any of the work of the ordinary machine by the use of the time-marker and the receivers, tubes, tambours and pen-arms of the Mackenzie system, the speaker had used it with special advantage in determining the effects of nicotine, glonoin, and, recently, caffeine on the heart. As presenting a graphic record of the action of these drugs, it was a new aid in pharmacodynamics. With respect to the effects produced by the alkaloid caffeine, he showed a series of polygrams illustrative of experiments in which he had given massive doses of caffeine to a healthy adult man, the amount given being 42 grains within 50 minutes, whereas the pharmaceutical dose was 1 grain. The polygrams as interpreted showed the rate of the pulse and respiration before, during and after the experiments; also the rhythm and the cardiac force, together with all the waves and wavelets designated by Einthoven in his schematic representation of a cardiac cycle.

Sphygmographic Methods.—Dr. Richard Van Santvoord read this paper. (See page 512.)

Stethoscopic Examinations.—Dr. Robert Abrahams said that the stethoscope had stood the test of time, and

still remained the handmaid of every practising physician. Most of the stethoscopes intended for the examination of the heart were defective in that the chest-piece was made too large. Thus it necessarily rested on the adjoining ribs and, air entering underneath it, the proper conduction of the sound or murmur was interfered with. For a long time he had used the stethoscope for the diagnosis of pericardial effusion. The instrument was placed one or two inches beyond the normal boundaries of the heart, laterally, and the patient made to repeat "1, 2, 3." The words would be heard distinctly as long as it rested on lung tissue, but the instant it reached the effusion the sound would be cut off. It was not necessary that the effusion should be very large in order to produce this effect, especially when the patient was in a reclining position. He could confidently state that by the use of this method one could, with very little effort, map out the normal heart and ascertain the dimensions of a hypertrophied and dilated heart, as well as determine the relative size of the superficial and deep areas of the heart, both in health and disease. The principle on which all this was based was simply that, while the spoken or whispered word sounded clear and distinct over lung, it became less clear when the stethoscope reached the border of the heart. The average physician perceived and appreciated respiratory sounds much better than percussion notes, and there was such a great difference in the faculty of perceiving the latter, even among those who had been long in practice, that he believed this method of stethoscopic auscultation would commend itself generally. It should not be confounded with the old and very unsatisfactory method of auscultatory percussion, which was now rarely resorted to. The greatest usefulness of the stethoscope was, naturally, in the interpretation of the sounds and murmurs of the heart. While everyone recognized that the first sound was louder and stronger at the apex, and the second sound at the aortic area, there was a general disregard of the fact that, except in childhood, the aortic second sound was louder than the pulmonic second. The practical point here was that if the pulmonic second was more strongly accentuated than the aortic second, almost invariably, other things being equal, mitral disease was present. This point was of special value in the diagnosis of mitral stenosis, where the murmur was frequently absent or inconstant, while the presystolic thrill might never have been present. There were two features in this valvular disease which the stethoscope would never fail to emphasize, the pulmonic second sound and the thud-like thump of the first sound at the apex. Moreover, this prominence of the pulmonary second was of material assistance in the prognosis and treatment. If the sound lost its accustomed accentuation it was a sign of failure of the right heart, while if, under treatment, it again became loud and strong, it was an indication of restored compensation. He had used the qualifying phrase "other things being equal" because the second pulmonic sound exceeded the aortic second in the following other diseases: chronic bronchitis, substantive emphysema, and incipient pulmonary tuberculosis involving the apices especially. These affections, therefore, would have to be excluded before ascribing the accentuated pulmonic to mitral disease. A murmur heard over the pulmonic area should not invariably be designated hemic, anemic or functional, as it might possibly be the continuation of an aortic systolic murmur due to aortic stenosis or, again, result from stenosis of the pulmonary valves of congenital origin. The quality of a hemic murmur, however, was soft, and its point of maximum intensity was slightly above its place of origin, while in the great majority of instances it was transmitted upward toward the left clavicle. If the pulmonic systolic murmur were a continuation of an aortic one it would be found that as the stethoscope was moved from the pulmonic to the aortic area the murmur would increase in intensity, and if the murmur were abnormally loud and harsh, with a point of intensity directly over the pulmonic area and with little or no transmissibility, it should be considered as due to pulmonary stenosis. Mild pulmonary stenosis was of more frequent occurrence than was generally supposed. A good rule to go by was that when a loud, harsh murmur, heard at the left second intercostal space, close to the sternum, did not disappear under a reasonably long ferruginous treatment it was to be regarded as due to pulmonary stenosis. There was a type of mitral affection, more often seen in children than in adults, which was generally the result of rheumatic trouble and which sooner or later was accompanied by chorea. In these cases there was a mitral systolic murmur, and although not attended by displacement of the apex it was to be considered an expression of mitral insufficiency. It was hemic only when following some kind of hemorrhage. These, he said, were all the examples that his limited time admitted of for illustrating the value of the time-honored stethoscope, which, while other instruments might come and go, would always remain the readiest and most trustworthy tool of the general practitioner. There was a revolutionary tendency among some modern clinicians to dethrone the once all-powerful monarch of heart disease, the murmur, but this the speaker regarded as nothing less than treason. He might be called an old fogy, but he could not forbear stating his conviction that murmur was a very important element in the diagnosis of cardiac disease. It was true that a valvular lesion could be and frequently was demonstrated by physical signs other than the murmur, yet one felt disappointed if the murmur was not present to corroborate the other evidence.

The Electrocardiograph.—Dr. T. Stuart Hart said that, while the clinical use of the electrocardiograph was still in its infancy, it already gave promise of revealing some of the important secrets of the circulation. The string galvanometer of Einthoven, with which his records had been taken, was a large and expensive laboratory instrument which was not portable, and could be used only for such patients as could be brought within reach of its electrical attachments. The records he showed were from patients in the service of Professor James at the Presbyterian Hospital, and these at the time the records were taken were probably 300 or 400 feet distant from the instrument. The expense of the apparatus and the time and skill required for its manipulation would always confine its employment to the specialist, but this would not prevent the general practitioner from familiarizing himself with the records and their interpretation. In the future he would make use of the information thus obtained in the same manner as to-day he availed himself of the nitrogen partitions and other complicated determinations of the pathological chemist. The records were marvelous in their accuracy, and to the speaker their value as precise data of the delicate cardiac mechanism had been emphasized by the fact that when once one was familiar with the record of an unusual case he was able to pick out from a collection of miscellaneous records those obtained from this particular case (provided the circulatory conditions had not changed) without any other help than the *sui generis* character of the records. In the present state of one's knowledge, however, one was far from being able to interpret many of the records made. Thus far one had merely scratched the surface of the ground, but it was evident that underneath there were veins of precious metal awaiting further laborious excavation. The kind of practical problems which these observations were going to help one to solve were those connected with the functional capacity of the heart muscle, the nature and point of origin of the rhythmic impulses, the direction and rate of the propagation of these, and the factors

which modified them, which should therefore indicate the kind and value of therapeutic measures necessary to meet the conditions which one had thus learned to recognize. The difficult and complicated problem of blood-pressure was taken by Dr. Hart as an example. As one knew, the blood-pressure was the resultant of four main factors: the energy of the heart, the peripheral resistance, the elasticity of the arteries, and the volume of the circulating blood. The difficulty met with in any particular case of high or low pressure, and which had to be solved if one's therapeutic measures were to be of service, was to determine which of these factors was modified and to what extent. This was a matter upon which he believed the electrocardiograph would throw much light. He then cited an example of the problems upon which the observations made by means of this instrument had already thrown light, not simply of academic interest, but of practical clinical value. Auricular fibrillation was a condition met with in about 50 per cent of all cardiac cases ill enough to seek hospital care, and yet one which had not been recognized until records were obtained from the electrocardiograph. One of the diagrams presented showed great irregularity and a continuous wavy motion of the galvanometer string, even during the diastolic period. Animal experimentation had demonstrated that such a record was caused by the absence of gross auricular contraction, this having been replaced by fine fibrillary contractions of the muscle fibers of the auricle. The result of these was to throw into the bundle of His a great number of stimuli, which were propagated to the ventricle and, according to its condition at any particular moment, might or might not cause a ventricular contraction. Hence the entire absence of rhythm which had been called delirium cordis, complete irregularity, etc. Auricular fibrillation was characterized by a complete irregularity of the pulse, a ventricular form of venous pulse, and electrocardiographic records showing continuous oscillations and an absence of the P wave (representing the normal electrical variation during auricular contraction). With one's finger on the radial pulse one could make a fairly good guess as to whether or not one was dealing with a condition of auricular fibrillation, and a polygraphic record would give more certain evidence, but the electrocardiogram was the only means by which one could make the diagnosis conclusive. It was in these cases of auricular fibrillation that digitalis showed its greatest efficiency, and here again the electrocardiograph would record the effect of the medication and indicate to one the proper size of the dose. When the heart had been slowed to 50 or 60 a minute and the beats were coupled, presenting a form of bigeminus, it was well to reduce the amount of digitalis. The heart would then ordinarily become somewhat more rapid, 80 to 90 per minute, lose its bigeminal character, and assume a rhythm which might be called "a moderately complete irregularity." This was the point at which the damaged heart showed its best obtainable functional capacity, and digitalis should be continued in a dosage sufficient to keep it as near this as possible. It was probable that in these cases digitalis acted as a block to a part of the impulses coming from the auricle, and thus protected the ventricle, making its contractions fewer and also more efficient.

Examination of the Urine and Feces in Diseases of the Cardiovascular System.—Dr. JOHN J. CONNELLAN said that until quite recently the urine was the only secretion examined, and then simply to determine evidences of the different forms of nephritis. To-day special attention was paid to the determination of indican and indolactic acid. It was customary to examine the urine alone for evidence of intestinal putrefaction (the presence of indican). This procedure was misleading at the best, as the amount of indican was only the roughest index of the degree of putrefaction. Again, many authors claimed that indican was found in large amount in the urine in affections other than intestinal putrefaction; but he doubted this statement, as he did not believe that indican to any degree originated from the metabolism of proteid matter, but wholly from putrefactive processes in the lower intestines. In children it was commonly supposed that certain well-known signs were due to the presence of pinworms (oxyuris vermicularis); but in the examination of many hundred stools of children he had found these parasites in only two instances. What he did find was the presence of indol in at least 95 per cent of the cases, while the rest showed a highly fermentative condition. In many of them there were traces of albumin in the urine, and he believed further investigation would show that up to the fourth or fifth year of life the absorption of indol caused renal irritation. He therefore considered it reasonable to suppose that the cornerstone of many cases of cardiovascular disease was laid in the tender years of childhood. Having described the characteristics of normal stools both in adult and infant life, he stated that the whole problem regarding the treatment of indicanuria could be reduced to the reaction of the alimentary tract and the character of the food ingested. The natural presumption was that bacteria should, if possible, be eliminated; but the fact was that they were a necessary factor in the complex economy of the intestine. Anaerobic or putrefactive bacteria had the power to disintegrate proteid substances, with the resulting formation of several mildly toxic agents: mainly indol, skatol, and phenol. The putrefaction of proteids without the action of anaerobes was impossible. Indol, when found in feces, was in the raw state, but in the urine its character was radically changed by chemical action. It was absorbed through the portal circulation and, by its combination with sulphuric acid excreted by the hepatic cells, an indoxyl sulphate was formed. Entering the blood stream, this became, through the action of the potassium of the blood, an indol potassium sulphate, and it was thrown off through the kidneys as such. There was a wide difference of opinion as to the toxicity of indol in the blood stream, but the speaker believed that it was only a mild toxin, which could not by itself set up the severe symptoms of auto-intoxication. If, however, it was retained in the blood, as in cases of chronic interstitial nephritis, it became more toxic than when its elimination was not retarded. His contention was that there was closely allied toxin, as yet not demonstrated by chemical tests, which was absorbed with indol from pronounced putrefactive tracts and which produced the clinical picture seen in auto-intoxication. In examining over 40,000 specimens of urine for Dr. Bishop he had found indican absent in only one of the primary examinations of his chronic cases. Dr. Bishop made the point that where intestinal putrefaction existed alkaline purges or laxatives were contraindicated. This seemed radical, but, when it was realized that all such alkaline agents would either change the reaction in the alimentary tract to a degree of alkalinity or increase the same if that reaction already existed, it could readily be seen that by giving alkalis, and thus promoting the growth of putrefactive bacteria and inhibiting or destroying the development of the acid-producing group, one was simply "adding fuel to the fire." Recently he had examined a urine which was so loaded with indican that it was impossible to throw it all down, while the feces of the same subject showed a marked alkaline reaction. Bacteria formed at least seven-eighths of the residue. Bouillon and agar showed very few colonies in comparison with the normal stool. The anaerobic cultures showed an enormous growth, and the gas volume tube, after thirty hours, showed 136 per cent of putrefactive gas volume. On investigating the history of this patient he found that

he had been given alkaline purges, in small doses, for several days. Cardinal points in the treatment of intestinal putrefaction, from the laboratory viewpoint, were diet and exercise, with resulting oxidation and reaction of the tract. After many failures to find with the use of gas tubes an agent that without causing a fermentative gas would inhibit the growth of putrefactive bacteria, and at the same time reach the lower intestine almost unchanged, Dr. Connellan had concluded that the use of sugar of milk in moderate doses would secure the desired results. In a recent article Kendall advocated the employment of this agent in intestinal diseases in children, with the idea in view of preventing or destroying putrefactive bacteria. The conclusions reached were as follows: Indican in the urine resulted from intestinal putrefaction, not from the metabolism of proteid matter; in doubtful cases, or to get a correct idea of the degree of intestinal putrefaction, the feces should be examined for indol, and a gas tube used to estimate the amount of putrefactive gas; the urine of children should be frequently examined for indican, especially after diseases which caused renal irritation; in all diseases of the renal tract the presence of indoxyl in the blood stream was detrimental; intestinal putrefaction could be treated only by changing the reaction of the tract to such a degree of acidity that putrefactive bacteria would grow or flourish; where an intestinal putrefaction existed all alkaline cathartics should be prohibited; the use of tablets of dead bacteria to overcome the putrefactive bacteria was of very questionable value, though live cultures of antagonistic bacteria were believed to be of service.

Heart Therapeutics and the Individual Patient.—Dr. James J. Walsh said that nothing had been clearer at all times since men began to make observations on themselves than the influence of thought and emotion upon the heart; and the recognition of the changes in its action produced by such causes and the manifestly important place of the organ in the economy led many in former times to believe that the heart itself was the seat of the emotions. It was thus made responsible for phenomena which occurred quite independently of it, but happened to affect it deeply. In all cases of heart disease it was evidently of the greatest importance to give the patient just as much assurance of mind as possible. In many instances there was really very little occasion for alarm. Thus it was perfectly possible to have a loud murmur without any serious affection of the heart. Indeed, a loud murmur was usually a sign of a strong, vigorous heart muscle, and so long as this remained healthy the prognosis was good. Often the disappearance of murmurs was of much graver import than their loudness. Gerhardt used to teach that if the apex beat were displaced there was probably something serious the matter with the heart or some neighboring organ, while if the apex beat was in place little trouble was to be apprehended. When serious symptoms were present nothing had so great a tendency to restore compensation as reassurance of the patient. The physician should learn to use this kind of mental therapeutics deliberately; not to do so was to neglect an important feature of therapy. It could be employed improperly, but from the abuse of a thing no argument against its legitimate use held in logic. Through the mind a great deal could be done to calm the heart, and the use of this calming influence was probably a better remedy than any other. Certainly there were no idiosyncrasies against it, and upon some individuals its effect was most potent. One was sometimes prone to think, on hearing of marked benefit following shortly after the administration of digitalis, that the mental influence was more important than anything else, especially when one recalled the fact that the physical effects of digitalis were not manifest under twenty-four hours. The point under consideration had been recognized by physicians of all periods, and emphasized by every distinguished cardio-therapeutist in recent years. It seemed to the speaker, however, that one sometimes forgot how much the patient's mind counted in such cases, and that there were many in whom the mental influence over the heart was much greater than in others. These would not be improved, no matter how powerful the remedies employed, unless their minds were set at rest. In confirmation of the views expressed he then quoted from the writings of two eminent authorities, Broadbent and Mackenzie.

Some Notes on Mackenzie's Work.—Dr. Victor E. Sorapure, who had met Mackenzie personally, gave an interesting account of his manner of life and an appreciation of his eminent contributions to medical science. So far from finding his work barren of therapeutic results, as was often claimed, he believed that the principles of treatment he had laid down were so rational and so universally applicable that they must influence every school of thought. In concluding his estimate of the man the speaker recalled the fact that, like the true general practitioner that he was, Mackenzie had not neglected any organ or system in his observations and studies, for if he had never published his great works on the heart and pulse his work on the interpretation of symptoms would be sufficient to claim for him the gratitude of his generation.

Philadelphia County Medical Society.

At a stated meeting held May 11 Dr. Hilary M. Christian presented a communication entitled "A Clinical Study of Cases of Syphilis Treated with Salvarsan." He reported the results obtained in fifty-seven cases of syphilis of varying stage and degree treated by means of intragluteal injections of arsenobenzol, without complication and with excellent results in thirty-two of the cases. In the remaining twenty-five cases the results were unsatisfactory or disappointing. The importance of continuing treatment with mercurials following the employment of arsenobenzol was emphasized. Dr. Guthrie McConnell read a paper entitled "The Pathology of Neuralgia." He pointed out the impossibility of distinguishing between a neuralgia without obvious lesion and an actual inflammation of a sensory nerve, causing pain. In all instances, however, there must be some change in the nerve or its ganglion occasioning the symptoms. Dr. James Hendrie Lloyd read a paper entitled "The Neurology of Neuralgia." He dwelt on the relation of so-called neuralgia to numerous varied conditions, relief from which must first be afforded before permanent cure of the painful state can be expected. He related a case of trigeminal neuralgia in which relief was afforded for a year by division of the sensory root of the Gasserian ganglion following a period of relief of a year and a half after resection of several branches of the fifth nerve. Dr. Ernest Laplace discussed "The Surgery of Neuralgia," speaking first of nerve-stretching, next of resection, and then of avulsion of nerves with plugging of their orifices of exit. Should these measures fail, resort may be had to resection of the Gasserian ganglion or division of its sensory root. He referred to a case of trigeminal neuralgia in which many operations had been performed with only temporary relief, and in which after death a tumor of the cerebello-pontile angle was found. Dr. W. S. Newcomet spoke of the "Röntgenology of Neuralgia," showing how painful conditions in the distribution of the branches of the inferior maxillary nerve might by means of fluoroscopic or radiographic examination be shown to arise as a result of displaced or unirrupted teeth, or of the presence of fillings or fragments of dental instruments, and he made it clear that relief could only follow removal of the disturbing factors.

Dr. A. A. Eshner discussed "The Treatment of Neuralgia by Alcoholic Injections." He pointed out that the treatment of neuralgia with various forms of injection, sterile water, saline solution, drugs in solution, anesthetic or otherwise, had long been practised, while it is only within a period of ten years that deep, intraneural injections of 70, 80, or 90 per cent. alcohol had been made. The results have been satisfactory in a large number of instances. The method has been employed particularly in the treatment of tic douloureux. The fifth nerve may be approached for this purpose either from the cavity of the mouth behind the last molar tooth or from the side of the face. The object is to reach the first division of the nerve in the sphenoidal sinus, the second division in the round foramen, and the third division in the oval foramen. Anesthesia, local or general, is employed by some, although rejected by most. The injection is attended with a sense of burning and tingling, but it is soon followed by relief of pain. Anesthesia in the distribution of the nerve treated may last for a week or more. Sometimes several injections are required in the course of a week or two. Often the freedom from pain persists for weeks or months or even a year or more. When it returns the injection may be repeated.

College of Physicians of Philadelphia.

At a stated meeting held December 7 Dr. Astley P. C. Ashhurst gave an "Exhibition of Three Cases of Severe Types of Infantile Paralysis Cured by Operation (Arthrodesis in Two Cases and Tendon Transplantation in One Case)." Operation was performed when deformities existed in degree and chronicity not amenable to other means of treatment and resulted in restoration of function of disabled parts and removal of the necessity for wearing braces and the like. Dr. James Tyson presented, on behalf of Mrs. Susan Parrish Wharton, a portrait of Dr. Joseph Parrish, who was born in 1779, was elected a fellow of the college in 1810, and died in 1840. He was a distinguished practitioner of his time, and while never connected with a medical college did considerable medical teaching to private students. Dr. Ralph Pemberton presented a communication entitled "A Study of Myotonia Atrophica, with the Report of Two Cases and the Exhibition of One." The disorder is a muscular dystrophy, with inability at once to overcome or release a performed motor act. Careful metabolic studies demonstrated a deficient kreatinin output, without apparent change in the calcium balance. It was suggested that in the metabolic derangement resides the most important criterion for differentiating various disorders of the muscular system. Drs. Wm. G. Spiller and Paul V. Anderson presented a communication entitled "Pellagra, with a Study of the Nervous Tissues," reporting the results of an historical study of the nervous system in two cases of pellagra carefully observed clinically. There was found a widespread degeneration of the nerve cells of the brain and cord, and no indication of systemic distribution, and accordingly it was concluded that the noxious agent must be toxic or infectious.

Toxic Dermatoses Due to Injection of Salvarsan.—Vincenzo Fisicella records two cases of toxic skin troubles resulting after injection of salvarsan. The arsenical eruptions are numerous and among them is herpes zoster. In one of the authors patients this eruption with its accompanying neuralgia appeared after the injection of salvarsan, lasted for a short time, and then rapidly disappeared. In the other patient the eruption was characterized by erythema in the beginning, marginate and circinate ,then slowly took on the characterisie of pityriasis maculata and circinata. After a second arsenical treatment with Fowler's solution taken some time later the same eruption recurred. Perhaps in this case the salvarsan had not yet been quite eliminated at the time of the Fowler's solution treatment.—*La Riforma Medica.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS

State Board of Medical Examiners of South Carolina

June, 1911.

general anatomy (Junior Curriculum).

1. Name group of bones that make up lower extremity.
2. Name the seven muscles of the orbital region.
3. Name branches of brachial artery.
4. Name the five veins of the neck which return the blood from the head and face.
5. Show by drawing the regions of abdomen.

surgical anatomy (Senior Curriculum).

1. Why is the shoulder joint most liable to dislocation?
2. Where is congenital dislocation most often found? How diagnosed?
3. Name the arteries met with in lateral lithotomy.
4. Where in the appendages does extrauterine pregnancy most commonly occur?
5. In deafness, after history of injury, how by tuning fork would you determine whether the nerve itself was destroyed or was due to some lesion of auditory apparatus?
6. Which of the vessels of the arterial system is most frequently the seat of disease, and what part or portion?
7. Why, when, and where would you make lumbar puncture?
8. Symptoms of irritation of phrenic nerve? What would be the consequence of bilateral paralysis of this nerve? Fracture dislocation of what cervical vertebra would produce this paralysis?
9. When and why would you use the Trendelenburg position? When and why would you use Fowler's position?
10. Of what surgical importance is the location of the lower part of the brachial artery in venesection?

physiology (Junior Curriculum).

1. Name the varieties of cartilage and state where each is found.
2. What produces the second sound of the heart and what events in the heart's action are coincident with it?
3. Give the varieties of secreting glands and examples of each.
4. Give the functions of the 10th cranial or pneumogastric nerve according to its distribution.
5. What is the purpose of respiration and what changes take place in the respired air?

hygiene (Senior Curriculum).

1. Name the common breeding places of house flies. Tell how best to destroy flies, and name diseases transmitted by them.
2. How is the hookworm propagated? How does it gain entrance into the human system, and how is the disease spread?
3. Given case of typhoid fever, describe proper precautions to prevent spread of disease.
4. How long is it necessary to quarantine in scarlet fever, measles, diphtheria, and smallpox respectively?
5. What would constitute an ideal sleeping room?
6. Describe a sanitary rural privy.
7. In an inspection of public school children, what diseases or abnormalities are commonly found which ought to be corrected and, briefly, why?
8. In scabies in school children what would you do?
9. Given an infant 6 months old, emaciated, anemic, one or more joints swollen and painful, fed on malted milk exclusively, give diagnosis, cause of condition, and proper feeding to restore to health.
10. Give diet in diabetes, chronic nephritis, rheumatism, phthisis, and why.

chemistry (Junior Curriculum).

1. Define an element, an atom, a molecule, and chemical force.
2. Give the chemical name and formula for each of the following: Caustic potash, saltpeter, Epsom salts, lime, and calomel.
3. Differentiate dialysis and osmosis.
4. How is formaldehyde prepared? In what forms is it used as a disinfectant?
5. What is electrolysis? Give example. Give the forms of electricity in clinical use.

PRACTICAL URANALYSIS, MICROSCOPY, AND TOXICOLOGY.

(Senior Curriculum.)

1. What is the reaction of normal urine? To what is it due?
2. What is a urinometer? Give specific directions for its use. State how it may aid in diagnosis.
3. Give concisely the technique of a chemical examination of the urine for life insurance.
4. Give concisely the technique of a microscopic examination of the urine.
5. State how you would examine for pus in the urine if you had no microscope.
6. What do you understand by a corrosive poison? How soon after taking will symptoms develop?
7. How does a corrosive poison differ from an irritant poison? Give an example of each.
8. Give symptoms and chemical and physiological antidote for digitalis poisoning.
9. Give symptoms and chemical antidote for acute acetate of lead poisoning.
10. How do chemical and physiological antidotes differ in action?

MATERIA MEDICA (Junior Curriculum).

1. Give two antipyretics.
2. Give two hydragogue cathartics.
3. Give two cholagogue cathartics.
4. Give two diuretics.

Give dose to effect of each of the above drugs.

5. Give dose and physiological effect of (*a*) morphine, (*b*) strychnine, (c) atropine, (*d*) pilocarpin.

THERAPEUTICS (Senior Curriculum).

In treating the following diseases, give dose, frequency, and physiological effect of drugs used; if other than drugs, method with physiological effect; 1. acute bronchitis; 2. chlorosis; 3. cholera infantum; 4. intestinal toxemia of infants or green diarrhea; 5. laryngismus stridulus; 6. puerperal eclampsia; 7. scabies; 8. lumbago; 9. uremic poisoning; 10. acute lobar pneumonia.

PRACTICE OF MEDICINE.

1. What symptoms would determine you in arriving at a diagnosis of: (*a*) grand mal, (*b*) petit mal, (*c*) Jacksonian epilepsy?
2. What are the clinical symptoms of the conditions which are liable to follow lobar pneumonia?
3. A man 40 years old has a blood-pressure of 180. Discuss its clinical significance.
4. What are the symptoms of carcinoma of the liver?
5. Describe a case of acute follicular tonsillitis, stating the diseases with which it might be confounded and their diagnostic differences. Give treatment you would use for a case of that affection.
6. Give etiology, symptoms, and treatment of parenchymatous nephritis.
7. In what diseases may hemorrhage from the bowels occur? What assistance in diagnosis may be obtained from inspection of the stools?
8. Discuss poliomyelitis: (*a*) Etiology, (*b*) premonitory symptoms, (*c*) symptoms, (*d*) prognosis, (*e*) treatment, including precautions, if any, you would take to prevent spread of the disease.
9. In what diseases is lobar pneumonia most liable to occur as a complication? What symptoms would cause you to suspect such a complication existed?
10. In June it is necessary to feed artificially an infant 8 months old; give explicit directions so that an intelligent mother could follow your instructions.

OBSTETRICS.

1. Define hysterectomy, and state its indications.
2. How is an ovarian tumor to be diagnosed from pregnancy?
3. What may result from laceration of the perineum?
4. Describe the symptoms and management of an incomplete abortion.
5. Describe the human embryo during the second month.
6. Give treatment of eclampsia.
7. How is a posterior position of the occiput to be diagnosed and managed?
8. What are the dangers of a breech presentation, and how should an impacted breech be managed?
9. Diagnose and give mechanism and delivery in face presentation.
10. How would you treat a case of placenta prævia when hemorrhage occurs prior to full term? (*b*) How would you treat a case of postpartum hemorrhage?
11. Describe (*a*) funic souffle, (*b*) uterine souffle, (*c*) ballottement, (*d*) Hegar's sign, (*e*) Braxton Hick's sign, (*f*) Rasch's sign, and (*g*) Jacquemier's sign.
12. What would lead you to suspect extrauterine pregnancy?
13. Give two symptoms of toxemia of pregnancy with treatment of each.

Answer only ten questions.

SURGERY.

1. Define anesthesia. Mention two favorite general anesthetics. What can you say as to their relative merits?
2. Describe intubation of the larynx (O'Dwyer's operation).
3. Mention several steps in performing perineal section (external perineal urethrotomy).
4. What is phimosis? What is the treatment? Describe the operation.
5. Acute cystitis; give symptoms and treatment.
6. Describe ligation of the radial artery in the upper third.
7. What are fractures? Mention different varieties. How would you diagnose fracture? What are the indications in treating a fracture?
8. Dislocation of the elbow joint: In backward dislocation of both bones what would be the symptoms? The treatment?
9. Mention the several steps in amputating the forearm through the middle third.
10. In burns and scalds what are the local symptoms? The constitutional symptoms? What the local treatment? The constitutional treatment?

BACTERIOLOGY AND PATHOLOGY (Junior Curriculum).

1. Name three pyogenic bacteria. Where are they found in health? Where in disease? And give usual method of staining.
2. Describe the diphtheria bacillus. How would you obtain a specimen for examination, and how would you determine when to release a patient from quarantine?
3. Describe the pathology of scarlet fever and give the usual complications.
4. How are tumors usually classified? Describe a myoma and an epithelioma.
5. Give the pathology of mitral insufficiency with loss of compensation.

MEDICAL JURISPRUDENCE (Senior Curriculum).

1. In gunshot wounds differentiate point of entrance from point of exit and give medicolegal significance of position of wound and direction of wound.
2. Describe the post-mortem findings in phosphorus poisoning; from what industrial source is poison usually obtained? Give antidote.
3. Give immedite and remote effects of concentrated lye poisoning. To what class of poisons does it belong?
4. Describe in detail the healing process in a case of burn.
5. In suspected case of criminal abortion how would you determine whether pregnancy had existed?
6. Give the most important medicolegal question arising in the disposition of property by will.
7. State order in which decomposition usually takes place in a dead body. What conditions hasten it, what retard it?
8. What are the post-mortem findings in drowning?
9. Differentiate a stillborn infant, full term, from one dying a few hours after birth.
10. Mr. A., past middle life, retires at 9 P. M., apparently in good health, and is found dead in bed at 7 A. M. with rigor mortis well marked. Give probable hour of death and state what diseases might have caused death.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

STATE BOARD OF MEDICAL EXAMINERS OF SOUTH CAROLINA.

June, 1911.

GENERAL ANATOMY.

1. Os innominatum (ilium, ischium, pubis); femur; patella; tibia; fibula; tarsus (os calcis, astragalus, cuboid, scaphoid, internal cuneiform, middle cuneiform, external cuneiform); five metatarsals; fourteen phalanges.
2. *Seven muscles of orbital region:* Levator palpebræ superioris, rectus superior, rectus inferior, rectus internus, rectus externus, obliquus superior, and obliquus inferior.
3. *Branches of brochial artery:* Superior profounda, inferior profunda, nutrient, anastomotica magna, and muscular.
4. *Five veins of the neck which return the blood from*

the head and face: External jugular, posterior external jugular, anterior jugular, internal jugular, and vertebral.

5. See Cunningham's "Anatomy" (1909), page 1046; or Gray's "Anatomy" (1910), page 1242.

SURGICAL ANATOMY.

1. *The shoulder joint is most liable to dislocations,* on account of: (1) The shallowness of the glenoid fossa; (2) the large size of the head of the humerus; (3) great freedom of motion; (4) the thinness and laxity of the capsular ligament; (5) the joint depends on the surrounding muscles for its strength; (6) the long leverage of the arm; (7) its exposure to violence.

2. Congenital dislocation is most often found at the hip joint; it gives rise to extreme lordosis, and a waddling gait is noticed when the child attempts to walk.

3. *The arteries met with in lateral lithotomy:* Transverse perineal, external hemorrhoidal (artery of the bulb and pudic artery).

4. Extrauterine pregnancy most often occurs in the Fallopian tube.

5. The distinction between ordinary deafness and the nervous form is made by testing with watch or tuning fork. "If the ticking of a watch or the vibrations of a tuning fork are heard faintly or not at all when held at varying distances from the ear (aerial conduction), but become distinctly audible when the watch or the handle of the fork is placed in contact with the skull or mastoid process (bone conduction), the deafness is of the ordinary variety and due to aural disease. If, on the other hand, watch and fork are heard indistinctly or not at all, both in contact and at a distance, the deafness is due to some lesion of the nerve or its connections. In the first case the nerve is normal and can appreciate vibrations brought by the bone, while, through some fault in the mechanism, aerial vibrations are not transmitted to the nerve endings. In the second case the nerve is at fault and cannot appreciate vibrations, no matter how well they may be conducted."—(Butler's *Diagnostics of Internal Medicine.*)

6. The aorta, more especially the arch, is, of all the vessels of the arterial system, most frequently the seat of disease.

7. *Lumbar puncture* may be made for diagnostic purposes, therapeutically, or for administration of spinal anesthesia. The puncture is made below the second lumbar vertebra, usually between the third and fourth lumbar spines.

8. Irritation of the phrenic nerve may cause hiccough and persistent cough. Bilateral paralysis of the phrenic nerve causes death from paralysis of the diaphragm. Fracture dislocation of the third cervical vertebra will produce this paralysis.

9. In the lymphatics of the peritoneum, those of the diaphragm are more rapid in absorption than those of the pelvis.

To stimulate, the patient should have the foot of his bed raised (*Trendelenburg's position*), so that the fluid (salt solution) may be conveyed more readily to the diaphragm, where absorption is more rapid.

To retard the too rapid absorption of pus in the abdominal cavity, the head of the bed should be raised (*Fowler's position*) so that drainage may be directed toward the pelvis, where absorption is slower.

10. "The lower part of the brachial artery is of interest in a surgical point of view, on account of the relation which it bears to the veins most commonly opened in venesection. Of these vessels, the median basilic is the largest and most prominent, and, consequently, the one usually selected for the operation. It should be remembered that this vein runs parallel with the brachial artery, from which it is separated by the bicipital fascia, and that care should be taken in opening the vein not to carry the incision too deeply, so as to endanger the artery." (Gray.)

PHYSIOLOGY.

1. *Varieties of cartilage.* 1. *Hyaline;* found in the joints, at the ends of the ribs, in the nose, trachea, bronchi, and larynx. 2. *Yellow elastic;* found in the external ear, Eustachian tube, epiglottis, and in cartilages of Santorini and Wrisberg. 3. *White fibrous;* found in intervertebral substance, symphysis pubis, and larynx.

2. The second sound of the heart is caused by the vibration due to the closure of the semilunar valve; coincident with it are: the commencing dilatation of the ventricles, opening of the auriculo-ventricular valve, continuation of the auricular diastole, and closing of the semilunar valves.

3. I. SIMPLE GLANDS.—Duct undivided.

(*a*) *Simple tubular*—Undilated at end—*e.g.* Lieberkühn's follicles, sweat, and many gastric glands.

(*b*) *Simple acinous (alveolar or saccular.)*—Dilated at end—*e.g.* some sebaceous glands (rare).

II. COMPOUND GLANDS.—Duct divided.

(*a*) *Compound tubular.*—Branched elongated tubes, no tubes, no acini—*e.g.* most gastric glands.

(*b*) *Compound acinous or alveolar (racemose glands),* branched duct with saccular acini on terminal branches—*e.g.* salivary, sebaceous, and Meibomian glands; the mucous glands of the mouth, tongue, palate, pharynx, nose, esophagus, and respiratory tube.

(*c*) *Acino-tubular.*—Branched duct, with elongated narrow acini on terminal branches—*e.g.* Brunner's glands.

(From Cunningham's *Anatomy.*)

4. *Functions of the pneumogastric nerve:* "Throughout its whole course the vagus contains both sensory and motor fibers. To summarize the many functions of this nerve . . . it may be said that it supplies (1) *motor* influence to the pharynx and esophagus, stomach, and intestines, to the larynx, trachea, bronchi, and lungs; (2) *sensory* and, in part, (3) *vasomotor* influence, to the same regions; (4) *inhibitory* influence to the *heart;* (5) *inhibitory* afferent impulses to the *vasomotor center;* (6) *excito-secretory* to the salivary glands; (7) *excito-motor* in coughing, vomiting, etc." (Kirkes' *Physiology.*)

5. The purpose of respiration is to provide oxygen to the blood and tissues, and to eliminate carbon dioxide.

	EXPIRED AIR.	INSPIRED AIR.
Oxygen	16.6 per cent.	21 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide...	4.4 per cent.	0.04 per cent.
Other gases.....	Often present.	Rare.
Watery vapor....	Saturated.	Variable.
Temperature	That of body.	Variable.
Volume	Diminished.	Varies.
Bacteria	None.	Always present.
Dust	None.	Always present.

HYGIENE.

1. Common breeding places of house flies: Manure heaps, privy vaults, garbage pails, etc. Flies are best destroyed by being caught on fly papers or in fly traps, and then burned. *Diseases transmitted by flies:* Typhoid, cholera, plague, tuberculosis, dysentery, anthrax, and intestinal parasites.

2. See French's "Practice of Medicine" (1910), page 505; or Osler's "Practice of Medicine" (1909), page 44.

3. See French's "Practice of Medicine" (1910), page 107; or Osler's "Practice of Medicine" (1909), page 96.

4. PERIOD OF QUARANTINE for: *Scarlet fever:* till the patient is quite free from sore throat or discharges of any kind, and the desquamation has entirely disappeared; generally six to eight weeks.

Measles: About one month from onset of symptoms provided no sequelæ are present, and no discharges persist.

Diphtheria: till the patient is free from all signs of congestion or rhinitis, and continued bacteriological examination is persistently negative.

Smallpox: till all crusts or scabs have entirely disappeared.

5. The sleeping room should be as large as possible, with the maximum of sunshine and fresh air; it should face the south, or east, or southeast, and should contain no hangings, and have as few "dust-catching" contrivances as possible; it should not lead into a bathroom.

6. *A sanitary rural privy* consists of a "small watertight pit, not drained but roofed over to exclude rain, and so arranged that the excreta and ashes become thoroughly mixed. For this purpose either the ashes must be thrown in through the closet seat, which may be hinged so as to be lifted *en masse,* or else a "shoot" or sloping slab must conduct one or the other to a common point. The floor should be smooth, and raised a few inches above the level of the adjoining ground.

"The contents ought to be removal at fixed short intervals, and the work should be done at night or early in the morning so as to minimize the nuisance." (Whitlegge and Newman.)

7. Infectious diseases, such as measles, scarlet fever, smallpox, chicken pox, mumps, diphtheria; adenoids; strabismus, trachoma; spinal curvature; pediculosis, scabies, ringworm.

8. *The treatment of scabies* "consists in a protracted bath with soap and hot water, followed by the application of sulphur ointment (3i to 3i) or other parasiticide every night for one week. In the meantime the bed linen and underclothing should be sterilized by heat. At the end of

a week another bath should be taken and some sedative ointment or lotion should be prescribed. Sulphur may be substituted by beta-naphthol, balsam of Peru, styrax, tar, staphisagria, etc."—(Gould and Pyle's *Pocket Cyclopedia.*)

9. The infant, probably, has scurvy; due to improper food. This proprietary food should be stopped and the infant be fed on fresh cow's milk, modified if necessary. The addition of fresh fruit juice (orange) may be of value.

10. See French's "Practice of Medicine" (1910), pages 974, 923, 932, 230, and 399; or Osler's "Practice of Medicine" (1909), pages 420, 694, 700, 226, and 356.

CHEMISTRY.

1. An *element* is a kind of substance out of which we cannot, by any known means, get dissimilar substances.

An *atom* is the smallest part of an element that can enter or leave a chemical reaction.

A *molecule* is the smallest portion of matter (element or compound) which can exist in a free state.

Chemical force is that force by which atoms are held together in the molecule.

2. Caustic potash is potassium hydroxide, KHO; saltpeter is potassium nitrate, KNO_3; Epsom salts is magnesium sulphate, $MgSO_4$; lime is calcium oxide, CaO; calomel is mercurous chloride, Hg_2Cl_2.

3. *Dialysis* is the process of separating substances from a mixture by placing the latter in a vessel with porous walls and immersing it in water, when the more diffusible substance passes through the porous wall. This latter process is called *osmosis.* Substances which readily pass through this porous membrane are called *crystalloids;* those which do not are called *colloids.*

4. Formaldehyde is prepared by the dry distillation of calcium formate:

$$Ca(H\cdot COO)_2 = CaCO_3 + H\cdot COH.$$

It is used as a disinfectant under the forms of: Formaldehyde, paraform, trioxymethylene, formalin, formol.

5. Electrolysis is the process of electrical conduction accompanied by the separation of the constituents of the electrolyte or the decomposition of a chemical compound by passing an electric current through it. The primary products of electrolysis are called ions; those which separate at the positive electrode or anode are called anions; those which separate at the negative electrode or cathode are called cations. A solution of sodium chloride contains NaCl, but it also contains the cation Na and the anion Cl; and the action of the electric current is to separate these ions (which are already liberated) at the respective electrodes. It is supposed that the hydrogen and metallic ions are charged with positive electricity, and the hydroxyl and acid-residue ions are charged with negative electricity; hence the former are attracted to the cathode and the latter to the anode.

Forms of electricity in clinical use are: Electricity by friction, by induction, by chemical action, and by magnetism.

PRACTICAL URANALYSIS, MICROSCOPY, AND TOXICOLOGY.

1. The reaction of normal urine is acid; due to acid sodium phosphate.

2. A *urinometer* is a form of hydrometer used for determining the specific gravity of the urine. It consists of a cylinder and a spindle. The graduation on a urinometer is so constructed that the spindle sinks to the zero point when it is immersed in water at a given temperature. The denser the fluid into which the spindle is immersed the higher it rises. The ordinary urinometer is graduated from 0 or 1000 to 60 or 1060.

To use the urinometer: "The cylinder should be without pouring lip, of such depth that the urinometer may be completely immersed, and of a diameter double that of the wide part of the urinometer. Hold the cylinder in an inclined position and pour into it urine to within 2 cm. of the top. Set it upright, float the urinometer in the urine, and add more urine until the level "heaps" above the rim of the cylinder. Now bring the eye to about the level of the top of the cylinder, and, seeing that the urinometer does not touch the wall of the cylinder, read off the specific gravity at the *highest* point where the liquid, drawn up by capillary attraction, cuts the graduation of the urinometer."—(Witthaus' *Urinalysis,* etc.)

The specific gravity of normal urine varies from about 1015 to about 1025. An *abnormally high* specific gravity may be found in: Diabetes mellitus, fevers, and chronic parenchymatous nephritis.

Low specific gravity of the urine may indicate: Diabetes insipidus, chronic interstitial nephritis, contracted kidney, some nervous disorder, albuminuria, hysteria, or some nervous disorders, or the ingestion of an abnormal amount of fluids.

3 and 4. See French's "Practice of Medicine" (1910), pages 1233, etc.

5. *Pus* in the urine: Acidify the urine with acetic acid, then filter it, and treat the filter with a few drops of freshly prepared tincture of guaiacum; a deep blue color denotes the presence of pus.

6. A corrosive poison is a substance capable of producing death or serious bodily harm by its chemical action upon a tissue with which it comes in direct contact. Symptoms begin to develop immediately.

7. An irritant poison has to be in solution in the blood before it begins to take effet. Sulphuric acid is a corrosive; arsenic is an irritant.

8. DIGITALIS POISONING. *Symptoms:* Nausea and occasionally vomiting. Sometimes colic and diarrhea. After two or three hours marked diminution in the frequency of the pulse, which may fall to 40 or even 25. Dyspnea, attended by a sense of oppression in the chest and coldness of the extremities. Headache, vertigo, and tendency to sleep. Usually attacks of syncope occur, provoked sometimes by the slightest movement of the patient.

Chemical antidote: Tannic acid.

Physiological antidote: Aconite and opium.

9. LEAD ACETATE POISONING. The *symptoms* are: "Metallic taste; dryness of the throat; thirst; severe colicky abdominal pains, referred particularly to the umbilical region, and relieved by pressure; pulse very feeble and slow; great prostration; constipation; urine scanty and red; violent cramps; paralysis of the lower extremities; convulsions; and tetanic spasms."

The *treatment* consists in removing the cause and administering the antidote, "magnesium sulphate, which brings about the formation of the insoluble lead sulphate, while the purgative action of the magnesia is also useful. It should be preceded by an emetic, or by the use of the stomach tube."—(Witthaus' *Essentials of Chemistry.*)

10. ANTIDOTES are classified as: (1) *Chemical antidotes,* which act by uniting chemically with the poison and thus converting it into a harmless or insoluble compound. *Example:* Albumin, in mercurial poisoning; sodium sulphate, in carbolic poisoning.

(2) *Physiological antidotes,* which act by combating one (or more) of the physiological actions of the poison. *Example:* Opium will counteract the dilated pupil caused by belladonna.

MATERIA MEDICA.

1. *Two antipyretics:* Aconite, dose 5 to 10 min. of the tincture; and acetanilid, dose, gr. iv.

2. *Two hydragogue cathartics:* Elaterin, dose of the trituration, about 1/10 gr.; and potassium bitartrate, dose ½ to 1 oz.

3. *Two cholagogue cathartics:* Podophyllin, dose of the resin, gr. ½ to j; and aloes, dose 1 to 5 gr. of the extract.

4. *Two diuretics:* Potassium acetate, dose 30 to 60 gr.; and potassium citrate, dose 15 to 30 gr.

5. MORPHINE. *Dose* of sulphate, gr. ⅛ to ½. *Physiological action:* It is analgesic, hypnotic, diaphoretic, narcotic, a respiratory and cardiac stimulant (later a depressant), it checks most secretions (not perspiration), it stimulates the brain, and contracts the pupil.

STRYCHNINE. *Dose* of sulphate, gr. 1/64 to 1/32. *Physiological action:* Strychnine is a bitter tonic, stimulates appetite, secretion, and digestion, increases peristalsis, stimulates the vasomotor centers, and so raises arterial tension, stimulates both accelerator and inhibitory nerves of the heart. All the functions of the spinal cord are exalted by strychnine, reflex, motor, vasomotor, and sensory. Large doses cause dilated pupils, irregular and jerky respiration, increased reflexes.

ATROPINE. *Dose* of sulphate, gr. 1/250 to 1/60. *Physiological effects:* Anodyne, mydriatic, inhibits secretions, depressant of terminations of nerves, accelerates the heart beat, causes rise in blood pressure, but toxic doses cause the blood pressure to fall, stimulates the respiratory center, but large doses depress the same; it may cause vertigo, restlessness, excitement, delirium, or mania.

PILOCARPINE. *Dose* of hydrochloride, gr. ⅛ to ½. It stimulates secretory nerves and involuntary muscles, is a myotic, nervous depressant, and sudorific.

THERAPEUTICS.

1. See French's "Practice of Medicine" (1910), page 666; or Osler's "Practice of Medicine" (1909), page 603.

2. See French's "Practice of Medicine" (1910), page 523; or Osler's "Practice of Medicine" (1909), page 730.

3. See French's "Practice of Medicine" (1910), page 804; or Osler's "Practice of Medicine" (1909), page 511.

4. See French's "Practice of Medicine" (1910), page 799; or Osler's "Practice of Medicine" (1909), page 509.

5. See French's "Practice of Medicine" (1910), page 663; or Osler's "Practice of Medicine" (1909), page 599.

6. See OBSTETRICS, 6.

7. For *scabies*, sulphur or betanaphthol (3j to ℥j of lard) may be used to kill the parasite.

8. See French's "Practice of Medicine" (1910), page 953; or Osler's "Practice of Medicine" (1909), page 397.

9. See French's "Practice of Medicine" (1910), pages 909 and 930; or Osler's "Practice of Medicine" (1909), page 702.

10. See French's "Practice of Medicine" (1910), page 177; or Osler's "Practice of Medicine" (1909), page 189.

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), pages 1163 and 1166; or Osler's "Practice of Medicine" (1909), pages 1060, 1062, and 1063.

2. See French's "Practice of Medicine" (1910), page 169; or Osler's "Practice of Medicine" (1909), page 180.

3. This *high blood-pressure* may be due to various conditions. "In *chronic interstitial nephritis* the elements of arteriosclerosis, high peripheral resistance, and increased heart energy bring about high readings. In abnormal nervous excitement temporary high pressure may be observed. In secondary myocarditis with *associated arteriosclerosis*, the uremic state, lead poisoning, gout, cerebral hemorrhage, and sometimes in *parenchymatous nephritis or early acute nephritis* high readings are present."—(Greene's *Medical Diagnosis.*)

4. See French's "Practice of Medicine" (1910), page 858; or Osler's "Practice of Medicine" (1909), page 569.

5. See French's "Practice of Medicine" (1910), page 735; or Osler's "Practice of Medicine" (1909), page 445.

6. See French's "Practice of Medicine" (1910), pages 910 and 918; or Osler's "Practice of Medicine" (1909), page 692.

7. "It is evident that a decision as to the origin of the blood in a given case can be reached only by a careful consideration of the history and symptoms, as well as a painstaking physical examination. It may be of service to bear in mind that the most frequent causes of hemorrhage from the bowel are hemorrhoids, typhoid fever, colitis, and cancer of the colon; that the most frequent causes of *large* intestinal hemorrhages are typhoid fever, portal engorgement from disease of the heart or liver, hemophilia, purpura hæmorrhagica, and rupture of an aneurysm; that the most frequent causes of *small* hemorrhages from the bowel are hemorrhoids, injury to the rectum or a rectal fissure by the passage of feces, ulceration (syphilitic or cancerous) of the rectum, and intussusception in infants and children. The extent of an intestinal hemorrhage, and on occasion its occurrence before appearing in the stools, may be judged by the constitutional symptoms, which are those of internal hemorrhage."—(Butler's *Diagnostics of Internal Medicine.*)

And see French's "Practice of Medicine" (1910), page 1228.

8. See French's "Practice of Medicine" (1910), page 1068; or Osler's "Practice of Medicine" (1909), page 914.

9. See French's "Practice of Medicine" (1910), page 92; or Osler's "Practice of Medicine" (1910), page 84.

10. "The bottle should be thoroughly cleansed with borax and hot water (one tablespoonful of borax to a pint of water) and boiled before using. The nipple should be turned inside out, scrubbed with a brush, using hot borax water. The brush should be used for no other purpose. The bottle and nipple should rest in plain boiled water until wanted. Never use grocery milk. Use only bottled milk which is delivered every morning. From May 1 to October 1 the milk should be boiled five minutes immediately after receiving. A mixture when prepared should be put in a covered glass fruit jar and kept on the ice. *For a baby from the sixth to the ninth month* the following mixture will be found useful: 24 oz. of milk, 24 oz. of barley water, 6 teaspoonfuls of granulated sugar. Feed 6 to 8 oz. at three-hour intervals, six feedings in twenty-four hours."—(From Kerley's *Treatment of Diseases of Children.*)

OBSTETRICS.

1. *Hysterectomy* is removal of the uterus.

The INDICATIONS FOR HYSTERECTOMY are given as follows: *For the abdominal operation:* All solid or cystic tumors of the uterus; cancer; uterine rupture during labor; certain conditions of puerperal sepsis; pregnancy complicated by pelvic deformity, cancer, or other serious obstacle to the passage of the child; uterine prolapse or inversion, and incidentally as a step in the removal of complicated suppurative conditions of the uterine appendages.

For the vaginal operation. Bilateral suppurative conditions of the appendages; prolapse, cancer, pregnancy with cancer before the sixth month; certain septic conditions of the uterus; certain rare conditions which may require the ablation of a small movable uterus.

For the combined operation: Cancer, certain complicated fibroids; failure to secure hemostasis from below.—(From *Reference Handbook of the Medical Sciences.*)

2. See Williams' "Obstetrics" (1909), page 191; or Hirst's "Obstetrics" (1909), page 204.

3. "Tears of the perineum destroy the integrity of the pelvic floor and result eventually in rectocele, cystocele, hemorrhoids, and displacements of the pelvic organs. If the tear involves the sphincter ani, incontinence also results. Lacerations of the cervix retard or check involution of the uterus and predispose to endometritis, menorrhagia, displacements, eversion of the cervical mucous membrane, cystic degeneration, and malignant disease. Deep lacerations of the vaginal vault may open into the base of the broad ligaments, and in the majority of instances genito-urinary fistulas are caused by traumatisms of labor. All lacerations are immediately dangerous on account of the increased liability to sepsis, while the remote results are generally due to interference with involution or the pelvic circulation and to the destruction of the normal supports of the pelvis."—(Ashton's *Gynecology.*)

4. See Williams' "Obstetrics" (1909), page 617.

5. See Williams' "Obstetrics" (1909), page 145; or Hirst's "Obstetrics" (1909), page 84.

6. See Williams' "Obstetrics" (1909), page 541; or Hirst's "Obstetrics" (1909), page 635.

7. See Williams' "Obstetrics" (1909), page 266; or Hirst's "Obstetrics" (1909), pages 404 and 407.

8. See Williams' "Obstetrics" (1909), pages 289 and 430; or Hirst's "Obstetrics" (1909), pages 424 and 824.

9. See Williams' "Obstetrics" (1909), pages 274, 278, and 280; or Hirst's "Obstetrics" (1909), pages 409 and 410.

10. See Williams' "Obstetrics" (1909), pages 815 and 821; or Hirst's "Obstetrics" (1909), pages 577 and 587.

11. (*a*) *Funic souffle* is a sharp, whistling or a blowing sound, synchronous with the fetal heart beat, heard on auscultation over the pregnant uterus.

(*b*) *Uterine souffle* is a rhythmical, soft, blowing sound, synchronous with the maternal heart beat, heard on auscultation over the pregnant uterus.

(*c*) *Ballottement* is the passive movement of the fetus *in utero*, obtained by tapping the lower segment of the uterus with the index finger.

(*d*) *Hegar's sign* consists in a thinning and softening of a segment of the body of the uterus immediately above its cervix.

(*e*) *Braxton Hicks' sign* consists of intermittent contractions of the uterus at about the fourth month of pregnancy.

(*f*) *Rasch's sign* is fluctuation felt when the hand is applied to the cervix of the uterus in early pregnancy, due to the presence of liquor amnii.

(*g*) *Jacquemier's sign* is a discoloration (dark or bluish) of the vaginal mucous membrane, noticed early in pregnancy.

12. "When extrauterine pregnancy exists there are: (1) The general and reflex symptoms of pregnancy; they have often come on after an uncertain period of sterility; nausea and vomiting appear aggravated. (2) Then comes a disordered menstruation, especially metrorrhagia, accompanied with gushes of blood, and with pelvic pain coincident with the above symptoms of pregnancy; pains are often very severe, with marked tenderness within the pelvis; such symptoms are highly suggestive. (3) There is the presence of a pelvic tumor characterized as a tense cyst, sensitive to the touch, actively pulsating; this tumor has a steady and progressive growth. In the first two months it has the size of a pigeon's egg; in the third month it has the size of a hen's egg; in the fourth month it has the size of two fists. (4) The *os uteri* is patulous; the uterus is displaced, but is slightly enlarged and empty. (5) Symptoms No. 2 may be absent until the end of the third month, when suddenly they become severe, with spasmodic pains, followed by the general symptoms of collapse. (6) Expulsion of the decidua, in part or whole. Nos. 1 and 2 are *presumptive signs;* Nos. 3 and 4 are *probable signs;* Nos. 5 and 6 are *positive signs.*"—(*American Text-book of Obstetrics.*)

13. See Williams' "Obstetrics" (1909), pages 508 and 518; or Hirst's "Obstetrics" (1909), page 263.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), pages 1321 and 1326; or Da Costa's "Surgery" (1908), pages 1025 and 1028.

2. See Rose and Carless' "Surgery" (1908), page 921; or Da Costa's "Surgery" (1908), page 771.
3. See Rose and Carless' "Surgery" (1908), page 1244; or Da Costa's "Surgery" (1908), page 1177.
4. See Rose and Carless' "Surgery" (1908), page 1248; or Da Costa's "Surgery" (1908), page 1181.
5. See Rose and Carless' "Surgery" (1908), page 1192; or Da Costa's "Surgery" (1908), page 1135.
6. See Rose and Carless' "Surgery" (1908), page 337; or Da Costa's "Surgery" (1908), page 406.
7. See Rose and Carless' "Surgery" (1908), pages 464, 466, 470, and 475; or Da Costa's "Surgery" (1908), pages 446, 455, and 460.
8. See Rose and Carless' "Surgery" (1908), page 623; or Da Costa's "Surgery" (1908), page 594.
9. See Rose and Carless' "Surgery" (1908), page 1307; or Da Costa's "Surgery" (1908), page 1121.
10. See Rose and Carless' "Surgery" (1908), page 116; or Da Costa's "Surgery" (1908), page 1052.

BACTERIOLOGY AND PATHOLOGY.

1. See Rose and Carless' "Surgery" (1908), pages 57, 7, and 8; or Da Costa's "Surgery" (1908), pages 42 and 33. See also French's "Practice of Medicine" (1910), page 1257.

2. The *characteristics of the bacillus of diphtheria:* The bacilli are from 2 to 6 mikrons in length and from 0.2 to 1.0 mikron in breadth; are slightly curved, and often have clubbed and rounded ends; occur either singly or in pairs, or in irregular groups, but do not form chains; they have no flagella, are non-motile, and aërobic; they are noted for their pleomorphism; they do not stain uniformly, but stain well by Gram's method and very beautifully with Loeffler's alkaline-methylene blue.

A sterile swab is rubbed over any visible membrane on the tonsils or throat, and is then immediately passed over the surface of the serum in a culture tube. The tube of culture, thus inoculated, is placed in an incubator at 37° C. for about twelve hours, when it is ready for examination. A sterile platinum wire is inserted into the culture tube, and a number of colonies of a whitish color are removed by it and placed on a clean cover slip and smeared over its surface. The smear is allowed to dry, is passed two or three times through a flame to fix the bacteria, and is then covered for about five or six minutes with a Loeffler's methylene-blue solution. The cover slip is then rinsed in clean water, dried, and mounted. The bacilli of diphtheria appear as short, thick rods with rounded ends; irregular forms are characteristic of this bacillus, and the staining will appear pronounced in some parts of the bacilli and deficient in other parts.

See HYGIENE, 4.

3. See French's "Practice of Medicine" (1910), pages 316 and 320; or Osler's "Practice of Medicine" (1909), pages 131 and 134.

4. *Tumors are classified as follows:*

I. Those derived from mesoblast:
(*a*) *Benign:* Lipoma, fibroma, chondroma, osteoma, myxoma, myoma, neuroma, glioma, angioma, lymphangioma.
(*b*) *Malignant:* Sarcoma.
II. Those derived from epiblast or hypoblast:
(*a*) *Benign:* Adenoma, papilloma.
III. Cystic tumors.
IV. Teratomata.

See Rose and Carless' "Surgery" (1908), pages 202 and 211; or Da Costa's "Surgery" (1908), pages 310 and 333.

5. See French's "Practice of Medicine" (1910), pages 588 and 584; or Osler's "Practice of Medicine" (1909), pages 894 and 795.

MEDICAL JURISPRUDENCE.

1. (*a*) In gunshot wounds by *soft lead bullets*, the *wound of entrance* is often smaller than the ball (skin stretched at the moment of impact and contracted after perforation); it is depressed, and the edges are contused and inverted, and if the weapon is fired within ten feet usually are blackened from powder and contain powder grains. If the wound is much larger than the bullet it means that some foreign body has been carried in.

The *wound of exit* is everted, "triangular, linear, or stellate," and much larger than the wound of entrance.

(*b*) In gunshot wounds by *hard lead or steel bullets*, the *wound of entrance* is usually as large as the ball, the skin may be split or may be perforated, and foreign bodies are not carried by the ball into the tissue.

The *wound of exit*, if not in the region of explosive action, may be a little larger or a little smaller than the bullet, but is not noticeably larger than the wound of entrance. If within the area of explosive action, the wound of exit is much larger than the wound of entrance, and is irregular and everted.—(From Da Costa's *Modern Surgery.*)

The medicolegal significance of position and direction of wound consists in the fact that by careful study of these it may be possible to differentiate between suicidal, accidental, and homicidal wounds.

2. *Post-mortem appearances in phosphorus poisoning:* "The most common and characteristic of these are the jaundiced skin and internal organs, the ecchymoses beneath the skin and mucous membranes, and the fatty degeneration of the liver, heart, and kidneys. In addition to these there is frequently fatty degeneration of the gastric epithelium and of the capillaries of the cortex of the brain. Necrosis of the jaw bone is quite often found and sometimes new formation of bone tissue. If the poison has been taken in the solid state particles may be found adhering to the mucous membrane of the stomach and bowels, and perforations are very apt to occur at these points. If paste or match heads have been taken there may be no local inflammation, but ecchymoses and hemorrhages into the pleural cavity, pericardium, and bladder. The blood is dark and syrupy, the corpuscles disintegrated and destroyed. The yellow liver of phosphorus poisoning may be distinguished from that of acute yellow atrophy, which it sometimes resembles, by the fact that in the latter, instead of globules of fat, the cells are filled with or replaced by finely granular detritus, and the urine is loaded with leucin and tyrosin, whereas in the former but little increase in these substances is found."—(Riley's *Toxicology.*)

The chief industrial source is the manufacture of matches. The antidote is old French oil of turpentine, or solution of potassium permanganate.

3. *Effects of concentrated lye poisoning:* "A nauseous acrid taste, rapid destruction of the mucous membranes and even the deeper tissues of the mouth and throat, burning pain in the throat and stomach extending very soon to the abdomen, which becomes exceedingly tender, aphonia, vomiting of bloody mucus, frothy and with a soapy taste, pulse small and thready, surface cold and covered with a clammy perspiration, great prostration, sometimes ending with convulsions, especially with children. When potassium hydroxide has been taken it sometimes shows its specific action on the heart, causing slow, weak pulse, the patient sinking into unconsciousness. Constipation is sometimes troublesome, but generally a bloody diarrhea supervenes. The urine is scanty and alkaline, or entirely suppressed. The blood is dark and gelatinous. If the patient survives a few days, sloughing of the fauces and esophagus may occur, followed by stricture and death from exhaustion or starvation, or the stomach may have been most severely affected and death result from destruction of its functions."—(Riley's *Toxicology.*)

It belongs to the class of corrosives.

4. See Rose and Carless' "Surgery" (1908), page 252; or Da Costa's "Surgery" (1908), page 113.

5. See Williams' "Obstetrics" (1909), pages 188 and 192; or Hirst's "Obstetrics" (1909), page 191. Much will depend on: (1) the time that has elapsed between the abortion and the examination of the woman, (2) the period of pregnancy when the abortion was performed, and (3) the manner in which the abortion was performed.

6. The most important medicolegal question in connection with a will is the sanity or insanity of the testator.

7. *The order in which decomposition usually takes place in a dead body:* Mucous membrane of larynx and trachea, stomach, intestines, spleen, omentum, mesentery, liver, brain, heart, lungs, kidney, bladder, esophagus, pancreas, diaphragm, uterus.

Decomposition is hastened by: Temperature between 70° and 100° F.; moisture; air; age (in children and young people more rapidly than in adults or old people); obesity; death from accidents or violence, also in certain infectious diseases; and burial in low ground or in damp, swampy soil, or in shallow grave.

Decomposition is retarded by absence or reverse of the above conditions.

8. In *death by drowning:* The surface is pallid, the face appears tranquil, the eyes and mouth being partly open. The skin often has the appearance known as gooseskin, and, if the body has lain upward of twelve hours in the water, that of the hands and the feet is sodden by imbibition. The most important external sign is the presence on the mouth and nostrils of a fine froth (possibly blood-stained), composed of air, mucus, and the medium in which drowning took place; if the body remains three or four days in water the froth disappears. Exceptionally, fragments of weeds or other small objects may be found tightly grasped in the hands. On opening the thorax the lungs, gray in color, with reddish staining, are seen to be

very voluminous, a condition known as ballooning, partly due to infiltration of the lung tissue with some of the medium in which drowning took place, and partly to true edema. The lung substance is inelastic and pits on pressure. On section, fluid and froth resembling that found on the lips exude from the divided air passages. Minute subpleural hemorrhages are not infrequently present, and the pleural cavities may contain fluid. The stomach often contains water or other liquid which was involuntarily swallowed during attempts at respiration. Occasionally some of this fluid is forced by vital action into the intestines. With one exception, the remaining appearances are those met with after death from asphyxia. The exception is constituted by the blood, which is not only dark colored and fluid, as is usual after death from asphyxia, but is also diluted by the imbibition of water from the stomach and lungs.—(Quain's *Dictionary of Medicine.*)

9. "The *general appearance* of a child that has been *born alive* at full term and respired is something like the following: The remains of the vernix caseosa are usually seen under the axilla, and behind the ears. The eyes remain partly open, and cannot be permanently closed. The ears are not so close to the sides of the head as is the case in children born dead. The hair is perfectly dry and clean, and the swelling at the back of the head (caput succedaneum) is more prominent than in the still-born. In the *dead-born* infant who has died immediately before its birth the vernix caseosa will be found, more or less, over its entire body. The eyes are closed and the ears are in close apposition to the head. The eyelids when raised close again. The mouth is closed, and from the nostrils is often observed exudation of watery blood. The hair is glued to the head. The thorax is unexpanded and flattened, and the lungs are situated at the posterior part of the thoracic cavity; they are greater in length than in breadth, and their margins are rounded; upon pressure no crepitation is elicited. Within the trachea, which is flattened, may be found a viscid mucous secretion. The remnant of the umbilical cord appears fresher looking than that of a child that has survived its birth a few hours."—(Herold's *Legal Medicine.*)

10. Mr. A. may have died of heart disease, apoplexy, thrombosis, embolism, or aneurysm. We decline to guess at the hour of his death.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

STUDIES IN CARDIAC PATHOLOGY. By GEORGE W. NORRIS, M.D. 233 pages; cloth; illustrated; price $5.00 net. W. B. Saunders Co., Publishers, Philadelphia.

PUBLIC HYGIENE. By THOS. S. BLAIR, M.D. Vol. I, 310 pages; Vol. II, 334 pages; cloth; illustrated. Richard G. Badger, Publisher, Boston.

THE DAWN OF THE HEALTH AGE. By BENJAMIN MOORE. 204 pages; cloth; illustrated. J. A. Churchill, London, and The Liverpool Booksellers' Co., Ltd., Liverpool, Publishers.

STOFFWECHSEL UND STOFFWECHSELKRANKHEITEN. By Prof. FRIEDRICH RICHTER. 407 pages; paper; price 8 M. August Hirschwald, Publisher, Berlin.

VACCINE THERAPY IN GENERAL PRACTICE. By GEORGE H. SHERMAN, M.D. 142 pages; cloth. Published Detroit, Mich.

KLINIK FÜR PSYCHISCHE UND NERVÖSE KRANKHEITEN. Vol. VI, Part I. By ROBERT SOMMER. 96 pages; paper; price 3.00 M.; complete vol. 12.00 M. Carl Marhold, Publisher.

NOTHELFERBUCH, LEITFADEN FÜR ERSTE HILFE. 159 pages; cloth; illustrated. August Hirschwald, Publisher, Berlin.

THE CHEMISTRY OF SYNTHETIC DRUGS. By PERCY MAY, B.Sc. 229 pages; cloth; price $2.25. Longmans, Green & Co., Publishers, New York.

A TEXTBOOK OF MEDICAL DIAGNOSIS. By JAMES M. ANDERS, M.D. 1195 pages; half morocco; illustrated; price $6.00 net. W. B. Saunders Co., Publishers, Philadelphia.

THE NATURE OF ENZYME ACTION. By W. M. BAYLISS, D.Sc., F.R.S. 137 pages; cloth; price $1.20 net. Longmans, Green & Co., Publishers, New York.

FOOD AND THE PRINCIPLES OF DIETETICS. By ROBERT HUTCHISON, M.D., F.R.C.P. 615 pages; cloth; illustrated; price $3.00 net. William Wood & Co., Publishers, New York.

THE PRACTICAL MEDICINE SERIES. Vol. II. SURGERY. By JOHN B. MURPHY, A.M., M.D., LL.D. 611 pages; illustrated; cloth; price $2.00; series of ten volumes $10.00. The Year Book Publishers, Chicago.

A NEW IDEA IN SANITATION. By J. C. SALTER. 89 pages paper.

CLINICAL ANALYTICAL METHODS. By KARL M. VOGEL, M.D. 19 pages; paper. James T. Dougherty, New York, Publisher.

MENTAL MECHANISMS. By WILLIAM A. WHITE, M.D. 151 pages; paper. The Journal of Nervous and Mental Disease Publishing Co., New York, Publishers.

EDUCATION AND PREVENTIVE MEDICINE. By NORMAN EDWARD DITMAN, Ph.D., M.D. 73 pages; paper; price 25c. The Columbia University Press, Publishers, New York.

THE PRINCIPLES AND PRACTICE OF BANDAGING. By G. G. DAVIS, M.D. 128 pages; illustrated; cloth; price $1.00 net. P. Blakiston's Son & Co., Philadelphia, Publishers.

NEURASTHENIA. By GILBERT BALLET. 408 pages; illustrated; cloth; price $3.00 net. William Wood & Co., New York, Publishers.

JOINT TUBERCULOSIS. By LEONARD W. ELY, M.D. 243 pages; illustrated; cloth; price $2.50 net. William Wood & Co., New York, Publishers.

DISEASES OF THE SKIN. By JAMES H. SEQUEIRA, M.D. 539 pages; with 44 plates in color and 179 other illustrations; price $8.00 net. P. Blakiston's Son & Co., Philadelphia, Publishers.

PROGRESSIVE MEDICINE. By HOBART AMORY HARE, M.D., and LEIGHTON F. APPLEMAN, M.D 397 pages; illustrated; paper; price $6.00 per annum. Lea & Febiger, Philadelphia and New York, Publishers.

AMERICAN PRACTICE OF SURGERY. VOL. 8. Edited by JOSEPH D. BRYANT, M.D., LL.D., and ALBERT H. BUCK, M.D. 1,146 pages; illustrated; cloth. William Wood & Co., Publishers, New York.

MEDICAL REVOLUTION. By SYDNEY W. MACILWAINE, M.R.C.S., L.R.C.P. 162 pages; price 2/6 net. P. S. King & Son, London, Publishers.

MERCK'S MANUAL. Fourth edition; 493 pages; paper. Merck & Co., St. Louis, New York and Rahway, Publishers.

PROCEEDINGS OF THE CANAL ZONE MEDICAL ASSOCIATION FOR THE HALF YEAR, 1910. April, 1910, to September, 1910. 150 pages; paper. I. C. C. Press, Mount Hope, C. A., Publishers.

THE PRACTICAL MEDICINE SERIES. Vol. III: The Eye, Ear, Nose, and Throat. Edited by CASEY A. WOOD, C.M., M.D., D.C.L.; ALBERT H. ANDREWS, M.D., and GUSTAVUS P. HEAD, M.D. 365 pages; illustrated; cloth; price $1.50. The Year Book Publishers, Chicago, Publishers.

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THERAPEUTIQUE USUELLE DU PRATICIEN. By ALBERT ROBIN. 530 pages; paper; price 8 fr. Vigot Frères, Paris, Publishers.

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ONE THOUSAND SURGICAL SUGGESTIONS. By WALTER M. BRICKNER, B.S., M.D. 225 pages; cloth; bound semi-de luxe $1.00, full de luxe leather $2.25. Surgery Publishing Co., New York, Publishers.

SCHUTZPOCKENIMPFUNG UND IMPFGESETZ. By Prof. Dr. MARTIN KIRCHNER. 158 pages; paper. Richard Schoetz, Berlin, Publisher.

THE PREVENTION OF MALARIA. By RONALD ROSS. D.P.H., F.R.C.S., D.Sc., LL.D., F.R.S.C.B. 669 pages; cloth; illustrated; price $5.00 net. E. P. Dutton & Co., New York. Publishers.

YEARBOOK OF THE UNITED STATES DEPARTMENT OF AGRICULTURE. 1910. Published by Government Printing Office, Washington. 711 pages; illustrated; cloth.

UNSOUNDNESS OF MIND. By T. S. CLOUSTON, M.D., LL.D., F.R.S.E. 360 pages; illustrated; cloth; price $2.50 net. E. P. Dutton & Co., New York, Publishers.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS. Vol. V. 400 pages. Published for the Society by Frederick H. Hitchcock, New York.

LITORA ALIENA. By MEDICUS PEREGRINUS. 78 pages; paper; price 50 cents. W. M. Leonard, Publisher, Boston, Mass.

HOW OLD THE NEW. By Dr. JAMES J. WALSH. 457 pages; cloth; price $2.00 net. Fordham University Press. Publishers.

Medicolegal Notes.

Father's Liability for Medical Treatment to Emancipated Minor Son.—In an action by a physician against the father of a boy of 20 for compensation for services in attendance on the latter while suffering from typhoid fever the defense was that the boy was emancipated and there was no contract with the father. In the same year the boy had left his father's home in Missouri and gone to Oregon. It was held that he was emancipated and that the fact that the physician did not know that he was no longer under parental control did not affect the defense. The plaintiff knew when the boy applied to him for assistance that he was not living with his parent. He was informed that the father lived in Missouri, so that the arrangement between the father and son, under which the boy had left home, was a matter the plaintiff should have inquired into before rendering the services to the boy on the credit of the father. It was not necessary that he should have actual knowledge of such an arrangement. The father wrote to the hospital in answer to a letter notifying him of his son's sickness, "I have a dear boy in your institution sick with fever. I have sent him some money and will send him more soon. You will give him all the attention you can and greatly oblige a father so far away, and kindly let me know from time to time how he is getting along." It was held that this did not constitute a promise in writing to pay for the services, as there was no evidence that the letter in any wise changed the relation of the parties or the terms of the existing contract with the boy under which he was being treated, or that any additional attention was given the boy on account thereof. Brosius v. Barker (Mo.), 136 S. W. 18.

Waiver of Privilege by Patient as to One Medical Attendant Does Not Admit the Evidence of Others.—In an action for damages for personal injuries received while alighting from a train a physician who attended the plaintiff after the injury testified that she suffered from a prolapsus of the uterus, which might have resulted from her fall. The defendant offered to prove by two physicians who had attended the plaintiff about two years prior to the injury that she had sustained a displacement of the womb at that time. Objection by the plaintiff to the admission of this testimony was properly sustained. The Arkansas statute, Kirby's Dig., § 3098, prohibiting a physician from being compelled to disclose information acquired while treating a patient in a professional character, necessary to enable him to prescribe, was enacted for the patient's benefit. It is a privilege which the patient alone may waive. When it is waived by the patient as to any particular witness the adversary is entitled to the benefit of the waiver as to such witness, but is not entitled thereby to call another physician who treated the patient at a different time to testify relative to the matter. Missouri & N. A. R. Co. v. Daniels, Arkansas Supreme Court, 136 S. W. 651.

Information Charging Practising Without License Must Negative the Exceptions in the Statute.—An information charged that the accused treated and professed to heal a certain named patient "without having a certificate or license issued by the State Board of Health, and filed in the office of the clerk of Custer County, Nebraska, as required by law." There was no allegation that the accused resided in Custer County. The act requires a license to be filed in the county where the licentiate resides or in which he intends to practise. The information was held to be fatally defective because it did not negative the fact that a license issued by the State board might have been filed in the office of the county clerk of the county where the accused resided. Every fact stated in the information might have been true and the accused be not guilty. Wilson v. State, Nebraska Supreme Court, 131 N. W. 223.

Evidence of Failure to Attend Accouchement as Promised Admissible.—In an action against a physician for negligence in failing to attend, in accordance with his promise and employment, the accouchement of the plaintiff, who had received a jar while alighting from a street car which brought on premature labor, the plaintiff's declaration alleged that laceration of the cervix and rupture of the perineum resulted from the defendant's neglect. It was held error to refuse, as bearing on the issue of negligence, the plaintiff's offer of evidence that after calling several times up till 7 P.M., when he promised to return at 11 P.M., or earlier, and, although telephoned to several times after that hour, he did not return until 2 A. M., after the child was born. Adams v. Henry, Michigan, Supreme Court, 131 N. W. 62.

Nonassenting Father's Liability for Operation on Infant Child at Request of Mother.—In a suit in quantum meruit for the reasonable value of professional services of a surgeon in performing an operation on the defendant's infant child it appeared that the defendant's little daughter had been suffering from liver trouble and was brought from her home to St. Louis by her mother and the family physician for treatment by the plaintiff. After an examination the plaintiff and the family physician diagnosed the malady to be an abscess on the liver and advised an operation to save the patient's life. To this the defendant's wife consented. The operation was performed and about two quarts of pus removed. The patient succumbed a day or two after, but it was conceded that the operation was performed with skill and the death occurred from weakness resulting from the disease. The defendant resisted payment of the plaintiff's charge solely on the ground that the operation was performed without his knowledge or consent. It was conceded that the operation was necessary to save the child's life, but was, of course, a dangerous one in the weakened condition of the patient. There was evidence for the defendant that he had objected to an operation before his wife left home with the child, but that fact was not communicated to the plaintiff. It was held that in the circumstances of the case the services rendered were necessaries, for which the law implied an obligation on the part of the father to pay when performed at the instance and request of the mother. The case was distinguished from that of Detwiler v. Bowers, 9 Pa., Super. Ct., 473, where it was said that a surgical operation of doubtful advantage is not a necessary for which a nonassenting father is liable upon an order given to the surgeon by the wife. In that case the malady was a cancerous tumor, and the parents had been advised that the disease would immediately reveal itself again, though an operation were had. That prediction came through, and the court deemed that the operation, known to be of doubtful advantage, did not come within the category of necessaries furnished the child for which the parent should answer.—French v. Burlinghame (Missouri), 134 S.W. 1100.

Masseur, as Such, Does Not Require Certificate.—In a prosecution for practising medicine without having filed the required certificate, the defense was that the accused was practising as a masseur. The court charged the jury that if the defendant did not charge for his services as a masseur, or for treatment by any method or system, and receive pay therefor, he should be acquitted, and that a masseur, in his particular sphere, was not required to secure a certificate. This charge, it was held, fairly submitted the defense. Newman v. State, Texas Court of Criminal Appeals, 134 S.W. 688.

Proving Existence of Nervous Disease.—Affection of the nervous system is a disease whose diagnosis and treatment call for the experienced physician. In estimating damages, therefore, in an action for injuries a jury may accordingly properly use the fact that the plaintiff's attending physician did not testify as a presumption of fact against the plaintiff. Steinert v. Whitcomb (Conn.), 79 Atl. 675.

Medical Expert's Evidence as to Injuries—Bias May Be Shown.—A physician who had treated an injured woman was asked as an expert what would be the effect of a woman being thrown out of a seat in a street car upon the lower end of her spine and buttocks. The plaintiff had testified to her fall and described the resultant injuries. There was nothing in the question requiring the physician to commingle knowledge gained as a physician with his opinion as an expert. He might give the probable results of the injury or the causes which might produce certain described conditions. Where the testimony of a medical expert for the defendant conflicts with that of the expert for the plaintiff it is permissible to contradict the former by reason of bias and to show that he held a similar position with another company. Witty v. Springfield Traction Co. (Missouri), 134 S.W. 82.

Itinerant Vendors of Drugs Do Not Require Certificates for Practising Medicine.—The Arkansas statute regulating the practice of medicine provides that any itinerant vendor of drugs intended for the treatment of disease "or" who may, by writing, print, or other methods, profess to cure diseases by any drug, shall, unless he has a certificate, be in violation of the law. It also provides for an examining board to issue certificates and makes it an offense to practise medicine without a license. In view of the general scope of the act, and that, if construed otherwise, the clause "who may by writing, print, or other methods profess to cure disease," etc., would be rendered ineffective, the act was construed to require only those itinerant vendors of drugs who profess to cure disease to secure a license; the word "or" being construed as "and." Williams v. State, Arkansas Supreme Court, 137 S. W. 927.

Unlawfully Practising Medicine—Sufficiency of Indictment.—Under the Texas statute defining and regulating the practice of medicine, an indictment charging the defendant with unlawfully practising medicine without having properly registered his authority for so doing, and treating and offering to treat physical disease and disorder, and making a charge therefor, is sufficient. Young v. State. Texas Court of Criminal Appeals, 134 S.W. 736.

Negativing Statutory Exceptions in Prosecutions for Practising Without License.—Missouri Rev. St., 1909, § 8315, makes it a misdemeanor to practise medicine or surgery without a license from the State Board of Health, but provides that physicians registered on or before March 12, 1901, shall be regarded as registered physicians for the purposes of the act. In a prosecution under the act it was held that an information charging that the accused, not being a registered physician, and having no license from the State Board of Health, did indicate that he was engaged in the practice of medicine, and that he treated the sick, etc., for compensation by offering to treat a specified person for a certain disease in consideration of a designated amount, was fatally defective for failing to negative the exception. The statute provides for a fine on conviction of not less than $50 nor more than $500, or imprisonment for not less than 30 days nor more than a year, or both. It was held that a judgment that the accused be imprisoned for 30 days, pay the costs accrued in the case, and stand committed until the sentence be complied with, that he pay to the State a fine of $500 with the costs accrued and that execution issue therefor, is defective as apparently imposing separate sentences adjudging two sets of costs, and leaving it a matter of doubt as to what punishment is actually inflicted. State v. Hellscher (Missouri), 135 S. W. 959.

Contract for Fee Contingent on Damages Recovered by Invalid.—A person injured in a railway collision made a contract with the physician who attended him to give him for his professional services one-third of any sum he might receive from the railway company as damages and to pay him a further sum in addition thereto if the claim was settled out of court for $2,000 or more. The claim was settled for $1,800 and the physician subsequently sued the party injured for the balance of the agreed on one-third. It was held that the contract was invalid as in contravention of public policy. The amount to be obtained from the railway company must depend principally upon the testimony of experts like the plaintiff, and the circumstances of the case and the agreement made showed that it was contemplated that the plaintiff should be a witness in case of suit, and should give a history of and opinion upon the case in the event of a proposed settlement. The plaintiff's interest in the amount of the damages would, therefore, tend to color his testimony. Sherman v. Burton, Michigan Supreme Court, 130 N. W. 667.

Sanatorium for Treatment of Bone Tuberculosis Not a Nuisance per Se.—Bills were filed by the board of health of a city and by private residents and property holders to prevent the conduct of a sanatorium for tuberculosis. Affidavits filed for the defendant showed that the institution of which complaint was made was not an institution for the treatment of pulmonary tuberculosis, but a sanatorium which was to be devoted exclusively to the treatment of children who are afflicted with bone tuberculosis. The sanatorium was for the free treatment of poor children afflicted with the disease last named, and not being maintained for profit did not come within the provisions of the New Jersey statute requiring a municipal license. The defendant lodged affidavits of a great number of physicians and surgeons of eminence who have given special study to the various forms of tuberculosis. These physicians testified that, while pulmonary tuberculosis is undoubtedly contagious, bone tuberculosis is neither contagious nor infectious, and cannot be transferred from one to another; and that cases of bone tuberculosis are freely admitted to all the hospitals and treated in the same wards as other surgical cases. If that were true it was manifest that no danger to the health of the inhabitants of the city was threatened by the maintenance of the sanatorium in question, and the grievance asserted by the complainants was based upon an assumed danger which did not in fact exist. In view of the evidence of these physicians it was held that the New Jersey act of April 9, 1910 (V. L., p. 279), containing the sentence "Tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health," which was probably not intended to apply to bone tuberculosis, did not render the institution a nuisance *per se* and injunction was denied. Board of Health of Ventnor City v. North American Home, 78 Atl. 677.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended September 2, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	394	148
Diphtheria	127	15
Measles	95	6
Scarlet Fever	50	1
Smallpox	—	—
Varicella	14	—
Typhoid Fever	119	20
Whooping Cough	42	6
Cerebrospinal Meningitis	3	5
Malarial Fever	—	
Totals	844	201

Rupture of the Uterus During Labor.—Potocki tells us that rupture of the uterus may result from any condition that renders labor difficult, whether it be a contracted pelvis, disease of the soft parts, or a large size of the fetus which renders it out of proportion to the pelvic canal. In case of contracted pelvis it is in the lesser degrees of contraction that rupture of the uterus is likely to result. In great degrees of contraction the condition is foreseen and measures taken to prevent the rupture. In cases of hydrocephalis, or extreme size of the fetus, rupture may occur. Other causes of rupture are cancer of the cervix, or fibromata. An imperfect cicatrix after cesarean section is another cause of rupture of the uterus. If the rupture occurs suddenly we get an intense pain with a sense of tearing, and collapse. If it is less sudden we get pain, bleeding from the uterus, and lesser symptoms. In some cases the rupture is latent and gives few symptoms. The prognosis of rupture of the uterus, unless the rupture is very small, is fatal, death occurring from gangrene, peritonitis, or sepsis. Preventive treatment of rupture consists in the routine examination of every pregnant woman before labor, and provision made against the occurrence of rupture. When rupture has occurred operation should be done at once. Laparotomy becomes necessary to extract the fetus, and this must generally be followed by amputation of the uterus when the cervix is not involved, or hysterectomy when it is.—*Le Bulletin Médical.*

Narcolepsy in Glandular Affections.—Tramonti says that the term narcolepsy signified originally a neurosis in which the principal symptom was an irresistible desire to sleep, occurring in attacks at intervals, accompanying various diseases, especially those connected with various glands. The author considers first narcolepsy in connection with glandular insufficiency. The condition occurs in affections of the liver, such as cirrhosis. In renal diseases it is rarer than in liver disease. It indicates a condition of marked insufficiency of the kidneys, as in acute Bright's disease. It is a common effect of absence of thyroid action and occurs in myxedema occasionally, but more frequently in hypothroidism, in adipose subjects. Here the crises of sleep come on without premonitory symptoms, and are very profound, the patient going to sleep suddenly in the middle of a medical examination. Examination of the thyroid gives no useful information about this condition. Under hyperfunction of glands the author classes the cases of narcolepsy in fat persons who eat a great deal, live a sedentary life, and have dyspepsia. The attacks do not come on suddenly, but slowly, in spite of the resistance of the patient. The hypophysis has a marked influence on the cortical system. Narcolepsy occurs in acromegaly, coming on suddenly in the midst of the occupations of the patient; sleep is complete, profound, and the patient wakes up spontaneously. It also occurs in disseminated sclerosis. The treatment of this condition is unimportant; at the time of the attack it consists in placing him in a comfortable position with loosened clothes. The causes must be found and removed to get permanent results. A severe diet and régime are needed in the obstinate cases found in hepatic and renal conditions. Those attacks that are most benefited by treatment are found in the obese and those suffering from hypothroidism. An anti-fat treatment is of value here. Thyroid opotherapy is also useful.—*Il Policlinico.*

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Original Articles.

TETANY AND THE SPASMOPHILE TENDENCY IN INFANCY AND CHILDHOOD.*

BY HENRY KOPLIK, M.D.,
NEW YORK.

FOR decades past interest has centered about the study of certain infants and children who in the course of their growth show a tendency to convulsions. The interest has, as it were, been a storm center of investigation and discussion. Why it is that certain infants should show a recurrent outbreak of convulsion under inciting influences which leave others unharmed has as yet not been entirely solved. The term spasmophile has been coined to fit children who have a tendency to show under special conditions spasms of various kinds. This term has been given to us by Heubner and maintained by his school. It has been rejected by Escherich and his pupils in favor of a nomenclature which might more completely unify the pathogeny of the convulsive condition of infancy and childhood. This nomenclature will be discussed more in detail. We may divide all children into (1) those who have never had any convulsions, spasms, or spasmodic affections. Under this head I would class not only those who have not had any convulsive seizures, but those who are not likely to have any under the most trying inciting causes. There are such children.

On the other hand, there is (2) a large class of infants and children who, though they have never had convulsions or even spasmodic affections, may at any moment exhibit them if the inciting agent becomes apparent. Such infants and children show certain characteristics which mark them to the careful observer. They are the so-called tetanoid infants of Escherich or the spasmophiles of Heubner and his school. To one who has seen these infants the striking point is the frequency of their existence if certain tests, of which we shall speak, are applied to them. In Escherich's clinic von Pirquet found fully 56 per cent. of all children, and infants especially, came under this class. In speaking of this class of infants and children, my own feeling has been, as I passed them in review, that of the European observers—their startling frequency. In any large clinical collection of infants or children we see many who come from neurotic parents. As the infant is placed on the examining table the look of anxiety in the face of the mother is reflected in the features of the as yet subconscious mite of humanity. The babe of three months will start and cry as soon as approached from an unknown quarter. Any sudden sound or harsh handling will cause it to jump and then cry. These infants show marked response to the slightest irritation, mechanical or otherwise. They are pale, sometimes quite well nourished, but as the Germans have well put it, "pasteuse," pasty. The signs of beginning rachitis or craniotabes are present, and in older children there is a distinct lymphatic tendency, but what is especially worthy of note is the extreme hypertension of the nervous organization of these young infants and the corresponding characteristics in the parents. The physician is interested, but at the same time realizes that he is in the face of serious conditions. Many, I should say the larger number, of these infants, are artificially fed, though not necessarily so. These infants whom we will for the sake of simplicity call spasmophilic may never have had any convulsions, or spasms, or spasmodic conditions, but their nervous system is ready to accept the first incitement to convulsive affections. We may with moderate certainty predict, if it were advisable, that such an infant will at some future time exhibit convulsions or the convulsive affections of childhood. The infant is in a constant state of tension as to its nervous system or other functions. The least variation in the food or change in the daily routine of such an infant becomes immediately apparent by a series of symptoms all reflected in a constant uneasiness which is not and never would be brought out in children who have not these tendencies. Under the careful guidance of the all-searching mother such an infant may be carried along through a part of its infant life without any mishap, when suddenly an explosion or catastrophe occurs, and the first symptom appears which immediately places the child in a second category, the outspoken tetanoid or spasmophile infants.

The first and by far the most frequent symptom to appear is one of the forms of laryngospasm, and with it one of the variations of respiratory apnea. In the old nomenclature of diseases of infancy laryngospasm, or laryngismus, is described as a distinct affection, the so-called laryngismus stridulus. We know now that this symptom is only a spasmodic manifestation of a deep-seated condition. It is only an outward sign of what may at any moment occur, and that is a convulsion. Going still deeper, laryngospasm combined with apnea may result in sudden death of the individual, a death which is due, not as formerly supposed, to asphyxia from closure of the glottis, for it may occur with wide open glottis, but to spasm of the diaphragm and stoppage of cardiac action, the so-called "*Herztod*" of the Germans.

As I have shown, the first disquieting symptoms are the attacks of laryngospasm and apnea. The mother fears the apnea, and to such a degree that this fear drives her to the physician. When these symptoms have appeared the next development in the clinical journey of these children is the convulsions. The least exciting moment will cause eclampsia, either a frank convulsive seizure or, what is generally the case, a convulsion, following some

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excitement or an attack of laryngospasm or apnea.

A study of these convulsions will mark them as peculiarly characteristic. The infants pass into the convulsions with tetanoid rapidity, there is a suspenion of respiratory movement and a slowing down of the heart. In some cases the suspension of respiration is prolonged until cyanosis is followed by pallor. In such cases death is dangerously imminent, when suddenly there is a resumption of respiration in a shallow manner as distinguished from the sudden deep inspiratory resumption in other cases. Any mild or severe febrile movement will in these infants be ushered in by a frank eclamptic seizure and these seizures may be repeated and prolonged.

These eclamptic seizures or convulsions in the tetanoid infant may be separated by intervals of days or weeks, but usually become more and more frequent until the infant may have repeated convulsions in twenty-four hours, as many as twenty-four in an equal number of hours. These convulsions, frequent as they are, do not seem to injure the sensorium of the infant. Untreated, the infant comes out of the convulsion apparently unharmed. There are no meningeal symptoms or paralyses remaining to mark the path of the convulsive seizure. The most striking element in the convulsion is its startling suddenness and the subsequent freedom from symptoms. The next stage is the appearance of muscular spasm in the intervals of convulsions or laryngismus. A child who at first had laryngospasm or apnea and even convulsions without any interval symptom, will then develop a constant or intermitting spasm of the fingers, arms, and toes, the extremities assume a spastic position and the face wears an anxious look. The so-called carpopedal spasm, or tetany proper, develops in its full symptomatology. This spasm may be evanescent, lasting only a short time, or may be constant and in rare cases last through weeks or months. During the continuance of the tetanoid spasm the infant may have not only recurrent convulsions but repeated attacks of laryngismus. The infants may recover from their tetany or carpopedal spasm, but during convalescence they show the repeated laryngismus and may even have apneic attacks. Others are not so fortunate, but may, in a convulsion or apneic attack, suddenly die as a result of either heart paralysis or paralysis or tetanoid spasm of the diaphragm. In the attack of tetany, unlike the stage of convulsive attacks without tetany, the sensorium may be affected. The face has an ever anxious expression in the stage of carpopedal spasm. This expression may give way to an expression at the height of the tetany of a vacant idiocy; the eyes have a fixed, vacant stare, "*Augenstarre*" of the Germans, and it may be a difficult matter to decide (as in one of my cases) whether the eyesight has not been compromised. Even here, from a vacant, meaningless expression, there may be a return to the normal, and a child who for days has baffled all attempts to fix the presence or absence of blindness will begin to see, and the face will again assume an expression of intelligence and repose.

I have thus sketched the transition of these infants from a series of very insignificant symptoms to the full development of a disease which may at any time threaten life—the full developed "tetany." The general practitioner who for the first time is called to see a spasmophile or tetanoid infant rarely goes deeper than the mere surface, and the result is that he seldom hears of the repeated convulsions of laryngospasm, and the case passes from hand to hand. A close study of the first era in the clinical history of a spasmophilic or tetanoid infant would, I feel, do much to ward off recurring attacks or the full development of tetany. Tetany is not an entity in that it stands alone, but it is the full development of a condition which may be detected in its incipiency and arrested in its onward progress. During the last few years I have given this matter close study and consideration, and have made every effort to recognize the spasmophile or tetanoid infant as it came under my care, and to try to warn those in whose care it was of impending danger.

I have brought together some eighty-two infants and children, of whom twenty-six suffered from fully developed or frank tetany, and the remainder were either spasmophiles or, as we might call them, tetanoid, and would come under the rubric of latent tetany of Escherich and his school. Taking up the discussion of the spasmophile or tetanoid infant, the first question that is of great interest is the bearing of the feeding on the occurrence of this peculiar tendency in infants and children. Of some sixty cases of spasmophilic infants fully thirty-six were fully or in part artificially or substitute-fed infants. It would seem that the simple fact, therefore, of breast or substitute-feeding was not so important as the efficiency of either mode of feeding. Breast milk may be as inefficient a food as cow's milk, and it is in this light that we must consider the feeding as an etiological factor. Therefore, those who insist on breast feeding as the first requisite in the formation of a healthy organism must consider also the full efficiency of this or any mode of feeding. A vast number of artificially fed infants are far from being spasmophiles, and an equal number of breast-fed infants may eventually be tetanoid. Of greater importance, it seems to me, is the presence in overwhelming prominence of the symptoms of rachitis and craniotabes in the spasmophile. Not that rachitis can be proven to be an etiological factor, as Kassowitz would have us believe, but that it is certainly a leading expression of disturbances of metabolism, which in a like manner have caused the appearance of the symptoms which I have sketched, must undoubtedly be admitted. Moreover, I would like to call attention to a factor which is of undoubted bearing in these conditions, and that is the so-called familiar aspect of the problem. I have seen certain families in which generations of children are spasmophiles. I have now under observation a family in which the first born was a manifest spasmophile or tetanoid infant, and in two succeeding members (infants) the spasmophile tendencies are becoming evident, even at the age of three months. In this family the father is rather phlegmatic, while the mother is palpably of high-strung nervous temperament.

The concurrence of the spasmophile or tetanoid tendency with other conditions perhaps closely allied to it, or in some way suggestive of it, is quite interesting. Thus, some seven of my spasmophiles were infants who at the same time showed congenital laryngeal stridor. By this I do not wish to trace any connection between the two conditions, but it would certainly tend to bear out the neurotic origin which some attribute at least to a percentage of the cases of laryngeal stridor. Pyloric spasm, or stenosis, is another affection strongly suggesting a neurosis in certain of its manifestations, and it may be found in a spasmophile.

CASES OF SPASMOPHILE TENDENCY.
LATENT TETANY

Number	Age	Feeding	Laryngismus	Convulsions	Apnœa	Anodal O. Susceptibility	Cathodal O Below 5 M. A	Latent Tetany	Spasmophile	Rachitis	Craniotabes	Chvostek	Trousseau Sign	Remarks
1	5 mos.	Artificial	+	+	+	+	+	+	+	+	+	+	..	Convulsions early, continued 9 mos.
2	8½ mos.	Artificial	+	+	+	+	+	+	+	+	+	+	..	Tetany laryngismus
3	3½ mos.	Artificial	+	..	+	+	+	+	+	+	+	+	..	Congenital laryngeal stridor, difficult feeding—Twins
4	2yrs.	Artificial	+	..	+	+	+	+	+	−	−	−	..	Large thymus
5	4 mos.	Artificial		No reactions taken								+	..	Congenital laryngeal stridor
6	6 wks.	Mixed	+	..	+	+	+	+	+	+	..	..	..	Thymus large, cries, restless
7	4 mos.	Mixed	−	−	−	−	−	−	−	+	+	..	..	Habitual vomiting, cries, restless
	7 mos.	Mixed	+	−	+	+	+	+	+	+	+	+	..	
8	17 mos.	Artificial	+	+	+	+	+	+	+	−	−	−	..	
9	5 mos.	Breast	−	−	+	+	+	+	+	−	−	−	..	
10	4 mos.	Artificial	−	−	−	−	−	−	−	−	−	−	..	Infantile atrophy
	6 mos.	Artificial	..	..	..	+	.	+	..	+	+	..	..	
11	6 mos. to 1 yr.	Breast and Bottle	−	+	−	+	+	+	+	+	+	+	..	Rachitis hydrocephalic, recovery
12	4 mos.	Breast	+	−	..	+	−	+	−	+	..	..	..	Difficult feeding
13	1 yr.	Artificial	−	−	..	+	+	+	+	+	+	+	..	Difficult feeding
14	4 mos.	Artificial	+	−	+	+	+	+	+	+	+	+	..	Difficult feeding, habitual vomiting
15	1 yr.	Artificial	+	+	+	+	+	+	+	−	−	−	..	No visible rachitis
16	3½ yrs.	Artificial	+	−	+	+	+	+	+	−	−	−	..	
17	11 mos.	Artificial	−	−	−	+	−	−	−	+	..	..	..	
18	5½ mos.	Artificial	..	+	..	+	+	..	..	..	..	+	..	Littlés disease, accidental tetany, latent
19	11 mos.	Breast	+	−	−	+	+	+	+	+	+	..	..	Mongolian idiocy, nystagmus.
20	2½ yrs.	Breast	−	−	+	+	+	+	+	+	..	..	..	Masturbator
21	7 mos.	Artificial	−	−	−	+	+	+	+	+	+	..	..	Difficult feeding
22	10 mos.	Artificial	−	−		No history of				+	..	..	..	
	15 mos.	Artificial	+	+	+	+	+	+	+	+	..	..	..	Intestinal intoxication
23	10 yrs.	Breast	−	−	−	+	+			+	..	..	..	Neurasthenia hysteria
24	3 mos.	Breast	−	−	−	−	−	−	−	+	+	+	..	Congenital laryngeal stridor
24	4 yrs.	..	..	+	..	+	+	..	..	..	..	+	..	
25	12 mos.	Artificial	+			No reactions taken				+	..	..	..	
26	7⅞ mos.	Artificial	+	+	+	+	+	+	+	+	+	+	..	Mongolian idiot
27	5 mos.	Mixed	−	−	+	+	+	+	+	+	..	..	..	Congenital laryngeal stridor
28	1 yr.	Breast	−	−	+	+	+	+	+	−	−	..	..	Ileocolitis pertussis
29	6 mos.	Breast	+	−	+	+	+	..	+	+	..	..	..	Spasmus nutans nystagmus
30	3 mos.	Artificial	+	−	..	+	+	+	+	+	..	+	..	Thymus large, scorbutus
31	7 mos.	Artificial	+	+	..	+	+	+	+	+	..	+	..	Difficult feeding, atrophy
32	5 wks. to 6 mos.	Artificial	−	−	−	+	+	+	+	+	..	+	..	Difficult feeding
33	4 yrs.	Breast	..	..	..	+	+	+	+	..	..	..	..	
34	4½ yrs.	Breast	−	+	+	+	+	..	+	..	..	..	..	Angina
35	2½ yrs.	Breast	..	+		No test recorded			+	..	..	..	..	Convulsions
36	1 yr.	Artificial	+	..	..	+	+	..	+	..	..	..	..	Bronchitis
37	5 mos.	Artificial	+	−	−	+	+	..	+	..	..	..	..	Difficult feeding, otitis
38	11 wks.	Mixed	..	..	..	+	.	+	..	..	..	..	..	Pyloric spasm and stenosis
39	4 mos. to 12 mos.	Mixed	..	..	..	+	.	+	..	..	..	..	..	Laryngeal stridor
40	6 wks. to 6½ mos	Artificial	..	..	..	+	+	+	+	+	+	..	..	Atrophia infantalis
41	6½ mos.	Artificial	..	..	..	+	+	+	+	+	+	..	..	Easily frightened
42	3 mos.	Artificial	−	−	−	+	+	+	+	+	+	..	..	Cries very much
43	2½mos. to 6 mos.	Artificial	−	−	−	+	−	+	..	+	−	..	..	Easily startled, difficult feeding, atrophy
44	10½ mos.	Breast	..	..	..	+	+	+	+	..	..	..	..	Amaurotic idiocy
45	9 mos.	Artificial	+	+	+	+	+	+	+	+	..	..	..	Convulsions and laryngismus since age 2 months
46	14 mos.	Mixed	..	..	..	+	+	.	..	..	..	..	.	Laryngeal stridor, mongoloid
47	16 mos.	Breast	+	+	−	−	−	+	+	+	..	+	..	Congenital laryngeal stridor
48	9 wks. and 11 mos.	Artificial	+	−	−	+	+	+	+	−	−	−	−	Enlarged thymus
49	6½ mos.	Artificial	+	+	+	..	..	+	+	+	+	..	..	Englarged thymus
50	10 mos.	Breast	+	..	+	..	.	+	+	+	..	+	..	Enlarged thymus
51	10 mos.	Breast	+	+	+	..	.	+	+	+	..	..	..	
52	4 mos. to 8 mos.	Artificial	..	+	..	+	+	.	..	+	..	..	..	Scorbutus
53	5 wks. to 9 wks.	Mixed	..	..	..	+	+	.	..	+	..	+	..	
54	14 mos.	Breast	+	+	+	−	−	+	+	+	−	−	..	
55	5 mos.	Artificial	+	+	+	−	−	+	+	+	+	..	..	Bronchopneumonia, latent tetany

Little's disease and various forms of idiocy, such as Mongolian idiocy and amaurotic, as well as hydrocephalic idiocy, may show in their symptomatology a distinct tetanoid tendency. I have met the tetanoid tendency in high-strung neurasthenic and hysterical children. To all these I would place the spasmophile or tetanoid tendency in rather a secondary relationship. Spasmus nutans is a distinctly neurotic affection which I have found to be present in spasmophiles. One of my spasmophiles two and one-half years of age showed the symptoms of masturbation. I have intimated that in a large number of the cases spasmophile or tetanoid infants can be immediately recognized by certain familiar traits. At the same time I have found infants perfectly normal early in infancy who later on would manifest tetanoid tendencies which were distinctly absent at first. Infants may show these tendencies very early, even as newborn, but what has struck me as important is that they may be absent at intervals during the first year of life and crop out later on. I have such a case of a breast-fed infant who during his infancy had several periods of freedom from tetanoid symptoms, but during several illnesses ran high temperatures without convulsions. Later on, however, when he had apparently been permanently freed from the attacks of apnea they recurred with renewed and increased severity at the age of twenty-one months. In this case they first appeared at the age of nine weeks.

I now pass to a consideration of the full de-

MANIFEST TETANY.

Number	Age	Feeding	Laryngismus	Convulsions	Apnoea	Anodal O. Susceptible	Cathodal O. Below 5 M. A.	Tetany Corpopedal	Spasmophile	Rachitis	Craniotabes	Chvostek	Trousseau Sign	Remarks
1	8½ mos.	Artificial	+	+	+	–	+	–	+	+	+	+	+	Died
2	5 mos.	Breast and Artificial	+	–			–	+	+	+	+	..	..	Acute bronchopneumonia
3	7 mos.	Mixed	+	+	+	–	–	+	+	+	–	+	–	Acute gastro enteric infection
4	6 mos.	Breast	+	+	+	–	–	+	+	+	–	+	.	Tetany laryngismus, convulsions
5	5 mos.	Artificial	–	–	–	+	+	+	..	+	+	+	+	Otitis, gastro enteric infection
6	4 mos.	Artificial	+	+	–	–	–	+	..	+	..	+	–	Tetany
7	9 mos.	Mixed	+	+	+	+	–	+	+	+	+	+	+	Tuberculous meningitis, died
8	8 mos.	Mixed	+	+	+	–	–	+	+	+	–	–	–	Tetany, acute bronchopneumonia
9	5 mos.	Artificial	+	+	+	–	–	–	–	–	–	–	–	Manifest tetany
10	...	Breast	+	..	+	..	..	+	..	..	..	+		Microcephalic idiot, nystagmus
11	5 mos.	Artificial	+	+	+	+	+	+	+	+	+	+	+	Otitis bronchopneumonia, tetany
12	9 mos.	Artificial	+	+	+	+	+	+	+	+	+	+	+	Otitis, rhinitis tetany, acute bronchopneumonia
13	10 mos.	Breast 4 mos. Artificial	+	+	+	+	+	+	+	+	+	+	+	Manifest tetany
14	2 wks.	Breast	+	+	+	–	–	+	+	–	–	–	–	Died. Tetany
15	7 wks. and 9½mos.	Artificial	+	–	+	+	+	+	+	–	–	..	..	Tetany
16	2½ yrs.	Breast	+	+	–	+	+	+	+	..	.	.	..	Hydrocephalus idiocy, tetany
17	10 mos.	Breast	–	+	–	+	+	+	+	..	.	+	–	Large thymus
18	6 mos.	....	–	+	..	–	+	+	+	+	.	.	.	Microcephalic idiocy
19	4 mos.	Breast	+	+	+	+	+	–	+	+	.	+	..	Enlarged thymus tetany
20	6 mos.	Breast	–	+	–	+	–	+	..		..	..	.	Tetany
21	11 mos.	Mixed	–	+	–	+	+	..	..	+	–	–	–	Tetany
22	8½ mos.	Artificial	+	+	+	+	+	+	+	+	+	+	+	Developed convulsions at 6 months
23	7 mos.	Artificial	+	+	+	–	–	+	+	+	–	–	–	Tetany
24	21 mos.	Breast	+	+	+	+	+	+	+	+	+	+	–	
25	11 mos.	Breast	–	–	+	–	–	+	–	+	–	–	–	Thymus large

velopment of the symptomatology of the tetanoid tendency, and that is tetany. Tetany may occur without any previous symptoms having been observed in the infant, or it may appear, as I have said, as a capping stone to the whole symptom-complex of the spasmophile. As a rule infants and children who exhibit the symptoms of frank tetany have shown some spasmophile tendencies during infancy in the form of extreme restlessness, irritability, and attacks of apnea or laryngismus. The symptomatology of tetany is so familiar that to detail it here would be out of place. I will pass in review only those phases of the disease which have left a more lasting impression on my mind. In some cases the first symptoms to appear suddenly, as lightning out of a clear sky, are the convulsions. A breast or bottle-fed infant having been in previous absolute health will suddenly and without any fever or premonitory symptoms develop convulsions. These convulsions may be repeated a number of times during the twenty-four hours, and only after a while do the extremities assume the characteristic tetany position. Laryngismus may be absent, but what is most interesting is that expiratory or inspiratory apnea may usher in the convulsion. The result is that the parents only by close questioning can detect any premonitory stage. The well-being of the infant does not seem to suffer. From this to the most outspoken forms of tetany is only a matter of gradation. Among my cases, of twenty-five in which systematic records were kept fifteen were bottle-fed or partly breast and bottle, the remaining ten cases were breast-fed. Here there is an overwhelming proportion of bottle-fed infants, but at the same time the breast-fed infants were certainly in remarkable proportion, proving again that the efficiency of the breast feeding might well be questioned in these infants. Of my twenty-five cases the most frequent occurrence was from the sixth to the twelfth month, sixteen cases; below the sixth, seven cases, and above the twelfth, two cases.

Of the twenty-five cases only one could be classed as subacute or chronic. In six of the cases the tetany appeared as a so-called accidental affection in the course of pneumonia, meningitis, or gastro-enteric infection. Of the series of twenty-five cases eighteen showed signs of rachitis to a degree, thus showing the overwhelming proportion of cases which have disturbance of bone nutrition.

In three of my cases of frank tetany sudden death occurred, and in another case which complicated tuberculous meningitis death followed, as was to be expected. This latter case showed in a most exquisite manner all the various symptoms of the disease, but in an exaggerated manner, no doubt intensified by the presence of the leading affection.

The diagnosis of tetany is one of the great strides in diagnosis made in modern pediatrics, and is due largely to the increasing activity of the German pediatric schools. I say without fear of criticism that to-day the recognition of tetany in America has not received that full attention which other diseases of infancy and childhood have. It is difficult to account for this. These cases are just as common here as abroad. We have practically the same class of infants and children, but the practitioner and those who devote some time to the study of diseases of children have not given the subject the close, intimate study it deserves. One of the greatest advances in the recognition of the infants I describe is the elaboration of the reactions of these infants to electrical, galvanic, and mechanical stimuli. Erb, Thiemisch, and, more especially, von Pirquet have emphasized the close relationship and sequence of cases of tetany with their development into tetanoid or spasmophile infants. In the so-called spasmophile we have not only a reaction or muscular response to cathodal and anodal stimuli of very slight degree, but in spasmophilic infants the noteworthy fact is that the opening of the anode is followed by prompt muscular reaction

34 CASES OF EPILEPSY.

Number	Age	Time of First Convulsions	Intervals	Number of Convulsions	Loss of Consciousness	Petit Mal	Grand Mal	Remark
1	12 years	4½ years	Weeks	Multiple	+	–	–	Cortical epilepsy in cerebral palsy, hemiplegia.
2	8 years	7 years	2 or 3 mos.	1	+	..	+	Occur also during sleep
3	3¾ years	1 year	Frequent	Frequent	+	+	.	Little's disease
4	9 years	9 years	....	2	+	.	+	
5	6 years	18 months	Once a mo.	6–7 a mo.	+	+	..	An O. and C. to 3½ M A., no CaO to less than 5 and over
6	8 months	3 months	Frequent	....	–	–	–	Little's disease. KaO and C. to 4 M A
7	3 years	3 years	Frequent	Daily	–	–	–	Little's disease. CaO and C An O and C. 3 M A.
8	11 years	8 years	....	...	+	.	+	
9	8 years	5 years	Frequent	...		.	..	Hystero epilepsy
10	8 years	Early in childhood	....	...	+	..	+	
11	3 years	5 months	Frequent	....	–	..	–	Microcephalic idiocy
12	6 years	5 years	1 month	Single	+	.	+	
13	4 years	3½ years	2 months	Single	+	.	+	
14	5 years	9 months	1 week	Frequent	–	..	–	Cerebral palsy
15	14 months	....	Frequent	Frequent	–	–	–	Amaurotic idiocy
16	9½ years	9 years	2 months	Single	+	..	+	Had a convulsion and fever at age 1½ years, lasted 24 hours, none since.
17	13 years	8 years	2-3 years	Single	?	..	..	Hystero epilepsy form
18	7 years	5 years	6 months	Single	+	..	–	Night terrors, epileptic form
19	13 years	12½ years	2 months	Single	+	.	+	Had convulsions as an infant until 4 years of age. Now typical epileptic. An O and C at 3 M.A. and CaO and C 4 M A.
20	11 months	6 months	Frequent	Frequent	+	–	+	Birth epilepsy, no history of paralysis, forceps case
21	5 years	Birth	2 months	....			..	Jacksonian type. Tumor cerebri
22	18 years	11 years	....	Single	+	..	..	Hystero epileptic
23	12 years	10 years	...	Single	+	+	..	Electrical reactions normal
24	10 years	10 years	2–3 weeks	Single	+	..	+	Onset past 2 years
25	5 years	4½ years	2 a week	Single	+	..	+	Had convulsions as an infant up to 15 months of age then stopped. As baby convulsions were frequent. Electrical reactions normal.
26	1 year	1 year	....	Single	+	..	+	Electrical reactions normal
27	13 years	12 years	....	Frequent	+	+	..	Typical
28	7 years	6 years	months	Single	–	..	..	Encephalitic idiocy
29	6 years	5½ years	3 months	Single	+	..	+	
30	9 years	5 years	1 month	Single	+	..	..	Localized twitchings of right arm and muscles of face. Jacksonian cause pachymeningitis
31	5 years	5 years	3 weeks	Single	+	+	..	Father has epilepsy
32	8 years	6 years	1½ years	Single	+	–	+	
33	13 years 9 years	9 months 13 months	4 months	Single	–	..	+	Hydrocephalus in both children
34	11 years	....	3 months	Single	+	..	+	

Synopsis: 34 cases of which 21 were manifest epilepsy, one to unknown causes, 16 grand mal, 5 petit mal.
Of these the most frequent period of occurrence was the 6th to 10th year of life. In only one case of manifest petit mal was there cathodal opening below 5 milliamperes.
In 3 cases there was a history of convulsions in early infancy. In one of these, a grand mal, there was anodal open and closure at 3 M A. Cathodal opening and closure 4 in A.
Cases of Epilepsy, 34. 21 manifest uncomplicated, 13 complicated by presence of cerebral lesions.

which is even more marked than the anodal closure. This occurs in response to currents of weak intensity which in normal children are without effect. This has been called by von Pirquet anodal susceptibility and, as with cathodal response, he feels, as I do, that opening anodal response is a distinct earmark of the tetanoid disposition. If in addition there is a cathodal opening contraction to less than five milliamperes we can be moderately certain that the infant belongs to the tetanoid class. In cases of frank tetany so delicate is this test that anodal and cathodal closure, especially opening response, is obtained under currents of such weak intensity as one milliampere. In order to obtain these reactions a reliable milliamperemeter is necessary.

The Chvostek phenomenon, though interesting and characteristic, may be obtained in spasmophiles, but my histories show that at times in frank tetany the reaction may be absent. I do not think the Trousseau phenomenon so valuable. First, it is obtained only in skilled hands, and in rough manipulation it is painful to the infant, and I have as a rule disregarded it, and only shown it to others on occasion. The tetany position of the hand, fingers, and toes, the expression of the face must all have been seen, I find, to be readily recognized. It is quite a common thing to find that in the hospital the house staff will not recognize the very interesting condition of carpopedal spasm unless it is first demonstrated to them. The carpopedal spasm may be absent in a frank case at the outset, but is quick to appear either after repeated convulsions or laryngospasm. The most common mistake is for the physician to diagnose either an impending infectious disease or a meningitis. This is more apt to happen in the cases of secondary tetany, though it may occur in so-called accidental cases of Escherich. I have seen three cases of this kind. In one the infant had had a bronchopneumonia and after two weeks passed into a tetany with convulsions and carpopedal spasm with the mental state of irritability *"Augenstarre,"* that is, mental apathy and pseudo-blindness. This was an infant, rachitic, eleven months of age, with extremely neurotic parentage. When I saw the patient in conference the convulsions and tetany had lasted three weeks, and the apathy and eye symptoms were present with carpopedal spasm of mild degree. The diagnosis of tuberculous meningitis had been made with the result imaginable. The infant recovered completely; it was in convalescence still susceptible to anodal and cathodal irritation both on closure and opening below four milliamperes.

The second case was that of a spasmophile two and one-half years of age, who at the lysis of temperature in a bronchopneumonia went into a condition of spasm of the upper and lower extremities with rigidity of the body, apathy, and apparently blindness and aphasia. This patient recovered, though I would not call this anything but tetanoid, and so diagnosed the case to the physician who made the fatal diagnosis of pneumococcic meningitis. The child had a double otitis, and as soon as this was relieved the peculiar mental state and tetanoid spasm were gradually relieved. The mother in this case was of an extremely nervous temperament.

The third case, which was diagnosed as tuberculous meningitis, was seen by me in my office

and observed for three months subsequently. In this case the tetany poison not only reduced the infant to a state of mental desuetude, but it was for weeks impossible to decide whether the child could see. This child is now mentally normal, and the eyesight is normal. An oculist examined this patient repeatedly and could come to no definite conclusion. The pupils were dilated and the fundus absolutely normal, so that the cause of the loss of sight must be a matter for future study. It may have been due to lack of power to accommodate. The diagnosis of tuberculous meningitis was made in a fourth case, which developed convulsions at the third month on weaning from the breast and changing the food.

The differentiation of these cases of convulsions in spasmophile infants from epileptiform convulsions or epilepsy has been one of the greatest advances in the modern conception of both conditions. The spasmophile or tetanoid convulsion has little or nothing in common with the epileptiform convulsion. The theories of Henoch and teaching of Marie and Sachs that the children who are convulsive, or have had convulsions, are apt to show the symptoms of epilepsy have given way to a more definite conception of epilepsy in children and the spasmophile infant. These children can develop into normal individuals, no matter how much they have suffered from convulsions in infancy and childhood (Thiemisch, Heubner, Birk, Finkelstein, Escherich). In fact, many of them have been studied and followed, and epilepsy has never developed. I have seen these children devlop into normal individuals. Thiemisch and Birk have investigated sixty children who in infancy suffered from convulsions and at the tenth year of life were not epileptic, this in face of the fact that epilepsy is frequent at the sixth to seventh year in its onset is significant.

In a series of thirty-four cases of epilepsy of my case books twenty-one were uncomplicated idiopathic epilepsy and thirteen were the outcome of lesions of the central nervous system, congenital or acquired. The twenty-one cases of idiopathic epilepsy divide themselves into seventeen of grand mal and four of petit mal. The most frequent period of occurrence was from the sixth to the tenth year of life. In only one case of petit mal was there a cathodal opening contracture to a galvanic stimulus below five milliamperes. In three cases only was there a history of convulsions in early infancy. In one of these there was an anodal opening and closure contracture to three milliamperes. This simply demonstrates that whereas a spasmophile may develope epilepsy it does not necessarily follow and epilepsy and spasmophilia are only accidental combinations.

Of great aid in differentiation is the systematic study of cases. The tetanoid or spasmophile infant shows, as I have pointed out, certain definite symptoms and reactions. There are the apnea, laryngospasm, the tetany, facial phenomenon, Trousseau sign, and the disturbance of nutrition. The tests to electrical excitation are above all characteristic, and are found only with rare exceptions, in epileptics. I have seen neurotic older children with marked anodal and cathodal excitability with currents of less strength than five milliamperes, but this is exceedingly rare, and can be disregarded. The convulsions of spasmophiles as a rule occur in rapid succession, are multiple, and are combined with the other signs of spasmophilia. The epileptic convulsion is of varied interval, and may recur after years. The infantile convulsion is excited by some agent, temperature, intoxication. The spasmophile as a rule has a clear family history, and is mentally overbright, the epileptic just the contrary. Fully 30 per cent. of the children in Birk's statistics of epileptics had a family history of epilepsy, and 50 per cent. were weak minded or slow. Another point of overwhelming influence is that convulsions in spasmophiles with tetany occur at certain seasons of the year, in the fall and early spring months. I cannot agree with Thiemisch and Birk that most of the spasmophilics are artificially fed, for I have shown that quite a goodly proportion are breast-fed, and have laid stress on the fact that a breast may be inefficient and lead to nutritional disturbances.

The nature of tetany and its etiology and pathology have been matters of study and speculation. It is a subject which has occupied much attention for decades. The first grouping of symptoms was made by Cheadle, who thought tetany, laryngospasm, and convulsions were different expressions of the same morbid state, associated with rachitis and the period of the first dentition. Preceding this we have the theory of Kopp, then of Hugh Leigh, that laryngospasm was caused by pressure of an enlarged thymus or lymphnode on the vagus. Later on the sudden deaths occurring in laryngospasm were theoretically traced to a disturbance of the function of the thymus gland. As to the more specific cause of tetany and its origin the theories to-day are widely divergent. In the main there are two contending camps, the one that of the Heubner school and his pupils, who have taken up the contention held for a long time that tetany was due to an influence of a poison, a so-called tetany poison, which was thrown into the circulation in artificially fed infants by disturbances brought about by the ingestion of cow's milk, that this poison existed especially in the whey of cow's milk (Finkelstein). This is a rather vague way of placing an old theory. Stölzner, on the other hand, arguing from the constant appearance of tetany in connection with rachitis, has contended that tetany is really a species of poisoning of the central nervous system by calcium salts. The most attractive theory as to the real causes underlying the manifestation of tetany is that of Escherich and Yanase. We may say at the start that it is the only explanation of the phenomena of tetany that seems to be founded on experimental data. Seeing the close similarity of infantile manifest tetany with that which is seen after operations on the thyroid gland, Escherich has ventured the opinion that they are both identical. They are both dependent on some lesion of the parathyroid glands or epithelial bodies which in some way compromises the efficiency of these glands in counteracting, as they do normally, the toxins in the circulation acting on the nervous system. The result is that the toxins act unrestrained, and produce the manifestations of tetany, a so-called parathyreopriva. As a corollary to this is the theory that the calcium salts in some way may be responsible for the immediate exhibition of tetany. Escherich tried through his school to prove that the irregular distribution of calcium salts resulted in the production of tetany and that this distribution was disturbed by an interference with the function of the parathyroid bodies. How this may be brought about Escherich, through Erdheim and Yanase, showed that in cases of manifest

tetany lesions, such as hemorrhagic cysts and parenchymatous changes, were found in the parathyroids in cases of tetany with sudden death. The launching of this theory has been the stimulus to a large amount of investigation of the parathyroid glandules in infancy. One of the contentions of Escherich that hemorrhage in the gland may occur as the result of the great strain on the infant during birth has been taken up by Grosser, Betke, and Auerbach, who have stated that hemorrhages in the parathyroids have been found in a number of conditions, infectious and toxic, in which tetany was absent, and in cases in which the electrical reactions during life were normal. In a recent case of tetany of my own, in which the parathyroids were carefully examined by Oppenheim, the only changes found in the glandules were peculiar dilations of the lymph spaces. The whole matter of the influence of lesions of the parathyroids in causing tetany still remains to be closely studied. Certain it is that of all the hypotheses of the disease thus far broached it is not only the most attractive but one which harmonizes most with our knowledge of tetany elsewhere than in infants.

30 East Sixty-second Street.

THE CONSERVATION OF SIGHT.*

By J. W. JERVEY, M.D.,

GREENVILLE, S. C.

Dearly Beloved Brethren: Let us take for the text of our discourse this morning the eighteenth verse of the twenty-ninth chapter of the Book of Proverbs—"Where there is no vision, the people perish."

Admitting that the words "proverb" and "parable" are in a measure synonymous, it may be that the theologian and commentator will venture the interpretation of the passage in its anagogical sense. Yet we must be pardoned for insisting that the words of the sage of Israel, whatever may have been his identity, can suffer no impairment of their forcefulness through a profane and literal acceptance of their meaning. Hence we mean, at this time, exactly what we say, without parabole or adumbration—"Where there is no vision, the people perish."

Precisely as the race that is stricken blind must perish, so in proportion will that people suffer which is more or less affected of its eyes in a pathological sense. In other words, both a race half of whose people are blind and a race all of whose people are half blind would be seriously handicapped in the struggle for existence—the eternal drama whose finale will be played only when the last surviving thing on earth has perished. Yet, strange as it may seem, with the full knowledge of this trite and axiomatic fact before us, we are daily doing many of those things which we ought not to do, and leaving undone many of the things which we ought to do, if we would preserve for ourselves and our children the eyesight which is our most precious physical heritage. In the beginning was the mandate "Let there be light," "and there was light." But there could have been no light were there no sight to perceive it, any more than there is sound in the primeval forest when the resistless whirlwind fells to the ground the giant oak unless there were some ear to hear it.

*Read before the Tri-State Medical Association of the Carolinas and Virginia, at Raleigh, N. C., February 21-22, 1911.

One of the greatest of modern philosophers has said that consciousness is the first great wonder of the world and next to it comes sight. What is our civilization doing to preserve its eyesight? And, still more to the point, what is the same civilization doing to cripple it? It is with the last question that we shall here concern ourselves. Much is said nowadays about conservation—of lands, of forests, of minerals, of water powers, natural resources the heritage of a nation. Let us who know discuss the conservation of a birthright greater by far than any of these—the priceless property of vision.

It were almost superfluous to point out to a scientific body such as this that a people's vision is the *vade mecum* of its mental and moral balance. From the mere mechanical necessity for the trained and perfect eye, sighting with deadly certainty the guns that bear upon the enemy, to that elaboration and blending of ocular and mental vision by which alone the masters of statecraft can command a true perspective of affairs and men and lead a race to its most lofty destinies, these blessed eyes of ours fulfill a glorious mission.

Many of you know and realize what defective vision means to the individual. Does it mean less to the state and to the nation? Shall we stand idly by and silently permit our fellowmen to offer up in ignorance their daily pitiable sacrifices to the yawning Moloch of ametropia? Are the institutions for the blind to be forever insatiate? Do we not know that our jails, reformatories, hospitals, and asylums are harboring tens of thousands of unfortunates whose moral, physical, and mental unbalance is directly traceable to defective vision, unrecognized and neglected? Can there be any doubt that the tide of world politics has more than once been turned by the peevishness of the ametropic statesman and the ill-considered logic of the restless asthenope?

Then with these pregnant thoughts upon us I shall enumerate here, with very brief remarks upon each count, the principal sins, as I see them, which are daily being committed by a modern, civilized people upon a nation's eyesight. They are all preventable and many of them easily so. And if, as I truly believe, preventive medicine is the medicine of the future, here is a field which will magnificently repay its entry.

I. *Ophthalmia Neonatorum.*—Thirty per cent. of the preventable blindness of the whole world is due to this one cause. And as if that were not pity enough, a greater pity still is that the medical profession as an average whole must share part of the shameful responsibility. In spite of the well-known danger of inflamed eyes in newborn infants; in spite of the universally recognized efficiency of Crédé's method of prevention; and in spite of a social state which spells suspicion in the palace almost as boldly as in the hovel, there are many physicians (not you or I, but others that you and I know) who seldom make a careful personal inspection of the baby's eyes, and still more seldom apply the magic touch of the silver specific. Yet the dawn has broken. The American Medical Association has made, and is now making, a nation-wide effort for the suppression of this blight, and in some States, our own among them, a law has been enacted requiring the parents and attendants upon any birth, on pain of punishment, to report and provide for the proper care of any inflammation, however mild, appearing in the eyes of the infant. Still, it remains for us, no doubt, to insist upon the enforcement of the statute.

II. *The Pernicious Activity of the So-Called "Optometrists."* One of the most active cults of recent years is that of the optometrists, which is but another name for opticians. They claim ability to differentiate pathological conditions of the eye structures, and loudly voice their superior qualifications for doing refraction work. By shrewd and insistent efforts these bands of charlatans with a central national organization have succeeded in many States in having their trade regulated by statute, with "state boards of optometry examiners," thus lending the apparent sanction and official recognition of the government to their preposterous claims. They are, of course, commercialists in the very vulgarest sense of the term and their whole aim and object is to ensnare victims and never let them loose until wonderful glasses are sold at still more wonderful prices. These vampires, most of whom are without even a high-school education, and all of whom impudently and falsely assume a knowledge which they do not possess, are daily all over this great country committing a grossly commercial rape upon the eyesight of the nation! Many physicians have been misled by specious arguments into sanctioning the practice of the optometrists. The recognition of the latter by statute is a direct blow at the public health, because it is letting down the bars of medical practice requirements, by which alone the health of the people can be safeguarded. If the care of the eye in any of its abnormal phases is not a part of the practice of medicine, then neither is the care of the lungs or the stomach, or the heart, or any other organ, and we should soon expect to see separate and distinct state boards of examiners for each group of imposters who would spring up, like mushrooms in the night, claiming superior skill in some particular specialty. Can anything short of a competent medical education enable any man to differentiate and diagnose, as their symptoms appear in the eye, such conditions as albuminuria, diabetes, arteriosclerosis, brain tumor, accessory sinus disease, the toxic amblyopias, syphilis, tubercle, etc., to say nothing of the dangerous localized intraocular diseases? Would not and does not the "optometrist" try to sell a pair of glasses to every such victim that he can lay his hands upon? Assuredly he does, and every oculist of even moderate practice is constantly confronted with the damage, much of it irreparable, which these conscienceless fakers have wrought. And the optometrist can do refractive work no more safely than he can diagnose disease. Competent refraction, in the vast majority of instances, requires the use of a mydriatic. The optician cannot use drugs, not being a licensed physician, therefore he can not employ the mydriatic. There can be but one result. Thousands upon thousands of innocent victims, victims of specious advertising and swindling imposture, are to-day unwittingly injuring their minds and constitutions by the use of ill-fitting lenses sold under wickedly false pretences. If any one imagines the picture overdrawn let him place one or a pair of improper cylinders before his eyes, thus putting himself in the condition of an ametrope needing correction, and see how long he can wear them without experiencing a general upheaval of his physical and temperamental balance. In the practice of medicine there is but one field for the optician, and that is the filling of the oculist's prescription; precisely as there is but one field for the druggist, to the same end. When either undertakes to prescribe the public health will suffer by that much. Let us then in the future avoid even the semblance of aid or comfort to the meretricious practices of the "optometrists."

III. *The Advertising Eye Doctor.*—The magazine-advertising quack has bled and blinded many a credulous victim. Happily the business appears to be on the wane, but it is still in evidence and a recrudescence of it would not be surprising. Every oculist from time to time sees cases which have been irreparably injured and even completely lost through the neglect of proper care, which neglect, along with fraudulent but expensive treatment, has been the result of everlasting credulity in combination with the plausible, however, worthless "guarantee of cure" by the advertising swindler.

IV. *The White Incandescent Gas Mantle and Electric Bulb.*—Contrary to general belief and the advertisements as glaring as the lights themselves, these modern forms of artificial illumination are a constant menace to ocular integrity. A few years ago I was for some time nonplussed by girl after girl, students of a large female college, appearing in my office with marked conjunctival congestion with its train of annoying symptoms. I could assign no cause for the phenomenon and all treatment seemed unavailing. I awoke from my stupor to find the dormitories and study rooms equipped with incandescent gas mantles. These were replaced and the epidemic vanished. I have encountered many instances since that time. The glaring white light rays, whether entering the eye direct or reflected from the printed page, are irritating and sooner or later a condition simulating snowblindness is likely to appear. This is a menace to the eyes of the unenlightened people which is daily becoming more popular on account of the beauty and brilliancy of this kind of illumination as well as its (unfortunate?) economy of operation. Frosted glass used over these lights or, better still, indirect illumination with the light reflected from suitably tinted ceiling and walls would greatly improve the situation. Shall we advise the public of its danger? And if we do not, who will?

V. *Badly Printed Newspapers and Schoolbooks.*—The poor we shall have with us always, and from now on likewise the poorly printed newspaper. Its perusal is certainly fatiguing and injurious to the eyes, especially by artificial light. But by its very nature and the demands of modern civilized life it is likely that little, if any, improvement can be had in its make-up at this time. The schoolbook, however, can and should always be made to conform to physiological requirements. Too many of these books are thrown together in a haphazard way, without regard to the kind of paper best suited, the length and width of the columns, the size and spacing of the type, and lastly the weight of the volume complete. All of these things have a direct bearing upon the results in the eyes of our youth. Is it anybody's business, and if so, is it not yours and mine, to protect the innocence of coming generations?

VI. *Badly Lighted Schools.*—Modern schools in metropolitan centers are now constructed under the supervision of competent illuminating engineers and experts. Unhappily, however, the proportion of these in the whole country is less than the proverbial drop in the bucket. But with very little expense of time, trouble, and money nearly every old school could be brought more nearly to the requirements demanded for the conservation of our national eyesight. An intelligent rearrangement of desks and seats and small expenditures for

proper changes of window lights and skylights would be an economic investment of the wisest kind for every community. I have taken the trouble to look over some of these old school buildings and speak from personal observation.

VII. *Unsuitable School Desks.*—Since the child cannot be adjusted to the desk, the desk must be adjusted to the child, even as the mountain and Mahomet. The child should sit erect, with head but slightly inclined, and the eyes equidistant from the point upon which the vision is to be focused. Too much inclination of the head will effect a constant determination of blood to the ocular structures, resulting in elongation of the antero-posterior axis and myopia; while any but a normal position will surely impose an unusual strain upon the musculature of the eyes and must ultimately and certainly impair their usefulness.

VIII. *Kindergartens.*—The large majority of young children's eyes are hyperopic, or farsighted. To force an effort of visual accommodation in a hyperopic eye at a tender age, when the tissues are least resistant to any form of strain or pressure, is cruelty approaching barbarism. The sole excuse for it is ignorance of its consequences. The results are seen later when astigmatism and especially myopia appear with their accompanying evil effects upon health and general development.

IX. *Moving Picture Shows.*—I am disposed to think that the modern motion picture is a serious agent in the production of ocular fatigue, with its train of corollary manifestations. If this be true the marvelous growth of popularity of this form of entertainment with its insidious potency for harm will prove a serious problem for the medical profession in its efforts to conserve the public health.

X. *Antipathy to the Use of Glasses.*—This is due first to the vanity of the individual concerned, and next to the former general belief that the oculist desired to put glasses upon every person consulting him. These errors are happily fading away. Even now we sometimes hear the remark of sympathetic friends and relatives "how sad that so young a child should have glasses put upon it." They do not stop to think, or do not know, perhaps, how infinitely sadder would be the consequences if these glasses were not put on. When the people are educated to the point of realizing that a neglected myopia will be likely to turn into a progressive myopia, leading oftentimes to blindness; and that astigmatism and hyperopia uncorrected lead eventually to nervous and physical wreckage, oftentimes for the benefit of the hospitals, asylums, and other financial or eleemosynary institutions; then and not till then, their psychic astigmatism, insofar as it relates to the wearing of glasses, will pass away, and they will betake themselves to the oculists for the cure of their afflictions.

Bear in mind that you, O doctors, are the teachers, for the very word doctor means teacher. And to-day I have given you the text; this time to be taken, if you please, in both of its interpretations; "Where there is no vision, the people perish."

Strychnine in Cardiac Arrhythmia.—J. Hay states the chief value of strychnine lies in its tonic action on the nervous system and on the vasoconstrictor and respiratory centers. In cardiac asthma, Cheyne-Stokes respiration, and the starting dreams of cardiac patients due to slight asphyxia strychnine is invaluable because of this action.—*Liverpool Medico-Chirurgical Journal.*

A NEW METHOD OF VACCINE TREATMENT AND PREVENTION OF SEPSIS.

By CHARLES H. DUNCAN, M.D.

NEW YORK.

Healthy tissues either resist disease or tend to develop such resistance. This is the fundamental principle of health, and, consequently, of life. The resistance to disease that is brought about by the forces within the body is manifested when the patient recovers without any medication, by the process of what is called "natural cure." Each disease has a definite action on the tissues of the body; the corresponding reaction or resistance to disease is also definite, individual, and especially adapted to resist that particular disease. Not only do healthy tissues tend to resist disease, but healthy tissues tend to resist the action of drugs or poisons. The inception of this idea of natural therapy is the foundation on which the science of vaccine therapy is being built up.*

We have such a firm grasp of the principle of vaccine therapy that it is confidently prophesied by many that we have only to isolate a causative microorganism to secure its vaccine or curative agent. Pasteur said: "The day will come when it will be possible to eradicate infectious diseases by vaccination." This prophecy is being rapidly fulfilled.

"Vaccine is a substance derived from bacteria which, taken into the body fluids, is capable of developing or exciting resisting substances." The reaction in the tissues that is brought about by the action of toxic substances on healthy tissues develops, or tends to develop, resisting substances or antibodies. This resisting substance, if there is sufficient, is the cure for the corresponding disease from which it is derived.

The writer is developing a method of preventing and curing sepsis. The cure consists in giving the patient crude pus from his own wound by the mouth. The prevention is effected by putting the discharge from a fresh wound in the patient's own mouth. To get some idea of the possibilities of this method of curing and preventing infections, we have only to direct our attention to the dog and cat and other animals that lick and cure their wounds. This is the oldest method of wound treatment the world has known, for animals have always licked and cured their wounds since the morning and evening of the sixth day of creation.

The only place where, as a rule, a cat or dog has bad infections is on the head, which it is impossible for them to lick. If the pus from their head wounds is placed in the mouth, they will recover from their head wounds as they do from wounds which they can lick. In licking their wounds, they place the autogenous vaccine in healthy tissues away from the seat of disease, and develop specific antibodies in the serum. This is Nature's method of curing an infection. It is the simplest and the best method of curing infection.

The criticism of this method as crude is unjustifiable, for, with a skilled appreciation of the nature of the infection and the response of the individual, the dose can usually be fairly accurately gaged and readily confirmed by experiment. There is no subject in medicine where there is as great a differ-

*The writer is aware that many of the views expressed in this paper contradict much that is held to be true by those best qualified to judge in such matters. His claims, however, are based on clinical results, the court of last resort in determining questions relative to the therapeutic value of any medical preparation.

ence of opinion as the subject of dosage. And in this comparatively new field of therapy it is a subject of which we know little. It may be mentioned, in this connection, that the dose of vaccines by the method now in vogue is (to a large extent) experimental, and that the majority of authorities, in giving the vaccines, are guided by the clinical symptoms of the patient.

In giving pus by the mouth it is difficult to say just what the fatal dose would be. Parke, Davis & Co., in their Detroit laboratory, fed a horse a quart of heterogeneous pus with scarcely any appreciable results. The only physical sign manifested was a rise of one degree and a half in temperature.

After experimenting two and one-half years at the Volunteer Emergency Hospital, I find the crude material, or discharge from the wound, is especially prompt and curative in the earliest stages, and in the later stages when the infected area is well walled off. A dilution of discharge from the wound is more prompt in its action in the intermediate stages. This should be given also when there is a prolonged or bad negative phase by either the dose being too large, too often repeated, or by the patient being especially susceptible. I have never seen the necessity of giving the dilution in the earlier stages.

Prescription for a Fresh Wound.—If the crude secretion from a fresh wound is given by the mouth soon after the wound is made, and repeated every four hours until the danger of infection is past or a negative phase sets in, it will tend to stop or abort infection in its incipiency. The first inoculating or parent microorganisms multiply extensively before we can microscopically determine their presence or before pus can be seen.

Put a drain to the deeper structures, where possible, and dress the wound every 12 hours, giving the patient the discharge from the wound by the mouth. This is collected from gauze or by soaking the drain in a small quantity of water—an ounce—or washing the secretion from the gauze by means of a water bottle and giving the mixture to the patient by the mouth in dram doses. We thus steal a march on the developing microorganisms in their early stages of development, and hence antibodies are formed in the tissues early that will prevent or stop further proliferation of the bacteria or an extension of the disease. The comparatively few microorganisms are at this time rendered an easy prey to the phagocytes; the system at this time will not be weakened or taxed by the disease; at this time few of the phagocytes have been destroyed; few generations of microorganisms have taken place, hence they are not so virulent as they would be later; those in the wound are easier overcome by the phagocytes, and the wound goes on to healing with no appreciable evidence of sepsis.

Without depreciating in the least the value of aseptic and antiseptic surgical treatment of wounds, the writer offers the autoseptic vaccine treatment of wounds as a means of resisting a microbic invasion (by raising the power of the serum, and increasing the activity of the phagocytes, by the action of specific antibodies) *earlier* than any other known method. "It must be admitted that there is much we do not know in connection with the healing of wounds. This has been demonstrated during the past few years by an enormous amount of clinical experience, for at times, when the most rigid aseptic technique has been employed, the wound becomes septic, and in accidental wounds, where infection is expected or invited, the wound often heals by first intention." Autosepsis does not interfere with either of the established methods of wound treatment, but offers an additional safeguard against infection when it is properly employed. Stress has always been laid on the fact that vaccines should be given early, and in no other way can they be given as early as by this method.

The following is but one of many illustrative cases could be cited:

Henry R., 45 years, applied for treatment January 20, 1911, at the clinic of the Volunteer Hospital. In falling he ran a splinter of wood from a rotten board in the back of his right wrist. It was an inch long and from ⅛ to 3/16 of an inch thick, half the thickness of a lead pencil. It was decided to perform an experiment in this instance and the writer asked two of the internes, Dr. Dietrich and Dr. Kirsch, to witness it. In this experiment practically every known rule of modern aseptic surgery was violated, and the best results followed. Nothing was cleansed or sterilized. The instruments used were a scalpel, an artery clip, and a pair of tissue forceps. These were taken from a pocket case of one of the assistants and used as they were. The wound was opened with the scalpel after a futile effort to withdraw the splinter with the artery clip and forceps. It was taken away in small pieces. Time consumed, about ten minutes. First, the wound was not washed or sterile; second, the surgeon's hands were not sterile; third, the three instruments were not sterile; fourth, the suture and the needle were not sterile; fifth, the gauze covering the wound was not sterile; sixth, the wound was placed in the mouth. After the sliver was removed the patient was told to suck the wound vigorously for ten minutes. Then a very superficial suture of silkworm gut was put in place, but the skin flaps were not drawn tightly. A flap of unsterile gauze was placed over the wound and held with a piece of tape. The tape was tied in a bow knot, and the patient was instructed to loosen it and suck the wound every few minutes, especially when he felt any tickling or irritation in it. He was told to return to the hospital at any time if it gave him trouble, but to return at any rate in six days to have the suture removed. He did not return for two weeks and an orderly was sent to look him up. He stated the reason he had not returned was there was no necessity for returning; that the wound healed all right. He was told to return and have the suture removed. He said, "that's all right, I took that out with my jack-knife."

Prescription for Intermediate Stages.—This prescription should also be given for a prolonged or bad aggravation. The crude autogenous pus by the mouth is curative during the intermediate stages, but it takes longer for the pus to disappear; at times pus has not disappeared for ten days. It is for this reason that the writer prefers the dilution during the intermediate stage. The manner of diluting the dose used in developing this treatment is as follows: Place the dose of pus obtained as described elsewhere in an ounce bottle of water. Give this a prescriptive 25 raps against the palm of the left hand; this will thoroughly mix the ingredients. Empty this out of the bottle but retain about half a dram and proceed to fill the bottle up and shake in the same manner for the second dilution. In this way make from six to ten dilutions, and the last is given in the following manner: One-third of the

bottle's contents is placed in the patient's mouth and he is told to hold it there about five minutes. In an hour the second one-third of the bottle's contents is placed in the patient's mouth and held for about five minutes. In another hour the third and last of the ounce is placed in the mouth in the same manner. The patient is told each time to gargle it so that it will come in contact with the tonsils before swallowing.

"In considering the functions of the tonsil," Dr. Bryan D. Sheedy says (MEDICAL RECORD, September 25, 1909), "we must take into consideration and study carefully the teachings of Goodal, Wood, Wright, and others, all practically agreeing (1) that the tonsils possess phagocytic properties; (2) that the lymph currents from the mouth and nose converge toward the tonsil; (3) that the lymph passes into the cervical lymphatics through the tonsils. Some observers have noted that foreign particles pass with the lymph current through the epithelium lining the crypts of the tonsil, but that living bacteria remain in the crypts. When we consider the location of the tonsils above described, generally spoken of as Waldeyer's ring, we are forced to the conclusion that this circular fortification of secreting tissue was not erected without some good purpose in view. This becomes more apparent when we stop to consider that, while all roads at one time led to Rome, all channels, whether over or under the mucous membrane, lead toward the tonsil. Food laden with bacteria on its way to the stomach is forced against some portion of the tonsillar ring by the muscles of deglutition. Food ejected from the stomach is also forced against it and the millions of bacteria passing into or out of the body through the nose and mouth pass or come in contact with this fortification. One investigator pointed out that bacteria entering the crypts of the tonsil remained there, while their toxins passed on into the blood current via the lymph channels, and those toxins in the tissues, or by their presence in the circulation, stimulated the opsonins or resisting substances, thus developing what we call immunity."

Prescription for the Later Stages, or When the Area of Infection Is Well Walled Off.*—From one to five drops of pus from the patient's wound are caught in a teaspoon and covered with a little granulated sugar, for mental effect, and given to the patient as a dose; three doses are given one hour apart and the medication is then stopped. The dose is made up of a drop or two of the thick, creamy pus, together with a like amount of the thin, serous secretion, if there is any, and the same amount of a light curettage from the side of the wound.

In curing acne vulgaris by this method, the dose is usually the contents of two or three small acne pustules, either covered with sugar or mixed with an ounce of water. The patient is told to gargle and swallow this. An aggravation will at times follow.

There are no set rules for determining the different phases of the disease; the condition of the patient will be the guide to determine whether the vaccine should be withheld or pushed. It has been the writer's experience, however, that the majority of cases respond to the tenth dilution given once a week thereafter. Always warn the patient that the first dose may make him temporarily worse. The use of the dilution may occasionally be required in chronic suppurative conditions.

In curing a number of cases of acne vulgaris, I have used slightly varying methods and obtained good results in each. In one case I could not obtain pus enough to see that there was any. In this case I grew a culture on agar slant, diluted it with an ounce of water, gave it to the patient to gargle and swallow, and a cure resulted.

If the best results are to be obtained after having given the patient the autogenous pus, either in crude form or diluted, the patient should be watched carefully for a change in his condition. When improvement sets in do not give any more till the improvement ceases, when a fresh dose is made from the wound as before, and given in a single dose; or, if the dilution is used, give four doses. It should be given as soon as made, always taking a fresh supply from the wound as it is needed. The length of time before another dose is given necessarily varies with the individual.

The writer has endeavored to obtain an aggravation in some of his milder cases by giving ten drops of pus by the mouth, and has obtained none. He succeeded, however, in others, and it was very annoying to the patient at the time. In but one very serious, apparently hopeless, case was there any danger. The patient was so very weak that he had scarcely the strength to set up a reaction, and we had to work with him for some hours before he was out of danger. This patient had an aggravation by my giving him one drop of pus daily for three days. This is the only serious result that I have ever had. Give it in comparatively big doses and results will certainly follow, either aggravations or ameliorations. When either set in stop. There must a certain period of time elapse after administering vaccines, and giving living virus by the mouth I find to be no exception in this regard. If a bad or prolonged aggravation is obtained, give the dilution. If you should get an aggravation (I have not found it troublesome except in severe cases) hail it with delight. Then simply wait patiently until the amelioration sets in. When an aggravation is obtained, the patient will tell you the medicine made him sick. The symptoms most frequently elicited are as follows: The *wound pains;* the patient is sleepless, some vomit, others complain of headaches, etc., etc. Often there is no appreciable aggravation; the first evidence of improvement generally is the patient will say he feels better; his clinical symptoms improve, coincident with the discharge becoming thinner. This is a favorable symptom and no more pus should be given as long as the discharge is thin. If the discharge become thick again, give another dose. Usually the remedy acts very quickly and results can be seen in from one to two days. The writer would like to hear the reports of others along this line, and of their efforts to cure other diseases by giving the autogenous products of disease by the mouth. The simplicity and ease with which sepsis can be cured in this manner bring it within the reach of every physician to test it for himself.

The possibility of autoinfection has been considered, but the known ability of the mouth and alimentary canal to take care of the pyogenic microorganisms is depended on to prevent infection from this source. But, in view of the fact that this is a feature that may receive adverse criticism, we will dwell on it for a moment. Many pathological micro-

*The writer has cured many of the most pronounced advanced cases of sepsis it is the lot of the surgeon to meet by giving the patient pus from his wound by the mouth. The most remarkable cure he has ever seen in medicine has been in curing septic conditions by this method.

organisms have been found in the mouth of healthy individuals. Our food is germ laden and we take into the body by the breath daily millions of germs. We surgeons believe that the slightest touch of our sterile hands to an object that has not been sterilized will render them septic; that is, will place on them pyogenic microorganisms that will cause the wound to be infected, if they should in any manner come in contact with it. In view of this fact, what may be said of the dangers that constantly beset the chronic finger nail biters who constantly keep in the mouth a choice collection of germs gathered throughout the day; or children—especially the street waifs—who place everything they get in their hands (even from the very gutters) into their mouths? What must be said of the dangers which beset the lower animals, who lick their wounds? They place in the alimentary canal virulent pathological microorganisms.

The opsonic index is raised by the placing of pyogenic microorganisms in the mouth. This has been demonstrated a number of times on patients in the Volunteer Hospital, where the writer is attending surgeon.

Abundant clinical experience has demonstrated the fact that a wound infected with staphylococcus, streptococcus, colon bacillus, or any combination of these, will heal quicker and better when the discharge from it is placed in the mouth than by any other medication. If there is reason to believe the wound is septic, then it is the physician's duty to assist the patient in getting the discharge from the wound in the mouth if he would cure the patient in the quickest and best manner possible. If the wound is clean, placing the discharge from it in the mouth will do no harm. The pus-producing germs that are in the mouth develop specific antibodies in the tissues.

Medical writers of all ages mention that cures have been made along the line of organotherapy. Dr. Wm. H. Morley of Detroit, says: "Organotherapy was well known to the ancients and enjoyed peculiar respect in the middle ages. It needs only to be recalled that one writer prescribed internally and externally the liver of the mad dog to the person who was bitten, and one advised for scorpion bite the oil in which the scorpion had been killed; that one applied snake bile for cure of snake bite, and many more of the same kind."

Lux, the founder of isopathy (1823—a system of medicine that consisted in giving the products of disease to cure the disease), might be cited as a pioneer in curing sepsis in this manner; but Lux did not recognize pus as pathological; he considered pus as physiological, or as necessary for wound healing. Lux called pus laudable, so he cannot be credited with curing a disease he did not recognize as such. Again, Lux failed to recognize the all-important feature of this system of medication, that the products of disease to be most curative must be autogenous. For this reason, isopathy passed into history until the writer took up the autogenous feature, in connection with isopathy, and cured sepsis by placing autogenous pus in the mouth, and in the light of modern medical research proved its value scientifically with the opsonic index and in the clinic. This is improved isopathy; this is scientific isopathy. Lux found, for a time, the key to the situation, but lost it eventually because he did not recognize pus as pathological and the great value of the autogenous product. Practically the same thing may be said of Swan. Swan followed in Lux's footsteps and made the same mistakes. The writer has proved pus by the mouth is curative in sepsis and believes, in doing so, he opened the way for the cure of many other diseases, and would here make a plea for a further extension of the usefulness of this idea.

The immortal work of Wright and Douglas in curing infectious diseases by vaccination has been welcomed by the medical profession as being one of the greatest therapeutic advances in the history of medicine. The writer believes the greatest thing they discovered is the fact that vaccines, to be most curative, must be autogenous.

The method of curing sepsis that the writer is developing is more curative, more convenient, less dangerous, less costly, and simpler than the method developed by Wright and Douglas, for the following ten reasons:

1. We are warned by many high authorities of the danger of anaphylaxis in giving repeated inoculations of vaccines hypodermically. Anaphylaxis enters into the hypodermic method of administering vaccines. Anaphylaxis does not hold in the method of giving living autogenous virus by the mouth.

2. Vaccines lose in therapeutic value by heat, as in sterilization. This does not hold true in giving pus by the mouth. It is the nearest endotoxins or the fresh toxic substances from the *live bacteria* that are most potent or curative.

3. Vaccines lose in therapeutic value by being grown in culture media outside of the body tissues. This does not hold true in giving living autogenous virus by the mouth.

4. Vaccines lose in therapeutic value by time. It takes from 24 to 72 hours after the pus is seen in the wound before the Wright and Douglas vaccine can be administered. In the direct method the patient may be given the vaccine from the wound by the mouth immediately, or as soon after the wound is made as the physician may think necessary.

5. The therapeutic value of vaccines may be lessened by extraneous matter, foreign bacteria, or slight error in technique. This danger is a live one and great care must be exerted that it does not occur. Anyone who has attempted to prepare vaccines by the method of Wright and Douglas knows this danger.

6. Vaccine treatment by the Wright and Douglas method is not always within the power of the patient to secure, especially of poor people and people living outside of the cities. The cheapness of the direct method places it in the hands of everyone, however poor he may be.

7. The Wright and Douglas method of preparing vaccines is not always convenient. The writer developed the fact that the specific for the infection is in the wound in the very form nature intended it should be taken. Wherever there is an infected wound there in the wound is the cure, always at hand ready for use. This cannot be said of any other method.

8. The Wright and Douglas method requires a skilled pathologist, one on whose report absolute dependence can be placed. This is not always easy to find. My method requires no pathologist.

9. The Wright and Douglas method requires a well equipped laboratory with culture media, culture tubes, ovens, heat, thermostat, microscope, hypodermic syringe, needle, antiseptics, etc., etc. The method of curing sepsis here described requires nothing but Nature's instruments—our fingers.

10. In the Wright and Douglas method there is danger of an embolus or an air bubble, as there is in all hypodermic injections. There is no danger from this source in the writer's method. This is the best method of giving vaccines to cure sepsis, and possibly many other infectious diseases. It is a true vaccine, and true cures are made by its use. The vaccine made according to Wright and Douglas loses in therapeutic value by the process of preparation. Approximate cures only are made by their use.

When nature cures a bad infection it is by the aid of autoinoculation or the escape into healthy tissues of the toxic product of bacteria that is usually in pus. The various elements of pus also escape into healthy tissues in autoinoculation. The writer employs *identically the same material unchanged that nature employs in effecting a cure.*

Dr. Clive Riviere says, in substance, in The Proceedings of the Royal Society: "Autoinoculation is the escape into healthy tissues of the toxic product of bacteria developed during the course of the disease. Autoinoculation may be assisted by hyperemia, as: heat, in fomentations; massage, as in friction; Bier's hyperemic treatment; stimulating lotions locally applied; medication that acts directly upon the part involved. As soon as the invaders land there is a call for more blood, more plasma acts, destroying them both by chemical process (oxidation, hydration, and, dehydration), and by the action of the specific antibodies. The leucocytes rush out to ingest the foe. If this is insufficient, antibodies are formed in response to the toxins carried through the body in the blood stream and the resistance of the plasma is thereby increased. Nature was the earliest vaccine therapeutist.

"In assisting Nature by induced hyperemia, we have several natural processes to study and imitate. First, irrigation of the infected area by plasma and leucocytes, and this of itself may be enough to cure a mild infection. Second, autoinoculation, or washing of the bacterial products into the blood stream to stimulate in the tissues the formation of antibodies to the invading microorganisms. We are all vaccine therapeutists, as annoying as it may be for us to realize it. It is this natural vaccine therapy that was exploited with success by the time-honored custom of applying hot fomentations, etc., to the inflamed area. By this means not only was irrigation assisted but such irrigation, of itself of value, necessarily helped to an increase of that autoinoculation on which the improved resistance of the body depends. Such an effect is obvious, as far as the hyperemia is concerned. In the application of hyperemia, the influence of the physician has been solely in the direction of irresponsible irrigation, but nature's armamentarium contains in addition the weapon autoinoculation, a weapon to be brought into use where irrigation alone has failed. The physician has neglected this weapon; he has been an irrigator pure and simple. To be sure, autoinoculation has necessarily occurred as the result of this irrigation, but has he directed it? Has he applied his fomentations at such intervals that time may be allowed between for the formation of antibodies? Has he calculated at what intervals he should autoinoculate his cases to maintain most successfully their toxic immunity? As a matter of fact, he has done none of these things."

In conclusion, I hold that the benefit to humanity that will result from this method of curing and preventing infections is inestimable and will go on to the end of time. It opens up an entirely new field of thought pregnant with promise and possibilities for many diseases.

It is the simplest method of curing bacterial infections; it is the oldest method of curing bacterial infections; it is Nature's method. This method of preventing and curing bacterial infections is within the reach of every one.

It is as convenient in the field or in the camp as in the city. In the frozen north or in the tropics the cure is always at hand in the form adapted by nature to be taken. It is obtained by the highest and the lowest alike, "without money and without price."

233 Lexington Avenue.

SOME COMMON ERRORS IN THE TREATMENT OF DIABETES.

By HOMER WAKEFIELD, M.D.,

NEW YORK.

The intelligent application of extensive practical knowledge of a disease to its treatment unfortunately does not appear to be the faculty of all therapeutists. The reasons for this are many, but perhaps the most frequent are wrong concepts of the disease treated, erroneous ideas of the state of health, to which restoration is sought, and, finally, inadequate facts as bases for logical conclusions in both physiology and pathology.

I have taken diabetes as an illustration of the above postulate, because of the fact that I know of no disease which better expresses and exemplifies it than this syndrome, which is productive of so much suffering to the human race, and is at once ordinarily so unproductive of therapeutic results which are creditable to the physician, *per se.*

Diabetes, as it comes to the city consultants, generally is well advanced. The previous physician in charge has usually exhausted his resources and the case has progressed into an advanced stage. Not infrequently the patient comes with the absence of an extremity which has had to be amputated as a consequence of a preestablished gangrene. The general circulation of the economy has been thus seriously interfered with and later therapeutic efforts are correspondingly curtailed. The present critical survey of such cases is not penned with a view of hostile criticism but rather as of a constructive nature, and with the sincere hope that the earlier treatment of this dread disease may be thereby caused to be more successful in the future.

The present space will not permit an exhaustive consideration of this disease, and I will, therefore, confine myself strictly to the criticism of several unfortunate errors of therapy which have been thrust upon my attention.

Despite the now well and generally recognized fact that diabetes mellitus is the most severe and pronounced type of acidosis by which mankind is afflicted, I not infrequently meet with cases which have progressed for years under more or less constant medical care, in which nothing, or practically nothing, has been done in way of either prophylaxis or neutralization of the great acidity.

Occasionally I learn that the alkaline treatment has been tried without success and sooner or later abandoned. A critical analysis of these cases is the prime object of this paper, to which will be supplemented some related considerations.

Among the cases in which attention to the chem-

ical reaction has been ignored or abandoned I have noted primarily negligence of the sources of somatic hyperacidity and secondarily absence of the neutralization of same.

Among the first-mentioned group may be enumerated gastrointestinal acid fermentations, the excess ingestion of acids and acid-forming foods, and finally tetanoid states of the peripheral tissues, which, owing to emotional factors, have developed first sarcolactic and secondly great betaoxybutyric and diacetic acidity.

A misconception of the normal status of the body has led some to administer alkalies regardless of the neutralizing effect, and often shifting from an excess to none at all and conversely, no index being used to determine a definite effect.

The fact that the body equilibrium is not far from the neutrality mark chemically is attested by the fact that the blood exhibits but a slight preponderance of alkalinity, while the urine is normally not strongly acid. Thus the administration of alkalies should be carried only to the extent of slight urine alkalinity, then allowed to recede into slight acidity. An alkaline excess will develop thirst and other unpleasant symptoms even in the healthy and is not a desirable state for a diabetic.

There is no such thing as producing a self-perpetuating neutrality in any manner, but it is absolutely necessary to maintain one from day to day by the continuous administration of alkalies, which have to be carefully graded to meet the varying demands of the economy. Painstaking indexing from day to day to restore the chemical equilibrium of the body is required as a part of the daily series of unremitting readjustments of new equilibriums of the chemical reaction.

The writer's preference among the alkalies is for the better grades of sodium bicarbonate. Magnesia products have been tried and abandoned as far inferior despite the eructations of CO_2 following the intake of the soda into an acid alimentary tract. It is always administered into an empty stomach a half hour or so before meals from one to three times a day and from a half to a heaping teaspoonful as required in individual cases, and never during digestion, except in emergency as a neutralizing agent for gastrointestinal hyperacidities of fermentative origin. Those before meals are regularly administered in water as hot as can be sipped, for general chemical and physical reasons. The before breakfast doses are regarded as the most important in the day and should be the last to be stopped when reduced quantities are administered.

When larger and more frequent doses of alkalies are demanded to attain neutrality than is acceptable in the form of sodium bicarbonate. Vichy Celestins may be supplemented.

Acids and acid-containing and producing foods and beverages are always as far as possible excluded from the diet by the writer. Sugar, syrups, sweetened foods of all kinds, malt food and beverages, in all stages of the malting process, are most harmful, owing both to their great fermentability and to their chemical nature as invert sugar products. In this class are included all products which we know under the names of maltose, dextrose, glucose, and the liquid and powder preparations which are offered as infants' and invalids' foods, beer, malt tonics, ales, porter, stout, etc.

Diastatic (sugar-splitting) enzymes have probably done the greatest harm, for through some reprehensible misconception of the nature of the incapacity of the system for carbohydrates in general, such enzyme preparations have been actually commended to the profession for diabetes by men of acknowledged authority in the medical profession. Despite that at least a great many physicians know the harmfulness of all sugar and malt products in this disease.

A moment's reflection as to the excessively acid status of diabetes mellitus and to the associated fact that the inversion of cane sugar and starches is always an acid process, and we have forced upon us the conclusion that inversion, by virtue of the excessively acid state of the system, is already too rapid and excessive in the diabetic, rather than deficient, and we have need for slowing rather than hastening that process. It is obvious that the prediastized foods and beverages and all diastatic ferments ingested with foods, by over-hastening and producing inversion and enzymic change in carbohydrate foods (sugar and starches), precipitate them too rapidly and abruptly upon the sluggish metabolic processes, resulting in excessive elimination (glycosuria), but yet more damaging, perhaps, to the body is the hyperglycemia, which always is pernicious, but to which I must not digress here.

Conversely to the above the diabetic should ingest his carbohydrates in the most rudimentary and low concentration forms. Among cereals, oatmeal, whole wheat, whole Japanese rice, etc., should replace white flour, white rice, etc. The green vegetables, with their higher percentage of cellulose and other excrementitious matters, are preferred, whereas sweet potatoes, beets, parsnips, carrots, etc. are proscribed. Irish potatoes are much better tolerated when baked and the skins are eaten with the pulp.

The sweeter cereals like barley are not as wholesome for diabetics as the unsweet ones. In general civilization has brought no good to the dietary of the diabetic. The nearer to nature the better.

The hyperesthesia of the general tissues in diabetes and the consequent predisposition to their precocious and excessive reaction to all manner of perturbations of life should be an indication to the physician to as far as possible protect the patient from all disturbing factors and, moreover, to retard or inhibit all exciting and stimulating influences.

Sadly has this rule been broken by medical advisers. Cases have come to my observation in which unlimited quantities of strong coffee have been allowed, even during the night or at very early morning hours, thus by its caffeine content producing an exacerbation of the general hyperesthesia of the disease which has continually necessitated direct narcotic administration for its amelioration.

Diabetes is a pathological state that involves a sluggish state of metabolism, but unlike other submetabolic states it does not necessarily involve somatic suboxidation. Oxygenation may be normal or supernormal, yet the high avidity of the acids of the disease diverts the oxygen from other utilities and animal processes and principally tissue syntheses suffer. The diminution of urea and corresponding excess production of ammonia in the urine should be recognized as a disturbance of the metabolic functions.

I have not for many years given saccharin as-

a substitute for sugar as a sweetening agent. In my experience it acts toxically in all cases and is, if anything, more harmful than carbohydrate sugars in diabetes. In 1901 I tested saccharin as a sweetening agent (substitute for sugars) in cases of excessive gastric fermentations, including my own person, with the result that it was abandoned as the worse of the two evils.

The mental attitude of the diabetic is of great importance and should never be neglected by the attending physician as beneath his notice. Any man or woman who is above giving attention to any bodily function should lose no time in giving up the practice of medicine to others who are better disposed to bestow upon it that which is indicated for a betterment or a cure. The time has gone by when a doctor can ignore that which he is not fond of. To turn patients off with ridicule of their mental distresses, depressions, hyperesthesia, etc., now, is to turn them to "Christian Science," to "New Thought" and kindred cults where at least this feature of their cases will receive exclusive attention and if other factors have already been eliminated a cure may result to the credit of Christian Science and discredit of the physician!

The personal equation is too often neglected in diabetes, and such neglect has led to many cases of unsuccessful results. To favor success derangements of all organs and functions of the body must be located, interpreted, and corrected, however far removed (supposedly) from the diabetic process.

Sedentary habits are absolutely incompatible with normal metabolism and thus are incompatible with diabetes. Exercise of the tissue in one form or other must be adapted to all cases. Even the passive exercise of massage and Swedish movements should be administered to the bedridden. Calisthenics, rowing machine, and other gymnastics should be skilfully adapted to walking cases. Neglect of these physiological requirements serves to determine such cases to the cults, osteopathy, nature cures, etc., and in the end they get them always at the expense of neglected factors. And after the other (medical) treatment cures are actually obtained, on supplying the broken spoke in the therapeutic wheel, they complete the cure.

It is not because any of these cults and irregular methods are more efficient than the armamentarium of the physician, but because it is that the physician is "above his job." He abandons a rich field of therapeutic resources for ideals which his generation may never see realized, if they ever are. He occupies himself with dreams of sifting all diseases down to narrowed definite and specific entities and of finding a specific remedy to combat each one, and while he is wasting his time waiting for Behring, Ehrlich, and lesser lights to perfect serums, vaccines, etc., to antidote disease, and administer poisons which will kill parasites without proving worse to the host that did the parasite, all irregulars are thriving as they never did before, and the position of medicine in the regard of the public is sunken lower than at any time since the days of Hippocrates.

The physician appears to be losing his cue and his nerve. Day by day the physician sinks lower and medicine is passing more and more into oblivion. More and more he neglects the demands of his cases until they pass into the care of the cults or irregulars, or to the surgeon for the separation of the uncontrolled pathological processes from the remaining uninvolved body. The surgeons, in recognition of the incapacity of the physician to utilize what has been considered a medical stage of many diseases, now demand that the cases be delivered to them for exploratory section and excision in the earliest stages at which they reach the physician to save time otherwise lost.

The successful treatment of the diabetic, more than any other with which I am familiar, demands intelligent cooperation on the part of the patient. This is not possible when he is kept in ignorance of the nature of his disease and treatment. There is little chance of a patient becoming dangerously wise by so doing. The more the patient learns of his disease the more he realizes what a big subject it is and how very great must be the physician's knowledge which he must continually draw upon, and the more he appreciates his aid.

My own observation has taught me that a patient who is given liberal ideas of disease, and corrective therapy, and is not turned away in ignorance when soliciting information, is not prone to turn to the cults or irregulars, and especially does the mental attitude of the Christian Scientists meet with logical incompatibilities in those who possess the fundamentals of the physiological and pathological sciences.

Within the boundaries of the profession I have met with the most sadly erroneous treatment of diabetes among the followers of the uric acid dogmas of Haig. Unfortunate, indeed, it is when the diabetic falls into the hands of these men, sees all evil in animal proteins, and thus substitutes therefor the fermentable vegetable proteins and the carbohydrates exclusively.

In general the writer is more partial to low concentration rudimentary forms of foods than to starch-free diabetic foods. He has under his care at the present time a patient whose former physician at once prescribed starch-free bread and sanctioned sugar-sweetened foods with few, if any, limitations, and the patient is an advanced case, having already suffered the loss of an extremity owing to diabetic gangrene.

In conclusion I will be glad if the above epitome of instances of cases of diabetes mellitus which have come to me from other practitioners will lend aid to the family physician who sees these cases generally in advance of the consultant. The early work must be improved or the ultimate work will be unsatisfactory. Many of these cases can easily be cured when taken in time and given the right kind of treatment. The earlier the case is received the more necessary is a thorough survey and analysis of the etiological factors for a correct application of corrective therapeutics.

To fight the disease, fight the acidity to the point of neutrality only, but not only the ready formed acidity, but the deranged processes which are generating it to excess either from ingested foods or degenerating tissues. Thereafter correct living is the key to subsequent normality.

Salicylate of Soda and Iron.—H. Drinkwater states that he has been in the habit of using a mixture containing salicylate of soda and liquor ferri perchloridi, which he has found very useful in rheumatic conditions associated with anemia, and especially in a kind of sore throat which appears to be of rheumatic origin.—*Liverpool Medico-Chirurgical Journal.*

THREE PHASES OF ECTOPIC GESTATION.

By JOHN M. KEYES, M.D.,

NEW YORK.

SURGEON TO ST. BARTHOLOMEW'S CLINIC, ASSISTANT GYNECOLOGIST TO COLUMBUS HOSPITAL.

At a meeting of the Triprofessional Society, held in February, 1910, at the Astor Hotel, New York City, I reported thirteen cases of ectopic gestation which had occurred during twenty months of service at Columbus Hospital. I dealt with the general subject as my background and drew clinical deductions from my findings. At a meeting of the Practitioners' Club of Yonkers, held on March 15, 1911, at the house of Dr. John B. Kouwenhoven, I read a paper on this subject, reporting eight additional cases which occurred between February, 1910, and March, 1911, also at Columbus Hospital. A more critical examination of the records of the hospital shows that we had ten instead of eight cases during the interval. A review of these ten cases bears out my observations as recorded in my previous paper, published in the *New York Medical Journal*, June, 1910.

A study of this topic, drawn from a comparatively large clinical experience, should be instructive to the surgeon as well as to the student. There are phases of ectopic pregnancy which need to be elucidated. The first concerns the bearing that complications have on the surgery of ectopic gestation. In summarizing the ten appended cases I find them complicated as follows:—The second by fibromyoma of the uterus; the third by catarrhal appendicitis; the fourth, while it had no present complications, gives a history of a previous ectopic, occurring six years before, and which was operated on and found complicated by appendicitis and small uterine fibroids; the fifth by interstitial appendicitis and interstitial salpingo-oöphoritis; the sixth and seventh by cystic oöphoritis and the seventh by a twisted tube in addition; the eighth, ninth, and tenth clinically showed febrile reaction, and at operation inflammatory exudates were found involving the appendices. A review of the complications of the thirteen cases previously reported and the fact that such associations are matters of common observation lead me to take issue with the doctrine that the thing to do in extrauterine pregnancy is to get in and get out as quickly as possible. The inference to be drawn from such teaching is that it is our duty to excise the bleeding sac and nothing more. Of course the excision of the gestation sac and the stopping of bleeding are essential, but we must deal also with complications, using the best surgical judgment at our command. If we find septic inflammatory conditions, such as pus tube, diseased appendix, and the like, we must remove them and drain if necessary. If we have fibromyoma of the uterus as a complication a supravaginal hysterectomy may be called for also. The aim of our surgical procedure should be, of course, to reduce mortality to a minimum and to attain the most complete recovery possible. When you bear in mind that your patient is suffering already from shock and hemorrhage and that the operation will add more shock, the necessity for expeditious operating becomes obvious and time-wasting procedures, such as the washing out of clots and so forth, should be dispensed with.

The second phase that I present for critical study has to do with mortality. In my previous paper I stated that the minimum death rate to be hoped for was 2 per cent. To attain it we must have an early correct diagnosis, perfect surgical technique, and an intelligent conception of how to deal with the conditions which lead to mortality. Dr. Hunter Robb reports an operative mortality of 8 per cent. in eleven hundred and seventy-six cases occurring in twenty-five clinics. He reports also a series of thirty-eight deaths, fourteen of which were due to septic infection. Bearing these figures in mind a survey of the twenty-three cases reported by me will show the association of previous and concurrent complicating lesions and thus the problem of reducing mortality becomes somewhat simplified. The two cases of appendicitis with septic aftercourses and the conclusions reached by the independent observations of other surgeons point to one avenue for the reduction of mortality. As we know that one of the causes of postoperative death in ectopic gestation is general peritonitis, I cannot too strongly emphasize the point that where the clinical symptoms indicate an inflammatory condition in the pelvis or in the abdominal cavity, and where after opening the abdomen we find evidences of present or past inflammatory conditions, it behooves us to examine the appendix as well as the pelvic organs, and if it is diseased to remove it, establishing drainage if necessary. We know our mortality from this abnormal pregnancy to be due to hemorrhage, shock, exhaustion, septicemia, general peritonitis, intestinal obstruction, and the usual postoperative risks, such as pneumonia, etc. The first three risks can be coped with by proper medication and the use of normal salt or blood transfusion.

Where ectopic gestation is complicated by diseased conditions, for instance, diseased adnexa, uterine fibroid, or appendicitis, the surgical procedure is clearly indicated. The diseased organ should be removed; and where the surgeon feels that the aftercourse is likely to be septic he should by all means drain through the posterior vaginal wall. The drains when composed of sterile gauze must cover also the cut and raw surfaces. These precautions, the removal of complicating conditions, the establishing of drainage, and the covering of cut and raw surfaces, practically minimize the chances of intestinal obstruction as well as of general peritonitis. The ten appended cases show no mortality.

The third phase of interest is the relative frequency of this abnormal pregnancy. The fact that twenty-three of these cases occurred in thirty-three months, the prevalence of conditions leading to extrauterine conception, and the universality of pregnancy make me feel that ectopic gestations are much more frequent than we had supposed. Undoubtedly many cases escape detection and the patients live without surgical treatment. The inability to judge whether a given case will live or die leads me to advocate immediate operation. The proportion of extrauterine to intrauterine pregnancy is said to be one in two hundred.

I shall dwell on those cases which have interesting clinical features. The pathological work was done by Dr. William B. Noyes and Dr. W. W. Hala. The cases occurred on the gynecological services of Dr. Egbert H. Grandin, Dr. Charles F. Adams, and the author.

CASE I.—C. P. Admitted March 3, 1910. Discharged March 20, 1910. Age 26 years. Married 2 years. Housewife. Previous history negative. Menstrual history:—Menstruated first at 16 years; 28-

day type; 4 to 6 days' duration. Amount small. No pain. No children; no abortions. Present history:—Last normal menstrual period, January 29. For 20 days had vaginal oozing accompanied by pains in one inguinal region or the other and at times cramp-like pains over the lower abdomen. Two days before admission had severe vaginal hemorrhage. Admitted 3 P. M. Pulse ranging from 90 to 94; temperature normal. One hour afterwards was operated on. Curettage and abdominal section. Free blood and clots in abdomen. Right ruptured ectopic. Microscopical examination of mass showed decidual cells, but no chorionic villi. Pulse varied between 78 and 82 until patient was discharged. Temperature normal.

Case II.—C. R. Admitted April 14, 1910. Discharged May 8, 1910. Age 38 years. Previous history:—Had usual diseases of childhood. Menstrual history:—Menstruated first at 15 years; 28-day type; 2 to 6 days' duration. Amount small. No pain. After marriage at times menstruated 7 to 8 days and in large amounts. No children; no abortions. Two months before had cramp-like pains in lower abdomen which continued accompanied by vaginal bleeding for 8 days. Six days later passed clots accompanied by cramp-like pains. Vaginal oozing continued except at brief intervals until she was admitted to the hospital. Physical examination showed the abdomen enlarged, cervix soft and lacerated, uterus enlarged and surface uneven with a mass to the right of it. Pulse varied from 86 to 92; temperature from 98 to 100; respiration was 20. Operation performed 24 hours later. Abdominal section; hysterectomy; left salpingo-oophorectomy; right salpingectomy. Free blood in abdominal cavity. Microscopical examination showed fibromyoma of the uterus, chronic salpingitis, ectopic gestation in right tube, which was eroded. Decidual cells present. Temperature ranged between 98 and 100 until May 8, when it stayed normal. Pulse ranged between 80 and 82 until patient was discharged.

Case III.—A. G. Admitted April 4, 1910. Discharged May 8, 1910. Age 33 years. Married 10 years. Had 2 children, the younger three years of age. Menstrual history:—Began at age of 16; 28-day type; lasted from 4 to 6 days. Amount small. Pain occurred previous to appearance of blood. Last menstruated March 12. Present history:—Began two months previously to have cramp-like pains in lower abdomen, severe in character and more or less continuous. There was vaginal oozing during the same period. Complained of general weakness. Uterus large and soft with masses on both sides of it. Pulse varied from 76 to 84; temperature normal. Was operated on 4 days after admission. Abdominal section. Free blood in abdomen. Ruptured left tubal gestation. Appendectomy. Catarrhal condition of appendix. No drain. Aftercourse uninteresting.

Case IV.—A. R. Admitted June 14, 1910. Discharged June 28, 1910. Previous history:—Six years before was operated on for tubal gestation, appendicitis, and the removal of two small fibroids from the uterus. Last menstruated October, 1909. Present history:—For the past two months had had cramp-like pains in the lower abdomen, vaginal oozing, nausea, and vomiting. Had mass to left of uterus. Operated on 4 hours after admission. Abdominal section. Left tubal gestation (primary rupture). Aftercourse uninteresting.

Case V.—C. M. Admitted August 14. Discharged September 3, 1910. Age 30. Married 10 years; had 3 children, youngest 10 months old. No abortions. Menstrual history:—Menstruated first at 14 years. Period regular; flow 4 to 5 days in duration. Last menstruation July 14, 1910. For the past two months had had cramp-like pains in lower abdomen and in the back; also headaches, chills, and fever. Mass to the either side of uterus. Abdominal section; salpingo-oophorectomy and appendectomy. Clinical diagnosis was ectopic gestation. Pathological diagnosis was chronic interstitial appendicitis and tubal pregnancy. Specimen consisted of an appendix with interstitial changes, a tube and ovary also undergoing chronic interstitial thickening, and a sac about the size of a peach, the serous surface of which was much inflamed. Section showed the contents of the sac to be clotted blood. Microscopically it looked like an ampullar pregnancy and revealed decidual cells, but no chorionic villi.

Case VI.—R. C. Admitted August 11, 1911. Discharged September 1, 1910. Age 28 years. Married 3 years. Had one child 2 year old, and one abortion. Menstrual history:—Menstruated first at 14 years of age. Type regular; flow lasted 6 or 7 days. Pain occurred before flow commenced. Last menstruated July 6, 1910. Had had vaginal bleeding since July 6, 1910. Operated on the day following admission. Curettage; abdominal section. Free blood in cavity. Pathological report (No. 1,233): Clinical diagnosis was ectopic gestation and microcystic oöphoritis. Specimen consisted of an appendix, a tube, and an ovary. The appendix was apparently normal. The ovary was slightly larger than normal, soft, and on section its parenchyme was seen invaded with small cysts containing a bright mucoid liquid. The tube was egg-shaped—5 c.c. long by 3 c.c. in diameter. On section it was found filled with blood clots occupying the entire lumen of extrauterine portion of tube. The fimbriated end was occluded. This is the ampullar type of ectopic pregnancy Microscopical examination revealed chorionic villi and decidual cells.

Case VII.—M. L. Admitted November 3, 1910. Discharged November 19, 1910. Had last child 14 years previously. One abortion. Menstrual history:—Menstruated first at 13 years of age. Type regular. Present history:—Was regular until 2 months before admission to hospital, when she began to have continuous vaginal oozing, accompanied by cramp-like pains in the lower abdomen. Uterus slightly enlarged with a mass behind it. Pains in lumbar region. Three weeks before was curetted at her home for what was supposed to be a uterine abortion. Operated on the day following admission. Abdominal section. Free blood in abdominal cavity up to midway between symphysis and umbilicus. Right tube and ovary removed. Tube enlarged and adherent posteriorly to uterus. (Pathological case No. 1,278). Clinical diagnosis was ectopic pregnancy and ovarian cystoma. Pathological diagnosis was tuboovarian pregnancy. Specimen consisted of a blood clot the size of a walnut, a twisted Fallopian tube, and a cystic ovary. The tube was not ruptured and was occluded. The clot was surrounded by a mass of tissue including the fimbriated end of the tube, adhesions, and the ovary. Microscopical examination revealed no chorionic villi, but areas of clearly marked decidual cells. In this case we had a tubal gestation to begin with and somewhat pre-

vious to her curettage the patient had had a tubal abortion of a still viable ovum, which attached itself to the ovary and the surrounding tissue, causing an exudate to be thrown around it.

Case VIII.—C. S. Admitted November 19, 1910. Discharged December 16, 1910. Age 38 years. Previous history:—Two curettages, the last 18 months before patient's admission to hospital. Six months before had a laparotomy for ruptured ectopic gestation in right tube. Present history:—Menstruation delayed 14 days and then had cramp-like pains in lower abdomen with vaginal oozing and symptoms of internal hemorrhage. Physical examination revealed rigidity of abdominal muscles, tenderness over lower abdominal zone, and a mass posterior and to the left of the uterus. Pulse 92; temperature 100°; respiration 34. Operation:—Curettage and abdominal section. The abdomen was full of clots. Left tube ruptured ½-inch from fimbriated end and it was surrounded by inflammatory exudate and the appendix was caught in this exudate. The tubal mass and appendix were removed; cut and raw surfaces were covered with sterile gauze and drainage established through posterior vaginal fornix. The aftercourse was septic. Pulse and temperature were practically normal by December 14. This is the type of case that calls for drainage and protection of the intestinal coils against adhesion. I feel that the patient's chances of developing general peritonitis or intestinal obstruction were minimized by the surgical practices employed.

Case IX.—R. G. Admitted January 2, 1911. Discharged February 7, 1911. Age 25 years. Married 5 years. Had had one child 3 years previously. Present history:—She had what she thought was a uterine abortion 20 days before admission, since which time she had had vaginal oozing, cramp-like pains in lower abdomen, and at stool she passed clots. Had mass at left of uterus and posterior to it. Pulse ranged between 88 and 112; temperature 99° to 100°; repiration 22 to 24. She was placed on table January 4, 1911, the regular operating day, with a diagnosis of pelvic abscess. After an examination under ether I suggested that we might have an ectopic gestation to deal with. Curettage and abdominal section followed. Free blood was found in the abdomen and a ruptured left tubal gestation. There was considerable inflammatory exudate and the appendix was removed and drainage by posterior section was established, the same procedure being employed as that described in case IX. The pulse ranged from 100 to 140 for 12 hours following the operation and then slowed down. The patient was given the Murphy drip in the Fowler position, eserine, and strychnine. The aftercourse was septic. Temperature became normal after February 4, 1911. These cases fully emphasize my point that diseased appendices should be sought and removed in cases of ectopic gestation where the clinical symptoms as well as the operative findings show inflammatory change complicating the original condition.

Case X.—C. R. Admitted January 11, 1911. Discharged February 14, 1911. Age 28 years. Had had 2 children, the last of whom was born 7 years before. Had had no abortions and had menstruated regularly. Present history:—Menstrual period was delayed 9 days; then she had vaginal hemorrhage accompanied by cramp-like pains in lower abdomen, especially severe over the left side. Physical examination revealed small mass in region of appendix. Uterus was not enlarged, but there was a soft mass to the left of it. Pulse 80; temperature 100°; respiration 20. Operation was performed on the following morning. Abdominal section. The abdomen was full of clots and free blood. Left tube was removed and also the appendix. Inflammatory exudate was around the tube and the end of the appendix was caught in it. The tube was not ruptured and the clot was at the fimbriated extremity. This was another case of tubal abortion. Microscopical examination revealed chorionic villi. The patient had a slight fever for a few days. Her pulse ranged between 80 and 90 until she was discharged.

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Sylvham Building, 616 Madison Avenue.

THE O'DWYER FORCIBLE RESPIRATION APPARATUS FOR CHILDREN.

By JOSEPH O'DWYER, M.D.,

NEW YORK.

The O'Dwyer-Fell apparatus for forcible artificial respiration has been in existence several years and has been used at one time or another in most of the hospitals. Some wonderful results in cases of respiratory failure have been accomplished with this apparatus. If you will permit me I should like to quote from memory the essential details of a case that occurred several years ago at the Presbyterian Hospital.

A male ward patient suddenly stopped breathing; Dr. David Bovaird, an interne at that time, had an O'Dwyer-Fell apparatus handy. He got this going and the patient's pulse came back. Artificial respiration was continued for a couple of hours with the patient in good shape. It was then stopped. The patient's pulse again began to fade until it disappeared completely. Artificial respiration was then resumed, with a return of the heart's action. This procedure was tried two or three times with like results. Life was kept in this patient twenty-four hours; then the doctors, realizing the hopelessness of the case, discontinued artificial respiration and the patient promptly died. Death was the result of a tumor of the cerebellum pressing on the respiratory center. I have quoted this case to show the possibilities of this form of artificial respiration.

The O'Dwyer part of this apparatus consists of a cone-shaped ridged end. This fits snugly into the larynx and has running through it a channel for the passage of air. This in turn is connected with a hollow metal tube curved at right angles and fitted with two external openings, one for the inspired air, the other for the expired air.

The Fell portion of this apparatus is a large bellows with rubber tubing connecting it to the laryngeal portion. The bellows is placed on the floor and worked with the foot. This, it seems to me, is open to serious objections. In the first place the air is not warmed, but is forced directly into the larynx and lungs without any warming medium.

In the second place, while there is a sponge below the tubing, still the apparatus is on the floor and is most likely to blow dust right into the lungs. You can see that these two reasons acquire added importance when artificial respiration is kept up for hours. Under normal conditions of breathing the narrowness of the nasal passages and the bend which the air passage makes in the pharynx serve the useful purpose of freeing the inspired air very largely of its dust, particularly since the latter adheres very closely to the mucus-covered walls of one cavity or the other.

My idea, with a very simple modification which I have devised, is to get the air to the lungs under the most natural of conditions. It consists of a long cylindrical bottle or large test tube. This bottle is half full of water and plugged with a rubber cork. Through this cork two glass tubes are passed. The first one enters the water; the second just penetrates the cork. To the second one rubber tubing is attached, which in turn is connected with a suction valve on a large rubber bulb (taken in this apparatus from an automobile horn). More rubber tubing connects the end valve on this bulb with the laryngeal instrument. The cylindrical bottle is placed in a bowl or large graduate containing water kept at about 110° F. Of course, the principle made use of is very simple. When the bulb is compressed a partial vacuum is created in the bottle. The outside air rushing in through the long tube and passing through the water is both warmed and filtered. After this it passes into the expanding bulb and is ready to be forced into the lungs. While the bulb is compressed the thumb is held over the outlet for the expired air. After a very short interval, depending on the age of the child, the thumb is removed and the air allowed to be expired. Since the air pressure acting upon the inner wall of the thorax is lower than the atmospheric pressure exerted upon the outer wall, every dilatation of the thorax is counteracted by a force corresponding to the difference between the outer and inner pressure. It is obvious that the expiratory contraction of the chest wall is favored by the same circumstance and that respiration almost always stops at the end of expiration.

During the first year of life the average rate of respiration is 44 per minute; at the fifth year it is about 26. According to Grey, the average breath volume in children in the first month is 1,300 c.c. per minute; in the twelfth month 3,000, and between the second and third years averages between 4,000 and 5,000 c.c. You may see from this that a foot bellows would be out of the question with young children. We would, of course, have no way of gauging the amount of air we were giving them at each inspiration, while with this method we can have different sized bulbs and gauge the amount of air we are giving them quite accurately. To a child a month old we would give 30 c.c. or about 1 oz. 44 times per minute. To a child up to one year of age a 2-oz. bulb emptied 40 times per minute would give sufficient oxygen to enable the heart to carry on its work.

The demands for forcible artificial respiration are, of course, limited, but when the demands must be met they must be met promptly, and on our method of meeting them often hangs a life. Some of the following are instances where forcible artificial respiration is urgently indicated: Sometimes in new-born infants; in chloroform poisoning; practically every case of death from chloroform is due to the failure of respiration. Some others are opium poisoning, drowning, and suffocation. There are cases in which a small cerebral hemorrhage presses on the respiratory center, causing death almost instantly. If artificial respiration were tried for a few hours this hemorrhage could be sufficiently absorbed to allow respiration to continue naturally. There are also cases of collapse from the loss of blood and hydrocyanic and carbonic-acid gas poisoning; also in convulsive spasms of strychnine and caffeine poisoning.

The diaphragm is the most important and probably the most typical muscle of respiration. The majority of the shoulder girdle muscles and neck muscles with thoracic attachments have other work besides their respiratory functions. The muscles of the shoulder girdle and the neck, being more distinctly voluntary muscles, are the first to become paralyzed, then the abdominal muscles, and finally the diaphragm. Under ordinary conditions the diaphragm is capable of supplying sufficient oxygen for ordinary purposes. But where there is considerable abdominal distention or where the patient has a pneumonia or pleurisy with effusion then the diaphragm alone is insufficient. When a patient of this type has to take an anesthetic we should always be prepared to carry on respiration by artificial means.

Apnea, according to physiologists, is not the last stage of dyspnea, but that condition in which the blood is so excessively aerated that there is no need for breathing at all. For instance if one holds his breath he will find that he can hold it but a few seconds, and then if he take several short breaths and repeat the experiment he will find that he can hold it for several seconds longer than at the first trial. This is a state of apnea as understood by physiologists. A few years ago it was discovered that when rabbits were kept in this condition a fatal dose of strychnine might be given without producing any effect. When respirations were discontinued and the animal allowed to pass from this condition of apnea convulsions came on even after respirations had been kept up three hours. If respiration were continued, however, for four hours the strychnine must have been excreted or destroyed, as there was no return of convulsions on discontinuing respiration.

This apparatus, with slight modifications, can be used for giving anesthetics for operations on the nose and mouth. The bulb is removed and the rubber tubing is connected directly from the laryngeal portion of the apparatus to the short glass tube that just penetrates the cork. The cylindrical bottle or test tube is then half filled with ether and placed in water at about 110° F. This not only gives us a simple method of warming the ether vapor, but also tampons the pharynx and prevents any blood entering the larynx during the operation.

Antitoxic Action of Iodine in Tuberculosis.—S. Rocci finds that iodine is of value internally in cases of tuberculosis of the lymph glands. He has made experiments to demonstrate this fact in animals. He considers it demonstrated that iodine exercises an antitoxic action against the tubercular toxins. This action is of a chemical nature, since the drug after entering the circulation fixes and neutralizes the tubercular toxins. The experiments made by the author are impossible of explanation on the supposition that the action of iodine is due to the biological production of antitoxins.—*Il Policlinico.*

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SIGNIFICANCE OF HORMONES IN INTERNAL MEDICINE.

THE provisional definition of a hormone is that it is a substance formed in a given organ and capable of exerting a specific biological action on other organs, to which it is carried in the blood stream. Some hormones exert a general, others a local, activity. When hormones are produced in excess or in diminished quantities morbid syndromes are set up. The interrelations and indirect manifestations of hormone action are most puzzling. Many of the simplest biochemical activities become still more simplified if regarded as due to the latter. For example, the part played by hydrochloric acid in gastric and intestinal digestion has usually been regarded as settled. This acid, so it has been taught for years, changes propepsin to active pepsin, and before its neutralization in the duodenum is a biological stimulant of the biliary and pancreatic functions. To-day, however, it is asserted that hydrochloric acid simply causes the production of hormones in the digestive surfaces, and these being taken up into the blood constitute the natural biochemical stimuli of pancreatic secretion, and to a certain extent of all the other digestive secretions. The so-called gastric secretion (gastrin) is further a stimulant of the muscle of the digestive tract, an activator of peristalsis.

At a recent meeting of the Verein für wissenschaftliche Heilkunde in Königsberg, Borchhart read a paper on the relation of hormones to disease (*Deutsche medizinische Wochenschrift*, June 8). Incidentally he touched upon certain adrenal syndromes. Adrenalin is used up by excessive muscular exertion, so that in death from the latter cause the organism is bankrupt of this substance, the absence of which is directly responsible for the fatal outcome. Hence, in disease of the suprarenals with diminished production of adrenalin a characteristic state of adynamia results. In high-pressure nephritis there are overaction of the adrenals and adrenalinemia, but the precise connection between the two conditions has not yet been made out. If the renal lesion is responsible by continuity or otherwise for the suprarenal disorders, the latter in turn are doubtless answerable for the arterial symptoms. In diminished functioning of the suprarenals the normal content of the blood in sugar is lessened and hence the alleged benefits derived from glucose in Addison's disease. Conversely in high-pressure nephritis there is an increase of sugar in the blood which does not appear in the urine because of diminished renal permeability. Acromegaly has been shown to depend, at least in part, upon hyperfunctioning of the hypophysis, for it tends to improve if the latter is removed. The opposite conditions of myxedema and exophthalmic goiter are explained by the author as hormone syndromes, due respectively to diminished and increased hormone action. Spasmophilia similarly means a decrease in the hormone production of the parathyroid glands. The over and under-production of several of the hormones stand in close relationship with carbohydrate metabolism. Adrenalin has already been mentioned in this connection, and similar relationships have been noted for the hypophysis hormone (hyperglycemia and glycosemia of acromegaly, the thyroid hormone (hypoglycemia and storage of glycogen in myxedema), the pancreatic hormone (diabetes of pancreatic origin), etc. In discussing the paper, Hofbauer spoke of the close connection between the ovary and the growth of bone and hemopoiesis respectively. The hypertrophy of the hypophysis in pregnancy is believed to stand in definite relationship with the ability of hypophysis extract to induce uterine contractions. It is perhaps taking too much for granted to regard every active principle in the body which acts through the blood as a hormone. Perhaps the only principles commonly regarded as hormones to date are the mamma hormone (Sterling), secretin, the peristaltic hormone, and the pancreatic hormone. These substances defy isolation to the same degree as enzymes. Their action is specific and appears to be localized. Many authorities are not yet ready to apply the term hormone to adrenalin and the active principles of the thyroid, which differ in several important respects from the preceding. In his recent monograph on the internal secretions Biedl uses the term hormone tentatively, while in the main preserving the older nomenclature. The most numerous and varied substances from a given animal may behave as hormones in the blood of another animal, so that even food albumin may be so termed. Again a disease-toxin may be conceived of as a harmone. Unless much care is used, the term is likely to lose entirely its primary significance.

INTELLECTUAL PRECOCITY.

INFANT prodigies in various branches of learning and of mental effort have flourished in all ages. Perhaps these have been most distinguished in music and mathematics. Of late years we have never been without the infant phenomenon in music and there have been several of tender years who have been somewhat remarkable as mathematicians. However, it is not difficult to understand why children precocious in music should predominate, for they are a ready and sure source of income to their parents. People are always anxious and willing to hear or see freaks of any description, and most of the musical prodigies may be numbered in this category. Tom A. Williams has written recently

concerning intellectual precocity (*Pedagogical Summary*, May, 1911) and propounds some interesting views on the subject. He believes that intellectual dexterity is an orderly functioning of mental processes seated in the brain and it is manifest that these will reach excellence best when they are trained by a capable hand during the formative period of early youth. He draws an analogy between the mental processes and the processes of physical development, arguing that as more or less constant exercise and work are needful for the attainment of a perfect or good physical structure so are they needful for the development of mental power. He carries the argument still further and contends that the precocious individual is not necessarily naturally extraordinary but has been deliberately guided to and trained in intellectual or other excellence. In support of this contention the example is cited of John Stuart Mill, who is said to have declared that both in memory and understanding he was considerably below the average of boys of his age; in spite of which his early training gave him what he contends to have been an advantage of 25 years over his competitors in after life. The case of the son of Dr. Boris Sidis is also brought forward, the father having explicitly stated that his boy's apparent genius is due only to the training of his intellectual activities in early life. This statement, however, was made with certain reservations.

Stress is laid upon the necessity for achieving a pleasant "feeling-tone" if one wishes to make the most of the intellectual capacities of a growing brain. It would not seem that the study of Greek would give pleasant feeling-tones to a boy of four, nor the study of anatomy the same to an infant. Yet this is what occurred in the respective cases of John Stuart Mill and young Sidis, and Williams argued that the fact that each boy learned with facility at that age proved that the task was agreeable.

After discussing at considerable length the whys and wherefores of the attainment of mental expertness and mental acquirements by young children, Williams asks the question, "Can a John Stuart Mill or young Sidis be reproduced in any family?" and answers as did Oliver Wendell Holmes: "Yes, if you begin with the grandfather," meaning from the standpoint not altogether of heredity but of attainment and atmosphere. That is to say that the father must be a trained man, and for the father to be a trained man the grandfather must have been so likewise. Williams is of the opinion that learning to think is of extreme importance in the attainment of that genius known as precocity and he defines genius as consisting in the power to maintain at the same time in the mind many impressions and to relate the complexities of these into a generality. It is, he thinks, in its first steps necessarily a capacity for taking pains.

After all has been said that can be said on the subject, the list of infant prodigies who have fairly fulfilled the promise of their youth may almost be counted on the fingers of one hand. As a rule, indeed, those of conspicuous genius have not displayed great application in their youth, nor does it seem likely that had they been compelled to application they would have evinced greater powers or production of brain during their adult years. The history of infant prodigies is not on the whole encouraging, nor was the career of John Stuart Mill so successful as to be a strong argument in favor of the kind of training he underwent. He most decidedly did not wholly fulfill the promise of his youth. One of the earmarks of a genius is originality and the majority of those who have shone in their earliest years have either snuffed out like a candle or have in after life displayed little or no creative faculty. Williams has written a most instructive and suggestive paper, but his pleading does not carry conviction that the teaching of Greek or anatomy to children of four or five would be attended with satisfactory results in the large proportion of instances, either mentally or physically. On the other hand, it may be most emphatically stated that in the routine education of the youth of what is termed the Anglo-Saxon race too little attention by far is paid to the training of the mind, and too much to physical training and amusement. The happy mean is the point at which to aim.

OFFSPRING OF TUBERCULOUS MOTHERS.

The progeny of tuberculous women, the results of gestation on the latter, and allied topics have always been the subject of much argument. Experienced family practitioners still hurry girls who are candidates for tuberculosis into matrimony in the hope of staving off the disease; gestation has similarly been forbidden to married women actually tuberculous; and it has been shown abundantly that such women are much less likely to conceive and more prone to abort than are healthy women. It has been claimed that the progeny of consumptive women, while not actually tuberculous, tend to invalidism and short life, and to psychopathic disease; this notwithstanding that every now and then some sceptic reports that normal children, of full weight and health, are born of women far advanced in the disease.

We are, therefore, in the presence of this inharmonious teaching, well disposed to listen to the 20 years' experience of an authority like Petruschky on these subjects. This author read a paper before the Northeastern German Society for Gynecology last winter (*Deutsche medizinische Wochenschrift*, August 17), in which he said that 19 pregnancies were carefully followed up in 18 women with active tuberculosis. Eleven children were born alive and all reacted negatively to von Pirquet's test. Twenty-four pregnancies in 22 women with latent tuberculosis gave similar results.

The author does not therefore prohibit the marriage of tuberculous women, but if these become worse as a result of conception he advises that the gestation be interrupted at the proper time. He would treat all unmarried women up to the time of marriage and all married women up to the time of conception and all gravidæ with especial refer-

ence to the use of tuberculin. Children born of such mothers he would also treat according to indications. He does not seem disposed, in other words, to allow tuberculosis to furnish anything like an absolute contraindication to marriage, conception, and childbirth.

TREATMENT OF GOUT WITH MINERAL ACIDS.

A GENERATION ago an English practitioner, who was an unattached individualist, created quite a sensation by publishing numerous cases from the ranks of his aristocratic patrons in which reports he always gave the antecedent treatment as prescribed by other notables (whose names he invariably repeated and whose prescriptions he regularly reproduced). His method was often simplicity itself. After a client had consulted some world-famous authority (who stood sponsor for a special therapeutic principle), and had become decidedly worse as a result, our individualist simply reversed the principle of the treatment, and—if we choose to believe him—promptly cured the patient. Apparently he went no further into the rationale of the treatment. Thus if a peer had chanced to consult Sir William Gull for his gouty paroxysms and had become distinctly worse after large doses of alkalies, the individualist merely changed the treatment to full doses of nitric acid, whereupon the patient at once experienced decided relief.

Quite recently Schmidt of Frankfort has advocated the use of hydrochloric acid in persistent high doses for certain cases of gout. But unlike the English empiricist he has a definite reason for this procedure, which, moreover, has its special indications. The treatment did not originate with him, for long ago the discovery was made that gouty patients often suffer habitually from defect of acid in the stomach. The biochemical studies which throw light on this mechanism are too numerous and complicated to be cited in this connection. They naturally involve the entire biochemical pathology of gout and of uricemia; and eventually of all the chronic affections which are found associated with gout.

Without at present going deeper into the subject we may simply call attention to the fact, which the author insists upon, that iodides should be combined with hydrochloric acid in these cases. Alkalies are still the remedy in the so-called uratic diathesis, which, however, furnishes but a fraction of the cases of clinical gout.

PRESENT STATUS OF RADIUM THERAPY.

AT a meeting of the Ontario Medical Association held at Niagara Falls, on May 31, 1911, W. H. B. Aikins and F. C. Harrison of Toronto read a paper dealing with radium therapy. As for the chief diseases in which radium may be used, the authors first draw attention to the fact that Wickham has shown that the word specific as applied to radium in the treatment of disease is incorrect, and that selective action means only that special pathological cells offer an inferior resistance to the action of radium. After pointing out that radium has been employed with much success in the treatment of numerous diseases of the skin, in certain rheumatic affections, exophthalmic goiter, and in many nonmalignant growths, its importance in the treatment of cancer is emphasized. The word cancer, too, is used in its widest sense, to include the whole series of malignant new growths, including rodent ulcer, epithelioma, carcinoma, and all the varieties of sarcoma. With reference to the influence of radium on goiter, they profess themselves as fairly well satisfied with its beneficial action, although their experience in this mode of treatment has been necessarily somewhat limited. The advantages of radium treatment of cancer in comparison with other forms of treatment are summarized as follows: The rays penetrate with facility to the deeper tissues, the apparatus is easy to manipulate, and the technique of the treatment is simple. Where extensive surfaces are involved in the growths the opinion is expressed that treatment by the Röntgen rays is preferable to that by radium. In the treatment of cancer of the breast radium has been used as a preliminary measure to operation and has apparently improved the condition of the operation field. Wickham has stated his conviction that intense preliminary radiation diminishes the malignancy of the operation area. In some instances of deep-seated cancer radium has shown itself a seemingly efficient remedial agent, but Aikins and Harrison, like Wickham himself recommend surgical procedures wherever feasible and likely to be followed by good results. In the more superficial forms of cancer radium frequently has a remarkable remedial and curative action. In more serious cases of malignant disease radium may often be used successfully both before and after operation. Radium has its distinct limitations in the treatment of cancer, but, on the other hand, it has its rôle in the treatment of this disease which is of great importance. As a therapeutic agent for many other diseases radium is of decided value and moreover the medical profession has yet much to learn concerning its merits.

THE OUTLOOK FOR VACCINATION IN GREAT BRITAIN.

THE principle of vaccination as a protective measure against smallpox was discovered in England, and yet of all the civilized countries of the world it is in England that the greatest amount of opposition to the carrying out of the operation is manifested. If the National Insurance Bill passes general vaccination in Great Britain is doomed. In the House of Commons a few weeks ago Mr. Lloyd George proposed to accept an amendment to the bill to the effect that no insured person shall be subject to any penalty, whether by suspension of benefit or otherwise, on account of the refusal by any such person to submit to a surgical operation, or to vaccination or inoculation of any kind. A member of Parliament asked whether it was not lawful to save a man's life against his will, and Mr. Lloyd George answered, "You ought not to deprive a man of benefit because he has come to the conclusion that he will not risk his life in an operation." The member of Parliament might have asked, Is it lawful to risk the health of the community at large because an ignorant person is unwilling to undergo a treatment which has been conclusively proved to prevent the spread and to temper the virulence of one of the most terrible and infectious diseases known. It would be a mere

waste of time to recapitulate the evidence in favor of vaccination. The wonderful results brought about by its enforcement in Porto Rico and the Philippine Islands should suffice to convince every doubter. It seems, however, to be an instance of whom the gods will destroy they first make mad.

Sunlight in the After-Treatment of Cancer.

Remedies designed to retard the return of cancer have been sufficiently numerous in the past. We need only mention two, viz., the seton and arsenic internally, both of which were believed to act upon the organism at large, and not merely on the region of the extirpated cancer. It is evident that we must have some biological test of the organism at large in respect to the recurrence of cancer after radical extirpation, otherwise a patient seemingly well may have latent cancer. Such a test is believed by Professor Hochenegg, among others, to exist in the so-called Freund reaction. According to the latter the serum of non-cancerous subjects dissolves cancer cells. At a recent meeting of the K. K. Gesellschaft für Aerzte (*Münchener medizinische Wochenschrift,* July 18) Professor Hochenegg, so well known for his work on rectal cancer, said that he believed, on the strength of a negative Freund reaction, that a rectal cancer had been practically prevented from recurring by a vigorous sun bath and light treatment. The interval is but fifteen months, but the force of the claim is realized when we read that up to eleven months after operation the reaction was positive. If the test is a valid one the solar rays appear actually to have changed the patient's constitution as far as a disposition to cancer goes.

News of the Week.

Vital Statistics.—The monthly bulletin of the State Department of Health for the month of July shows that the total number of deaths from all causes was decreased by 438 from the number for the corresponding month of last year. The number of deaths of infants under one year of age was 2,590 as compared with 3,486 for July, 1910. The number of deaths from pulmonary tuberculosis was 1,101, of which 650 died in Greater New York. There were 486 cases with 94 deaths of typhoid fever reported in July, 1910, while during the present year there were 641 cases with 125 deaths. The increase was about equally distributed between the urban and rural population.

The Cholera.—Official advices from Italy state that the city of Gio del Colle has been the scene of savage excesses in consequence of the cholera epidemic. A frenzied mob broke into the hospital and carried away those suffering from cholera and freed the suspects. It became necessary to call out soldiers, carbineers and even sailors to quell the riot. Similar scenes were enacted in the town of Massafra. In Turkey soldiers suffering from the disease were thrown from a military train and allowed to die on the ground. The disease continues to spread among the troups from Albania. Several suspicious cases have occurred in Vienna and twelve cases in a Servian town near Belgrade. Since the beginning of the present year the total number of deaths from cholera in Italy has been more than 30,000.

Unusual Rush for Vaccinations.—The week ending September 9 was one of the busiest in the history of the New York Health Department. During the week nearly 5,000 children were vaccinated at the offices of the department, the record for one day being 1,900. In addition to the demand for vaccinations caused by the approaching opening of the schools there was a rush for birth certificates. To prevent such a condition in the future a card-mailing system will be introduced for applications for birth certificates.

Sanitary Work in Charleston.—The Health Department of Charleston has been doing admirable work since the hurricane disaster. The citizens have been instructed as to the best methods to use and their cooperation with the department has been secured. To those who are unable to pay, the city furnished lime and other disinfecting materials. It is believed that the effective work of the health department will avert disease which so often follows in the wake of disasters like that which recently occurred in Charleston.

Saccharine Barred Out.—The New York Board of Health has added an amendment to its Sanitary Code forbidding the use of saccharine in foodstuffs and beverages. This action of the Health Department is in line with that of the division of food inspection of the Department of Agriculture which forbids the use of saccharine in the District of Columbia after January 1.

Medical Testimony and the Criminal Insane.—At the meeting of the American Institute of Criminal Law and Criminology in Boston on September 1, a report dealing with the testimony of expert witnesses in criminal cases where insanity is the plea of the defense was presented by a committee of physicians and lawyers who have been investigating this subject. While the report of the committee was not final it made the following recommendations: That legal tests of insanity be abolished; that insanity should be held to be a good defence whenever it negatives the necessary criminal intent: that various medical associations shall establish and maintain a code of professional ethics to govern medical reports; that the various bar associations shall establish a code of professional ethics to govern counsel in criminal trials where the defense of insanity is raised; that medical witnesses who give opinion evidence in criminal cases, where the defense is insanity, shall be chosen from a qualified group.

Contribution to Freeport Hospital.—Dr. W. W. Krape, founder of the Globe Hospital of Freeport, Ill., has given this institution an additional gift of $6,500 for an addition and improvements needed by the hospital.

A Hospital for Pellagra.—Atlanta, Ga., is to have the distinction of establishing the first hospital in the world entirely devoted to the care of patients suffering from pellagra. This institution, which is an annex to the Tabernacle Infirmary, will be opened on September 11, and offers accommodations for twenty-one patients.

Buys Site for Tuberculosis Sanatorium.—The State Antituberculosis Commission of Texas has purchased a tract of 375 acres of land in the North Concho Valley near San Angelo, upon which tuberculosis colony buildings are to be erected in the near future.

Infants' Hospital Ends Season.—Junior Sea Breeze Hospital, an emergency hospital at Sixty-fourth street and East River, maintained by John D. Rockefeller, has closed for the season. There

were 173 sick babies cared for in the hospital and 361 in the dispensary. The mortality this year was only 29 per cent., while for 1910 it was 38 per cent.

Association of Life Insurance Medical Directors of America.—The twenty-second annual meeting of this Association will be held in New York City on Wednesday and Thursday, October 4 and 5, in the Board Room of The Mutual Life Building, 34 Nassau Street. The following papers will be read: "A Suggested Readjustment of Our Views on Heart Examinations for Life Insurance," by Chas. F. Martin, M.D., Medical Director of The Standard Life Insurance Co. of Montreal, Canada. "Alcohol and Life Insurance," by T. F. McMahon, M.D., Assistant Medical Referee The Manufacturers' Life Association Company, Toronto, Ont. "The Use of the Sphygmomanometer in Life Insurance Examinations," by John W. Fisher, M.D., Medical Director The Northwestern Life Insurance Company, Milwaukee, Wis. "Some Observations on the Means of Detecting Adverse Selections," by Arthur B. Wood, Actuary Sun Life Assurance Company, Montreal, Canada.

The Eastern Medical Society.—A meeting of this society will be held in the Academy of Medicine on September 20. The scientific feature will be a symposium on "Practical Features of Ear Disease," in which papers will be read by Drs. S. MacCuen Smith of Philadelphia, George L. Richards of Fall River, E. A. Crockett of Boston, and Albert A. Gray of Glasgow, Scotland, a guest of the society. A general invitation is extended to the medical profession of the city.

New York State Homeopathic Society will hold its forty-fifth annual meeting from October 10 to 14, inclusive, at the Flower Hospital, New York City. Dr. Orlando S. Ritch of Brooklyn is President, and Dr. Bert B. Clark of No. 6 West 129th St., New York City, is Secretary. The headquarters of the society will be at the Hotel Savoy.

Dr. Charles A. Mohr has been elected Health Officer of the City of Mobile, Ala., to succeed Dr. Rhett Goode who recently resigned after having served for twenty years.

Dr. Wiley.—The Homeopathic Medical Society of Pennsylvania at its recent meeting at Bedford Springs adopted a resolution to the effect that "the removal of Dr. Harvey W. Wiley from his position as chief chemist of the United States Department of Agriculture would be a calamity to the nation and a direct blow to the health of every citizen."

Award of the Cameron Prize.—The University of Edinburgh has awarded the Cameron prize in practical therapeutics to Dr. Simon Flexner of New York, who is director of the laboratories of the Rockefeller Institute for Medical Research. This prize, which amounts to $500, is awarded every five years to a person who has made an important contribution to medical therapeutics. Dr. Flexner has received this prize in recognition of his researches on epidemic cerebrospinal meningitis and its treatment with antimeningitis serum. Dr. Flexner has been invited to deliver an address at the University of Edinburgh during the coming academic year on the researches in recognition of which he has received the prize.

Dr. Theodore C. Janeway has been elected a member of the board of scientific directors of the Rockefeller Institute of Medical Research to fill the vacancy caused by the death of Dr. Christian A. Herter.

Obituary Notes.—Dr. Benjamin Edson of Brooklyn, N. Y., a graduate of the New York University in 1873, member of the Medical Society of the State of New York, King's County Medical Society, Brooklyn Pediatric Society, physician for the Home for Destitute Children, died at his home September 5, aged 70.

Dr. George Alexander DeSantos Saxe died of heart disease on September 10 at his home in this city. He was born in St. Petersburg, Russia, February 22, 1876, and was educated at St. Peter's College in St. Petersburg, then at Columbia University Medical College in New York, where he was graduated with honors in 1898. He was at different times pathologist at the Columbus Hospital, assistant genitourinary surgeon at the Post-Graduate Hospital, as well as instructor there. He was a member of the Medical Society of the County of New York and of the State of New York, of the New York Academy of Medicine, of the American Medical Association, the American Urological Association, the National Association for the Prevention of Tuberculosis, the American Medical Editors Association, and the American Society of Social and Moral Prophylaxis. He was joint editor of "Blackboard Headings on Surgery," author of "Examinations of the Urine," and assistant editor of the *New York Medical Journal*.

Dr. George F. Harris of Bellefont, Pa., a graduate of the University of Pennsylvania, Department of Medicine, in 1864, member of the American Medical Association, died at his home September 10, aged 68.

Dr. Wyatt P. Exum, Jr., of Saulston, N. C., a graduate of the Medical College of Virginia, Richmond, 1901, died at his home August 18, aged 78.

Dr. Walter Owen Tyan of Springfield, Ill., a graduate of Rush Medical College, Chicago, Ill., 1896, died in Los Angeles, Cal., September 1.

Dr. William B. Lane of Brooklyn, N. Y., a graduate of Bellevue Hospital Medical College in 1864, a director in the Manhattan Life Insurance Company and its Vice-President for many years, died at his home in Brooklyn, August 27, aged 74.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

SUMMER HEAT AND MORTALITY—CONSUMPTION DISPENSARY SYSTEM—PULMONARY ANTHRACOSIS—ACTION OF RADIUM ON SOUND TISSUES—ANTHRAX REPORT—OBITUARY.

London, August 25, 1911.

The most delightful summer that England has experienced for many a long year has broken up, and we find ourselves in autumn weather, ushered in by two or three thunderstorms. Many people complained of the heat and declared its continuance was abnormal, but already they are speaking almost with regret at its conclusion. A heat wave seems to have passed all over Europe, but according to the accounts it was not to be compared with what you in New York sometimes experience. In this island it was milder than on the Continent, but still unusual. Temperatures above the nineties have been often recorded this summer. The eighties are not very common in our climate, but all over England we have had readings of 90 to 97, and one day at the Royal Observatory at Greenwich, 100 F., which I think is unprecedented. The shortage of rain was serious for the crops, and in a few places water was

scarce. The chief medical interest in these conditions lies in the mortality, which was increased, especially among children in closely inhabited localities. The weekly returns of the annual death rate in the great towns from all causes rose from 12.1 to 13.6 and 15.9 per 1,000. In London the returns were 11.4, 13.7, 15.5, 18.7, giving an average of 14.8, or 3.4 above the mean of the same period for the previous five years. The infantile mortality also showed progressive increase. In children under 2 the deaths from diarrhea and enteritis numbered in the successive weeks 56, 157, 318, 548. The Local Government Board issued a circular to sanitary authorities to impress on them the importance of taking special steps above those required in cold summers to minimize the excess.

The appeal on behalf of the Central Fund for the Promotion of the Dispensary System for Dealing with Consumption in London has been successful thus far. Some £40,000 has been subscribed and the committee hope the fund will reach £100,000 before the end of the year. Additional grants have been made to dispensaries actually in existence. Others are in course of examination; probably about nine will be at work in the coming winter. The committee have issued a list of the districts which in their opinion should be dealt with, based on the population, mortality from pulmonary tuberculosis in each, and the estimated approximative number of living consumptives in each. According to these figures it appears that about twenty dispensaries will be necessary to meet the requirements of the whole of London. It is expected that some will be adequately supported locally. Reckoning all together, they think one-quarter of the total cost may be the average contributed locally; the remaining three-fourths would have to be found by the fund. The cost of the Paddington dispensary for the first year was about £1,000, which sum may be taken as the probable average. Thus for the twenty dispensaries the three-fourths from the Central Fund would consume £15,000, but inasmuch as it is proposed to devote something for sending certain patients to sanatoria or to homes for the dying, as much as the one-fourth given locally would be needed in addition, so that £1,000 is really wanted for each dispensary established, and if the twenty estimated can be started, the fund will want £20,000 a year to keep them up.

Although the tuberculin treatment is at present in the ascendant it is as well, perhaps, that the promoters of the scheme have not so named their institutions, but are content to appeal for them as "consumption dispensaries," a name well enough understood by the public, and leaving every therapeutical principle open to the consideration of the staff. They will care for the patients on the most modern lines—open air, vaccine therapy, selection for sanatoria, hospitals, farm colonies, etc. Their work will not be confined to the applicant; they will follow him to his home, see and correct, if needed, his home conditions, examine the others of his household so that the earliest case may be detected. Thus they will endeavor to recreate healthy homes, well instructed as to prevention, and serving as bases of operations and intelligence in the campaign against consumption.

The system, if new in London, has been well tried in Edinburgh, where it was instituted in 1887, and has thence spread through many countries. The last report of the Registrar-General for Scotland shows that the death rate from consumption during the last decade has been less in Edinburgh than in any other center. The fall there in 1910 was 46.4 per cent. from 1901. During the same period in London the fall was approximately 30 per cent. only.

Mr. Percival Mills of Birmingham described in the Pathological Section of the last meeting his research on the action of radium on healthy tissues. He applied it to the liver of mice and produced two inflammatory reactions, one of which began immediately, affected all the tissues for three hours, and faded away in twenty-four hours. It caused a cloudy swelling with hyperemia lasting a week. The other "late reaction" began after fourteen days and lasted 113 days, when the last mouse died. Infiltration and hyperemia resulted, and finally some fibrosis. Professor Sims Woodhead said here was something which might be of some help to the production of cirrhosis. These illustrations suggested that the primary changes in cirrhosis were associated with the parenchymatous tissues and followed by interstitial changes.

Dr. Leonard Findlay related his experimental work on the origin of pulmonary anthracosis. These experiments are directly opposed to the views of Calmette and Whitla. In no case could he produce this lesion by injecting into the peritoneum, but in every experiment by inhaling he succeeded in doing so, provided, of course, the bronchi were patent. In animals killed after one short inhalation the pigment was found in the alveoli and bronchioles. When repeated inhalations had been given, besides finding more pigment in the alveoli, it was also found in the pulmonary tissue and bronchial glands. To many of us this is just what we anticipated, for in the post-mortem room we are familiar with the appearance of the lungs as pigmented, even in the autopsies of young children. Dr. Sims Woodhead expressed interest in the experiments and had no doubt as to the channel through which the pigment reached the lung, but of course that did not prove that bacilli took the same route. He had confirmed Dr. Findlay's results.

Professor F. C. Leith hoped Dr. Findlay's experiments would be accepted as re-establishing the old view that the pigment entered by the respiratory tract. It was not denied, however, that bacilli might differ from inorganic particles.

Dr. C. Pouder is a bacteriologist at the technical school of the Leathersellers Company, and has prepared a report issued by that worshipful company on the incidence of anthrax. In it he examines the various methods that have been proposed for meeting the danger among persons engaged in the hide, skin, and leather industries. After a full consideration he concludes that the best plan is to convert these materials into the "wet salted" condition propposed recently by Mr. Seymour Jones, chairman of the International Commission on the subject. The hides are first soaked for twenty-four hours in a solution of 1 per cent. of prussic acid and 0.02 per cent. of sublimate, and then transferred to a brine pot. This could easily be done at the port of shipment, and does not interfere with the subsequent process of conversion into leather. Nor does it injure the goods commercially.

Dr. John Dixon, who died suddenly on the 15th of August, was surgeon to the Mildmay Mission to Jews and to the French Protestant Hospital. He took L.R.C.P. (1870), M.B., and C.M., Edinburgh, 1872.

Surgeon Lieutenant-Colonel James Scanlan of the Army Medical Staff (retired) died on the 12th.

aged 64. He was M.B. and C.M., Glasgow, 1868.

Surgeon Lieutenant-Colonel E. R. O'Brien, Army Medical Staff, died on the 13th, aged 69. He was M.D., R.U.I., 1863, and a licentiate of the Edinburgh and Dublin Colleges of Surgeons.

Dr. L. H. Stevenson died on the 11th of August at the age of 63. He took the two college diplomas and the M.B. with honors of the London University in 1876-7, and in 1879 proceeded to the M.D.

Dr. G. Fielding Blandford, who has for many years been known as an eminent psychologist, died on the 18th inst. at the age of 82. He went to Rugby School and continued his education at St. George's Hospital and the Oxford University, where he graduated in both arts and medicine, M.A., 1854; M.B., 1857; M.D., 1867. He took the membership of the London College of Physicians in 1860, and was elected a fellow in 1869. His "Insanity and Its Treatment" passed through several editions. His Lumleian Lectures on this subject were issued in 1895. He wrote the article on Insanity in Quain's Dictionary and contributed on this and allied subjects to other medical publications. You will perhaps remember that he gave an address on the "Treatment of Insane Patients" at the International Medical Congress at Washington, 1887. He was lecturer on Psychological Medicine at St. George's Hospital, had been president of the Psychological Association, and was president of the Society for the Relief of Widows and Orphans of Medical Men.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

DEATH OF HERMANN SENATOR—PRACTICAL VALUE OF THE WASSERMANN REACTION.

BERLIN, August 15, 1911.

HERMANN SENATOR died July 14 at the age of 77. With his death there passed away one who to the thousands of German physicians who had been his pupils, had dedicated so much of his life work. We have certainly had more brilliant teachers, who with shining rhetoric were able to make each simple case of illness an important chapter in medical science. Nevertheless this was not always of practical value in the physician's daily work. All the more grateful are we to the man who, with utmost patience in the presence of every case of disease, transported his audience with his modest sense of reality and his exquisite conscientiousness. Moderation characterized his speech, but as clear as crystal and without a gap, thought followed thought until the speaker had exhausted all that science has as yet definitely contributed to the subject under discussion. A student who had attended one semester at Senator's clinic received a thorough grounding in clinical medicine. Only recently, when Senator left the position that he had held for so many years, the question of his successor has come up. His status with reference to medical life in Berlin was an extraordinary one. He was the last representative of the older school of general practice that has given place to the modern specialization of medical science. He was not responsible for any revolutionary discovery in medicine, but in every branch of this he had become a master.

When not yet 20 years old Senator came to Berlin and became a pupil of Johannes Müller, Schönlein, and Traube. Four years later he began the practice of medicine in a district inhabited by laborers. Here he laid the foundation of his subsequent success as a teacher, acquiring an experience of the daily needs and resources of the practitioner. In 1868 he became a privat dozent at the University. In the war of 1870 he commanded a hospital division and thereby came under the notice of the Empress Augusta. When in 1875 the Augusta Hospital was established, the Empress besought Senator to become director of the medical division, and through her influence Senator in 1881 received a division in the Charité, in which, in 1888, he became director of the policlinic.

Ever since 1868 Senator published a large series of articles, chiefly on fever, heat production, and metabolism. Beginning with 1874 there followed numerous contributions on diseases of the kidneys, which labors above all served to spread the fame of Senator, whose activity continued into ripe old age and grappled with the problems of to-day. His latest work, among other things, dealt with Banti's disease, internal secretions, and blood pressure. An exceptional phase of his industry was his devotion to the laboratory, where, with his many assistants, the scientific methods of the master became the property of an untold number of practitioners. The medical society of which Senator was president for many years will hold a memorial meeting October 25.

"The Practical Value of the Wassermann Reaction in the Treatment of Syphilis" was the title of a paper read by von Plehn before the Medical Society. Plehn doubts the practical utility of the reaction. He reaches this conclusion because the reaction is positive in many nonsyphilitic affectins, because it is sometimes positive and sometimes negative in the same individual, and finally, because the reaction is distinctly positive in many healthy people of advanced years. Now, since the negative reaction is no evidence that a case of syphilis is cured, and since under the most energetic treatment the reaction does not disappear, the reaction can not be regarded as an index of the treatment. In the first stage of syphilis treatment causes the reaction speedily to become negative, and it is therefore in this stage that the reaction is of great value. In the later stage of the disease caution must be exercised, particularly in nervous cases in which a syphilitic etiology is under consideration. In the numerous investigations that Plehn carried out, the question of error can be eliminated, for in every case controls were made with five extracts.

Progress of Medical Science.

Boston Medical and Surgical Journal.

August 31, 1911.

The Causes and Treatment of Paralytic Dislocations and Subluxations of the Hip-Joint. J. W. Sever.
Interstitial Gingivitis. E. C. Briggs.
Wound Diphtheria. Report of a Case. F. A. Thompson, Jr., and W. R. MacAusland.
Rupture of the Uterus Through the Posterior Vaginal Fornix. A. T. Hawes.

Paralytic Dislocations and Subluxations of the Hip-Joint.—J. W. Sever concludes that subluxations of the hip joint are not uncommon conditions following paralysis of the thigh and peritrochanteric muscles. The most important factors in their production are the unopposed contractions of the non-paralyzed muscles. The two muscles which escape the paralysis most frequently are the adductors and the tensor vaginæ femoris. The most common type of subluxation is upward and backward on to the ilium. The changes from atrophy in the femur and acetabulum are practically constant, and consist of a

coxa valga and a shallow, flattened, and elongated acetabulum. The treatment should be directed toward correcting the contractions and reducing the dislocation of the hip. The muscles may be elongated by stretching, by means of plaster casts, bed traction, or division. The best method of keeping the hip reduced is by means of an arthrodesis, although this is not practical in all cases. Without treatment the tendency is toward progressive deformity. With treatment the conditions may be permanently helped. Complicating conditions make a total cure impossible, but a more useful leg should be assured under proper treatment. Walking after arthrodesis is often improved. In some cases splints may be altogether discarded. It is not advisable to do an arthrodesis on both hips, or on any joint other than the hip and ankle on the same leg.

Interstitial Gingivitis.—E. C Briggs states that the flow of pus as a symptom of this condition comes late in the disease, and after the deposition of the nodules. He assumes that intestinal putrefaction is the primary cause of gingivitis, by disturbing the circulation and rendering the connective tissue of the gum an easy prey to vitiating influences. Some of the local conditions that may be the starting point of inflammations are malposition of the teeth, the deposition of salivary calculus, impacted teeth, and improper toothbrushes and their improper use. Interstitial gingivitis first announces itself by a feeling of uneasiness of the gum, a sensation described as a "crawling," or by a sensation of pain with some lameness of tooth or teeth. The early symptoms may even simulate alveolar abscess. There is sometimes in the mildest forms of the disease a considerable recession of the gum. In the severe forms there is generally pus formation. Preventive treatment consists in careful hygiene of the mouth, the correction of malocclusion, the maintenance of the thorough use of the teeth in mastication, and the prevention of intestinal antointoxication. The first step in the curative treatment is attention to the gastrointestinal tract. For the gingivitis aspirin and calcium sulphide are good remedies. The local treatment consists in thoroughly scaling the affected teeth, in removing diseased pulp, and in stimulating the diseased pockets.

Wound Diphtheria.—F. A. Thompson and W. R. MacAusland describe a case of diphtheritic infection of the skin following a compound fracture of the patella. They note that diphtheria infection of a wound is much more difficult to check than other infections; that the local treatment plays an important part in limiting extension and destruction of tissue; that antitoxin plays a double rôle in attacking the local manifestion of the process, as well as defending other parts by neutralizing the toxins in the blood stream.

Rupture of Uterus.—A. T. Hawes reports a case of rupture of the uterus, in which the rent extended transversely across the vaginal vault in the posterior fornix. The patient recovered.

New York Medical Journal.

September 2, 1911.

Tendencies Toward Race Degeneracy. J. H. Kellogg.
A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. G. T. Stevens.
The Location of Pathological Lesions of the Genitourinary Tract from Epithelia Found in Urine. G. A. Wyeth.
Cerebral Rheumatism. E. M. Williams.
Suicide in the Registration Area. H. A. Brown.
Triple Rhythm Heart Block with Auricular Interruption. A. L. Benedict.
Suction Drainage with a New Form of Siphon Air Pump, as a Means of Removing Pus and Blood from the Abdomen and Pelvis. N. G. Bozeman.
Some Interesting Data on Recently Reported Research Work on Dysentery. S. R. Klein.

Race Degeneracy.—J. H. Kellogg states that man belongs to the most highly organized class of mammals, a group which paleontology shows to be the most prone to degenerate. In addition to this, civilized man has, in recent times, subjected himself to a number of subtle degenerative influences. There is at the present time a decided tendency toward physical decay and race degeneracy among civilized nations. Evidences of race degeneration are manifest in the diminishing stature; the tendency toward an edentulous condition; the alarming decrease in the birthrate; the increasing number of incompetent mothers; the appalling increase of insanity, idiocy, and imbecility; the rapid spread of cancer; the increase of eye and ear defects; the doubling of mortality from chronic disease within the past thirty years; the notable increase of crime; the decrease in the number of centenarians; the anatomical evidence of degeneracy in man; and the new and abnormal varieties of the human race, such as the criminal type, the insane type, etc.

Eye Adjustments and Pose of the Body.—G. T. Stevens advances the proposition that, depending upon certain conditions of adjustment of the eyes, there result certain well defined habitual positions for the carriage of the head and that these habitual carriages of the head in relation to the body induce certain well defined positions of the body itself. Further, these bodily positions are, in many cases, indeed in many special forms of disease, the inducing and perpetuating causes of not only certain nervous affections but of certain important diseases not classed as nervous.

Diagnostic Value of Urinary Epithelia.—G. A. Wyeth reports a series of cases which illustrate the results obtained from careful microscopical uranalysis, since the diagnoses were corroborated by operation. The author states that others could be cited in which a doubtful clinical diagnosis was entirely cleared up by the microscopical findings in the urine. Such cases prove beyond a doubt that, through the differentiation of the various epithelia in the urine, one has a reliable means of locating lesions in the genitourinary tract, regardless of whether the pathological condition can be diagnosticated or not. Of special value is the work in the early recognition of inflammatory conditions of the kidney, as many cases of nephritis exist without the presence of casts.

Cerebral Rheumatism.—E. M. Williams reports four cases of this condition with pathological findings. The interesting features of the latter, in addition to the meningeal and cellular changes already described by other observers, are the presence of numerous cells similar in every respect to the so-called plasma cells, numbers of fatty granular cells, and also an abundance of globular, pale blue staining bodies, probably of albuminous nature, having their origin from the disintegrated tissue. The great intensity as well as the diffuseness of the cellular changes is exceptional, as are also the vast extent and degree of the neuronophagocytosis.

Suicide.—By H. A. Brown. (See page 590.)

Triple Rhythm Heart Block.—A. L. Benedict reports a case in which the arterial pulse was fairly strong and regular, twenty-five a minute. The jugular pulse was three times as frequent and in perfect triple time, but careful inspection of the neck showed that the auricular beat immediately preceding the ventricular was imaginary, or, at most, so faint as to be imperceptible, although the perfection and steadiness of the rhythm at first gave the impression that one had to deal with a three to one ratio of auricular to ventricular contractions. The author states that with a very slowly acting ventricle and a firm closure of the auriculoventricular valve it is conceivable that a double wave might occur in the blood in the auricle and great veins, without any secondary contraction of the auricle.

Suction Drainage.—By N. G. Bozeman. See MEDICAL RECORD, Vol. 79, page 701.

Dysentery.—S. R. Klein reviews recent research work on the causation of dysentery.

Journal of the American Medical Association.

September 2, 1911.

Suggestions Concerning the Welfare of the Section of Ophthalmology. A. E. Bulson.
An Epidemic of Chancres of the Lip from Kissing. J. F. Schamberg.
Lingual, Sublingual, and Other Forms of Aberrant Thyroids. C. H. Mayo.
The Treatment of Lateral Curvature of the Spine. R. W. Lovett and J. W. Sever.
Mild Cases of Hookworm Disease in Children. T. Frazer.
A New Proctoscope and Sigmoidoscope. D. Roberts.
Cardiac Dilatation and Displacement Due to Pleurisy. E. O'N. Kane.
The Elicitation of the Knee-Jerk. A. A. Eshner.
Some Lessons Drawn from a Series of Twenty-Eight External Operations on Frontal Sinus and Ethmoid Labyrinth. H. Horn.
The Various Pathological Conditions Involving the Frontal Sinus. B. R. Shurley.
Effect of Tubercle Products on Epithelium. S. G. Dixon, H. Fox, and A. J. Smith
A Theory for the Pathological Physiology Involved in Disease of the Thyroid Gland and Its Therapeutic Application: Experimental Studies. J. Rogers.
Factors Influencing the Safety of Operation for Goiter. M. B. Tinker.
The Phenolsulphonephthalein Test for Estimating Renal Function. J. T. Geraghty and L. G. Rowntree.
Some Objections to the Use of Alum Baking Powder. W. J. Geis.
A New Operation for Ureteral Anastomosis. A Preliminary Note: Anastomosing the Proximal End of a Divided Ureter into the Side of the Ureter of the Opposite Side. J. J. Gilbride.
A Case of Potassium Chlorate Poisoning. M. M. Scheid.
Rupture of Left Rectus Muscle. M. A. Stern.

Section on Ophthalmology.—A. E. Bulson in discussing the welfare of this section of the American Medical Association, states among other things that the Knapp Testimonial Fund has been established and that it has been decided to procure a medal, to be known as the Knapp Medal of the Section on Ophthalmology, and offer the same to invited as well as uninvited contributors to the Section on Ophthalmology for original work in ophthalmology, or for some contribution of such a highly meritorious character in the field of ophthalmology as will warrant the granting of a medal as a special recognition.

Chancres from Kissing.—J. F. Schamberg describes the following epidemic: At a party of young people at which juvenile kissing games were indulged in, one of the participants, a young man of 22, had a sore on his lip, the nature of which he avers he did not know. Six young women kissed by him developed chancres of the lip. A young man present at the affair likewise developed a chancre of the lip apparently from the virus deposited on the lips of one of the young women, for he did not come into contact with the original source. In addition, a young woman kissed by the offender at a third social function likewise developed an initial sclerosis, making in all eight labial chancres from the one source. The original offender was apprehended, taken to the municipal hospital, and given an intravenous injection of salvarsan. But he was not isolated.

Aberrant Thyroids.—By C. H. Mayo.—See MEDICAL RECORD, July 8, 1911, page 100.

Treatment of Scoliosis.—R. W. Lovett and J. W. Sever refer to two varieties of lateral curvature, the postural and the organic. The former is nothing but a faulty attitude or habit which is often overlooked. There is no tendency to its spontaneous recovery, but the treatment is simple. The general hygiene should be looked into, overwork at school and home prevented, and, if the child is of low resistance, lying down a while during the day is advised. The weight of clothing should not drag on the shoulders, round garters should be substituted for side elastics, and clothes suspended from the waist should be as light as possible. Any visual errors causing improper positions in reading should be corrected and measurement of the legs should be made to see if an improved position of the spine results from equalizing the limbs. Then exercises and a setting up drill should be carried out under good supervision. The daily active treatment generally covers a period of not more than three or four weeks, but the observation period should last at least a year. The organic lateral curvature is accompanied by changes in the vertebræ and may occur from various causes in infancy, such as congenital anomalies, infantile paralysis, empyema, and conditions approaching rickets. Gymnastics as a treatment is generally condemned by the author, excepting in very slight cases and only as long as it shows good effects. The permanent jacket is better suited to hospital practice, while the removable jackets are more acceptable to private patients and, where the patient is under complete control, are nearly as efficient as the other, though requiring perhaps a longer period of use.

Hookworm Disease in Children.—T. Frazer notes that mild cases of hookworm disease may be easily overlooked. He reports a number of these cases in children who after a course of thymol showed rapid gain in weight and strength and increase in intelligence.

A New Proctoscope and Sigmoidoscope.—D. Roberts has devised an instrument one feature of which is a flat-faced metal filament lamp snugly held in a tube which projects at an angle of 30 deg. from the main tube, the inside of which is heavily plated and highly polished with lines of polish running lengthwise. Owing to the manner of polishing, no light is thrown back into the eye from the walls of the tube, all the rays going to the distal end. The end of the obturator is much less blunt than in the previously made instruments, as bluntness is not needed for safety.

Cardiac Displacement.—E. O'N. Kane reports a case of extreme displacement of the heart to the right side resulting from a left-sided empyema.

Elicitation of the Knee-Jerk.—A. A. Eshner describes two procedures which he has found useful in eliciting a dubious knee-jerk. The first consists in supporting the leg to be examined on an inclined plane while the patient is seated, the slope of the plane being varied to suit the needs of the case. This secures relaxation of the limb independently of the volition of the patient and the limb can be placed in the most favorable position for bringing out the symptoms. It is particularly useful in case of obese individuals and in case of patients who will not willingly cooperate with the examiner. The second procedure consists in the application of the palmar surface of the index finger of one hand over the patellar tendon and striking the dorsal surface of this finger with the percussion hammer or with the opposite clenched hand. In this way a slight contraction of the tendon can sometimes be felt though not otherwise demonstrable.

Frontal Sinus and Ethmoid Labyrinth.—H. Horn states that, having determined that an external operation on the frontal sinus and ethmoid labyrinth is necessary, there is not any question but that the mutilating radical operation of Riedel, with its complete destruction of the supraorbital ridge, is the one that gives the greatest certainty of a cure.

Frontal Sinus Disease.—B. R. Shurly states that the most frequent pathological condition is the ascending infection from a common cold in the head. The most frequent invaders are the staphylococci and streptococci, the *B. pyocyaneus* and the pneumonia and influenza germs. The inflammations in bony cavities are much like inflammations elsewhere, but the necesssity for prompt attention and drainage is more important. The inflammation is sometimes very rapid and destructive and special pathological conditions may develop. The influence of the biochemistry of the blood and lymph and the general systemic condition should also be kept in mind. A routine bacteriological examination should be the rule. Cysts and polypi are frequently formed in the other accessory sinuses and suppuration may be free or scanty, according to the freedom of drainage, and fistulæ may occur in rather rare instances. Among the most frequent infectious conditions are influenza, tuberculosis, and syphilis.

Tubercle Bacilli and Epithelium.—S. G. Dixon, A. J. Smith, and H. Fox state that the results of their experi-

ments in stimulating superficial epithelium were not very positive. They conclude that a combination of living tubercle bacilli and tuberculin is necessary for this purpose.

Pathological Physiology of Thyroid Disease.—By J. Rogers. See MEDICAL RECORD, July 8, 1911, page 102.

Goiter Operations.—By M. B. Tinker. See MEDICAL RECORD, July 8, 1911, page 102.

The Phenolsulphonephthalein Test.—B. J. T. Gerachty and L. G. Rowntree. See MEDICAL RECORD, Vol. 79, page 1,028.

Alum Baking Powder.—W. J. Gies concludes that, unless it can be shown definitely and beyond a reasonable doubt that aluminized foods are harmless, the use in food of such aluminum carriers as alum baking powders should be prohibited by law in the interest of public health.

Ureteral Anastomosis.—J. J. Gilbride describes experimental work performed on the cadaver and on dogs in anastomosing the proximal end of a divided ureter into the side of the ureter of the other side.

Potassium Chlorate Poisoning.—M. M. Scheid reports a case of this condition in a twenty-day-old baby caused by the administration of "borrowed medicine."

Rupture of Rectus Muscle.—M. A. Stern reports a case of rupture of the left rectus resulting from a blow in the abdomen by a heavy truck.

British Medical Journal.

August 26, 1911.

Spa Treatment, with Special Reference to Moffat. D. Huskie.
Tuberculin Dispensaries: A Reply. W. C. Wilkinson.
The Frenkel System of Exercises for Tabes. J. G. Garson.

Spa Treatment.—D. Huskie notes the mention of mineral springs as far back as the early biblical era. Hippocrates demonstrated the curative effects of waters apart from the supposed power of the presiding deity or spirit. Rome left abundant proof of the balneological practices of her people. The amount of "drug" potential in the molecular states of a mineral water is very small, and yet it has a vastly greater effect in certain affections than an enormous amount of the artificial salt. Spa treatment is concerned largely with chronic conditions and intractable constitutional states. The sulphur water of the town of Moffat has a marked diuretic effect. It also increases oxidation and tissue change. The action of the warm sulphur baths seems to be due to a nervous and vascular cutaneous reaction attributable to the irritation of the contained salts, modified to a certain extent by the temperature of the water.

Tuberculin Dispensaries.—W. C. Wilkinson believes that sanatorium treatment with its system of graduated exercises is no real help to the consumptive poor. Moeller of the Belzig sanatorium near Berlin states that sanatorium methods by themselves cure only 10.0 per cent. of the cases and 25.3 per cent. of the incipient cases, while tuberculin has cured 84.6 per cent. of the latter. The author is convinced that in the first stage of the disease tuberculin cures pulmonary tuberculosis with certainty, and that in the second stage of the disease the routine use of tuberculin is the best means of preventing mixed infections. By the system of graduated doses which can be measured with mathematical accuracy there is not the same need for constant medical supervision as is customary in sanatoria. The patients are taught to take their own temperatures. The expense of the tuberculin treatment as carried out in dispensaries is $10 as against $150 for each patient, which makes the former treatment one better adapted for the poor. Under tuberculin treatment cough and expectoration subside and the patients cease to be a danger to their friends and relatives.

Frenkel Exercises in Tabes.—J. G. Garson states that, as long as a certain amount of sensibility exists in the muscles and joints, systematically performed movements, frequently repeated with the attention concentrated on the acts, produce certain impressions on the neurones still unaffected by the disease; these impressions are accumulated until their collective intensity equals that of a stronger but less frequent stimulus, and are capable of being reproduced by the central nervous system. The greater the loss of sensation the more difficult and prolonged will the treatment be, but in Frenkel's practice it has been rare to find a case in which the sensibility of the muscles and joints has been so reduced as not to be capable of great improvement. The exercises designed to be performed in bed or on a couch are done by patients separately, but the walking exercises are best done when three or four patients are simultaneously on the track and practise them alternately, as there is then a spirit of emulation and intentness of purpose aroused which has a very beneficial influence on the result.

Berliner klinische Wochenschrift.

August 21, 1911.

Melanoblastomata.—Kreibich has shown by the demonstration of a lipoid component in the pigment of so-called melanomata, melanosarcomata, etc., that these growths are derived not, as taught heretofore, from the mesodermal chromatophores, but from the epithelial pigment cells. The lipoid component, as demonstrated by special staining, is present also in the metastases. The epithelial cells which generate the pigment are termed melanoblasts and the tumors formed are therefore melanoblastomata. On account of this common property of forming pigment containing lipoid material, the author can see no radical difference between melanotic cancer and melanotic sarcoma. If spindle-cell elements predominate we have a melanotic spindle-cell sarcoma; if the elements are epithelioid we have a so-called pigmental alveolar cancer. Mixed forms are known to occur.

Chemotherapy of Pneumococcus Infection.—Morgenroth and Levy believe that bacteria are in reality as amenable to a therapia sterilisans magna as are certain kinds of protozoa. The power of quinine over the latter is well known, and this drug has been used extensively in large doses in various bacteriogenic diseases, especially in pneumonia. We have here the germ of an idea of finding in quinine derivatives remedies which will disinfect the organism of certain bacteria. The authors have satisfied themselves that quinine itself is not in the slightest degree bacteriotropic toward the pneumococcus. A quinine derivative known as ethylhydrocuprein having shown itself—along with other derivatives—to be similarly inert, it was finally ascertained that the sulphate salt of this body possessed undoubted prophylactic and curative influence over laboratory pneumococcus infection in mice. This compound is by no means looked upon as anything more than a step in the right direction. A further study of quinine derivatives may lead to the discovery of a drug having power over croupous pneumonia in man. Such a remedy would doubtless be used in connection with an antitoxin for it has been shown satisfactorily that antibodies are responsible for the cure of pneumonia by crisis. These quinine derivatives should also possess a field in streptococcic infections.

Rectal Infusion of Sugar Solutions in Diabetic Acidosis.—Balini calls attention to the fact that this resource is by no means new. Since acidosis is usually held to indicate that the point of carbohydrate tolerance has been passed, any such plan of treatment would be condemned *a priori*, and this assumption would be borne out were sugar given in the usual way. By rectal infusion, however, some new element must be introduced, for the sugar then seems to be properly utilized and the glycosuria is seldom increased. The utilization of the sugar spares

the proteid of the muscles, etc., and in some cases the acetone in the urine is notably cut down. As is well known, it is very difficult to get the rectum to retain solutions of glucose, as intolerance soon develops. The introduction must be in small quantities, frequently exhibited, and even with good tolerance much of the glucose remains unabsorbed. Still with patience the number of calories which can sometimes be supplied daily is very considerable. By the mouth the patient takes bouillon, a little cheese, etc. The entire technique is complicated, as in all similar plans for treating severe diabetes, feeding days alternating with fasting days, and the diet being regulated largely from the uroscopic findings.

Münchener medizinische Wochenschrift.

August 22, 1911.

Encephalitis Hemorrhagica Following an Infusion of Salvarsan.—Fisher comments on the surprising tolerance of the organism to intravenous injections of salvarsan, but insists that there must be individual examples of intolerance which must always be borne in mind. It may be recalled that some of the worst recorded cases of iodism were traced apparently to organic disease of the kidneys which was responsible for a highly toxic cumulative effect of the drug in subjects already suffering from syphilis. Something of this sort must be anticipated whenever the emunctories or disintoxicating organs are insufficient for the added demands made upon them. This element divides with anaphylaxis the responsibility for therapeutic tragedies. The patient in question was himself a medical man accidentally infected with syphilis, for which he had been duly mercurialized and had also received iodides. Salvarsan was then infused and although the Wassermann reaction had now become negative the patient became very ill at night after his usual daily routine. The symptoms suggested severe intracranial mischief and death occurred in coma in a little over twenty-four hours from the onset of the attack. The case is summed up as follows: It is known that between two and three days after an infusion of salvarsan an acute edema of the encephalon may develop, but that this quickly resolves itself and only exceptionally does a fatal encephalitis develop. Since this phenomenon has been noted chiefly after repeated injections there may be an anaphylactic element concerned (the patient had had a previous injection). Precisely the same accident has been known to follow mercurial injections in syphilitics, and it is believed that the action of syphilitic toxins on the encephalon is a contributory cause in such cases. When the patient first suffered from his general explosion of syphilis the cerebral symptoms were prominent. Finally the autopsy disclosed a beginning cirrhosis of the liver. The lessons from the case are in part obvious.

Encephalitis Hemorrhagica After Infusion of Salvarsan.—Almquist has had his first death after 184 cases of intravenous salvarsan treatment. The victim was a man aged 32 and autopsy showed no evidence of arsenical poisoning, despite the considerable amount of the drug infused. The patient was probably an alcoholic and had suffered from insomnia; these may have made his brain an organ of minimum resistance. The nature of the fatality, while obscure, must be set down to the drug, for several cases on record show that it can cause serious intracranial disturbance as part of the systemic reaction.

Salvarsan Infusion Without Reaction.—Herbsmann believes that systematic reaction after salvarsan infusion is practically constant. He regards a chill, headache, nausea, etc., as typical. Numerous other symptoms occur very rarely—as fever. These may be regarded as more or less accidental. A reaction should be expected as a guarantee that the remedy is not inert. As such it is welcomed by the patients themselves. Any attempts, therefore, to do away with the typical reaction by improvements in technique are a waste of time. The prevention of preventable accidents is quite a different proposition.

Deutsche medizinische Wochenschrift.

August 24, 1911.

Pathogenesis of Chronic Polyserositis.—Fogarasi writes of that paradoxical affection which has assumed so many clinical forms and has been "discovered" on so many different occasions. He chooses to call it by one of its older designations—Pick's pericardiac pseudocirrhosis—although he gives a good résumé of the views of other authorities, only failing to mention Bamberger, who is generally held to have been the true pioneer observer of the affection. The question of greatest significance seems always to have been the relationship of the perihepatitis to the obliteration pericarditis—largely because these two lesions often represent the sole clinical finds. It is not unlikely that the latter may have a dual nature. First it may represent the sole manifestation of a mysterious malady of unknown cause and nature, and, second, it may be a purely mechanical problem in which organic disease in a given organ causes organic changes in a neighboring organ. Thus a healthy subject contracts a pericarditis which ends in obliteration of the sac and resulting dilatation of the heart, which leads in turn to enlarged liver, hydroperitoneum, etc. Such a sequence, simple as it is, is by no means easy to distinguish from Pick's pericardiac pseudocirrhosis. An autopsy may show in a doubtful clinical case that the liver *per se* is practically intact and that what was looked upon in life as a stasis of that organ was in reality a thickened and inflamed condition of the hepatic capsule. Again, the deformity of the pericardium may be too slight to prejudice the integrity of the heart.

Oriental Boil.—This affection is now fairly well covered in textbooks, but Reinhardt of Constantinople finds our knowledge of it to increase so rapidly that the subject is in some need of revision. The lesions vary greatly from fixed types and often require differentation from other dermatoses. It is true that we now know its cause and nature, and that the treatment need not much concern us since the affection is self-limited. Aside from the confusion it may give rise to in the mind of the diagnostician it may lead to numerous complications, but these are such as may be found in any wound surface. Since the lesions occur practically everywhere on the surface, and while usually isolated may be confluent, they are readily mistaken for syphilis and tuberculosis. Occurring on the penis a so-called boil could hardly fail to simulate a chancre. Other affections simulated are ecthyma, furuncle, acne, and epithelioma. The disease attacks animals and is doubtless propagated chiefly through gnats and other insects. The specific protozoon which is known to cause the disease has been fully investigated in every way and few parasites are better known and understood. It seems hardly conceivable that only a few years ago the so-called "Aleppo evil," "Biskra bouton," "oriental boil," etc., was commonly assumed to be a form of syphilis or yaws, despite the fact that a more strictly local disease can hardly be imagined. It does not even infect its proper lymphatics and it does not appear to form any toxic products.

Koplik's Spots.—Mme. de Biehler finds that in measles these spots *always* precede the rash and are absolutely characteristic of measles. In 946 cases the spots appeared in 864 cases one day, in forty-two cases, two days; in eighteen cases, three days, and in 12 cases four days before the rash. Search for Koplik's spots is important in all acute diseases of infants, particularly for its prophylactic value.

Insurance Medicine.

The Relation of Physicians to Life Insurance.—Ex-Governor W. D. Jelks, president of the Protective Life Insurance Co., Birmingham, Ala., read before the Medical Association of the State of Alabama, at Montgomery, on April 18, 1911, a paper dealing with the relation of physicians to life insurance. After referring to the methods of insurance of bygone days it was pointed out that life insurance premiums now must be made with mortality tables in front of the actuary: the rates and tables keep step together. But it is only within recent years that these tables have been procurable. In the earlier times there was no experience table of mortality, and if there had been such a table the premium rate that is now known would have been impossible; indeed, genuine life insurance would not have been possible. We have tables now, however, on which to base all premium rates—an actuary to figure the exact cost of insurance. The business of insurance is tremendous. In 1909 176 legal reserve life companies in the United States had assets of $3.643.857,971. The premium rates of life insurance have been made in the face of mortality tables. It remains for the company to obtain not less than a fair average of physical risks; hence the importance of the medical examiners. Their selection is a matter of most serious consideration, as a company cannot afford to carry too many life discards. An examiner with a moderate degree of skill and efficiency in his line, and honestly serving the company, can give it a class higher than the average life. Such an examiner would recognize that the company was his client and entitled to the same fair dealing that he gives to the afflicted. He would appreciate the fact that his duty was to the company which appointed him and which was to pay him, and in no sense was he under obligation either to the agent who sold the insurance or to the candidate for insurance. Jelks said that the company of which he was an officer had no great number of complaints to make of the treatment which had been accorded to it by the various members of the profession in Alabama. However, their experience had not been altogether satisfactory. They had discovered that from some doctors there was reported a too great uniformity of pulse beats. Out of half a dozen cases from one physician the pulse of each applicant for insurance would be at the same rate as all the others. His pulse would beat exactly in time with the pulse of the several persons making application in the same community and in the same few days. These pulses not only seemed to stand up together, but to sit down together, and as a layman Jelks thought he had the right to say that pulses ought not to act in that way. Then occasionally was found a doctor suffering from the use of a urinometer on crutches. These items represented some of the more common complaints. Sometimes such examinations were refused. The medical department understood, of course, that the doctor was merely guessing at the specific gravity and pulse, if not sinning against the company in a more serious manner. It frequently happened in cases of this description that the company not only dismissed the doctor from its employ but the speaker understood that some companies uniformly filed a complaint against such a doctor with some central authority. When an occurrence of this nature took place the careless examiner found himself without a client in all the insurance world. Jelks believed he was conservative in saying that a good number of practising physicians had by their carelessness destroyed in a day their field of usefulness with all life companies. The companies felt that, inasmuch as they had been appointed to guard the door against wrecks and weaklings, if they failed it was very necessary to appoint some other guardian. The remainder of the paper treated of the life insurance situation from a general point of view in Alabama.—*Southern Medical Journal*, August, 1911.

Annuity Insurance for Professional Men.—The *British Medical Journal* states that government officials are, generally speaking, entitled to a pension on retirement, and most important business institutions have some scheme of superannuation for their staff, but, as a rule, a medical man has no retiring allowance to look forward to after a strenuous life unless he has had sufficient foresight to provide it out of his income. The average man who desires to set aside, say, $250 per annum to supplement his income on retirement and replace capital sunk in a practice requires the help of some system, or there is very apt to come a time when he fails to carry out his intentions. There are two courses open to medical men who intend to save a part of their income. They can invest through the Stock Exchange, earn a remunerative rate of interest, and take their chance of appreciation or depreciation in the amount they save. To follow this plan with any degree of success it is almost essential to have some special training in finance, and a great deal of time must be spent in selecting and watching the investments made. It would, of course, be necessary to reinvest the dividends as soon as received if compound interest is to be secured. After allowing for tax, brokerage, etc., it would be hard to realize more than 3½ per cent. as a net yield in this way. Let us suppose that, after allowing for income tax and brokerage, $250 per annum is successfully accumulated at the net rate of 3½ per cent. compound interest for twenty years, then the amount invested at the end of that period would be $7,315. In the event of death before completion of the twenty years only the savings to date with the interest thereon would be receivable. Under the alternative plan of effecting an annuity policy with a life insurance company the result from an investment point of view is much the same, but the responsibility and work are thrown upon the company. An annuity policy, however, presents two aspects—saving and protection. That is to say, a part of every premium paid is being saved for the assured, as in a savings bank, to be returned to him at a later date with compound interest, and the other part secures protection until the annuity age is reached, so that in the event of premature death the capital amount is payable in full. The benefits thus secured under an annuity policy in the event of death before maturity outweigh those obtainable by ordinary investment apart from the question of security. It would be necessary to spend more on the annuity policy to produce the same result, because in the event of premature death the full sum assured with bonuses to date would become payable. To provide $7,315, or an annuity of $640 (nearly $12.50 a week) at the age of sixty in the case of a healthy person aged forty next birthday, an annuity policy for $5,300 could be effected in a good office with bonuses at an assumed rate of about 38 per cent. per annum, namely, $2,015. The annual premium would be about $282.50. Comparing this with the annual saving of $250 the cost of the cover is only about $32.50. An annuity policy may fitly be described as a scientific form of saving. No trouble is involved, and there are no incidental expenses, the one important factor being the prudent selection of an office. The protection afforded during the period of saving should appeal specially to medical men. Another point not to be lost sight of is that the contract is elastic—the amount saved can be realized in a lump sum, or as a guaranteed annuity, as circumstances demand. If it be desired or necessary to discontinue the annual payments, a paid-up insurance can be secured proportionate to the number of annual payments already made. Thus five payments made out of twenty secure five-twentieths of the original sum contracted for.

Statistics of Suicide in the Registration Area.—H. A. Brown states that suicide as a cause of death is comparatively insignificant, the total number of reported suicides in 1909 amounting to only 8,402, or but 1.2 per cent. of the total number of deaths at all ages from all known causes (731,225) in the registration area. Of the total number of deaths from all known causes in this area, however, between the ages of twenty and twenty-nine years (56,979), 1,630, or 2.9 per cent., were due to suicide, as were 1,721, or 2.7 per cent., of those between the ages of thirty and thirty-nine years (numbering 62,803); 1,790, or 2.7 per cent., of those between the ages of forty and forty-nine years (66,674); and 1,480, or 2.0 per cent., of those between the ages of fifty and fifty-nine years (73,384). The percentages of suicides relative to the entire number show a steady increase from 19.5 per cent. during the period twenty to twenty-nine years to a maximum of 21.4 per cent. during the period forty to forty-nine years, and drop slightly to 17.7 per cent. during the period fifty to fifty-nine years. The decreases are then much more rapid, only one-tenth of 1 per cent. of the suicides occurring during the period from ninety to ninety-nine years, when five deaths from this cause were reported. As regards the methods of suicide it is noted that poison and firearms hold the chief place, these two accounting for nearly 58 per cent. of the suicides; about 26 per cent. are due to hanging and asphyxia (chiefly by illuminating gas); about 12 per cent. to drowning and cutting instruments, and the remainder to jumping from high places, crushing, and other or unspecified methods. Among males about one out of every twenty-eight persons between the ages of twenty-five and sixty-four years reported as engaged in agricultural pursuits, who died in 1909 in the registration area, committed suicide; about the same proportion occurred among those engaged in professional service; one to thirty-five in domestic and personal service; one to thirty-one in trade and transportation; and one to twenty-nine in manufacturing and mercantile pursuits.—*New York Medical Journal,* September 2, 1911.

Functional Tests of Cardiac Efficiency.—A. D. Hirschfelder states that the most popular of these is Gräupner's exercise test, in which it is found that the blood-pressure of strong hearts rises during exercise, while the blood-pressure of weak hearts falls. But recent studies have shown that when strain is placed upon the heart—the strong heart as well as the weak heart—there is a rise of blood-pressure which lasts for a while in both, in spite of the fact that the hearts are dilating. In many cases, however, the period during which the blood-pressure remains high in spite of dilatation is much more prolonged, so that from changes in blood-pressure alone one could not distinguish between the stronger and the weaker heart. The patient with a moderately weak but not absolutely failing heart usually responds with a much greater rise of blood-pressure than does the normal individual. On the other hand, the athlete responds to mild exercise with a fall of pressure. The change of blood-pressure, therefore, gives no true index of the dilatation of the heart, nor of the degree of cardiac tonicity, and, therefore, the mere blood-pressure and pulse-rate changes furnish evidence which is insufficient for the estimation of cardiac efficiency. The symptoms and sensations of the patient, his manner of breathing, his change of color, his general appearance, the degree of fatigue, and many other signs furnish a much more delicate test than the numerical changes in pulse rate or blood-pressure.—*Interstate Medical Journal,* June, 1911.

Medical Inspection of Delinquent Children.—S. Block discusses the importance of careful medical examination of children who are brought to court for various violations of the law. These children, if under sixteen years of age, are not looked upon as criminals, but are legally known as delinquents, and are sent to reformatories. At present neither New York State nor New York City officially recognizes a medical examiner for these cases. Various private organizations supply this want temporarily. In Brooklyn a special committee has considered this subject and has made the following recommendations: All children remanded from the Juvenile Court should be subjected to a medical examination. Voluntary examinations are undesirable; medical examiners should be paid for their work. There should be a scientific advisory council to the Juvenile Court of at least five members, at least three of whom should be medical men. This council should be appointed by the judges of the Juvenile Court. The duty of the members of the council should be to recommend examiners and interpret findings of the examiners, and act in an advisory capacity to the court. The simplest form of examination blank is preferred. The result of the examination should be handed to the judge of the Children's Court who has the case in consideration for final disposition. The committee is not prepared to answer the general question as to the relation between physical defects and juvenile crime, but if these examinations are systematically carried on they will answer that question in time. The relation between mental defects and juvenile crime is a fact. Medical examinations must sooner or later be resorted to in every Juvenile Court and it is time to recognize them as part of the machinery of justice. Not all cases that come to the courts are abnormal. Many of the cases are brought to the court for petty offences such as snowballing, etc. Only one-fifth of the cases are medical. These may be divided into two groups: 1, those physically abnormal; and, 2, those functionally, physiologically, or psychologically abnormal. The author presents illustrative types of the latter group. The service of the physician in this class of cases is summed up as follows: He should explain the results of the deficiency to parents, prevent injudicious marriages when possible, educate the public to discuss, at least, the matter of castration of degenerates, thus minimizing the danger of an unhealthy burden on the community. Most authorities agree on the last point, but not all. The physician should delve more deeply than heretofore into family histories, which often alone determine the diagnosis. He should recognize the fact that many traits of character are hereditary and that these are modified by individual environment. There are many criminal, drunkard, epileptic, or insane family trees. He should also be instrumental in correcting physical defects, removing enlarged tonsils, adenoids, and nasal spurs, putting glasses on weak eyes, syringing waxy ears, giving iron, arsenic, bromides, and thyroid in the thousands of cases now craving them. Then one in three hundred will not be mentally deficient. The physician should join the "big brother" movement and thus make a practical effort in a single case.—*American Journal of Obstetrics and Diseases of Women and Children,* May, 1911.

Statistics of Coal-Mining Accidents.—The figures collected by the United States Geological Survey show that in 1907 in 22 States that produce 98 per cent. of American coal there were 3125 men killed and 5316 injured; in 1908, 2450 were killed and 6772 injured. In 1907 one man was killed for each 206 employed; in 1908, one for each 278 employed. In 1907 one man was killed for each 145,471 tons of coal mined; in 1908, one man was killed for each 167,545 tons mined. During the decade ending with 1908, 19,469 men were killed in the coal mines. According to figures compiled from the mining reports of Pennsylvania and Illinois for the decade ending with 1908, the average mine employee of these States has one chance in 324 of death from his year's work, and one chance in 138 of injury. If he looks forward to ten years' employment in the mines, he has one chance in 32 of fatal injury, and one chance in 14 that a non-fatal accident will befall him. Over thirty per cent. of coal-mine casualties are fatal.

Book Reviews.

Allgemeine und spezielle Pathologie des Zwerchfells. Supplemente zu H. Nothnagel, Spezielle Pathologie und Therapie. Von Privatdozent Dr. Hans Eppinger in Wien. Mit 31 Abbildungen im Text. Price, 6.50 marks. Wien und Leipzig, Alfred Holder. 1911.

Supplementary parts are now being issued to the invaluable Nothnagel System of Medicine which bring together certain phases of disease or certain regions which were not exhaustively handled in the original sections. Eppinger has prepared an excellent supplementary monograph on the development and physiology of the diaphragm, its general pathology, and the special lesions of this muscular organ, which forms an extremely useful and up-to-date summary. The bibliography is very full. An index of course has been omitted.

A Treatise on Diagnostic Methods of Examination. By Professor Dr. Hermann Sahli, Director of the Medical Clinic, University of Bern. Edited, with additions by Nathaniel Bowditch Potter, M.D., Assistant Professor of Clinical Medicine at Columbia University (College of Physicians & Surgeons), New York; Visiting Physician to the New York City Hospital, to the French Hospital, and to the Hospital for Ruptured and Crippled. Second Edition, Revised. Authorized Translation from the Fifth Revised and Enlarged German Edition. Price $6.50. Philadelphia and London: W. B. Saunders Company, 1911.

This volume is a veritable mine of information on the subject of diagnostic methods. The rapidity with which these have grown within recent years and the complexity which they have attained are a source of bewilderment to the practitioner who would fain appropriate at least a small portion of the vast estate. The growth of this subject is partly shown in the fact that the present edition contains 220 pages in excess of the former, or a total of 1229 pages. The extensive alterations and complete revisions that characterize the fifth or latest edition of the German work compelled the editor of the English edition to adhere strictly to the German text, without adding comment of his own. The use of a thinner paper and of finer type in certain places has enabled the publishers to accommodate the larger material in a volume that is no thicker than the first edition. Among the new subjects and changes that have been introduced in this edition may be noted the following: Géraudel's investigations on icterus; edema considered in the light of studies by Metzer and Starling; the determination of cutaneous electric resistance; a new theory on the nature of fever; the teleology of dyspnea; and the graphic record of types of respiration. In the chapters on hemodynamics are noted sections on pseudotachycardia and pseudobradycardia; on dynamic palpation; on sphygmobolometry; on the method of taking simultaneous records; on various new instruments such as Mackenzie's polygraph; a chapter on simultaneous records of pulses of different arteries in the diagnosis of aortic aneurysms; new sections on arterial maximum pressure, the absolute sphygmogram, the ventricular nervous pulse and other refinements in hemodynamics. In the chapter on precussion a special section is devoted to recent investigations on the theory of the percussion notes; and in the chapter on auscultation there is described a graphic method of recording the cardiac sounds and a method of chronoscopic determination of the length of the systole. With the chronoscale devised by Sahli; hundredths of a second may be directly read. In palpation the importance of the Siendelenberg position is emphasized. There are described a host of new methods in the examination of the stomach and intestines. Modern rectoscopy is discussed at length. The section on urine examination contains many additions, of which may be mentioned the methods for the differentiation of various forms of albuminous substances and new methods of quantitative determination of sugar. Among the new topics discussed in the chapter on the sputum may be mentioned the nonacid fast form of tubercle bacillus, and Bordet's whooping cough bacillus. There are numerous changes and additions in the chapter on the blood, including recent observations in the blood in Banti's disease, multiple myeloma, purpura, scorbutus, and many other conditions. Among the additions in the section on the nervous system are the testing of the sensory effect of faradic vibrations and of muscle contraction, alternating contractility of muscles under electric stimulation, and psychogalvanic reflex phenomena. Among the descriptions of the reflexes one notes the absence of any reference to Brudzinski's reflex (signe de la nuque) or of the contralateral reflex, both of which are valuable in the diagnosis of meningitis. This partial summary of some of the newer methods of diagnosis that have been added to Sahli's work shows that one can ill afford to omit this book from one's reference library.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. June 1, 1911. Price $6.00 per annum. Philadelphia and New York: Lea & Febiger.

The current number contains Coley's contribution on Hernia; Gerster's on Surgery of the Abdomen, exclusive of Hernia; J. G. Clark's on Gynecology; Stengel's on Diseases of the Blood, etc.; and Jackson's on Ophthalmology. The style and the value of this publication are too well known to need more than the mention of the new number. As is usual in the June number, Dr. Clark gives a most useful summary on Cancer. It will be noted that Dr. Gerster supplied the article so long furnished by Dr. Foote.

Radiométrie Fluoroscopique. Par le Docteur H. Guilleminot, Attaché au Laboratorie des Travaux Pratiques de Physique Biologique de la Faculté de Médecine de Paris. Avec 12 figures dans le texte. Prix 2 fr. 50. Paris: G. Steinheil, 1911.

The determination of the dosage of *x*-rays is a subject that is still in its infancy. Nevertheless important progress is being made. The property which the *x*-rays possess in common with light waves of short wave-length, with ultraviolet rays, and with radium emanations, of rendering phosphorescent crystals of platinocyanide of barium, has been utilized as a means of actually measuring the intensity of the *x*-rays. The author describes in this volume his method of measuring the *x*-rays by their fluoroscopic power. He also describes the applications of this method in radiography, in radiotherapy, in the analysis of the *x*-rays, in the determination of the efficacy of *x*-ray filters, and in the determination of the dosage of radium emanations.

Die Immunitätswissenschaft. Eine kurz gefasste Uebersicht über die Immunotherapie und Diagnostik für praktische Aerzte und Studierende. Von Dr. Hans Much, Oberarzt am Eppendorfer Krankenhause. Mit 5 Tafeln und 6 Abbildungen im Text. Price $2. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

Comparatively early in the history of the development of serology Much published an excellent treatise for nonspecialists on what was then known concerning the subject. Since that time a considerable number of similar books have been written, and widely read, so that at present the practical aspects of this field of investigation are fairly well known. None the less the appearance of the author's present and much larger volume must be greeted with a great deal of satisfaction. This is the case not alone owing to his reputation as an investigator who has made many valuable contributions to the theory of immunology and serotherapy, but chiefly, perhaps, on account of his experience as a clinician in applying the results of his own work and that of others in actual practice, and because of his unprejudiced judgment of the effectiveness of these procedures. The book is therefore one that is most likely to appeal to practitioners, for whom indeed it evidently was written, for the therapeutic side has been greatly emphasized, and less space devoted to technical methods. For the general medical reader the book is a model and it appears to the reviewer that the difficulties of providing satisfactory explanations of the complicated phenomena involved without undue excursions into the realms of theory have been most happily overcome. The principles underlying our conceptions of anaphylaxis, the action of opsonins and aggressins, the meiostagmin and Wassermann reactions, etc., are very clearly discussed and the technique of making sera and vaccines and of carrying out specific agglutination and precipitation tests is described with sufficient detail to make the method easy of comprehension. Added to the excellence of the material is the author's very agreeable and simple style, which should render the book easy to read even for those not very well versed in the German language. It must be considered as one of the most useful contributions to the literature of the subject that has yet appeared and deserves the attention of every one at all interested in the progress of immunotherapy.

Golden Rules of Pediatrics. Aphorisms, observations, and precepts on the science and art of pediatrics; giving practical rules for diagnosis and prognosis, the essentials of infant feeding, and the principles of scientific treatment. By John Zuhorsky, A.B., M.D., Clinical Professor of Pediatrics, Medical Department, Washington University, St. Louis; ex-President of the St. Louis Pediatric Society; Attending Physician to the Bethesda Foundlings' Home and the St. Louis Children's Hospital; Member of the American Medical Association and St. Louis Academy of Science; Author of "Baby Incubators," etc. With an Introduction by E. W. Saunders, M.D., Emeritus Professor of Diseases of Children and Clinical Midwifery, Medical Department, Washington University, St. Louis, etc. Price $2.50. St. Louis: C. V. Mosley Company, 1911.

The title page indicates the scope of this book, the first edition of which has apparently enjoyed a wide popularity. The mature experience of the author enables him to speak with authority, and those who specialize in diseases of children will find that the rules laid down in this book are fully in accord with their own experience, while the general practitioner will find it a most entertaining review of his own scattered knowledge of the subject. The book deserves wide circulation.

Disease in Bone and Its Detection by the X-Rays. By Edward W. N. Shenton, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Sen. Surg. Radiographer, Guy's Hospital. With illustrations. Price $1.60. New York: The Macmillan Co., 1911.

This is a small book of 72 pages, nevertheless the importance of its subject matter is out of all proportion to its size. An experience extending over a period of fourteen years has enabled the author to reach the conclusion that the *x*-rays should not be relegated to the detection of coarse and obvious lesions, but should be employed in the detection of early lesions. It is pointed out that many diseases are clinically alike, but are radiographically different, *e.g.* tubercle and osteoarthritis, malignant disease, and chronic inflammatory trouble in the shafts of long bones. It is predicted that the examination for varying densities in bone will become a routine practice in surgical, if not in medical, practice. There are various forms of thinning of bone that occur in many chronic diseases, including alcoholism. An increased transparency of bone is observed in cases of malnutrition and in anemia, and as the result of keeping a bone at rest. The main part of the book is devoted to a discussion of the radiographic appearances accompanying inflammation in bone, tuberculous disease, osteoarthritis, growth in bone, and osteomalacia. The series of 46 photographic illustrations accompanying the text are remarkable for their clearness.

Clinical Symptomatology. With Special Reference to Life-Threatening Symptoms and their Treatment. By Alois Pick, Professor of Medicine, University of Vienna, and Adolph Hecht, Pediatrician, St. Anne's Hospital, Vienna. An authorized translation under the editorial supervision of Karl Konrad Koessler, M.D. (University of Vienna), Instructor of Clinical Medicine Rush Medical College, in Affiliation with the University of Chicago. New York and London: D. Appleton & Company, 1911.

The title of this volume clearly indicates its purpose and scope. The authors state in the preface that the number of morbid processes in which there exists a specific therapy is very small and that the physician is obliged to select those symptoms from the total picture, which, if successfully combated, will render the greatest benefit to the patient. The life-threatening symptoms that sometimes develop insidiously test the resourcefulness of the physician. Dangerous symptoms are frequently latent, not suspected by the patient, and overlooked or unrecognized by the physician until too late. The present volume is a systematic discussion of these symptoms, their significance and treatment. It is difficult to classify this book, combining as it does the features of a textbook in diagnosis with those of a manual on treatment. An idea of the scope of the subject matter may be conveyed by the titles of some of the chapters, as follows: General symptoms, disturbances of respiration, dyspnea, and asphyxia, pain in the chest, cough, vomiting, diseases of the intestines, examination of the abdomen, hemorrhage, severe general infections, sleeplessness, etc. The eminence of the authors as clinicians and teachers is stamped on every page, in the careful presentation of the various topics, and the inclusion of the latest contributions to the arts of diagnosis and treatment. The volume is a veritable mine of information on these subjects. To the skill of the translator must be accorded the credit for the excellent literary style with which the text is garbed. The volume represents one of the most valuable contributions made within recent years to medical literature.

Funktionelle Diagnostik und Therapie der Erkrankungen des Herzens und der Gefässe. Von Professor Dr. Aug. Hoffman, o. Mitglied der Akademie für prakt. Medizin und Direktor der medizinischen Klinik in Düsseldorf. Mit 109 Abbildungen und einer farbigen Tafel. Wiesbaden: Verlag von J. F. Bergmann; New York: G. E. Stechert & Co., 1911.

In this volume of 483 pages the author presents in extended form the content of his lectures on diseases of the circulatory organs, as delivered at the Academy for Practical Medicine, at Düsseldorf. Keeping in mind the practical needs of the physician, he makes the subjects of diagnosis and therapy of cardiac insufficiency the starting point of a complete exposition of circulatory disturbances. This subject is presented with characteristic German thoroughness, with full appreciation of the extensive developments of the past ten years in the physics and mechanics of cardiac pathology. As examples may be mentioned the excellent description of *x*-ray diagnosis of cardiac disease, electrocardiography, the other numerous methods of graphically recording the events in the cardiac cycle and the variations in blood pressure, all of which are profusely illustrated. The volume is divided into three parts. The first deals with the subject of general diagnosis. The second deals with the subject of special diagnosis. The third part takes up the subject of the functional therapy of diseases of the heart and blood vessels. It is difficult to single out any one portion of the work for special commendation. The section on therapeutics is particularly complete, discussing in detail the various physical, hydrotherapeutic and medicinal measures. Appended to each chapter is a comprehensive bibliography. The volume is handsomely printed on good paper.

Materia Medica Step by Step. By Arthur W. Nunn, F.C.S., Pharmaceutical Chemist, Materia Medica Medallist. Price $1.40. Philadelphia: P. Blakiston's Son & Co., 1911.

This little work is really an introduction to pharmacology, and does not treat of Materia Medica as it is generally understood. The plan of the book is based on the arrangement of the British Pharmacopeia, and the volume is evidently intended as an introduction to that work. The author has been unusually successful in making clear and simple what beginners generally find uninteresting and irksome.

Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege. Herausgegeben von Dr. L. Katz, Spezialarz für Ohren, Nasen, und Halskrankheiten in Kaiserslautern; Dr. H. Preysing, Professor der Ohrenheilkunde, ord. Mitglied der Akad. für prakt. Medizin zu Cöln a Rh.; und Dr. F. Blumenfeld, Spezialarzt für Nasen, Hals, und Lungenkrankheiten in Wiesbaden. 1 Bd., Lieferung 4-5. Price 9 Marks. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

The scope of this work has already been alluded to in former reviews in the Medical Record. The present number represents the third instalment of the first volume, and continues the subject of the topographical anatomy of the nose and of its accessory cavities, and begins the description of the topographical anatomy of the ear. There are in this number seventy-two full-page plates which represent the very optimum in artistic illustration.

Hautkrankheiten sexuellen Ursprungs bei Frauen. Von Dr. Oskar Scheuer, Facharzt für Haut-und Geschlechtskrankheiten in Wien. Price, 9.50 marks. Berlin and Vienna: Urban & Schwarzenberg; New York: Rebman Company, 1911.

Of considerable interest not only to dermatologists, but also to obstetricians and gynecologists, is the subject of the cutaneous affections associated with changes in the sexual apparatus in women. This is a topic which has interested physicians from time immemorial. In a monograph of 204 pages the author covers the entire field of the relation between the skin and the physiology and pathology of the female sexual organs. The cutaneous manifestations occurring at puberty, during menstruation, in chlorosis, during pregnancy, parturition, the puerperium, at the climactric and as the result of castration and of various diseases of the sexual organs are all fully described. The author, in addition to his own extensive experience, presents the results of a comprehensive survey of the literature and appends a complete bibliography.

Vicious Circles in Disease. By Jamieson B. Hurry, M.A., M.D. (Cantab.), ex-President Reading Pathological Society. With Illustrations. Price $2. Philadelphia: P. Blakiston's Son & Co., 1911.

The term which forms the title of this book is one with which the medical student becomes acquainted early in his career, and which he uses frequently ever after. Few persons, however, have thought enough about the matter to realize how extremely common the establishment of such a relation between cause and effect is in conditions of the most varied sorts. The author has set himself the task of collecting such instances and elucidating each by a paragraph or two of terse discussion. The first nine chapters are devoted to the circles associated with the nervous system, the cardiovascular system, etc., and in the final three the genesis of the circle and the manner in which it may be broken by natural means or by treatment are discussed. Appropriate diagrams illustrate the sequence of events and emphasize the points made in the text.

Tratado de Ginecologia. Por el Dr. Miguel V. Fargas, Catedrático de Obstetricia y Ginecologia de la Facultad de Medicina de Barcelona; Miembro de la Real Academia de Medicina y Cirugia; ex-Presidente de la Academia y Laboratorio de Ciencias Médicas de Cataluña; Miembro del Instituto Rubio de Terapéutica operatoria de Madrid; Miembro honorario de la Sociedad de Obstetricia y Ginecologia de la Universidad Imperial de Moscou, etc. Segunda Edición, revisada. Tomo Primero: I. Generalidades; II. Enfermedades de la Vulva y Vagina. Tomo Segundo: III. Enfermedades del Utero; IV. Enfermedades de los Anexos. Barcelona: Salvat y C. a S., en C., 1911.

The first edition of this work appeared eight years ago, when it was accorded a warm reception by the profession in the various Spanish-speaking countries. As Professor of Obstetrics and Gynecology in the University of Barcelona, and with an experience of twenty years in the practice of gynecology, an experience comprising 18,000 cases, the author has impressed upon this work the stamp of mature scholarship and practical knowledge. The subject of gynecology touches very closely every other branch of medicine, and he who would aspire to authority in this as in other specialties, must have a vision that is not restricted by the boundaries of his particular province. It is this breadth of view that distinguishes the present work. In its two volumes, and its total of 1,284 pages, it presents a comprehensive survey of the entire field of modern gynecology. The first volume consists of two parts. The first of these, which comprises the greater part of the volume, deals with the general aspects of gynecology—anatomy, physiology, methods of examination, medical and local treatment, and the principles of operative treatment. The author presents in minute detail a description of the gynecological armamentarium, from the arrangement of office fixtures and the laboratory equipment, to the selection of instruments. The description of the surgical technique specially applicable to gynecology is masterly. The second part of the first volume deals with the diseases of the vulva and vagina. The second volume discusses the diseases of the uterus and those of the adnexa. The various operative procedures are described in detail, and the successive steps in the operations are shown with the aid of many photographic and other illustrations. The author gives evidence of an attitude of conservatism and of a full appreciation of the medical and physical methods in the treatment of the numerous conditions that arise in the practice of the gynecologist as well as of the general practitioner.

Hospital Management. A Handbook for Hospital Trustees, Superintendents, Training School Principals, Physicians, and all who are actively engaged in promoting hospital work. By Charlotte A. Aikens, Author of "Hospital Training-School Methods and the Head Nurse"; "Primary Studies for Nurses"; "Clinical Studies for Nurses." 12mo, 488 pages. Illustrated. Cloth, $3.00 net. Philadelphia and London: W. B. Saunders Company, 1911.

There is no doubt that this book will fill a long-felt want among those who are connected with hospitals, both as officers and as trustees. To the former a practical classification of the various duties of employees is given, together with many valuable suggestions as to management; and to the latter class a fund of information all trustees should know—and few do. The book is a compilation of nineteen chapters, written by as many authors on the several subjects taken up.

Chapter I is on "The American Hospital Field," and on the whole is a most able paper. Dr. Emerson, in taking up that new and most necessary branch of hospital work, "social service," gives to us a clear, concise idea as to the value of a branch of hospital work which is now absorbing the attention of all institutions which are striving to get away from the old idea that their responsibility ceases when the patient leaves their doors. Dr. Emerson's observations on hospitals for special work may not meet with the approval of many medical men. In this age of specialism our general hospitals are not prepared to devote to special branches of surgery the attention that is given in institutions equipped solely for that purpose; but on the whole, what he says is true—at least it will be true when our hospitals have advanced to a higher state of perfection and that germ of sure destruction, jealousy, is eliminated. To one who is contemplating building a hospital this work will prove a veritable compendium. The wards, kitchens, halls, engine-room, offices, and all other departments are treated in turn.

The chapter on "Superintendent of Training Schools" is worthy of special mention. The author of this chapter, Miss Aikens, shows us that she is a woman of great experience on this subject. She has ably handled the question, and it should be read by every person occupying that position.

Perhaps, after all is said, this book will appeal especially to the man who is a member of the board of trustees of some hospital. It will tell him, in a concise form, exactly what a hospital should do, and how it should be run, from the scrubwoman up to its financing, and what is expected of the various officers connected with the institution. "Hospital Management" should prove a valuable addition to our literature on this subject.

Merck's Manual of the Materia Medica. A Ready-Reference Pocket Book for the Physician and Surgeon. Containing names of the chemicals and drugs used in modern medical practice, with their chief synonyms, physical form and appearance, solubilities, percentage strengths and physiological effects, therapeutic uses, modes of administration and application, regular and maximum dosage, incompatibles, antidotes, precautionary requirements, etc.; a table of therapeutic indications, with paragraphs on bedside diagnosis, and a comprehensive collection of prescription formulas, embracing also the newer remedies of established merit; a classification of medicaments; and miscellany, comprising poisoning and its treatment; a comprehensive dose table of chemicals, drugs, and galenicals; urinalysis and examination of urinary deposits; approximate metric equivalents and various useful tables, etc. Compiled from the most recent authoritative sources. Fourth Edition. St. Louis, New York, Rahway: Merck & Co., 1911.

It is sufficient to mention the appearance of a new edition of Merck's Manual; a perusal of the title page will show what it contains.

The Care of the Baby. A Manual for Mothers and Nurses. Containing Practical Directions for the Management of Infancy and Childhood in Health and Disease. By J. P. Crozer Griffith, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital; Consulting Physician to St. Christopher's Hospital for Children; Member of the American Pediatric Society and of the Association of American Physicians; Corresponding Member of the Société de Pédiatrie of Paris. Fifth Edition, thoroughly revised. Price $1.50. Philadelphia and London: W. B. Saunders Company, 1911.

The book, the first edition of which was published in 1895, is so well known to the profession that comment upon it at this time would seem superfluous. It has been carefully revised and brought up-to-date, and maintains its former standard as a reliable book for the guidance of mothers and nurses in the management of infants and young children.

Nothelferbuch. Leitfaden für Erste Hilfe; bei plötzlichen Erkrankungen und Unglücksfällen. Herausgegeben von der Medizinalabteilung des Königlich Preussischen Ministeriums der geistlichen, Unterrichts und Medizinal-Angelegenheiten. Mit zahlreichen Abbildungen im Text. Berlin: Verlag von August Hirschwald, 1911.

First aid to the victim of an accident or to one who has been taken suddenly ill, is presented briefly and at the same time thoroughly in this excellent manual of 159 pages. It is intended as a textbook for the use of classes taking a short course of instruction in first aid. The first chapter gives an outline of such a course for the use of the teacher, a course that may be completed within the limits of twelve to fifteen lessons. The text which is admirably supplemented with a large number of illustrations contains all the well-known features of the first-aid manual, together with many useful hints on the subject of nursing and disinfection, and a description of the German statutes relative to quarantine, notification, and compulsory insurance.

Society Reports.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Annual Meeting Held in Philadelphia, Pa., May 29, 30 and 31, 1911.

Monday, May 29—First Day.

Regional Anatomy of the Upper Air Tract.—Dr. George McClellan of Philadelphia directed particular attention to the deviations in the course of the esophagus and to the folds of mucous membrane usually encountered at such points. He also laid stress upon the innervation of the air passages, particularly with reference to the parts supplied by the recurrent laryngeal nerve, voicing the opinion that the accessory fibers from the spinal accessory nerve as it emerges from the skull combine with the vagus nerve and ultimately help to form the recurrent laryngeal nerve.

Vasomotor Rhinitis (Apart from Hay Fever).—Dr. E. Fletcher Ingals of Chicago considered this a nasal condition differing from the ordinary forms of hyperesthetic rhinitis, hay fever, rose colds, etc., being characterized by excessive intumescence of the turbinal bodies, which are very pale, excess of thin, watery secretion, intense tingling in nose, exceeding chronicity. The attack was brought on by exposure to heat or cold, various irritants, and other unknown causes. The disease had been prevalent around Chicago the past winter; the general health at first was not affected. The treatment was very unsatisfactory, as the nose was intolerant of applications, and no remedy was found that afforded more than slight temporary relief, and that only at times.

Vasomotor Disturbances of the Upper Air Tract.—Dr. Charles W. Richardson of Washington, D. C., called particular attention to the difference between the perennial and paroxysmal vasomotor catarrh, and discussed only the perennial type. He referred to the investigations of Bidder and Volkmann, as well as Buch's experiments on the sympathetic, and to the fact brought out by these investigators that the sympathetic nerve was non-sensitive only in a healthy condition. When the nerve became hyperemic it was extremely sensitive to pain. Through this hyperemic nerve various reflexes of a sensory, motor, or vasomotor catarrh could be produced. The speaker divided the perennial type of vasomotor catarrh into four different classifications, treated largely of the constitutional character of these disturbances, and considered that they were more of a general type than due to local inflammatory changes within the passages, the toxin or irritant being produced through changes in the fluids and tissues of the body.

Dr. Delavan of New York, in referring to a case cited by Dr. Ingals, considered one of the most interesting features to be the fact that after the use of the serum treatment the patient, although exposed to quite as inclement weather as formerly, had not nearly so severe symptoms as previous to its use.

Dr. Coakley of New York said that he had seen many of these cases and believed local treatment to be of little or no avail. He considered these conditions to be dependent on some derangement of the internal secretions, attended by a peculiarly irritable condition of the nasal mucous membrane.

Dr. Coffin of New York agreed with the former's remarks, and gave briefly the report of one of his own patients, in whom the condition was shown to be due to some autointoxication.

Dr. B. R. Shurly of Detroit stated that these conditions were almost exclusively associated with people of high tension and peculiar nervous temperament, nearly all patients being among the intellectual classes. He considered local treatment inadequate, and suggested that this condition in the nose was usually associated with a vasomotor disturbance in some other possibly remote part of the body. He believed that the internal secretions played a very important part. In the line of therapy his best results had been obtained through the use of valerian and other general sedatives, and by the hypodermic use of citrate of iron, which had a very quick and sharp effect on the general nervous system and blood stream, adding tone to the entire vasomotor system.

Dr. Thrasher of Cincinnati mentioned two expedients for the relief of the most troublesome symptoms; one was the free incision of the turbinal bodies, giving free exit for the accumulated fluid; the other, the hypodermic use of adrenalin in doses of from 5 to 10 minims (1-1000) once or twice a day.

Dr. Logan of Kansas City called attention to the cauterization of the highest part of the triangular cartilage, which he had found of more value in relieving the turgescence than any other local application to the turbinal body. He also mentioned good results from the use of bromides, and the application of the galvanocautery to the anterior tip of the turbinate and local area of the triangular cartilage.

Dr. Norval H. Pierce of Chicago agreed with regard to the beneficial results obtained from following Professor Killian's methods. He cited an interesting case of vasomotor disturbance due to the eating of raspberry pie, to which the patient was extremely susceptible.

Dr. Coolidge of Boston considered the question from the standpoint of lack of immunity in the body fluids, this making some susceptible and others not. He laid stress upon the similarity existing between vasomotor rhinitis and the various infectious fevers, such as measles, scarlet fever, etc., in their manner of onset, and also regarding immunity.

Dr. Myles of New York advocated the cutting out of a section of the tubercle of the septum, making a complete section down to the junction of the perpendicular plate of the ethmoid where the triangular cartilage meets it. This was done either under cocaine or adrenalin. His theory was that by this procedure the transmitter of the irritation either to Meckel's ganglion or to the brain center was cut.

Review of Eighty-one Cases of Inflammation of the Frontal Sinus.—Dr. George L. Richards of Fall River presented this comparative study. Both sinuses were involved in 23.5 per cent., the left alone in 32 per cent., the right alone in 44.5 per cent. The question as to which sinus was involved depended upon the anatomical conformation of the nose and the relation of the frontonasal outlet to the septum and to the turbinate. Sixty per cent. of the cases were acute, 7 per cent. subacute, and 33 per cent. chronic. Pus was found in 92 per cent., and five cases, or 8 per cent., were designated as gas cases; that is, the symptoms were apparently due to the closure of the outlet of the frontonasal canal, with consequent sense of pressure, due to the expansion of the air or gas within the sinus. In 14 cases the antrum also was involved. As to treatment, 65 cases were treated intranasally, and in 16 radical operations were done. That is, 81 per cent. were found to be curable intranasally, 20 per cent. required some type of external operation. Sixty-six cases were considered as cured. The others still had an occasional recurrence of acute attack, or small amount of pus discharge still remained. For the permanent comfort of patients with frontal sinus trouble it was essential that the frontonasal duct remained open, unless the sinus were entirely obliterated. As to the general method of treatment, intranasal methods should be tried for a long time, and would usually result either in a cure or in so great amelioration of symptoms that the patient would not submit to any more radical operation. There were other cases of extensive involvement of the ethmoid cells which would require some type of external operation before final cure was accomplished.

Attenuated Types of Suppurative Sphenoiditis in Relation to So-called Postnasal Catarrh, to Headache with Mental Daze, and to Asthma.—Dr. W. E. Casselberry of Chicago read this paper, stating that the sphenoid sinus being out of sight was out of mind until adrenalin's vasoconstrictor effect availed to facilitate reaching it by operation, when the frequency of its infection as a primary source of postnasal discharge became evident. The secretions of the attenuated infections appeared, not as typical pus, but as variously modified purulоid products, most, though not all, of which might be grouped in two classes. First, those varying from pus to mucopus, which did not form a varnish-like film nor induce atrophy, but tended rather toward edematous hyperplasia, an intensification of which, lacking previous emphasis, was a prolific polypoid exudate, forming layer upon layer at the site whence polyps had been removed, as if a fresh growth of polyps had sprung up over night. The second class included the viscid mucilaginous, sometimes fetid, secretions, which when copious formed into long ropey strings, defying ordinary means of expulsion. When rather scanty they varnished the pharyngeal wall, inducing atrophic or dry pharyngitis, and accumulated in the nasopharynx in brownish splotches, comparable only to liquid glue, which when "set" formed adamantine-like crusts, liable to require the leverage of a probe to pry them loose. The osteum sphenoidale itself was located out of sight, nor was it visible by reflection from the rear unless marked by a bead of pus, a protruding polypus, or a probe. However, in the rhinoscopic image, just outside the osteum, could be seen a portion, 1 cm. in length, of a probe which had been properly inserted in the sphenoid sinus. As this means of verification gave the most satisfactory assurance of precision to the diagnostic tests which followed it, the author had sought by perfecting the technique of the rhinoscopic examination with the cannular probe in position to render it generally available. Thus, to prevent the cannular probe from slipping out it was anchored to the dorsum of the nose by a flexible wire and a piece of rubber plaster. To facilitate the anchoring and to avoid the annoyance of having to withdraw the probe to reintroduce a cannula for the irrigation and aspiration tests, a combination cannula and probe of original design was used. Tapping the inner wall of the sinus served to elicit another characteristic sign, which was termed the sphenoid click, as if the bone were almost but not quite bare, accompanied by a leaden metallic click, a combination peculiar to the healthy sphenoid and not due to dead bone. In diagnosis the irrigation test was of first importance. From fifty to sixty private cases had been recorded under the diagnosis in part of suppurative sphenoiditis, although in less than one-eighth of the number was the infection limited absolutely to the sphenoid without involving the postethmoid cells or other sinuses. With respect to postnasal catarrhal conditions, including atrophic or dry pharyngitis, the conclusion was reached that, after the exclusion of antrum disease, adenoid growth, or clefts, Thornwald's bursa, and pronounced posterior turbinated hypertrophies, practically all other chronic postnasal purulоid discharges were due to suppurative sphenoiditis, either alone or with implication of other sinuses. With reference to headache: The best description was by a university professor, who said "it was a boring pain toward the middle of the head far back between the eyes." More often it was located in the back of the head, but connected also with pain far back in the eyes, and next the top of the head or the side near the top, or radiating from the ear and mastoid to the top of the head; one-third of the sphenoid cases suffered from occipital or parietal headache; in one when the probe penetrated the sphenoid sinus it liberated an orange-yellow discharge, with cessation of the pain. Another was conscious of a dazed mental state, on whom a double Hajek operation resulted in free drainage of the sphenoids and cessation of symptoms. Commonly when, with a probe or sphenoethmoid cutter, one touched the postethmoid and adjoining face of the sphenoid, the patient exclaimed at suddenly feeling a sharp pain at one or more of these five points—the back of the head, the top of the head, the eyes, the ear, and upper jaw. Merely touching with a cotton applicator the site of the spenopalatine ganglion had caused patients to remark that it was the right spot, as it excited the same kind of pain or suggestion of neuralgia as that for which they sought relief. The ganglion bordered the floor of the postethmoid cells and the sphenoid wall, and connected with the nerves distributed to the five painful parts, which indicated that sphenoethmoid disease was capable of exciting the ganglion, and so of causing headache of the type described. Nevertheless mere distension of the sinus by fluid or gases could cause headache of the deep-seated boring description. With reference to asthma: About one-third of the series were asthmatic subjects; in several the sphenoid region was a dominating feature, and in a few it was the only site of attachment of polyps. A recurrence of asthma was observed in conjunction with an acute exacerbation of chronic sphenoiditis, also with a severe initial attack of sphenoiditis. Believing the benefit of removal of the nasal exudative features of asthma to be proportionate to the thoroughness of the operation, the author had of late years supplemented earlier treatments by removing any residual polypi found in the sphenoethmoid sulcus, with the effect of gaining a distinct reduction in the patient's residual asthmatic tendency. Twenty-four intranasal operations were performed on seventeen private patients. Usually only local anesthesia is employed. Resection of the middle turbinal was necessarily the first step, and the bulla, with other anterior ethmoid cells, if found diseased, were also eliminated on the way to the posterior group which then came in view. This the author called the back-bulla, as keeping this resemblance in mind aided in distinguishing it in the foreshortened perspective. The postethmoid group was dealt with as one structure, for one could not know, nor was it essential to know, how many individual cells it contained. The dominating principle of the treatment was free drainage or as nearly free as might be consistently possible. The palliative treatment was based on the principle that if the posterior nares and nasopharynx were kept clear of accumulated sphenoid discharge the catarrhal symptoms and irritation exterior to the sphenoid outlet would tend to subside and the sphenoid drainage be improved in so far as the exterior swelling had impeded it. The same principle must have pertained to the amelioration of the symptoms before the real condition was thought of. As the cleansing process must be regularly maintained, it was essential to instruct the patient in a simple but efficient method—requirements met by the postnasal type of douche with an alkaline solution weak enough to be devoid of irritating effect. With regard to the extent to which the sphenoid wall and postethmoid cells might regenerate it was believed additional portions might need to be excised but that eventually they remained open. With regard to a cure, to approximate ordinary conditions, a less rigid standard of cure than total suppression would suffice, few individuals being altogether free from disordered secretion. If then nine-tenths or more of the distress and disability incidental to the postnasal discharge were eliminated, material mitigation of the asthmatic feature afforded, and the headache with possible mental deterioration wholly remedied, it amounted to a practical cure. In this sense a large majority of sphenopostethmoid sinus infections of the attenuated types specified were curable by the methods described.

Foreign Bodies in the Antrum.—Dr. James E. Newcomb of New York reported the case of a middle-aged man referred to him with postnasal discharge. Examina-

tion revealed in addition the existence of pulmonary tuberculosis. At the time of his first visit the patient was not transilluminated and the source of the discharge was not definitely made out. Under cleansing he remained without definite benefit and was seen again some months later. At this visit he was transilluminated and an empyema of the left antrum was definitely discovered. His general condition seemed to forbid anything more radical than perforation through a vacant tooth socket and insertion of a Myles' rubber antral tube. With this the drainage afforded was perfect and the patient was much relieved. He was very nervous and constantly working with his tongue at the tube, which was closed with a wooden obturator. On one occasion, while in the doctor's office, both tube and obturator were thrust into the antrum. It was supposed at first that they had fallen on the floor and search was made for them but they were not found. It was then surmised that they were in the antrum. A skiagram made by a competent operator failed to reveal them. The patient was instructed to keep the cavity clean and to return after he came back from the mountains, whither he desired to go for the summer. While there (patient's statement) he fell into the hands of a dental student who succeeded in removing first the tube and then the obturator and with the same delicate forceps with which Dr. Newcomb had failed. The patient's condition at the time of the accident was not good and he stood manipulation very badly at his office visits. After his return the pulmonary lesion steadily progressed and he died from it, with laryngeal involvement. Dr. Newcomb has succeeded in finding 50 cases of a similar accident recorded in the last 20 years, and gave a list of references, alluding to some of the more interesting ones. The proper treatment of such cases was to open the antrum through the canine fossa provided search through a natural or artificial opening through a tooth socket did not reveal the foreign body. A small electric light should be used to examine the cavity and the latter should receive at the same time the treatment its condition seemed to indicate.

Dr. Makuen of Philadelphia mentioned a case of foreign body in the antrum consisting of the retention of a portion of gauze packing, in the removal of which he was compelled to curette the whole cavity over again.

Dr. Casselberry of Chicago considered that in the majority of cases where tubes were worn the patients became addicted to the habit throughout life.

Dr. Getchell of Worcester referred to a case of foreign body in the antrum consisting of a thickened plug of mucus. This was removed and recovery was satisfactory.

Dr. Coakley of New York referred to the difficulty encountered in the after-treatment of sphenoiditis, especially in keeping the opening patulous. He advocated, where the disease was extensive enough to warrant it, the external operation, where the incision was made alongside the nose, and where the opening could be kept open more easily. With reference to the case reported by Dr. Makuen, Dr Coakley took exception to the curettage of the sinus. He believed drainage should either be restored to a frontal sinus so that Nature could take her course or else that the sinus should be completely obliterated.

Dr. Barnhill of Indianapolis agreed with Dr. Coakley as to the more satisfactory manipulation afforded by the external route in grave cases of sphenoidal disease. He also seconded the remarks regarding curettage of the frontal sinus, believing in the complete obliteration of the sinus, or if drainage was to be secured the inadvisability of curettage.

Dr. J. Price Brown of Toronto mentioned a case of two foreign bodies in the antrum, both consisting of plugs of cotton.

Dr. Sluder of St. Louis added two cases of foreign bodies in the antrum, both consisting of plugs of bismuth paste, one remaining a year and a half, the other two years.

Dr. Myles of New York, in relation to operations on the frontal sinus, said he had always had to remove the nasal processes of the superior maxillary bone, which could only be accomplished with a hammer and chisel. He never curetted the frontal sinus.

Tuesday, May 30—Second Day.

Nasopharyngeal Fibroma.—Dr. D. Bryson Delavan of New York called attention to the fact that, from time immemorial until about thirty years ago, the removal of these peculiar growths had been effected through the performance of some severe preliminary operation by which access was obtained to the affected part. These preliminary operations were of a very serious character, the patient often dying upon the table from hemorrhage or shock or succumbing within a few days. Voltolini of Breslau and Rufus P. Lincoln of New York had deprecated the employment of the preliminary operation and had substituted certain lines of treatment by means of electrical methods. These were used through the natural passages. Thus, the growth was removed bodily by encircling its base with a galvanocaustic loop, causing the loop at a low rate of incandescence to pass through the fibrous tissue. Not only was the danger of severe hemorrhage present in other methods of operating entirely done away with, but the resulting cauterant action destroyed any remnant of the growth to such an extent that in some cases further treatment was unnecessary. In cases where fragments remained these could be eradicated by the direct application of the galvanocautery or by other suitable means. Where a growth was too large to admit of the use of the galvanocaustic loop its volume was first reduced by means of electrolysis or by ignipuncture. Both the unipolar and the bipolar methods of electrolysis were employed, the latter however being preferred. In many cases applications made in this way as near as possible to the base of the growth caused the occlusion of so many of its nutrient vessels that the volume of the tumor was decreased sufficiently to make the use of the incandescent loop practicable. Up to ten years ago a considerable number of successful cases had been reported as cured by this method. During the past ten years it had fallen more or less into disuse, although the statistics which the writer of the paper had taken pains to collect amply proved its vast superiority in point of safety and of efficiency over all other means of treatment. The fact that so many of the leading surgeons of the day gave preference to radical operation made it desirable that the subject should be carefully reviewed; even when the growths were removed through the natural passages by means other than electrical, such as by tearing away of the tumor piecemeal, or its removal by means of the cold wire snare, accidents were common and hemorrhage was almost invariable. In fifteen reported cases treated by electrical methods no cases of hemorrhage, shock, or death were reported, while ten cases were reported as cured, and one improved, the others not having been heard from. As against this through the use of the cold wire snare in ten cases there were reported nine instances of severe hemorrhage and no cases of cure. Of forty-six cases operated upon by severe preliminary operation or by removal piecemeal with the forceps, one death was reported and only five cures. These statistics, covering a period represented by the last ten years, about coincided with those obtained by the writer from the twenty years preceding. They amply sustained the supposition that radical preliminary operation for the removal of fibroma of the nasopharynx was injustifiable; that all of the necessities of the case could be met by means of the employment of electrical methods applied through the natural passages without any preliminary operation whatsoever; that they could be met

by those means without risk to the patient and without resulting deformity, and that the percentage of success through their employment was vastly in excess of that by other means.

Dr. Holmes of Cincinnati called attention to the use of the mercury points either by the unipolar or bipolar method; he stated that with the unipolar 500 to 700 milliampères and by the bipolar up to 2,500 milliampères could be used. He referred to a case of spindle-cell sarcoma involving the tonsil and upper posterior part of the tongue in which he successfully removed the growth; also to a case with involvement of the soft and hard palates; both patients were without recurrences to-day one being of eight and the other of three years' duration.

Dr. Harmon Smith of New York briefly mentioned three cases of postnasal fibroma including the entire posterior nares reduced by the injection of monochloracetic acid; there were no recurrences.

Case of Spindle-Cell Sarcoma of the Larynx Treated by Electrocautery Operations and the Application of Radium.—Dr. J. Price Brown of Toronto reported the case of a young man of 22 suffering from a rapidly growing tumor in the larnyx. Previous to two months before Dr. Brown saw him he had been in excellent health, with no throat symptoms whatever; then for several weeks there was gradually increasing stenosis until the point of suffocation seemed impending. On examination a large, corrugated, dark red growth could be seen through the throat, nearly filling the larynx; it was like a large strawberry, seemed to be very widely sessile in attachment and was located more to the left than to the right side. The glands of the neck on the same side immediately adjacent to the growth were large and somewhat tender. The voice was not much affected. Owing to the size of the tumor and the involvement of the glands of the neck the case did not seem suitable for radical external operation. Accordingly, under cocaine and adrenalin anesthesia the speaker commenced electrocautery operations, first to be able to remove a large segment for microscopical examination, and then for removal of the growth. After several sittings he secured a piece about the size of a marble of solid tissue, removing it by snare for histological examination. Dr. Archibald examined it carefully and pronounced it to be undoubtedly rapid growing spindle-cell sarcoma, occurring in a very unusual situation. Having been able to remove so much by aid of the electrocautery knife, the speaker continued the electrocautery operations daily, the blade being at a white heat In about three weeks the large bulk of the growth had been removed and the speaker concluded to try the effect of the application of radium at the base. Accordingly Dr. Ryerson of Toronto substituted for one week radium applications in place of electrocautery operations The pain seemed to be lessened by the application of the radium; but during the week of its use the growth of the tumor was enormous and the glands increased in size. The larynx was full again, although the new growth was lighter in color and softer. So the use of radium was stopped and a return to electrocautery operations was adopted. For a while the operations were daily; then as the tumor decreased in size they were made on alternate days. At the time of reading the paper the growth had almost entirely disappeared, although certain points still required treatment. When the man first came for operation his weight was 130 pounds; two months later after the many cauterizations he weighed 124 pounds. One month later at the time of reading of the paper it had increased to 139 pounds. The glandular enlargement had disappeared, the larynx was quite open, and the patient was taking his meals regularly with the family at the table. During the early part of the treatment he was fed solely on milk, which he could always swallow well, although it pained his ears while drinking. At no time his food or drink got into his larynx. During all the early operations there was always profuse bleeding, but later there was little or none.

Dr. Mackenzie of Baltimore said that the use of radium in cavities more or less inaccessible, that is, where the operator could not watch the agent every instant during application, was to be deprecated, and that no less an authority than Wickham of Paris had said that under no circumstances should this agent be used in the deep throat cavities, in the larynx, or deep parts of the pharynx. The speaker considered that the *x*-rays had proven quite successful in the pharynx.

Esophagoscopy and Bronchoscopy by the Killian Method.—Dr. Thomas Hubbard of Toledo reported a series of operations for removal of foreign bodies from the esophagus and the bronchi. (1) Boy aged 4. One cent piece in esophagus one month, complicated by stricture due to lye swallowed when two years of age. (2, 3) A group of coin and button cases were briefly referred to. Two cases having fragments of bone impacted in esophagus each five days, operated on by local anesthesia. One fatal case of impacted bone in esophagus one week; death due to pneumonia. (4) Girl aged 3 having a large open safety pin in esophagus. Details of method of turning the pin on the embedded point based on measurements of radiograph to determine the safety of this method. For instance, in the case detailed, the process of turning the pin by traction on the shield by means of a hook stretched the esophagus only one-quarter of an inch more than it was as shown in the radiograph. This was done and no traumatism resulted. A snare was exhibited by means of which an open pin could be closed *in situ*. (5) Brass Christmas tree candle holder removed from the esophagus of an infant of eight months. (6) A series of radiographs of a case having an upholsterer's tack in the left lung for eight years were exhibited, showing disappearance of the shaft and changes in the lungs. (7) Brass ferrule with rubber eraser in one end and a steel pen in the other, removed from the right bronchus. (8) Steel glass-headed pin removed from the left lower lobe bronchus of an infant after one week. (9) Screw bolt removed from right lower lobe bronchus of an infant after five days. (10) Fragment of cement tooth filling, removed from the lower lobe, right lung of a woman, seven months after aspiration. During extraction of teeth this fragment snapped into the trachea. An abscess cavity formed and the fragment was located below the ninth rib near the spinal column and extracted through the Killian tube. A group of cases having kernels of corn, seeds, nutshell fragments, peanuts, etc., operated on in part by the Killian method, were briefly referred to.

Dr. Makuen of Philadelphia referred to a case in which he met with a rather unusual difficulty. In attempting to remove a safety pin by means of the ring instrument, the glottis, sphincter-like, grasped and held the instrument so tightly that it was impossible to extricate it; finally the pin was pulled through the bronchoscope, but fell on the floor before the operator had an opportunity to see how it had been held in the ring.

Dr. Jackson of Pittsburgh considered Dr. Makuen's case a unique one. With regard to esophagoscopy and bronchoscopy he considered it required a great deal of ingenuity and the ability to meet emergencies for these procedures to be safe. He said that in his opinion the removal of an open safety pin was extremely dangerous, and that he considered it a better method to push such a pin down into the stomach, turn it around, and then pull it out, rather than to try to turn it around in an already stretched esophagus. He also mentioned the frequent dyspnea in esophageal cases produced by the depression of

the trachea during an attempt to remove a foreign body from the esophagus; this was frequently apt to end fatally. He laid great stress on the fatal nature of the peanut, stating that in his opinion it was the most serious of all foreign bodies becoming lodged in the bronchi, referring to three personal cases of great interest.

Dr. Mayer of New York stated that he believed the bronchoscope would soon come to fill a rather different field than that used for it to-day, namely the ability by its use in the hands of skilled bronchoscopists of ascertaining the presence of new growths and other conditions in the air passages.

Are Tonsils a Menace or a Protection?—Dr. Henry L. Swain of New Haven discussed the question as answered, first, in the practice of throat surgeons all over the country. As they almost universally were adopting the operation of tonsillectomy whenever they attacked the tonsils, the inference was that the latter were surely of account and always a menace. Answering the question from the anatomical and physiological standpoint, the evidence adduced was such that it could be readily proved that the tonsil was to all intents and purposes a lymphnode and was of just as much importance, no more, no less, as any other node. He called attention to the fact that the tonsils (faucial) had lymphatic trunks leading into them, which drained from the nose and palate, so they had a very definite office in caring for this lymph, a very different viewpoint from the usual one of being a mere retentive area for matter soaking into them from the mouth. Being thus, when in health, an active agent of protection to the system, the tonsil must, like the whole lymphatic system, be of relatively greater importance to the very young child than to the adult. These two facts were strengthened by the additional observation that as the healthy normal individual always had such tissue, which began to functionate early in life in the adenoid tissue in the nasopharynx, in the faucial tonsils in childhood, and in the lingual tonsil in later adult life, it would seem absolutely proved that the body required some such physiological action of some such tissue for its proper development or in its economy, *i.e.* a definite function for lymphoid tissue. Taking this as true, it would be absolutely illogical to remove any of it except for just cause, and this led Dr. Swain to deplore tonsillectomy, complete removal of the tonsils, as an indiscriminate routine procedure in young children, especially when this was accompanied by complete adenoidectomy. The adenoidectomy was to be commended—too thorough an operation was rarely possible—but in early childhood a portion of the healthy faucial tonsil tissue could be well allowed to remain. The system might have need of it. When diseased any of the good operations for tonsillectomy could be used, but he felt that the teaching should be that, even in adults, there were other methods of bringing about a satisfactory and safe condition of the tonsils. These latter he almost universally employed by preference and such patients had, at least, the benefit of whatever protection the saved tissue could be to them.

Dr. George B. Wood of Philadelphia objected to the views held by the essayist, and stated that by repeated experiment he had been able to prove that the lymph flow in the tonsil was an efferent current. If a tubercle bacillus is placed in a crypt of the tonsil it will produce tuberculosis of the tonsil; at almost the same time tuberculosis will start in the lymphnode draining that tonsil. He did not believe it to be possible to tell macroscopically a diseased tonsil. He regarded the function of the tonsil to be primarily concerned with the production and elimination of lymphocytes. He advocated in all diseased conditions the complete removal of the tonsil, having obtained for better results from this procedure than from tonsillotomy.

Dr. J. G. Wilson of Chicago agreed with Dr. Swain that the physiological activity of the tonsil was principally confined to fetal and infant life, but did not consider it as a pure lymphatic gland. He called attention to the fact that in its development as an ingrowth through the second branchial cleft it differed from other lymphnodes, which developed as a breaking up of the lymphatic cords. He said that the rat was the only animal he had found in a study of the comparative anatomy of the tonsil which did not possess this organ.

Dr. W. E. Casselberry of Chicago said he had never seen a particle of detriment to either the child or adult resulting from the total excision of the tonsil, but explained this on the basis that there were supplementary tissues to continue its function. He agreed with the essayist that during childhood the tonsils should never be removed unless definitely diseased, but advocated their absolute removal if operated upon at all.

Dr. Mackenzie of Baltimore emphatically voiced his disapproval of the indiscrimnate removal of tonsils so largely practised at the present time, and considered it the duty of every laryngologist to make the conditions warranting tonsillectomy plain to the general practitioner.

Dr. Coakley of New York called attention to the fact, also referred to by Dr. Swain, that the tonsils in children and in adults were entirely different in function; in adult life it was classed more as a pathological than as a physiological organ. He mentioned the fact that frequently in adults with rheumatic diathesis the removal of the tonsil which had caused quinsy, etc., would show an abeyance of these peculiar manifestations. It was his opinion that tonsils should be enucleated and not cut off, and his experience had been that the children in whom this procedure had been carried out because of disease of the tonsils as a general rule became markedly improved in health following the operation.

Dr. Coolidge of Boston discussed the etiology of acute tonsillitis, referring to the recent epidemic in Boston, which was at first traced to the milk supply, but later became general throughout the city. He considered in view of the mode of onset that the condition in the tonsil pointed rather to an efferent than to an afferent flow of the septic microorganisms or their toxins.

Dr. Coffin of New York called attention to the frequency with which tonsils which macroscopically appeared unaffected were found microscopically to be diseased. He considered the most dangerous of all tonsils to be those stumps remaining after a tonsillotomy and urged the total excision of the tonsil.

Dr. B. R. Shurly of Detroit deprecated the removal of tonsils unless proved to be diseased. In many hundreds of tonsillectomies he had seen nothing but favorable results. He believed children whose tonsils had been removed were less liable to the various throat complications if they became the victims of the infectious diseases of childhood.

Dr. Bliss of Philadelphia also considered the stumps of tonsils remaining after partial removal to be a great menace to the health of the individual. He made a plea for the school children now being sent to the various dispensaries for treatment, urging that wherever indicated the tonsils should be removed, but where there was no absolute indication for this procedure that the laryngologist should refuse to consider operation.

Wednesday, May 31—Third Day

The Technique of Tonsillectomy.—Dr. J. M. Ingersoll of Cleveland gave the following as the method of tonsillectomy used at the dispensary of the Lakeside Hospital: Ether was used for the anesthetic in adults as well as in children. The patient was operated upon lying on the back with the head over the end of the table. One assistant sat on the left and held the patient's head firmly with both hands. The second assistant stood on the right

and held the tongue depressor with his left hand and sponges with the right. The operator sat at the end of the table with the patient directly in front of him. One tonsil was grasped with a pair of forceps and pulled toward the median line, and the mucous membrane was carefully incised down to the capsule of the tonsil. The tonsil was then carefully dissected free with its capsule from the anterior and posterior pillars, and from its attachment superiorly and somewhat inferiorly. The enucleation was completed with the snare. A gauze sponge was then packed into the fossa and held in position for two or three minutes with firm pressure. This pressure usually stopped the bleeding. If the bleeding continued the bleeding points were grasped with ordinary hemostats and twisted. If an artery large enough to spurt had been cut, it was grasped and a buried catgut ligature passed around it and tied tightly. The second tonsil was then operated on in the same way, and when all hemorrhage had been controlled an adenotomy was done if necessary.

Relation of the Tonsil Operation to the Soft Palate and Voice.—Dr. G. Hudson Makuen of Philadelphia stated that the purpose of his paper was to discuss the causes leading to the popular belief that the removal of the tonsils injured the voice. There was no absolute standard of vocal excellence and the voice which sounded good to one might sound very differently to another. This fact accounted for the great difference of opinion now prevailing as to the effect of the tonsil operation upon the voice. The three important vocal organs considered in this connection were the soft palate, the tongue, and larynx. The soft palate was especially affected by the tonsils, and it was one of the most important of the phonatory organs, because upon its normal action the normal action of all the others depended. It had two important functions in phonation, one being a valvular function by which vocal resonance was markedly affected, and the other had been called a thyroid-tilting and cord-stretching function by which the quality and pitch of the voice were determined and regulated. This valvular action of the soft palate might be greatly interfered with by abnormally large or degenerate faucial tonsils, the large ones interfering with the motility of the depressor muscles, and the degenerate ones having somewhat the same effect by the catarrhal hypertrophies and adhesions which they engendered. Moreover, when the valve failed to close and the soft palate being limp in the oropharynx, the palatopharyngii muscles, having lost their anchorage in the vault, were quite unable to perform their thyroid-tilting and cord-stretching function, and the voice necessarily suffered as a consequence both in respect to quality and to pitch. The normal tonsil, serving as it did to keep the faucial pillars apart and thus determining to some extent, at least, the direction of their forces in the act of phonation, must be beneficial to the voice rather than otherwise, and its presence might also improve the resonant quality of the voice. There were two types of abnormal tonsils, the simple hypertrophied and the degenerate types, and both types interfered with the valvular action of the soft palate, thus impairing directly the resonance of the voice, and, indirectly, its quality and pitch. A tonsil operation under these conditions was absolutely imperative in order to improve or save the voice, as well as to remove sources of general infection. The operation which should be chosen is the one that would best remove foci of infection and at the same time conserve the phonatory and articulatory functions of the neighboring organs. While complete tonsillectomy best fulfilled the first of these two indications, it might not be the operation best adapted to the conservation of the functions of the neighboring organs, because, however well it might be done, it resulted in cicatricial contractions and adhesions in the tonsillar fossæ, which interfered with the functions of the surrounding muscles. When, therefore, the capsule was not hypertrophied and no inflammatory adhesions existed between it and the surrounding muscles, one should probably get better results so far as the phonatory functions of the palate were concerned by removing the tonsil only and leaving the capsule intact. This, of course, was the more tedious and difficult operation, and in some instances it might be an almost impossible one, but nevertheless in selected cases the procedure should be at least attempted, because it left the palate in a better functional condition. Every case should be a study in itself, and in all cases it should be a question of judgment with the operator as to whether a complete tonsillectomy should be performed or an attempt made to do an extracapsular operation by some of the many methods which had been devised. As in so many other instances, the mistake was often made in supposing that a single operation was suitable in all cases, and one was not sufficiently governed in one's choice of methods by the conditions as they presented themselves. The sacrifice of one or more pillars of the palate should give one great concern, because the results upon the voice and speech had been in some cases not only disastrous but altogether irreparable.

The Relation of Enlarged Tonsils to Endocarditis.—Dr. Albert C. Getchell of Worcester, Mass., stated that of late years there had been a growing tendency to ascribe constitutional diseases, among them endocarditis, to enlarged tonsils. With the interest in the operation for a complete removal of the tonsils, this question took a practical as well as a theoretical turn. A review of the literature on diseases of the heart and diseases of children showed in general a cautious acceptance of this view. Some authors, however, stoutly maintained it, while others did not discuss it. The writer's clinical experience showed that evidence of endocarditis was not commonly found in patients who came for removal of tonsils, and he concluded from a study of the subject that enlarged tonsils in themselves did not contain the foci of disease that produced endocarditis. Therefore, the operation for their removal should not be unduly difficult nor dangerous.

Primary Chancre of the Tonsil.—Dr. A. B. Thrasher of Cincinnati stated that syphilis must no longer be regarded as a venereal disease. It was especially with reference to chancre of the tonsil that this was true. A singular thing was the diversity of views in reference to the comparative frequency of chancre of the tonsil. When one considered extragenital chancre the relative frequency of tonsillar lesions varied according to the different observers from 1 to 75 per cent.; also in reference to the real frequency of tonsillar chancre. Sabolotsky reported the observation of 104 tonsillar chancres in one year, while on the other hand Protzeck saw but one case in twelve years. By far the most frequent cause of tonsillar infection was the virus conveyed by kissing. Three out of the four cases falling under the observation of the writer were caused in this way. Infection had occurred from eating utensils, drinking vessels, from pipes and cigars (the cigar maker moistening the wrapper with luetic saliva), lead pencils, nails, tooth brushes, etc. The most subjective symptom has been pain in the region of the tonsil markedly more prominent than in other diseases of this region. There was no special difficulty in differential diagnosis except possibly from cancer or from tubercle or syphilis mixed. For cancer of the tonsil it was sometimes necessary to resort to the microscope and serum test to establish the diagnosis. The disease spread more rapidly when introduced through the tonsil than through any other region of the body, and secondary symptoms were usually present when the primary lesion was first discovered. However, in the early stages of tonsillar in-

fection the serum diagnosis had not proven reliable, probably because the virus had not extended into the system from the encapsulated tonsil. The treatment was not different from that of other primary lesions. Should one, however, discover the contagion of a tonsillar infection when there was a possibility that general infection had not occurred, immediate tonsillectomy might be made with a faint hope of eradicating the local poison.

Late Secondary Hemorrhage Following Tonsillotomy.—Dr. Frederic E. Hopkins of Springfield, Mass., reported this accident occurring in a child of nine and in a young man of 19. In one case severe hemorrhages occurred as late as the eleventh day; in the other as late as the twelfth day.

Dr. Wood of Philadelphia mentioned a case of late hemorrhage following seven days after operation for adenoids, being so severe as to require etherization and packing of the vault.

Dr. Richards of Fall River added to the list two cases of late hemorrhage, occurring in one case five days after operation, in the other six days after operation. He also mentioned a fatal case of late hemorrhage following an adenoidectomy. In discussion of Dr. Makuen's paper he took exception to the author's statement that because there was a large hole on one side of the palate and not on the other side it was indicative of a poor operation, for sometimes the supratonsillar fossa was higher on one side than on the other.

Dr. Casselberry of Chicago referred to the cause of late hemorrhage, and stated that in almost every case it was due to the separation of a slough, the result of the operation. He advocated the use of the clamp under these circumstances, having always had very good results from its use; and also mentioned that in operations in his office upon adults, if hemorrhage occurred, he immediately applied the galvanocautery to the bleeding point, and had found this measure most efficient in controlling the bleeding.

Dr. Richardson of Washington, D. C., stated that many times cases were referred to the specialist by the general practitioner for removal of tuberculous or otherwise diseased tonsils, when the specialist could find no evidence of any disease, and he considered that the time had come to refuse to operate on any tonsil until it could be proven microscopically, or possibly macroscopically in some instances, to be diseased. He referred to the many complications which followed tonsillectomies, viz., emphysema, pneumonia, and pleurisy, mentioning one case of a child in which the latter condition developed and ended fatally.

Dr. Kyle of Philadelphia advocated, in cases of enlarged tonsils when the patient was otherwise healthy and no definite disease of the organ could be demonstrated, the loosening of the tonsil from the existing adhesions, without cutting the connective tissue in the soft palate or the anterior or posterior pillars; he reported satisfactory results after this procedure. In making a diagnosis with regard to the tonsil he urged that the operator should satisfy himself that the condition was not the result of some systemic upset before performing a a tonsillectomy. He considered that the size of the tonsil had little to do with its dangers, as a small tonsil could be just as great a menace at times as an enlarged one. In discussion of Dr. Makuen's paper he mentioned the fact that in irregularities of the palate the individual adapted himself to the condition by twisting his mouth in usch a way as to overcome the liability of making a false sound, and said he had frequently noticed this in singers.

Dr. Coolidge of Boston, in discussing Dr. Thrasher's paper, reported briefly a case of primary chancre of the tonsil in which treatment with 606 was begun just as the secondary manifestations began to appear. The chancre disappeared rapidly and the secondary eruption also disappeared, and in a week or so the patient seemed fully recovered. With regard to the question of tonsils, he believed that it was unfair to the specialist for the general practitioner to expect him to make a diagnosis from the appearances of the tonsil alone, but that he should always insist upon hearing the whole history before giving his ultimatum.

Dr. Delevan of New York referred to the fact that the removal of the tonsils was probably one of the earliest operations known to man, and the fact that for many generations it was abandoned rather pointed to the belief that there must have been some good cause for this step, and he urged caution in returning to tonsillectomy as a routine practice, considering that each individual case required separate steady. He condemned the practice, which he stated to be quite prevalent, of practitioners in other lines of work, such as gynecology and pediatrics, undertaking the removal of tonsils.

The Effect of the Cautery on Tuberculous Lesions.—Dr. George B. Wood of Philadelphia stated that clinical experience and experimentation on guinea-pigs showed that the cautery was an almost ideal method of treating localized tuberculosis. It was shown that there existed a retarding influence on the spread of the disease beyond the area actually destroyed by the heat. Within three days a marked zone of inflammatory reaction was found just outside of the cauterized area and in this zone an excessive amount of fibrous tissue developed. The development of this fibrous tissue had a marked influence on the limiting of the tuberculous disease. Formation of new blood-vessels in the inflammatory zone brought sufficient nutrition to the part to keep it from breaking down and becoming necrotic, while the eschar produced by the burning prevented reinoculation and sealed the lymphatics and blood-vessels.

Dr. Getchell of Worcester, Mass., considered that if the constitutional disease was active the local treatment should be of the mildest nature, but if the constitutional treatment was in abeyance and the general condition of the patient good, while the local lesion was of a sluggish character, stimulating treatment was a proper procedure

Dr. Richards of Fall River stated that at first he had held the opinion voiced by Dr. Getchell, but to his surprise the reaction after the electric treatment in these cases was much less than that following other methods, while the results were much more rapid and satisfactory.

Congenital Web of the Esophagus: Report of a Case.—Dr. J. Payson Clark of Boston reported the following case: A woman, aged 24, had always been obliged to mince her food in order to swallow it. There was no history of trauma. A year before he saw her she had had a choking attack following an attempt to swallow a piece of meat. Since then she could swallow only liquids. She was well developed and nourished. Attempts to pass bougies failed. Under ether anesthesia examination with Jackson's tube spatula revealed a membrane shutting off the esophagus from the pharynx except for an opening 3 to 5 mm. in diameter. On attempting to place this membrane on the stretch with an esophagoscope it gave way and the instrument passed on to the stomach without meeting further abnormality. The patient had no further difficulty in swallowing. This case was apparently unique as no report of a similar one could be found in the literature.

Dr. Mosher of Boston reported a case of complete web of the esophagus, in which examination showed a thin diaphragm at the upper end of the esophagus; after evulsion of the same the symptoms, which had persisted for fifteen years, disappeared. He considered that probably on careful examination it would be found that many cases attributed to nervous affections were in reality the

result of slight webs in the upper part of the esophagus.

Dr. Swain of New Haven referred to a case which he believed to be of this variety, but in which the patient passed from under his care before a definite diagnosis could be made.

Election of Officers.—The election of officers for the coming year resulted as follows: *President*, Dr. James E. Newcomb, New York City; *First Vice-President*, Dr. Frederic C. Cobb, Boston, Mass.; *Second Vice-President*, Dr. Burt R. Shurly, Detroit, Mich.; *Secretary and Treasurer*, Dr. Harmon Smith, New York City; *Librarian*, Dr. Joseph H. Bryan, Washington, D. C.; *Member of Council*, to serve for four years, Dr. D. Braden Kyle, Philadelphia; *Delegate* to the Triennial Congress at Washington, Dr. William K. Simpson, New York City; *Alternate*, Dr. Joseph H. Bryan, Washington, D. C.

AMERICAN ACADEMY OF MEDICINE.

Thirty-sixth Annual Meeting, Held at Los Angeles, California, June 23-26, 1911.

Friday, June 23—First Day.

A preliminary popular meeting was held at 8 p. m. in the Arrow Theater, with the President, Dr. Charles Stuart Sheldon, presiding. Dr. Donly C. Hawley took the chair and Dr. Sheldon delivered the President's address.

The Latest Improvement in Medical Education.—Prevention.—Dr. Sheldon referred to the desirability of the establishment of a National Department of Health, reviewed the work in the Canal Zone carried on by Colonel Gorgas, and called attention to the results in the fight against malaria, typhoid fever, and tuberculosis. The study of the prevention of infant mortality was mentioned as a field in which until recently little thorough work had been done. To Dr. Helen C. Putnam he gave much credit for aggressive work in this line. The economic protection of the mother was shown to be of great importance since industrial conditions were factors in infant mortality. Compulsory medical school inspection and adequate playgrounds were favored. The speaker pointed out the intimate relation which the medical profession bore to public health.

Eugenics—The Science of Improving the Human Race by Better Parentage.—Dr. Henry B. Ward of Urbana, Ill., said that the determining factor in human evolution was to be found in the blood rather than in external conditions. Investigations showed that the classes of our population characterized by their effectiveness were not maintaining their present numbers, while the most undesirable classes, including defectives and degenerates, had markedly increased in the last fifty years. It was the purpose of eugenics to point out means by which the unfit may be eliminated. While in some States the propagation of criminals and degenerates was limited, Dr. Ward believed that marriage must be safeguarded by legislation regarding permits.

Saturday, June 24—Second Day.

Report of the Committee to Investigate the Teaching of Hygiene in Public Schools.—Dr. Helen C. Putnam of Rhode Island, Chairman of this Committee, reported that the year's study had been concentrated upon the following subjects: healthy parents, right customs and wholesome environment being essential factors in preventing infant mortality; the preparation of teachers to establish through the schools, better practices in hygiene and sanitation and more ideal parenthood. In the schools visited, there was need for standardization. The subject of the training and testing of janitors in sanitary care of school premises had been presented by the speaker before the National Education Association, under the title "Practical Applications of Biologic Science in School Administration." As a result a special committee had been appointed and had arranged a program on "Clean Schoolhouses" for the meeting in the present month in San Francisco. Matters under discussion were said to be methods of training and examining janitors in sanitary care of school premises, with a report of one existing course for janitors. Prosecutions of city governments for injury of children's health by unsanitary schools were said to have already occurred and it was suggested that these seemed as logical as similar action for accidents due to other municipal mismanagement.

Dr. C. D. Lockwood of Pasadena asked how Dr. Putnam would make the ideas suggested effective, and stated that in their own school board the county medical society had been requested to appoint a committee of five, to be known as the Sanitary Committee, its function being to cooperate with the Board of Education.

Dr. Andrew Stewart Lobingier of Los Angeles inquired whether the work might not be carried on under Civil Service direction.

Dr. Lockwood felt that a public sentiment must be created.

Dr. Albert Goldspohn of Chicago spoke of the necessity of the medical profession standing together upon legislative matters, no matter what their school.

Dr. Ray Lyman Wilbur of Palo Alto felt that many of the present hygienic rules were in reality decidedly antiquated and that a perfectly clear understanding of the present day rules was necessary.

Dr. F. M. Pottenger of Monrovia observed that doctors were about the poorest hygienists in the world.

Dr. Putnam in closing, said that while Civil Service was a step in the right direction, it was as yet of little value in the instances in which it was established. She referred to the claim made, that until parents prosecuted school authorities for injury to their children's health schools would not be what they ought to be.

Report of Committee for Teaching Preventive Medicine in Universities and Normal Schools.—Dr. Henry B. Hemenway of Evanston, Ill., presented this report which was read by Dr. McIntire. It was stated that while the importance of hygiene seemed to be fully recognized the responsibility was not always so clear in the minds of those in charge of school curricula. Preventive medicine he had found was not taught in the majority of medical schools. The present backwardness of legislation he attributed in a measure to the ignorance of legislators who had been taught in public schools. He thought it probable that the best mode of instruction would be that of a lecture course open to the entire student body.

Professor Henry B. Ward, Professor of Zoology, University of Illinois, attributed the neglect of this work to the absence of an organized plan, and the lack of demand for such a course. Reference was made incidentally to a textbook which had been prepared by Dr. Andrew Stewart Lobingier, a Fellow of the Academy, as a step in the right direction.

Dr. Edward Jackson of Denver said that in the University of Colorado a course in preventive medicine had been given and was well attended. With Dr. Ward he believed that universities could not be expected to display much interest until something definite had been presented.

Dr. Helen C. Putnam thought that possibly the demand for the teaching of hygiene in colleges and universities might be larger than generally supposed, since at the National Congress on School Hygiene, a resolution had been passed requesting universities and colleges to give such instruction and to require an examination in their entrance test. At the International Congress on Tuberculosis also a demand had been made that universities and colleges should prepare teachers for the public schools.

Report of the Seventh Annual Conference of the Council on Medical Education of the American Medical Association.—Dr. John L. Heffron presented this report which was read by Dr. McIntire. Reference was made to the general recognition that the standard long holding in European medical schools was one for which our civilization was now ready. That the control of medical education should be handed over to the State, as favored by some, did not seem to the writer desirable. So long as medicine was not an exact science, so long would dogmas arise.

Report of the Delegates to the Meeting of the Association of American Medical Colleges.—This report was prepared by Dr. Frederic Gerrish of Portland, Me., and read by Dr. James H. McBride. The writer said that his report was rather one of comment and review since the transactions of the association had already appeared in the journals. That it was wise to insist upon as rigid an apportionment of time as indicated in the curriculum was not clear. It was well known that two of the great schools paid no particular heed to the association's prescription, but since they were "valuable show pieces in the membership list" they were not disciplined. The movement for "whole-time" teachers had been aggressive, indeed to the extent of "ultramodernity," it would seem. That good might come from the proposed coöperation of the Association of American Medical Colleges, the Council on Medical Education, and the Confederations of State Boards of Registration of Physicians was clear to the writer, but doubt was expressed as to the wholesomeness of a combination of those bodies with the Carnegie Foundation, since its work hitherto had not been so clearly permeated with intelligence and actuated by a spirit of fairness as to awaken confidence in its future results.

Dr. Andrew Stewart Lobingier hoped that Dr. Gerrish's criticism of the Carnegie Foundation would not be understood as an expression of the opinion of the Academy.

Dr. Edward Jackson felt that the report was plainly understood to be individual and in no sense the report of the Academy. Admitting that the Flexner report might not be ideal he regarded it nevertheless as an exposure of the weak places in medical education in America likely to be highly beneficent in results.

Should One Expect More Than Mediocrity from the Medical Profession?—Dr. Francis M. Pottenger of Monrovia, Cal., read this paper. The author stated that while all professions and branches of business had their leaders and geniuses, it must be remembered that the great majority followed the leaders at a great distance. The author stated that the one thing which American physicians lacked in comparison with their English colleagues was a good preliminary training, not only in the branches underlying the foundation of medicine but in the foundation of medicine itself. No matter how high the entrance requirements, or how stringent the final examinations, many men, doomed to be failures in their chosen profession, would find their way into the ranks of medicine.

Dr. Donly C. Hawley of Burlington, Vt., said he believed the great majority of men entering the medical profession would render service of about the medium grade.

Dr. Boardman Reed felt that a man might be mediocre in one thing and quite gifted in another.

Dr. L. A. Carter emphasized the importance of the teaching of medical ethics in the medical colleges and emphasized the need of the young physician feeling the responsibility he assumed in taking up his profession.

Report of the Committee on Publishing Details of Suicides in the Public Press.—Dr. Henry B. Hemenway of Evanston, Ill., made this report which was read by Dr. Stuever. The statement was made that newspaper men claimed that it was the province of the papers to publish the news. The committee found that while alienists were practically unanimous in the opinion that the suggestive effect of the reading of details of suicides was a powerful causative factor in suicide among susceptible individuals, yet attempts at legislation were practically useless without a demand by the public. It was found that for each sex, occupations requiring physical activity were less prone to the act except in the case of soldiers and sailors. The writer suggested the advisability of confining pernicious news to a separate sheet of distinctly yellow color. A statistical study showed a continual increase in the death rate from suicide aggregating 60 per cent. in the nine years ending 1908. Not only was there this increase, but death by suicide constituted 1.2 per cent. of all deaths reported in 1909. Nationality had a bearing and geographically the crime was not uniformly distributed.

Neurotic Books and Newspapers as Factors in the Mortality of Suicide and Crime.—Dr. Edward Bunnell Phelps, editor of the *American Underwriter*, contributed a paper upon this topic which was read by Dr. Edward Jackson. Reference was made to the opinion of Dr. William Farr, the founder of vital statistics, that "some plan of discontinuing, by common consent, murder and bloodshed in the newspapers was well worthy the attention of their editors." Tabulations and specific illustrations of the suggestive influence of the press on suicide and crime were given.

The Press and Crimes Against the Person.—Frances Fenton, Ph.D., of Mt. Holyoke College, prepared this paper which was read by Dr. S. C. Buck of Grinnell, Iowa. It was claimed that the extent to which crimes against the person were due to suggestion from the press while not accurately measureable was indicated by the large percentage of published matter dealing with crime. Representative cases were given in which the matter contained in the newspapers was known to have incited to crime. The average percentage of news alone which, in the writer's opinion, should be withdrawn from the columns upon which she based her study was 23.02 for the highest and 7.94 for the lowest. The threat of the press to make the Church bill a dead letter should it become a law indicated the necessity of having judges of high quality and an educated public.

The Newspapers and Crime.—Dr. William S. Wadsworth of Philadelphia contributed this paper (by invitation) which was read by Dr. C. L. Lowman of Los Angeles. The author expressed his conviction that newspaper accounts of crime did have a pronounced influence upon the readers and instanced an epidemic of cyanide poisoning which was predicted to result from newspaper accounts that had appeared of a crime committed recently. A plea was made for the protection of those accidentally potential and the congenitally defective.

Sunday, June 25—Third Day.

Dr. L. Duncan Bulkley of New York in the Chair.

A conference was held in the First Methodist Church.

The Effect of the Medical Missionary on the "Sociology" of the Orient.

Present Magnitude of Altruistic Medical Effort in the Far Orient.—Dr. Charles McIntire of Easton presented this paper comparing the beginning of medical missions in China with the reports submitted to the Edinburgh Conference last year. Dr. Peter Parker in 1835 had opened an ohpthalmic hospital in Canton, securing the following day one patient. The Edinburgh reports showed that there were now 207 hospitals in China that treated 58,757 in-patients for the year. The study also showed that in Korea, Japan, the Chinese Empire, Siam and French Indo-China, the Dutch East Indies and India there were 716 missionary physicians, 410 hospitals, and 681 dispensaries. The work was regarded as claiming the in-

telligent and sympathetic coöperation of the profession at home.

The Medical Uplift in Burma.—Dr. ELMER S. CORSON of Bridgeton, N. J., formerly of Toungoo, Burma, contributed this paper which was also read by Dr McIntire. The paper stated that while the British Government, so far as her dependencies were concerned, had an efficient medical service in all centers of population, yet the vast agrarian population was practically without medical aid. Every large mission was said to maintain a large central boarding school. The mission school hospital in which those desiring might add a knowledge of medicine during their regular schooling was regarded as the main means at present for solving this vast problem. Socially the practical knowledge of medicine, though given in a desultory manner, had conferred incalculable benefits.

The Caroline A. Ladd Hospital, Presbyterian Mission, Pyengyang, Korea.—JAMES HUNTER WELLS, Surgeon in charge, and formerly of Portland, Ore., made this contribution. The paper was read by the President, Dr. Sheldon, and described the conditions at Pyengyang sixteen years ago at the time the author reached that city. He found a city of 50,000 people entirely without any scientific surgical aid. Some. of the Chinese methods in use at that time included the use of fat to increase one's weight, the use of deer bones to make legs that were stiff with rheumatism, agile like those of the deer. He had about a thousand patients a month. Tribute was paid to the splendid work of the Japanese in their handling of epidemic cases.

Necessity for Trained Workers.—Dr. MARY ELSIE CARELTON of Ming Chiang, China, Physician in Charge of the Dr. Nathan Silas Memorial Good Shepherd Hospital, in a paper read by Dr. Herbert E. House of the Canton Christian College, made a plea for a body of trained, qualified medical men and women. She stated that the only solution of the problem lay in medical colleges and nurses' training schools in China. The ideal was contemplated in the suggestion of the possibility of medical colleges in the United States offering free scholarships to Chinese boys and girls, or of groups of physicians assuming the support of a Chinese student in one of the medical institutions in China and the question was raised whether a nobler gift could be made than to return to these awakened needy people every eight or ten years one of their own people thoroughly prepared to enter the profession of medicine.

The Education of the Chinese in Western Medicine.—Dr. H. H. BOYD told of the need of sanitation in China and of the effort to fight the tuberculosis scourge there. Further, he outlined the work which was being done for the insane and the blind.

Monday, June 26—Third Day.

Contagious Diseases in Schools.—Dr. ERNEST BRYANT HOAG of Berkeley, Cal., in presenting this paper, which was read by Dr. Donly C. Hawley, outlined the work done at Berkeley in the prevention of contagious diseases The paper particularly emphasized the importance of accurately collecting data and exhibiting them as far as possible in a graphic form by means of charts and the plotting of curves.

Dr. HELEN C. PUTNAM referred to the common drinking cup as one of the readiest means of contagion. She felt it imperative that with compulsory school laws the utmost care must be taken to prevent injury to the health of the children by the room environment. Reference was made to legal action in a case in which the parents had no difficulty in proving to the court that the children's health had been injured by the unsanitary condition of the school.

Leartus Connor: An Appreciation.—Dr. JUSTIN E. EMERSON of Detroit presented this paper, which was read by Dr. Charles McIntire.

Monday, June 26—Fourth Day

Should There Be Two Degrees in Medicine? Memoranda in Absentia.—Dr. HELEN C. PUTNAM had addressed a number of educators upon this subject and read the replies, some of which favored a second degree and some not.

The Need of More Than One Degree in Medicine.—Dr. BOARDMAN REED in presenting this paper expressed his conviction that if the laity were better instructed in the elementary principles of hygiene and medicine, they would insist upon higher standards, and that if the medical colleges would maintain as high standards as was right, the establishment of one or two more degrees in medicine would promise well.

Should There Be Two Degrees in Medicine?—Dr. RAY LYMAN WILBUR, of the Department of Medicine, Stanford University, expressed the belief that efforts should be made to cause the medical degree to have a uniform and recognized merit. The givinig of a degree for rsearch work done after the attainment of a properly grounded medical education, however, was to be considered. The only proper basis for granting such degree should be high and uniform standards. The suggestion that if the academic yearning for labels were so strong that there must be a degree and a specially lined and colored and shaped gown and hood accompanying it, then it should be made a degree of real individuality, and based upon two years of fruitful research work done after the properly given doctor of medicine in some institution of learning.

Postgraduate Degrees in Medicine.—Dr. ANDREW STEWART LOBINGIER of Los Angeles said there must be entire reconstruction of undergraduate schools of medicine before there could be established effective postgraduate courses of medical study. The first efforts, he felt, should be directed to reducing the number of schools to one-tenth the present number. He regarded it as more consistent with the accredited value of these degrees if the bachelor's degree were granted in the undergraduate course and the doctorate in medicine granted for the completion of a course of postgraduate work leading up to the ultimate qualifications for the various specialties. If possible after taking his postgraduate degree, which should be a doctorate in his specialty, the student should spend two or three years at least as assistant to a master surgeon or other specialist before being licensed to practice his specialty.

Dr. CHARLES LYMAN GREENE of St. Paul regarded the adoption of the English system of giving a bachelor degree absolutely impractical in this country. The mistake had been made primarily in granting the doctor's degree which was not justified and now an attempt should be made to build up the schools to make good the bestowal of a M.D. degree. Postgraduate degrees, he believed, would come after the medical schools had been improved.

Dr. ARTHUR E. HERTZLER, Kansas City, felt that an urgent step was to eliminate the pseudo-specialist.

Dr. CHARLES D. LOCKWOOD said that the present course in the average medical school could not adequately develop the research worker. For him there should be special schools for this development. He felt that the good general practitioner was the product most needed.

Amendment of Constitution.—The Constitution of the Academy was amended so that hereafter the qualifications for membership shall be: "The Fellows shall be liberally educated physicians as interpreted by the rules formulated by the Council and adopted by the Academy."

Sixteen names were added to the Fellowship List.

Election of Officers.—The following officers were elected: *President*, Dr. Alexander R. Craig, Chicago, Ill.;

Secretary, Dr. Charles McIntire, Easton; First *Vice-President,* Dr. W. Blair Stuart, Atlantic City; *Second Vice-President,* Dr. Albert Goldspohn, Chicago; *Third Vice-President,* Dr. Ray Lyman Wilbur, Palto Alto; *Fourth Vice-President,* Dr. Arthur E. Hertzler, Kansas City.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held May 16, 1911.

DR. H. S. PATTERSON IN THE CHAIR.

THE evening was devoted to contributions from the medical wards and pathological laboratories of St. Luke's Hospital.

Further Reports on the Treatment of Typhoid Fever with Vaccine.—Dr. AUSTIN W. HOLLIS made this report. He said that last year he had reported eleven cases of typhoid fever treated at St. Luke's Hospital with vaccine, and compared these with a number treated during the same season with hydrotherapy. Aside from a larger number of relapses these cases presented a highly encouraging comparison. The present report comprised 40 cases which Dr. Hollis had observed during his service at St. Luke's. The average duration of the fever in the series was thirty-two days. Relapses occurred in 12 per cent. of the cases. Two cases died, making the mortality 5 per cent. The Widal reaction was positive in 90 per cent., and the blood culture was positive in 32 per cent. There were no hemorrhages, no complications and no perforations, except one case of phlebitis. The two fatal cases were beyond medical aid when admitted and received only a few doses of vaccine. They had used the same method that was used in the cases last year. The initial dose of fifty million dead typhoid bacilli was given as early as possible and repeated every other day. In the majority of cases as soon as the temperature showed a lower average the dose was increased by fifty million at each injection. The injection was given in the back of the upper arm; as a rule smarting followed the injection. Often there was a slight swelling or erythema but no marked local reaction. There never appeared to be any constitutional reaction. The proof of the mode of action of the bacterial vaccines in increasing the opsonins causing phagocytosis had been demonstrated by Sir A. E. Wright, who first proposed their use in the treatment of disease. During the course of their use in typhoid fever they had obtained evidence of markedly increased agglutination as shown by the Widal reaction. In one case the administration of typhoid vaccine after a fever lasting sixty-seven days was followed by the appearance of the Widal reaction. In a case of Hodgkin's disease with long-continued fever and no sign but a moderately enlarged spleen, after using typhoid vaccine the blood showed a positive Widal reaction. As a rule a pronounced fall in temperature was seldom seen sooner than one week after the use of the vaccine although it was very common to note a moderate drop in temperature within forty-eight hours after its injection. The series of cases showed nothing very striking in the duration of the fever but the low mortality and absence of complications, especially hemorrhages, encouraged them to continue this treatment. The mortality of typhoid fever in the New York Hospitals was generally over 10 per cent. Dr. James G. Callison reported 303 cases before the Medical Association of the Greater City of New York at the meeting on May 15 with a mortality of 5 per cent. and 5½ per cent. relapsed. The medical profession had been most faithful to the Brand method, but after twenty years' experience with it Dr. Hollis said he would be glad to give it up. The injections of vaccine were continued for ten days after the temperature had become normal. He did not use a larger dose than fifty million and if the fever continued over twenty-five days he advised dropping the vaccine if it had been used early in the disease.

Dr. ALFRED MEYER asked Dr. Hollis the number of cases that had been treated with vaccines.

Dr. HOLLIS replied that during the past year eleven cases of typhoid fever had been treated and without a death. His present report comprised forty cases with a mortality of 5 per cent.

Dr. ALFRED MEYER thought that it might be interesting for the members of the Section to know that at Mt. Sinai Hospital a committee had been appointed to consider the question of the feasibility of introducing this method of immunization. No suggestion had been made as to the duration or the extent of the immunization. It was also interesting to note that one of the workers in the laboratory accidentally sucked up with a pipette living typhoid bacteria. Various remedies were employed including lemon juice. Five hundred million of dead typhoid bacilli were used, but the patient developed typhoid afterwards. He belonged to a family who were prone to this disease.

An Unusual Case of Intermittent Febrile Hodgkin's Disease.—Dr. HOLLIS reported this case. The patient, a man thirty-one years of age, entered St. Luke's Hospital September 5, 1910, with a history of fever and progressive loss of flesh and strength extending over a period of one year. It was supposed that he had incipient tuberculosis and he had spent a part of the year at Loomis Sanatorium. He was a civil engineer and had been in this part of the country mostly in wet swampy districts. He took a glass of beer occasionally and had smoked to excess before the onset of his illness. At the time of his admission he was moderately prostrated and markedly emaciated. The heart appeared normal in size at the apex, and over the pulmonic area there was a soft systolic murmur. The action was regular, rapid, and forcible. The lungs showed moderate dullness at both apices. At the right apex, just below the spine of the scapula, were a few subcrepitant râles. The abdomen was scaphoid; the spleen descended about two fingers below the free border on inspiration. The right kidney could easily be felt. The temperature ranged between 102° and 104.8° F., the pulse was about one hundred, and respirations twenty to thirty-two. The blood count showed 3,300,000 red blood cells, with 35 per cent. hemoglobin; white blood cells, 3400; polymorphonuclears 46 per cent., and leucocytes 54 per cent. The blood count taken a short time after admission showed what appeared to be a short-chained streptococcus, and from this an autogenous vaccine was prepared and the patient received increasing doses with what appeared to be excellent results. His temperature came down and remained there for three weeks, when without any apparent cause it jumped to 103° and thereafter remained above normal, ranging between 100° and 104°. The course of the disease was uneventful and marked only by progressive asthenia, anemia, and emaciation, finally ending fatally three and one-half months after admission. While the present case was under observation for only a part of the course of the disease, there were apparently three periods of pyrexia, and two of apyrexia, the first of about a month, the second lasting almost three weeks. The second unusual phase of this case was the distribution of the glandular involvement. At no time in the course of the disease was there any enlargement of lymph nodes palpable, and at no time was there any enlargement of the deeper nodes, either by direct evidence, or by secondary pressure signs. There was no sign of any pressure on any nerve or upon the larynx, trachea, bronchi, or esophagus, nor was there any dyspnea or dysphagia. There was never any edema nor was there evidence of ascites. There had been cases of Hodgkin's reported in which the deep glands were the only ones involved, but they seemed quite regularly, especially in the later stages of the disease, to have given secondary

signs of pressure. The blood findings were interesting in that in spite of fever there was a gain in red blood cells and hemoglobin. The digestive ability was always good. Leukopenia was a marked and constant feature, the leucocytes were never higher than 6,500; the polynuclears and lymphocytes were variable though in normal range proportions; eosinophiles were not present. A few weeks before the death of the patient, Dr. S. W. Lambert suggested the possibility of Ebstein's variety of Hodgkin's disease, but prominent clinicians were quite in doubt as to the true conditions up to the time of his death. In the two cases that Dr. Hollis had seen, this one and another, periods of pyrexia and apyrexia alternated; in neither case were the superficial lymphatic glands implicated, but moderate splenic enlargement with some involvement of the abdominal and thoracic glands was a feature in both cases. He found no case reported of the typical variety of Hodgkin's disease which ran the striking temperature course of these two cases, yet because splenic enlargement and glandular involvement was always present they must, until pathology or bacteriology could demonstrate the specific difference or microbic cause, continue to classify such cases as a peculiar variety of Hodgkin's disease. The gross pathological findings at autopsy were a spleen more than twice the normal size which showed on cross section numerous whitish nodes hardly any larger than an almond; a very few similar but smaller nodes were found in the liver; and there were a number of very definitely enlarged mesenteric and bronchial glands.

A Case of Leontiasis Ossia.—Dr. KARL M. VOGEL made his report demonstrating his case with lantern slides (see page 214).

Dissecting Aneurysm of the Aorta and Ruptured Thoracic Aneurysm.—Dr. J. G. HOPKINS made this pathological report. The autopsy was performed the day after death. The anterior portion of the left pleural cavity was found filled with blood clot which extended about the root of the lung and up over the apex, amounting to 600 c.c. in volume. From a line running down about the middle axilla, backward, the lung was firmly bound down to the chest wall with a mesh of fibrin two cm. or more thick, which was saturated with a turbid yellow fluid. In the left upper quadrant of the abdomen a large mass was felt retroperitoneally above the left kidney. As no definite boundaries to this mass could be made out the organs were removed *en masse*. On section this mass was found to lie behind the posterior portion of the diaphragm and to consist of a large false aneurysm lying between the diaphragm and the diaphragmatic pleura. This had ruptured upward into the pleural cavity. The aneurysm opened laterally from the aorta by a huge gap measuring five cm. vertically and one cm. anteroposteriorly. The remnants of the arterial wall could be traced out for a distance of three or four cm. into the wall of the sac. Beyond this it was bound down by dense connective tissue and for the most part was filled with firm thrombus. It extended laterally 11 cm. and measured 11 cm. vertically and 5 cm. antero-posteriorly. The aorta also presented two other aneurysms. In the ascending aorta occupying the region of the fourth sinus was a small fusiform dilatation measuring 5.5 cm. in diameter. Beyond this the aorta narrowed greatly and at the isthmus measured three cm. in diameter, as did the descending aorta. Eleven cm. below the origin of the left innominate there was a small opening in the left wall of the aorta through which a probe could be passed into the sac of a huge dissecting aneurysm. This measured two cm. in average diameter and extended about two cm. above the opening into the main vessel. A short distance below this it branched, one branch communicating by a small opening with the neck of the ruptured aneurysm above described, the other passing posteriorly to the neck of this aneurysm and ending blindly a little below the level of the celiac axis, making the total length of the sac thirteen cm. The lower portion of the blind sac was filled with a firm thrombus. The upper portion of the lumen was free, and the wall smooth and glistening with numerous atheromatous plaques. Microscopically it was lined with epithelium. The aorta showed most extreme endarteritis. The changes were much more marked than was usual in cases of aneurysm. The orifice of the celiac axis which lay a little below the main aneurysm was restricted to a diameter of 2.5 mm., while the superior mesenteric just below this was dilated to 7 mm. across. The right renal was very large, while the left renal was much contracted; the suprarenal on this side being unusually large. These vessels beyond their origin showed little evidence of disease. The heart was hypertrophied and the myocardium showed very slight evidence of fibrosis. The aortic ring was thick and calcareous, but not appreciably dilated. The descending thoracic aorta was rather less frequently the seat of aneurysms than were other portions of the vessel, and this precise situation between the pleura and the diaphragm seemed rather unusual and Dr. Hopkins had been unable to find any recorded cases.

Anatomical Study of a Thoracopagus Fetus.—Dr. J. R. PAULING presented this specimen, which was one of identical or homologous twins, *i. e.*, having developed in a single amniotic sac and having resulted probably from a single ovum. Double monsters might be classified into two classes: First, those showing decidedly unequal development, and, second, those showing practically equal development. The specimen under consideration belonged to this latter class and might be termed an equal monosymmetrical thoracopagus. The thoracopagus was not really exact because the union in this case included not only the thorax but the upper part of the abdomen as well, for it would be noticed from the photograph taken before dissection that the cord sprung from the under surface of the bond of union. This same picture showed a double thumb. The development of these twins was that of a four months fetus. In order to show the relations of the viscera, one side of the specimen was removed completely. In dissecting up the skin the recti muscles were exposed and found to extend from the lower ribs downward and outward to each pubis. By making translucent that portion of the chest wall removed, they found that, instead of the sternum of each side coming in contact face to face, each sternum had split; that was, the front and the back of the specimen formed a separate sternum. The thorax, therefore, was common; it contained a single pericardium inclosing one heart having five chambers. The apex of the heart, as they looked at the specimen, pointed directly forward. The long axis of the heart was in a horizontal plane. Two aortæ left the two left ventricles, the arch in each fetus taking the normal direction. Two inferior venæ cavæ pierced the diaphragm and entered a common right auricle. This was continuous with a common left auricle. Into this common chamber entered also a pulmonary vein from the right fetus. The pulmonary artery of the left fetus appeared to be represented only by a fibrous cord, which extended to the root of the aorta, there being no right ventricle for that fetus, so that its lungs received blood only from its aorta by way of the ductus arteriosus. The course taken by the blood seemed to be as follows: Entering the common right auricle by the inferior and superior venæ cavæ, it reached the common left auricles, and thence to the two left ventricles and the two aortæ to the arterial system, but also partly back to the lungs through the ductus arteriosus of each fetus. Some left the common right auricle to enter the single right ventricle, then through the pulmonary artery of the right fetus to the lungs on that side. The lungs showed the usual divisions into lobes. The left lung of the right

fetus presented a cardiac incisure, which received the apex of the heart. The left lung of the left fetus was abnormal, in that a lobe hooked over the aorta and there was a groove accommodating the left superior vena cava which ran down between the outer surface of the left lung and the chest wall. The diaphragm was single and arched over a single liver. The upper part of the liver had a shallow groove in the median line from which a thin fibrous partition extended to the abdominal wall. The umbilical vein was single and entered the liver through a deep notch situated at about the center of this front surface. Above and below this the liver was continuous across. At each side of this there was a deep cut as if to represent what would have been an umbilical fissure in each liver. The umbilical vein followed into the substance of the liver, but the right branch also connected by a distinct vessel with the right inferior vena cava, this connection being a ductus venosus. The intestinal tract was very interesting. As the abdominal wall was opened a small pointed pouch about 0.5 cm. long was seen adherent to the inner surface of the cord. It was the remnant of the vitelline duct, or a Meckel's diverticulum. It opened into a horizontal loop of gut and was located at a Y-shaped junction formed by what they might call a common jejunum meeting the two ilea. Below this point each fetus had its own intestinal tract. Following upward this common jejunum they found that it continued single almost up to the stomach, where it joined a horizontal loop of gut made up of the two short duodena. The viability of such a monster seemed very unlikely even if it could have been delivered at term. Dr. Pawling discussed the underlying causes of the production of such monsters and stated that the evidence seemed to point to an external causation and to no inherent condition in the ovum or sperm. He had collected thirty-three cases of pathological ova and found that they could be classified into three groups: 1. In the first group of eleven cases a severe hemorrhage for several days preceded abortion; 2. This group of twelve specimens were abortions from newly married women or relatively sterile women; 3. This group of ten specimens were from women who had given birth to a number of healthy children and then began to abort, often two or three times. The specimen presented belonged to the third group.

A New Method of Diagnosis of Acute Intestinal Obstruction by the Stomach Tube.—Dr. HARRY G. WATSON presented this paper. He said that it was a sad commentary on the practice of medicine when it was learned that the mortality in cases of acute intestinal obstruction was nearly 50 per cent., and that this was mainly due to procrastination. In every case of acute intestinal obstruction "He who hesitates is lost." The diagnosis of acute intestinal obstruction was difficult. Among other conditions which were similar the most important was acute peritonitis. In acute peritonitis they usually had high fever, 102° to 104° F., marked distention, and rigidity of the abdomen, vomiting appearing early but more frequently in strangulation. The attitude of the patient was quiet in peritonitis, very restless in acute obstruction; in acute obstruction the temperature was normal or subnormal. The vomit soon became fecal and there was complete constipation. In peritonitis there was some movement. As a rule in acute obstruction peristalsis could be seen, and there was usually some gurgling. Some other confusing conditions which might be taken for acute intestinal obstruction were hepatic colic with gallstone history, nephritic colic, twisting of a pedicle of an ovarian cyst, and volvulus of the sigmoid. A careful history, pelvic examination, or finding blood in the urine would help clear up the diagnosis in these cases. Vomiting was one of the constant and most important signs in intestinal obstruction and the study of the vomit in every case of acute abdominal disorder was vital. They first got the ordinary stomach contents, later becoming greenish, mixed with bile, and later still a dark brown fluid with a fecal odor. This was a most important sign. If the obstruction was high up in the duodenum fecal vomiting might not be so marked. If the obstruction was in the ileum, fecal vomiting was present earlier, and the distention was more marked. The vomitus was frequently disposed of before the physician arrived and the patient could not vomit just when desired, hence as an aid to diagnosis in these acute abdominal disorders the stomach tube should be passed from hour to hour and the contents carefully noted. If they were of a dark brown color with fecal odor, ruling out peritonitis and other acute conditions mentioned before, then a definite diagnosis of acute intestinal obstruction could be made and immediate operation should be advised.

Brill's Symptom-Complex, Typhus, and Manchurian Typhus.—Dr. G. A. FRIEDMAN read this paper. He said that Dr. Brill had described a disease, infectious, of unknown origin and unknown pathology, characterized by an incubation period of four or five days, a period of continuous fever, accompanied by intense headache, apathy, and prostration, a profuse and extensive erythematous maculopapular eruption, all of about two weeks' duration, whereupon the fever abruptly ceased either by crisis within a few hours or by rapid lysis within three days, when all symptoms disappeared. Brill was right in stating that this disease was often taken by New York physicians for typhoid and this interpretation was incorrect. Neither did the disease in question have anything in common with the group of paratyphoid diseases, as was confirmed by the agglutination reaction in both instances. Brill in differentiating his symptom-complex from typhus fever said: "If it had been proved that typhus fever had lost its virulence, that it was constantly present in a community, that it was not communicable, that when it was present epidemics of it did not occur, and that it was no longer a grave and fatal disease, then the resemblance of the symptom-complex to this malady might be admitted." But Brill thought that with the description of typhus as the "great masters" had taught it and as he had seen it such a conception would be unjustifiable. Brill had failed to acquaint his readers with the view of modern or recent authors who had observed cases of typhus fever while possessing all the advantages of medical progress in differentiating other diseases from them, advantages which were absent in the times of "the great masters of medicine." The writer was in active practice in western Russia for six years, during which time he had the chance to observe three epidemics of typhus fever and constantly saw sporadic cases of the disease. The more the writer read Brill's descriptions, the oftener he listened to discussions of the theme, the more inclined he became to identify Brill's disease with typhus fever. The fairly sudden onset of the affection, the fever curve, the duration of the illness, its termination, the nature of the eruption, the time of its occurrence, the intense headache, the relatively frequent occurrence of herpes labialis, the rapid convalescence, the occurrence of the disease in patients who had previously had typhoid fever, the frequent enlargement of the spleen, the complications involving the respiratory tract, all these the writer had seen in authentic cases of typhus fever occurring during epidemics and independently of them. Brill emphasized the intense headache which dominated the clinical picture; other observers dealing with typhus fever had laid stress on this point. To the writer this was one of the most striking features of typhus fever as he had observed it. In regard to the skin eruption the writer had seen cases of the maculopapular type, but likewise other cases showing a roseola and petechiæ, or petechiæ alone, or roseola

alone. Intestinal complications such as frequently occurred in typhoid fever had not come under the author's observation. Brill had stated that typhus fever did not occur in the summer, but this statement was only partially correct; whenever there was an epidemic in the winter sporadic cases occurred the following summer. The writer had seen a repetition of typhus in the same individual. Typhus was endemic in many districts of Russia, so that sporadic cases were of constant occurrence there. In many other districts where hygienic conditions were very favorable typhus fever was but little known, and if sporadic cases did occur they were of mild character. When sporadic cases running a mild course occurred in large cities they were usually not recognized, or were designated as "uncertain kinds of typhus." Typhus was also endemic in other countries. Virchow assumed that the endemic typhus of the Slav led to the epidemic outbreak in Berlin in 1867-68. In Edinburgh typhus was practically endemic at one time. In Ireland, Italy, and Bohemia the affection was likewise said to be endemic. De Arellane stated that typhus fever was not endemic in the capital of Mexico, but was always present in a very extensive zone in the Republic. An epidemic in Edinburgh in 1899 proved that after eighteen years of immunity an epidemic might occur. From numerous similar instances they might conclude that in a community typhus might be present for a long time without leading to an epidemic. Dr. Friedman reviewed the history of the epidemics of typhus in New York City and stated that the mortality of typhus epidemics had considerably decreased through improved hygienic conditions and modern sanitation. The mortality of typhus fever in hospitals and private houses was not appalling, ranging from 6 to 9 per cent. In his sporadic cases there was rarely a death. Dillingham gave a description of "so-called typical cases" of typhus and if they were carefully analyzed and compared with Brill's cases the identity would be apparent. The fact that mostly Hebrews were affected among Brill's cases must be remembered; this race was usually but mildly affected by typhus. The same had been shown to be true of the Arabs. Time alone would decide the question of properly classifying the symptom complex so ably observed and described by Brill. In the meantime it did not seem to the author to be the part of wisdom to retain his nomenclature of a "disease of unknown origin," but rather call it New York typhus, just as the typhus of Pekin and of Manchuria had been named. This would go far in calling the attention of physicians to the clinical picture concerned and, moreover, not connote something surely rare and unusual. The name typhus need cause no panic for it was no longer equivalent to the terrifying news "*Hannibal ante Portas.*" Modern conditions had robbed this scourge of much of its terror.

Dr. Nathan E. Brill and Dr. E. Libman discussed this paper. The discussion was closed by the essayist.

THE ALUMNI ASSOCIATION OF THE ST. JOHN'S GUILD HOSPITALS FOR SICK CHILDREN.

Stated Meeting Held April 15, 1911.

Dr. Medwin Leale, President, in the Chair.

Arthrodesis in Infantile Paralysis.—Dr. Benjamin P. Farrell of New York, read this paper. He said that his object was to describe the operation as performed at the New York Orthopedic Hospital. In 1905 following the publication of Albert's article they attempted to stiffen the ankle-joint by denuding the articular surfaces of the astragalus, tibia, and fibula of their cartilages through an anterior incision. These cases failed to give bony union, as the denuded surfaces could not be brought into close contact. Whitman's method of astragalectomy was more satisfactory. Later seven cases were operated upon with fair success. In 1908 Jones first published in the *American Journal of Orthopedic Surgery* his operation for stiffening the ankle-joint. Since that time his method has been used in a large number of cases with success. In varus and valgus perfect results have been obtained through arthrodesis between the astragulus and scaphoid, internal and cuneiform os calcis and cuboid. It has been found that the age limit for the operations should be ten or eleven instead of eight years, as Jones advised. Since 1909 Hibbs' operation for stiffening the knee-joint as described in the *Annals of Surgery*, March, 1911, had been successfully employed. The class of cases in which this operation was indicated were those which had lost control of the knee by complete paralysis of the quadriceps. They otherwise would be doomed to a life of cumbersome braces with their attending discomfort and expense.

The O'Dwyer Forcible Respiration Apparatus for Children.—Dr. Joseph O'Dwyer presented this paper. (See page 576.)

Dr. Edwin Leale said that in asphyxia neonatorum so long as the heart continued to beat there was hope for resuscitation. The best way to accomplish artificial respiration was to pass a catheter directly into the larynx, and by this means to inflate the lungs. The old mouth-to-mouth inflation was defective in that it succeeded more in inflating the esophagus and stomach than the lungs. Dr. O'Dwyer's apparatus was simple and effective. The nozzle of the instrument for the ingress and egress of air firmly tamponed the upper aperture of the larynx and closure of the nostrils was not required. This instrument was particularly useful in those forms of asphyxia in which the reflexes had been abolished and in which other simpler means had failed. If they had not been abolished a dash of cold water, immersion in hot water, passing the finger into the anus, or one of the old forms of artificial respiration, preferably that of Schultz, might be successful. In a vigorous infant where there were a blue skin and a bounding pulse, evidences of venous engorgment, the asphyxia might be relieved by allowing a few tablespoonfuls of blood to flow from the cord. If shock were present nothing was of more service than immersion of the body in water at 100 to 105° F. As a last resort, when the heart has ceased to beat, direct compression of the heart against the thorax by the fingers of the left hand through the flaccid abdominal wall might be given a trial.

Dr. W. M. Hartshorn spoke of the use of the O'Dwyer apparatus in cases of asphyxia following overdoses of morphine. He referred to a case requiring artificial respiration for twelve hours, in which such an apparatus would have been of value.

Laparotomy in Irreducible Retroversion of the Gravid Uterus.—Goullioud states that in case of the early discovery of retroversion of the uterus in pregnancy the reduction may be easily accomplished by the use of a Hodge pessary, which will maintain the uterus in its natural position. Later this becomes impossible, and the author introduces two fingers of the right hand into the vagina and reaches upward toward the promontory, crowding before him the fundus. When it rises it is pushed forward and the fundus assisted by the left hand in falling forward. In some cases assistance may be given by the inflated rubber baloon of Gariel. When incarceration has occurred and cystitis with retention of urine is present, constipation absolute, with pain in the pelvis and edema of the vagina and vulva, some operative interference is the only course that will prevent death from gangrene of the neck of the bladder compressed against the pubic bones. In some cases laparotomy and fixation of the uterus to the abdomen may be done without interruption of the pregnancy taking place. The chief obstacles to reduction are adhesions—the result of perimetritis or parametritis— and bands of congenital origin.—*Annales de Gynécologie et D'Obstetriques.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE. Vol. IV, No. 6. 96 pages; paper; illustrated; price 7/6. Longmans, Green & Co., London, New York, Calcutta, and Bombay, Publishers.

DISEASE IN BONE AND ITS DETECTION BY THE *X*-RAYS. By EDWARD W. H. SHENTON, M.R.C.S. (Eng.), L.R.C.P. (Lond.). 68 pages; illustrated; cloth; price $1.60 net. The Macmillan Company, New York, Publishers.

GOLDEN RULES OF PEDIATRICS. Second Edition. By JOHN ZAHORSKY, A.B., M.D. 284 pages; cloth; price $2.50 net. C. V. Mosby Co., St. Louis, Publishers.

STEDMAN'S MEDICAL DICTIONARY. By THOMAS LATHROP STEDMAN, A.M., M.D. 1,000 pages; illustrated; leather; price, thumb-indexed, $5.00; plain, $4.50. William Wood & Co., New York, Publishers.

STRUCTURE AND FUNCTIONS OF THE BODY. By ANNETTE FISKE, A.M. 221 pages; illustrated; cloth; price $1.25 net. W. B. Saunders Company, Philadelphia, Pa., Publishers.

SPIROCHÆTES. By W. CECIL BOSANQUET, M.D. 152 pages; illustrated; cloth; price $2.50 net. W. B. Saunders Company, Philadelphia, Publishers.

YELLOW FEVER AND ITS PREVENTION. By Sir RUBERT BOYCE, F.R.S. 380 pages; illustrated; cloth; price $3.50 net. E. P. Dutton & Co., New York, Publishers.

KOMPENDIUM DER RÖNTGENDIAGNOSTIK FÜR STUDIERENDE UND PRAKTISCHE ÄRZTE. By Dr. EDGAR RUEDIGER. 80 pages; paper; illustrated; price 3.60 M. Curt Kabitzsch, Publisher, Würzburg.

HYMN TO HYGEIA. By JOHN C. HEMMETER, M.D., Ph.D., LL.D. English and German Text. Words and Music. Price: Score, $1.00 net; Parts, $0.50 net. Carl Fisher, New York, Publisher.

KURSUS DER NORMALEN HISTOLOGIE. By RUDOLPH KRAUSE, Berlin. 428 pages; paper. Urban & Schwarzenberg, Berlin, 1911.

HAUTKRANKHEITEN SEXUELLEN URSPRUNGS BEI FRAUEN. By Dr. OSKAR SCHEUFR. 203 pages; paper. Urban & Schwarzenberg, Berlin, 1911.

LEHRBUCH DER AUGENHEILKUNDE IN DER FORM KLINISCHER BESPRECHUNGEN. By Dr PAUL ROMER. 1028 pages; paper. Urban & Schwarzenberg, Berlin, 1911.

DIE PERORALE INTUBATION. By Dr. FRANZ KUHN. 162 pages; paper. Verlag Von S. Karger, Berlin, Germany.

UEBER WERNICKES EINFLUSS AUF DIE KLINISCHE PSYCHIATRIE. By Prof. Dr. H. LIEPMANN. 37 pages; paper. Verlag Von S. Karger, Berlin, Germany.

LEITFADEN DER AKUSTIK FÜR OHRENARZTE. By Dr. M. TH. EDELMANN. 118 pages; paper. Verlag Von S. Karger, Berlin, Germany.

DIE SYPHILIS IM LICHTE DER MODERNEN FORSCHUNG MIT BESONDERER BERUCKSICHTIGUNG IHRES EINFLUSSES AUF GEBURTSHÜLFE UND GYNÄKOLOGIE. By Dr. FRANZ WEBER. 128 pages; paper. Verlag Von S. Karger, Berlin, Germany.

CLINIQUE CHIRURGICALE. By Prof. O. Laurent, Bruxelles. 1424 pages; cloth; third edition O. Doin et Fils, Paris, 1911.

DIE EROFFNUNG DER SCHADELHOHLE UND FREILEGUNG DES GEHIRNS VON DEN NEBENHOHLEN DER NASE AUS. By Prof. Dr. A. ONODI. 53 pages; paper. Paper, 8 M.; cloth, 9 M. Würzburg Curt Kabitzsch (A. Stuber's Verlag), 1911.

HYGIENE DE L'ALIMENTATION. 4th Edition. By Dr. J. LAUMONIER. 348 pages; cloth. Librairie Felix Alcan, Paris.

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. REPRINTS, VOL. XII. Published by The Rockefeller Institute for Medical Research, New York.

FOLIA GYNÆCOLOGICA. Vol. V. No. 2, 1911. Edited by Prof. I. CLIVIO (Pavia). 425 pages; paper.

MEDICAL DISEASES OF CHILDREN. By Dr. REGINALD MILLER. 541 pages; cloth; price $4.00 net. Wm. Wood & Co.

SURGERY OF DISEASES OF THE APPENDIX. By WILLIAM HENRY BATTLE, F.R.C.S., and EDRED M. CORNER, M.A., M.D., M.C., F.R.C.S. 291 pages; cloth; price $3.00 net. Wm. Wood & Co.

LATERAL CURVATURE OF THE SPINE AND FLAT-FOOT. By J. S. KELLETT SMITH, F.R.C.S., England. 137 pages; cloth; price $2.00 net. Wm. Wood & Co.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended September 9, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	415	160
Diphtheria	146	11
Measles	81	4
Scarlet Fever	41	2
Smallpox	—	—
Varicella	4	—
Typhoid Fever	136	16
Whooping Cough	23	5
Cerebrospinal Meningitis	7	5
Malarial Fever	—	
Totals	853	203

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended September 8, 1911:

CHOLERA.

Places.	Date.	Cases.	Deaths.
Bulgaria: Varna	July 4	1	*1
France: Marseilles	Aug. 21-31	9	†6
India: Calcutta	July 2-8	..	21
Madras	July 16-22	1	1
Negapatam	June 11-July 1	..	32
Rangoon	June 1-30	15	11
Italy		..	‡..
Provinces—Genoa	Aug. 13-19	81	35
Genoa	Aug. 13-19	53	34
Leghorn	Aug. 13-19	150	65
Naples	Aug. 13-19	135	67
Naples, city	Aug. 13-19	66	14
Sicily	Aug. 13-19	..	**..
Palermo	Aug. 13-19	42	20
Palermo	Aug. 13-19	126	45
Java: Batavia	July 9-15	14	8
Spain: Tarragona	Aug. 30	..	††..
Straits Settlements: Penang	July 2-15	6	5
Singapore	July 2-8	6	9
Turkey: Constantinople	July 1-31	50	‡‡24
Turkey in Asia: Bagdad Vilayet	May 29-July 30	124	***114
Basra Vilayet	June 8-July 29	76	49
Beirut	Aug. 21	..	†††..
Samsoun	July 24-30	2	2
Smyrna	July 24-30	27	‡‡‡18
At sea	July 25	..	****..

*From Asia Minor via Constantinople.[1]
†Aug. 1-31: Cases 30, deaths 13.
‡Total for Italy, Aug. 13-19: Cases 1,604, deaths 636. Continental Italy outside of Naples Province: Cases, 851, deaths 292.
**Outside of Palermo Province: Cases 100, deaths 64
††Present in vicinity.
‡‡And vicinity.
***New outbreak.
†††Present among pilgrims.
‡‡‡And vicinity.
****One case from S. S. *Zar Nicolaus* from Algiers.[2]

[1]From the *Veröffentlichungen des Kaiserlichen Gesundheitsamtes*, Aug. 16, 1911.
[2]From the *Veröffentlichungen des Kaiserlichen Gesundheitsamtes*, Aug. 2, 1911.

YELLOW FEVER.

Brazil: Manaos	Aug. 31	2	..
Ecuador: Babahoya	July 16-31	1	1
Calaroma	July 16-31	1	1
Guayaquil	July 16-31	4	1
Milagro	July 16-31	1	3

PLAGUE.

Brazil: Rio de Janeiro	July 16-29	2	*..
Chile: Arica	June 28	4	3
Iquique	July 16-29	3	1
China: Kulangsu	July 9-22	..	2
Ecuador: Guayaquil	July 16-31	10	4
India: Bahrein Island	June 26-July 9	110	†110
Bombay	July 16-22	30	22
Calcutta	July 2-8	..	47
Kurrachee	July 16-22	3	3
Rangoon	June 1-30	309	291
Morocco: Mazagan	July 13	..	‡..
Peru: Departments—			
Arequipa—Mollendo	June 30	1	..
Callao—Callao	July 21-24	3	1
Libertad—Santa	June 18-July 1	2	..
Trujillo	June 18-July 1	1	1
Lima—Lima	June 18-July 1	10	3
Russia: Odessa	July 30-Aug. 3	3	1
Kirghis Steppe—Kjuhekudik	July 15	5	**4
Turkey: Beirut	Aug. 21	..	††..

*Aug. 28, 4 cases.
†In the Persian Gulf.
‡Present among the Doukala, 5 hours distant.
**Pneumonic.
††Present among pilgrims.

SMALLPOX.

Algeria: Departments—			
Algiers	Mar. 1-May 31	7	..
Constantine	Mar. 1-May 31	74	..
Brazil: Para	Aug. 1-5	2	..
Rio de Janeiro	July 9-29	5	..

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Original Articles.

ON THE VALUE OF RADIUM TREATMENT IN CANCER OF THE DIGESTIVE TRACT.*

By MAX EINHORN, M.D.,

NEW YORK,

PROFESSOR OF INTERNAL MEDICINE AT THE NEW YORK POSTGRADUATE MEDICAL SCHOOL.

As yet no specific against cancer has been discovered. Localized foci of this affection can, if recognized sufficiently early, be removed surgically and can at times be successfully cured. The clinician must, therefore, strive to make the diagnosis of malignancy early. This, however, is not always possible in the digestive tract. Frequently enough we are confronted with conditions that render operation impracticable. For these cases the radium treatment appears to me to have a great future.

Seven years ago I [1] had already written upon this subject. In cancer of the esophagus I[2] have frequently obtained good palliative results: the strictures became less narrow and the patient could take food and lead an endurable existence. This I have often seen.

In the present paper I would like, first, to say a few words about the instruments used for the radium application in the digestive tract, and then discuss the value of this method in the treatment of cancer of the stomach, pylorus, and rectum.

Technique.—Since radium must be applied for some length of time, it is important to construct the instrument in such a manner that it should not annoy the patient. As an improvement on my former efforts I consider the radium holder with whalebone stem (see Fig. 1).

Its handling is simple and its application not disagreeable to the patient. The instrument is suitable for the treatment of cancer of the esophagus and stomach. Whereas, however, in the esophagus the radium can easily be applied at the desired spot, thus exerting a powerful action upon the part affected, this cannot be accomplished in cancer of the stomach. Here the radium cannot be applied always in the most effective manner. If the cancer is at the pylorus, it causes grave early symptoms through narrowing of the canal and limitation of the food supply. If, as in the esophagus, we could apply the radium exactly to the affected spot, the therapeutic result would be considerable. It could then be hoped that in favorable cases the strictured pylorus might become more permeable.

I have, therefore, constructed for this purpose an instrument for the application of radium to the pylorus. It consists of a radium receptacle with a long whalebone stem; the capsule for the reception of the radium is provided with a small canal on its side, through which a thread can easily be passed (see Fig. 2). The method of radium application to the pylorus is accomplished in the same manner, as I [3] have described for the catheterization of the pylorus. The patient swallows, the night previous, either a small duodenal bucket or a metal olive, attached to a long braided silk thread; the length of the thread is such that 75 to 80 cm. can enter the digestive tract and the end is attached to the shirt. On the following morning, in the fasting condition of the patient, we see whether the bucket or the olive lies beyond the pylorus or in it. If this is the case a slight resistance is felt when we pull at the thread. In the stomach there is usually no such resistance felt. The thread is now cut near its attachment and drawn through the canal of the capsule and the latter is pushed along the thread by means of the whalebone stem, first into the mouth, pharynx, esophagus, and finally the stomach of the patient, slowly and without exertion of force, until an unsurmountable resistance is encountered. The latter is the strictured place. The capsule of the instrument now lies exactly at the spot we wish to treat with the radium. We, therefore, leave the instrument lie there for one-half to one hour, after again attaching the thread to the nightgown of the patient. When the time for the application of the radium has elapsed, the radium holder, the olive, and the thread are slowly withdrawn.

Occasionally it is desirable to leave the radium for a longer period (6 hours or more) in the digestive tract. It is then necessary to have the radium capsule exactly at the diseased focus. The hard rubber capsule devised by me and attached to a thread would be serviceable, but in swallowing the capsule we cannot tell whether we have touched the affected spot. The whalebone instruments are also unsuitable, because they exert too much irritation in the throat of the patient, if left in for any length of time. I have, therefore, constructed a "radium introducer" (Fig. 3). It consists of a spiral metal sound, covered with rubber, and a mandril. For a longer application of radium we use a capsule hollowed out in its upper end. The introducer is inserted into the hollow part of the capsule, the thread is drawn tight and pressed against the rubber tube. In this position the capsule is pushed to where it is wanted (esophagus or stomach). Now the mandril is first removed. This causes the capsule to lie free. Then the rubber tube of the introducer is slowly and carefully removed. We now have the capsule with the radium at the seat of the disease, and the thread emerging from the mouth of the patient is attached to the clothing. This procedure is not connected with any disagreeable symptoms for the patient and the capsule can be retained in the digestive tract as long as desirable.

My Latest Experiences in the Radium Treatment of Cancer of the Digestive Tract.—Since I wrote

*Read before the German Medical Society of New York on June 5, 1911.

a few years ago on the value of radium treatment in cancer of the esophagus I have made numerous new observations, which form only a confirmation of my previous communications. I would like to describe only two new cancer cases of the esophagus, in which the new instruments here described were used. Furthermore I made the trial in both patients of leaving the radium (70 mg. of strongest pure radium bromide) for a period of six hours at the affected spot. This prolonged and strong radium application I have tried in both these cases for the first time.

Case I.—Feb. 28, 1911. Carcinoma cardiæ. Max S., about 67 years old, suffering since October, 1910, from dysphagia. At first the patient noticed that he could not swallow solid food without drinking a great deal of water at the same time, in order to force it down. He had also had cramp-like pains in the esophagus, and occasionally vomited. Soon he also experienced difficulty in swallowing water, being able to take only a little at a time. After having partaken of food he would be compelled to lie down, in order to retain it. He never had hematemesis or melena. Since the beginning of his trouble the patient had lost over 25 pounds and had become much weaker. Examination shows that the swallowing sound is absent; bougie (39 F.) meets with resistance at 43 cm. from the teeth.

March 17. Patient was admitted to the German Hospital. Examination with the sound on this day showed: Bougie (43 F.) meets with resistance at 42 cm. from the teeth. The diagnosis of carcinoma cardiæ was made. Although the patient could not swallow even liquids comfortably, he did not wish to have a gastric fistula established. We decided, therefore, to treat him with radium. The affected spot was thus treated daily for one-half hour with radium. A few days later the patient could take his food much more easily.

March 25, 1911. Bougie (43 F.) met with resistance of 44 cm. *i.e.* the sound entered 2 cm. deeper than before the commencement of the treatment.

March 27, 1911. A swallowing sound was audible 17 seconds after the injection of water at the ensiform process. The patient could now take semisolid substances. The pains were also much less. Since the patient came from out of town and did not desire to remain long in the hospital, I decided to prolong the radium application in order, if possible, to obtain a more lasting effect. On March 28, therefore, I introduced the radium capsule (containing 70 mg. pure radium bromide) by means of the introducer, and left it for six hours at the seat of the disease. The patient felt no ill effects and stood the application very well. A week later the swallowing sound was audible after 12 seconds. At all events the patient had been materially improved by means of the radium treatment.

Case II.—February 15, 1911. Carcinoma cardiæ et ventriculi. Samuel K., about 40 years old, began to suffer about 3 years ago from gastralgia and vomiting. In 1909 the patient was operated upon for a tumor of the stomach. Since then he has been running down more and more. For about 3 months he has suffered, besides his anorexia, from difficulty in swallowing. Examination made on February 15 revealed a resistance of the size of a walnut under the left border of the ribs. The swallowing sound was absent, and a sound (39 F.) met with resistance at 42 cm. Shortly after admission to the hospital he had a severe internal hemorrhage (melena), from which he nearly died. After a few days, however, he rallied sufficiently to undergo an instrumental examination.

The patient received an application of 70 mg. of pure radium bromide for one hour on March 7, 9, and 15. On March 22 and April 1 he had applications of six hours' duration. His condition visibly improved during the treatment. The resistance at the epigastrium was no longer palpable and the patient could take mushy and soft food without difficulty. On March 27, 1911, the swallowing sound was present after six seconds. Examination with the bougie (43 F.) shows on March 30, 1911, resistance at 43 cm. bougie (25 F.) meets with resistance at 44 cm. The patient has gained considerably in weight and in strength.

Case III.—March 5, 1911. Carcinoma ventriculi. Louis S., about 58 years old, has been suffering for 7 or 8 years from grave disturbances of digestion. About 4 years ago, and then later 3 years ago, the patient had severe gastric hemorrhages. In the meantime there was intense hyperchlorhydria. The diagnosis had then been made of gastric ulcer and with bismuth, rest, and dietary treatment the patient got well and felt well for about 2 years. Then he had again severe hematemesis, accompanied by a resistance in the region of the stomach. The stomach contents showed absence of free HCl, presence of lactic acid and of occult blood, and slight ischochymia. It was fair to assume from these new findings that a malignant neoplasm had developed on the basis of the old ulcer. An operation was therefore advised and performed at a Brooklyn Hospital. A tumor was found at the stomach that could not be resected. A gastroenterostomy was therefore established. The patient then felt well for about six months, when he again began to suffer from digestive disturbances. For the last ten weeks he complains of pain in the epigastrium and frequent vomiting. The vomited matter consists of foul smelling substances, and he says frequently contains blood. The patient has since lost a great deal in weight, feels weak and sick, sleeps poorly, and suffers frequently from singultus and obstinate constipation. Examination revealed a tumor the size of a fist in the upper abdomen, lying nearly in the middle, a little above the umbilicus. Its surface was uneven, and it was of hard consistence.

March 6, 1911, washing of the stomach in the fasting condition shows the presence of decomposed food. In the stomach contents we can readily see unchanged blood. Chemically HCl is absent, lactic acid and blood are present. Microscopically large numbers of Oppler-Boas bacilli are visible. After washing out the stomach radium was introduced into this organ and left there for several hours. To state more correctly 70 mg. of pure radium bromide

Fig. 1.—Radium Receptacle for Stomach and Esophagus with Whalebone Stem.

was left in the stomach for five hours and twenty minutes on March 21, for five hours and fifteen minutes on March 23, and for full six hours on March 27, 1911. During the treatment the vomiting ceased, the pains were less, but the tumor failed to decrease in circumference. Fourteen days after the last radium application there was no decrease in the size of the tumor.

Case IV.—October 13, 1910. Carcinoma pylori. Robert D., about 65 years old, has been suffering for 4 or 5 months from increasing digestive disturbances. At first he had severe heartburn after meals and then pains and vomiting. The patient had lost about 40 pounds and complained of severe burning in the pit of the stomach, belching, pains, and vomiting of large quantities of acid matter. Examination revealed a markedly dilated stomach with visible peristaltic restlessness. Examination with the tube in the fasting condition showed the presence of food from the previous day; HCl present, also occult blood and sarcinæ.

The duodenal bucket (23 F.) was introduced on the evening of October 14, before the patient retired, and removed the next day. In withdrawing the thread slight resistance was at first felt. The bucket returned with foul-smelling, blood-tinged contents. The thread near the bucket and above it for some distance was discolored brownish. There was no bile on the thread. The thread test plainly showed that the bucket could not pass the pylorus, but was kept in a niche and filled up with bloody necrotic contents. The thread test combined with the examination of the stomach contents and the history pointed to a malignant trouble at the pylorus.

After a consultation with Drs. King and Pollock it was decided, in view of the advanced age of the patient, not to operate. Since the neoplasm involved the pylorus, it seemed advisable to apply the radium directly to this outlet. I then constructed the instrument above described. The patient was now treated twice weekly with hourly applications of 70 mg. pure radium bromide to the pylorus. The stomach was besides washed out in the fasting condition. The patient was placed upon a liquid diet and received chloral hydrate, 6 grams; distilled water, 200 grams; a tablespoon t.i.d., before meals.

Result of Thread Test in Robert D.

Date	Bucket or Olive No.	Impregnation of Blood	Bile Stains at
Oct. 15, '10. . .	B.	43–56 cm.	
Oct. 19, '10. . .	B.	37–50 cm.	
Oct. 22, '10. . .	B.	40–50 cm.	
Oct. 25, '10. . .	B.	40–50 cm.	Greenish 79–85 cm.
Oct. 29, '10. . .	B.	0	Yellow 71–75 cm.
Nov. 1, '10. . .	B	0	Yellow 73–75 cm
Nov. 5, '10 . .	Olive 13 F.	0	Golden yellow 65–80 cm.
Nov. 8, '10 . .	B.	0	
Nov. 12, '10 . . .	Olive 15 F.	0	
Nov. 15, '10. . . .	Olive 13 F.	0	
Nov. 19, '10 . . .	B	0	Yellow 64–68 cm

A short time after the beginning of the radium treatment the patient began to feel better. He had no pains, the heartburn disappeared, and he slept well. The improvement could also be noticed objectively. Since the radium was always introduced over the thread of the duodenal olive, an examination could always be made for the presence or absence of blood impregnation on the thread. It was shown that while the threads of October 15, 19, and 22, 1910, revealed marked blood impregnation between 37 and 50, or beyond, subsequent threads at first showed only a little and later no blood at all. We will tabulate the results of the thread test as follows:

On November 5 the olive (13 F.) passed deep into the duodenum and showed a golden yellow discoloration between 65 and 80 cm. Olive No. 13, however, never again passed through.

The retention of food at first was of a high degree, becoming a little less, and remained that way for some time, only to become more intense later on. Thus we obtained from the fasting stomach in the morning on October 20, 500 c.c.; October 24, 400 c.c.; on October 27, 395 c.c.; on October 28, 350 c.c.; on November 3, only 300 c.c.; then the retention became steadily greater, being, on November 4, 700 c.c.

The weight of the patient showed at first a slight increase and then dropped steadily. He weighed on November 4, 155½ pounds; on November 7, 157 pounds; November 12, 158 pounds. On November 22 the patient left the hospital and a similar course of treatment was followed at his home. In October a resistance developed at the smaller curvature of the stomach in the epigastrium. It grew steadily

Fig. 2.—Radium Receptacle for Pylorus, with Whalebone Stem.

and the peristaltic restlessness of the stomach became more marked. The subjective health of the patient remained rather good. In spite of the constant loss of weight through the impermeability of the pylorus, the patient could take a daily walk and was in fine spirits. Finally he began to have fainting spells and 2 or 3 days later he died in collapse.

Case V.—January 16, 1911. Carcinoma ventriculi. Daniel S. B., 67 years old, was always in good health until 6 months ago, when he began to suffer from digestive disturbances. The appetite was poor and pains occurred soon after meals. Soon vomiting set in, and the patient lost steadily in weight and became weaker and weaker. When he consulted me he looked pale and emaciated; he could hardly walk without support and stated that he had lost about 40 pounds in weight. Physical examination revealed a distinct resistance in the epigastrium, which seemed to be localized in the lesser curvature of the stomach. The stomach was dilated and reached 2 or 3 fingers below the navel. The liver was enlarged, prolapsed, and seemed to be harder than normal. This caused suspicion of a secondary neoplasm in this organ. Examination with the tube showed the presence of food remnants from the day previous, absence of HCl, presence of lactic acid, and numerous Oppler-Boas bacilli.

We had here to deal with an advanced case of cancer of the stomach, involving the lesser curvature and probably the pylorus. In view of the great weakness and advanced age of the patient, Dr. Shelton and myself decided to defer operative in-

terference and to treat the patient expectantly. The patient was accordingly placed on a liquid diet and the stomach was washed out every other day. In this way the stomach showed no retention of food, but in the washwater mucus with a great deal of black blood was at first always found.

The duodenal bucket was introduced on January 16, and removed on the next day in the fasting condition. There was no resistance encountered; the length of the thread was 68 cm. Between 50 and 68 cm. the thread was discolored from blood; the bucket contained foul-smelling, decomposed blood.

January 20. Lavage; blood visible microscopically.

January 21. Radium treatment was begun. Twice weekly 0.07 gm. pure radium bromide was introduced into the stomach for a half hour by means of the whalebone instrument. One day after the first application (January 22) lavage of the stomach showed no blood, and this remained thus for a long time with one exception (February 13), when a quantity of blood was again observed on lavage.

January 27 the thread test was performed with olive (15 F.), showing thread length 73 cm.; greenish discoloration between 55 and 73 cm.; at 68 to 70 cm. were several suspicious brown spots. This test also showed a diminution of the bleeding spots in the stomach. The patient felt much better; he had hardly any pain, became stronger and looked better (he was not as pale as formerly) and gained in weight. Toward the middle of February he had gained 8 pounds in weight. At the end of February, 1911, another consultation between Drs. Shelton, Lloyd, and myself was held and, in view of the improved condition of the patient, an operation was deemed advisable. The patient was then operated upon in Rochestser, Minn., by Dr. W. H. Mayo, a gastroenterostomy being made.

Case VI.—December 20, 1910. Carcinoma pylori. Louis L., 75 years old, has been suffering for 5 months from pain in the epigastrium and frequent vomiting. He lost constantly in weight and in strength. Dr. N. Sobel sent the patient to me with the diagnosis of carcinoma of the stomach. Examination revealed the stomach much dilated, extending a hand's width under the navel and showing peristaltic restlessness. A resistance could not be discovered on palpation. The stomach tube brought up foul-smelling, coffee-ground material, with food remnants from the previous day; HCl was absent, lactic acid, also Oppler-Boas bacilli, was present. The examination with the duodenal bucket on December 20, 1910, showed: Thread length 60 cm.; no resistance in withdrawing it; thread brownish at 50 to 60 cm. The bucket, therefore, did not pass the pylorus and showed a light brownish discoloration in its vicinity.

The diagnosis of Dr. Sobel was therefore correct in every way. An operation in this case could not even be thought of and the patient was accordingly sent to a nearby health resort at his own request. He was placed upon a fluid diet and his stomach was washed daily. He ran down quickly, and returned to New York on January 22, 1911. He was admitted to the German Hospital, being so weak that he could scarcely sit up. Every change of position was accompanied by fainting spells.

The physical examination showed no change. A duodenal bucket test (17 F.), on January 24, showed a marked bloody discoloration from 57 to 60 cm. Lavage showed ischochymia of a high degree and dark brown, bloody masses. For 3 weeks the patient was treated with half-hourly applications of radium twice weekly as in Case V. Although the ischochymia remained, the brown coloration of the chymus soon disappeared. The patient had less pain and felt somewhat stronger. The ischochymia, however, did not decrease and the patient kept on losing in consequence of the inanition until he died.

Case VII.—January, 1909. Carcinoma recti. Mrs. B. B., about 70 years old, had suffered for 6 or 8 months from severe abdominal pains, frequent desire to go to stool, and mucosanguineous diarrhea. She had lost considerably in weight and looked pale and slightly cachectic.

On examination per rectum the finger encounters high up an irregular tumor, not connected with the uterus; on withdrawal the finger showed mucus with decomposed blood. An operation was refused by the family physician and the patient. Radium treatment (application of radium, 0.25 gm., Curie 20,000 strength, per rectum to the tumor) was begun, and used for nearly two years every day for one hour. The hemorrhages ceased after a few weeks and the pains grew less. Then patient was left for about four months without radium treatment. When, however, the pains returned one application of 0.07 gm. pure radium bromide was made for 6 hours at one time. During this application the patient was lying with her pelvis elevated in order to effect a better contact of the radium with the tumor. She stood this very well and the application seemed to exert a good influence. It is now three years since the trouble began and the patient still leads a comfortable existence. She receives company, eats at the table with her family, and seems to have little trouble. The tumor is still plainly palpable, but does not bleed.

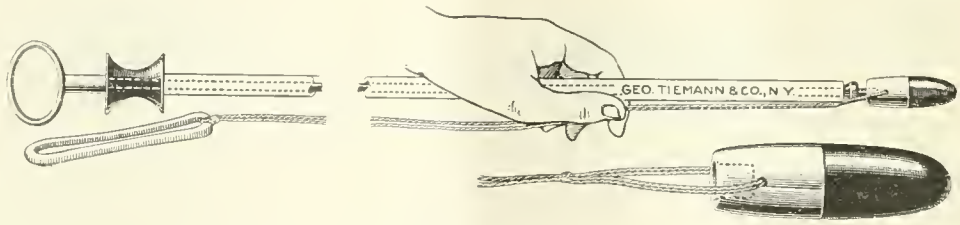

Fig. 3.—Radium Introducer.

Epicrisis.—If we analyze the cases treated with radium and described above, we find that this mode of treatment alleviated considerably the dysphagia in two cases of advanced cancer of the cardia and caused the swallowing sound, which at first was absent, to return. In one of them a small tumor, the size of a walnut, which before treatment was plainly perceptible, could not be demonstrated later. Whether this disappearance of the small tumor came about by the shrinkage of the tissue or whether it was only apparent, being caused by a change of position, I am unable to say.

Applications of 0.07 gm. of pure radium bromide for periods of 6 hours caused no disturbances and were followed by good results.

We now will consider the following four cases of cancer of the stomach and pylorus. In one case (L. S.) a gastroenterostomy without the removal of the tumor had been performed six months previously. The old symptom (steady vomiting), however, had returned. There was grave ischochymia and blood was easily recognized in the stomach contents. After the use of radium the vomiting ceased, retention was less, and blood was no longer present. The tumor, however, did not decrease in size. In the other 3 cases there was a marked diminution of the bleeding into the stomach. In two (R. D. and D. S. B.) there was first a marked improvement with some gain in weight. In R. D., where the applications took place directly to the pylorus, the latter became for a short time more permeable. A decrease of the pains was apparently present in all of these cases.

In case VII we have an advanced case of cancer of the rectum, in which the application of the radium caused a cessation of the bleeding and pain, and undoubtedly prolonged life.

If we consider that in all these cases we have to deal with separate conditions, where until now our only treatment has consisted in increasing doses of opium or morphine, we may be contented with the results of the radium treatment.

It would, of course, be more satisfactory if I could report a cure. This has, however, not been the case, although the possibility is not excluded. Long-continued applications of strong radium may, if inaugurated sufficiently early, be crowned occasionally with entire success. I am, however, ready, on the basis of my experience, to recommend highly the direct application of radium in inoperable cancer of the digestive tract.

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20 EAST SIXTY-THIRD STREET.

TWO CASES OF LITTLE'S DISEASE.

BY M. NEUSTAEDTER, M.D., PH.D.,

NEW YORK.

ATTENDING NEUROLOGIST NEW YORK UNIVERSITY AND BELLEVUE COLLEGE CLINIC, BELLEVUE HOSPITAL O. P. D., ST. MARK'S HOSPITAL O. P. D.

LITTLE'S disease, or congenital or acquired spastic paraparesis, is characterized by a generalized rigidity of the muscles of the trunk and extremities, and in some cases even of those of the neck and face, but usually confined to the lower extremities. True paralysis is not a marked feature. Intelligence as a rule is not impaired. Strabismus, nystagmus, and convulsions may be present.

Struempell first described this variety of paraplegia, and later Bernhardt, Tooth, Erb, Hochhaus, Nenmark, Raymond, Kuehn and others have reported cases of this character. One cannot get a definite picture, however, from the reported cases so far as the degree of the affection is concerned, as is the case in other nervous affections of an hereditary type. While cases in one family show a decided similarity of type, other reported cases betray other forms of spastic paraplegias. In a case reported by Sachs, a poliomyelitis seems to have been superimposed on Little's disease.

It is seldom that several generations are afflicted with this disease; as a rule it occurs in one family, in which the hereditary taint manifests itself in the presence of other neuroses of the progenitors. The males are more often attacked than females.

Little has shown that the most important cause is immature birth, but a protracted and difficult labor or a forceps delivery is a frequent etiological factor. Furthermore, inflammatory processes, or a defective development, or a cortical agenesis of the motor area during fetal life play an important part in the prenatal etiology. Friedman, De Amicis, Rolly, Déjerine and others have shown that hereditary syphilis is also an underlying cause.

FIG. 1.—Case I, under treatment.

The traumatic influences produce either meningeal hemorrhages in the motor zone or in a circumscribed area, such as the leg center, or a degeneration or inhibition of development of the pyramidal tracts without any cortical lesion, either of which lesions produces a congenital spasticity of the extremities. In other cases encephalic processes lead to an induration or atrophy of solitary convolutions or even to porencephalitis. A symmetrical lesion, of such a nature, in the motor areas of both hemispheres will necessarily cause a spastic paraplegia.

Gehuchten, Souques, Erb, and Déjerine include under this category cases of a purely spinal origin

as well. In these cases, it has been shown, the lesion begins in the cervical portion of the spinal cord with a consequent descending degeneration in the lateral tracts.

The symptomatology of this disease is so well

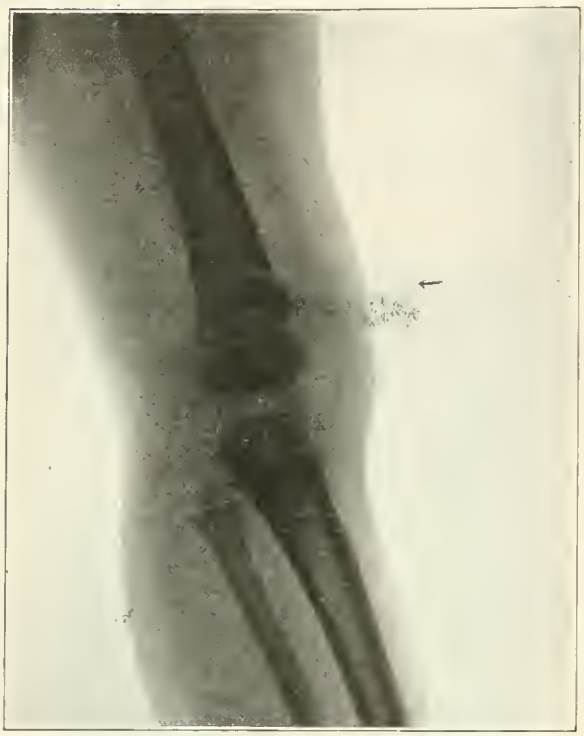


Fig. 2.—Case I, the arrow points to the patella.

marked in my cases, that I will proceed with the description of these.

Case I.—L. F., female, 3½ years old, born in United States of Galician parents of a rather neurotic temperament. The existence of syphilis, alcoholism, or rheumatism is denied. Patient was born after 7 months' gestation and after a hard labor lasting 11 days? (statement of mother). No instruments were used. She was a mixed breast and bottle-fed baby. When 5 months old she began teething without convulsions; at the age of 1 year she started to sit up and at 1½ years began to take steps; unaided she cannot walk as yet. At 14 months she began to talk. She was always quite intelligent. Five weeks ago she had measles, otherwise has had no disease. With the exception of enuresis nocturna, which subsided with the onset of measles, she was at all times of clean habits.

Physically, the upper part of her body is not affected, but the lower extremities present a marked spasticity on account of the rigidity of the muscles. The thighs are pressed together and when separated with some difficulty recede at once into the position of adduction as soon as force is removed. The gait is a pathological one, the legs are held stiffly in a semiflexed position, with the thighs rotated inwardly and markedly adducted, so that the knees nearly touch each other. This condition is so pronounced that during the act of walking the feet cross each other. The walk is maintained on the toes with the heels uplifted. (Figs. 1 and 3.) The legs are thrown forward as though they were of one piece, the pelvis being respectively raised or lowered. The rigidity of the muscles of the left extremity is more marked than of the right, while the motor power is fairly good in both. Patellar reflexes are markedly exaggerated, ankle clonus is present in the left extremity only, and the toe extension reflex (the Babinski sign) is present in both feet. The ligamentum patellæ is very much elongated, so that the patella is fairly pushed upon the femur beyond the condyles. (Fig. 2.) There are no sensory disturbances.

Case II.—M. F., male (brother of above patient), 2 1/3 years old. Born after 9 months' gestation and very easy labor. He was a breast-fed baby. When 7 months old he began teething without convulsions; when 1½ years old he began to sit up; he does not walk yet, but takes steps with difficulty, when aided. He was 14 months old when he began to talk. Has enuresis nocturna, but otherwise is of clean habits and quite intelligent. Had measles and scarlet fever a few weeks ago, but is quite well now.

Physically he presents the symptoms of his sister in a more marked degree. (Fig. 3.) The ligamentum patellæ is not as elongated as in case I (Fig. 4), because he is not as old, therefore the patella is not as high up as in Fig. 2.

It is characteristic that the epiphyses of the bones in both cases are very far apart and present

Fig. 3.—Case II, showing the spasticity.

a rather delayed ossification in all bones. In Case I there is a faint point of ossification in the patella. There are two explanations offered for the elongation of the ligamentum patellæ in these cases. It may be due to a constant stretching of the ligament

by the rigidity of the muscles and a consequent limited motion in the knee joint. Frasser, Roux, Marey, and Joachimsthal have shown in a number of experiments that as a result of a long limitation of movements in an extremity there results a short-

Fig. 4.—Case II, the arrow points to the patella.

ening of the muscle and an elongation of its ligament. In the case of Little's disease there is still another explanation, namely, that there is a delayed development of the muscular tissue on account of the constant rigidity and stretching and the consequent immobility of the joint. This phenomenon is characteristic of Little's disease, as we seldom meet with it in other spastic affections of the lower extremities occurring in later life.

111 Second Street.

CHORIOEPITHELIOMA MALIGNUM.

REPORT OF A CASE FOLLOWING ABORTION; OVARIES RETAINED; COMPLETE RECOVERY; WITH DETAILED REPORT OF THE PATHOLOGIST.

By WM. H. DUKEMAN, M.D.,

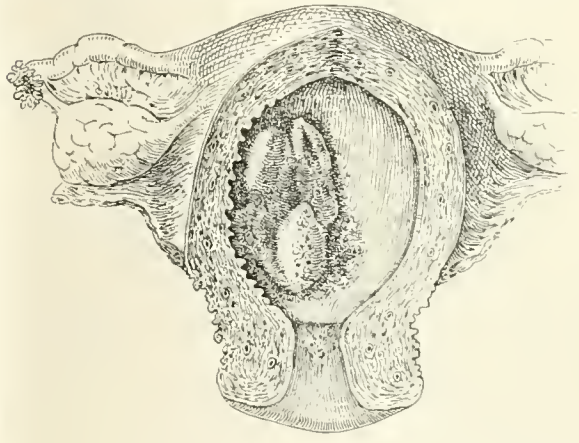
Los Angeles, California.

This malignant uterine tumor was originally described by Sänger of Leipzig in the year 1888. The two cases then described by Sänger were soft, spongy tumors which developed in the body of the uterus following abortion. Metastases developed in other tissues remote from the original site of the tumor and he then believed the growth to belong to the sarcomatous group. He termed the growth "deciduoma malignum." Since then pathologists the world over have studied the disease and its true histopathology is now clearly defined. Less than 300 cases have so far been reported.

Histology: The tumor is made up chiefly of large blood spaces with walls consisting of large, clear cells with vesicular nuclei and vacuolated protoplasmic masses containing several deeply stained nucleoli resembling syncytium. It is sometimes called syncytial cancer. The disease has its origin in the syncytial cells of the chorion villi. The syncytial-like masses are especially abundant about the margins of the tumor and have the tendency to penetrate the walls of the blood vessels and is thus carried into the general circulation, causing metastases. Only rarely are the lymphatic glands involved. Chorioepithelioma malignum has no stroma which distinguishes it from carcinoma. In sarcoma true syncytium or structure resembling the early villi of chorioepithelioma are not found.

Etiology: There is no known cause. But that the disease follows a pregnancy or an abortion is a known fact. Sometimes a hydatid mole precedes its appearance. It is not known whether the disease develops during pregnancy, or after labor, or abortion, or how long after it makes its initial appearance. The average time when the tumor presents its first symptoms is about five weeks after labor at term, seven weeks after abortion and after hydatid mole the time varies from several weeks to five years.

Symptoms: Hemorrhage is the first symptom and continues to be the most prominent symptom throughout the entire course of the disease. The hemorrhage at times is quite profuse and persistent and when it abates will reappear again without any known special cause. Later when the tissue of the



Showing Location of the Tumor.

tumor breaks down the discharges with the blood become foul. The body of the uterus becomes larger than normal and is soft and boggy. The os is patulous and dilated and the examining finger may be introduced into the uterine cavity and the lobulated like mass may be recognized.

Diagnosis: Unfortunately the disease cannot be accurately diagnosed from uterine curettings. It is only from sections of the uterine wall with decidua and villi, showing the characteristic blood sinuses, surrounded by the large, clear cells of Langhans and the invading syncytial masses that the nature of the disease is recognized. Chorioepithelioma malignum occurs most frequently between the ages of twenty and thirty and usually proves fatal in six or seventh months. It sometimes occurs later in life.

Treatment: In its earliest stages, could the disease be clearly defined, curettegé would appear to be the most rational treatment. Later in the disease nothing short of hysterectomy is advisable.

Report of Case: Mrs. F. E. D., age 29, weight 100 pounds, normal weight 135 pounds, married, mother of two children, both living, ages respectively 7 and 5 years. Nine years ago patient underwent a mastoid operation. At last childbirth, five years ago, she was confined to bed for several

weeks with puerperal fever, due to retained piece of membrane. She was not curetted, but her physician called in consultation Dr. M. L. Moore and Dr. W. W. Beckett, who advised cleansing the uterus by intrauterine irrigations. She recovered. During the year following her menstruations were irregular, going over time, and a little more profuse than normal. Three years ago she became pregnant and miscarried at about the fifth month. During the pregnancy she menstruated irregularly. She was confined to her bed again for several weeks. Losing confidence in her attending physician she discharged him and consulted a Chinese doctor, who administered the usual mysterious decoctions, and in time a mass of retained membranes were expelled. This siege of sickness again reduced her health and she only weighed about 95 pounds. She remained under the Chinaman's treatment for about one year. Her health gradually improved and she regained her normal weight and was in better health than before the miscarriage. During the past two years at intervals of several months she menstruated profusely and on three occasions passed growths from the size of an orange to that of an egg. She consulted Dr. J. T. Stewart about one of these growths, who pronounced it a submucous fibroid. Last December she passed the last growth, about the size of an egg. Her menstruation continued irregular, usually going over time. Her last menstruation was in the early part of February. Her menstruation not appearing by the latter part of March and thinking she was pregnant and not wishing any more children she attempted to produce an abortion by shoving a catheter containing a stilette into the uterus the best she could. The result was a profuse hemorrhage. She became alarmed and called in Dr. J. Colvin Brown, who found her almost exsanguinated. The writer was called in consultation and the uterus was irrigated with hot (temp. 120° F.) boric acid solution, which controlled the hemorrhage. The uterus felt hollow as after labor. By bimanual manipulation a growth was diagnosed on the right side of the uterus. The hemorrhage reappeared in a few days and Dr. Brown sent a scraping to Dr. E. L. Leonard, who reported epithelioma. The writer was again called in consultation. Examination by speculum showed a soft enlarged cervix; there was no visible excoriation or visible signs of carcinoma. The os was very patulous, admitting the index finger, and a mass in the uterine cavity, as previously outlined, was felt and its true nature suspected. Hysterectomy was advised and the patient was sent to the Clara Barton Hospital.

May 1 operation was performed by the writer, assisted by Dr. J. Colvin Brown and H. G. Marxmiller, Dr. F. D. Bullard, anesthetist. The abdomen was opened in the median line and the omentum, intestines, and line of incision were walled off with large, moist gauze pads. The uterus grasped in the hand was gently drawn up, it was soft and enlarged; the ovaries and tubes were apparently normal. There were no enlarged glands to be felt anywhere. A supravaginal amputation was done a little below the internal os. As the ovaries and tubes were, to all appearances, normal they were retained. No clamps were used. The arteries were doubly ligated and divided between ligatures, thus avoiding any loss of blood or bruising of tissue. All raw surfaces of the peritoneum and cervix were carefully coaptated and turned in by continuous suture. The abdomen was closed in layers. The wound healed nicely and on the tenth day the stitches were removed, and the patient left the hospital on the seventeenth day. She is up and around and apparently well. As metastases in these cases most frequently develop first in the lungs and the vagina, and later in other internal organs, and as the disease is transmitted through the circulation of the blood, and not by the lymphatic system, I decided not to disturb the apparently healthy ovaries, concluding that by retaining the ovaries the vitality of the patient would be better preserved and the ovarian secretion (for one of her age) would possibly act as an agent in assisting, at least, as a preventive aid against metastases. Whether there will be a recurrence of the disease by metastases, as is the usual course of this disease, time only will tell.

It is now four months since she underwent the operation and there is no evidence of any kind of a return of the disease. In fact, she is feeling remarkably well and has gained 30 pounds in weight.

A section of the uterus and growth was sent to Dr. C. C. Warden, pathologist, who reported chorioepithelioma malignum. Herewith is appended the pathologist's report in full:

The gross specimen consisted of a uterus, slit open to show the cavity, of about normal adult size. The external surface, the body, and a portion of mucosa appeared normal to the eye. Attached to one side of the interior and covering nearly all of one-half of the surface was a soft, friable, fungating mass, necrotic and hemorrhagic in places, protruding fully one-half inch into the cavity and fitting a corresponding depression in the opposite uterine wall. The growth was rather firmly attached to its broad base. A portion of the specimen cut at right angles to the growth and body of the uterus, including both, was reserved for histological examination, and the remainder of the specimen was returned to Dr. Dukeman. The tissue was fixed in Zenker's fluid, hardened in alcohol and mounted in celloidin. Sections were stained in hematoxylin eosin, Mallory's blue, eosin-methylene blue, and phosphotungstic acid-hematoxylin. A description of the sections follows: Commencing at the innermost portion of the growth and lying immediately beneath a thin layer of blood and fibrin are observed numerous remains of chorionic villi, some of which are quite fibrous and others excellently preserved and showing clearly the cellular elements composing them. Between the villi is much granular matter and necrosed tissue which here and there shows definite abscess formation. In other areas clusters of cells, soon to be described, are in close relation to the villi. Not a few of the villi have undergone a hyaline change. A few uterine sinuses are seen which contain blood débris, fibrin, and tumor cells. Blood vessels in this portion are almost wholly absent.

Proceeding outward, the villi disappear and give place to masses of tumor cells, among which masses there is much fibrin. The tumor cells are of two kinds. One variety consists of large, irregular, plasmodial or syncytial masses of deeply staining protoplasm, with large, deeply staining nuclei. Sometimes from two to five nuclei are seen in one mass. The other cells are smaller, irregular to spherical in outline with rather lightly staining, finely granular protoplasm, and containing single, round or oval faintly but distinctly staining, vesicular nuclei (the cells of Langhans). In the masses of cells there are neither blood vessels nor stroma

proper although granular matter, fibrin, and some fibrillary substance between the cells are observed here and there with connective tissue stains. The cell masses have no definite arrangement. There are no traces of glandular structure to be found. At a point where the tumor merges into the uterine wall the conditions are interesting. The growth extends well into the wall in two ways, one by finger like processes which, however, are little in evidence, and the other by the cells dissecting their way beneath the adventia of the blood vessels. Some of the vessels show tumor cells in the lumen. Here and there among the muscle bundles of the uterine wall may be seen both varieties of tumor cells above mentioned. They are observed well out toward the external surface of the uterus. In the external portion of the wall the uterine elements appear fairly normal, but the blood vessels are very numerous, much dilated, and filled with débris. The growth is a chorioepithelioma malignum. Specimen slides accompany this report.

410 Grant Building.

SKIN GRAFTING.*

By ARCHIBALD E. ISAACS, M.D.,

NEW YORK,

SURGEON, BETH ISRAEL HOSPITAL.

Skin grafting is one of the most satisfactory operations in surgery. To us, as physicians, it has lost its novelty, but to the layman it yet appeals as one of the wonders of the surgeon's art. The frequent reports of such cases in the lay press generally include the sensational feature that some relative has volunteered to give part of his skin to the patient. That this practice of using donors to supply the grafts is common is borne out by our knowledge from more reliable medical sources. It was attempted in this case also, and it is one of the points I wish to call attention to.

This boy is ten years old. He came to his injuries in a real boyish way. Playing with his friends at a bonfire, they pulled a paper bag over his head and lit it, and from it his clothing caught fire. He was admitted to the Beth Israel Hospital August 3, 1910, four days after having received his injuries. The hospital chart records a burn of the second degree, extending from his elbow, over the inner surface of the arm onto the chest, which was burned from the midclavicular line anteriorly to the midscapular line posteriorly, and from the first to the tenth rib. He had an acute nephritis and his general condition was such that it called for active stimulation and proctoclysis. At first the usual local treatment was used. On September 28 skin grafting was done, the father acting as the donor. This attempt was not at all successful. I found him in my ward when I came on duty in October, some two and a half months after he had received his injuries. There was but a narrow band of cicatrization surrounding the whole granulating surface. A pyocyaneus infection had persisted from the very beginning and was sufficiently active to stain his daily dressings a dark blue. The whole axilla was bare and the arm was held in flexion to within one inch of the chest. While the original cause for this position was evidently spasmodic muscular contraction for the relief of pain, its persistence had permitted the formation of bands of new connective tissue across the axilla, which now held the arm bound down in this position. On October 24 I took him to the operating room for grafting. As the case was complicated by extension of the wound across the shoulder joint, on its axillary side, cicatricial contraction with loss of function had to be overcome and means taken to prevent its recurrence. In raising the arm, under anesthesia, the axillary bands of new fibrous tissue were torn across and had to be divided further, with the knife, to afford free motion to the joint. The arm was held in extension during the grafting, spreading out the whole axillary surface, and it was subsequently put up in that position, in a plaster of Paris dressing, for the healing. The grafts were taken from the patient's thigh. By the time I had covered the raw surface of his arm and axilla, and an area extending well down onto the chest, about half the denuded surface, I had used up all the available material from one thigh. To get at his other thigh it would have been necessary to change his position on the table, which I feared might displace the grafts, and as the most important part of the work, that involving prevention of

From a photograph taken about three months after skin grafting. Shows tendency to keloidal overgrowth of scar tissue between the grafts; also cicatricial bands across the axilla, which limit extension of the shoulder to about 135°, and which are to be corrected.

cicatricial contraction at the axilla, was done, I decided to leave the balance for a subsequent session. A plaster of Paris jacket, with arm extension, was applied to hold the axillary space open during the healing. Every graft "took," and at the end of a week the surface was healed and dry.

In the alternation of hospital service the boy now came under the care of Dr. H. M. Silver and was referred by him to Dr. Harry E. Isaacs for the completion of the grafting. This was done on November 19, the skin of the opposite thigh being utilized for the purpose. The same method was used as on the previous occasion, all the remaining space was covered, and again every graft "took" perfectly.

In skin grafting it has been my invariable custom to take the material from the patient himself. Most cases where a donor is used could be better done in this way. Instances where sufficient material can not be gotten from the patient must be

* Case presented at the December, 1910, meeting of the East Side Physicians' Association.

rare, as denudation to such an extent, either by burn or otherwise, usually results fatally. The manifest advantage of using the grafts from the patient himself is sparing some other person the anesthesia, the pain and the disability entailed. Other important advantages are the exclusion of the possibility of transmitting infection, and the observed fact that skin from the patient himself is much more likely to 'take." The most desirable part to take grafts from is the outer portion of the thigh, from the knee to the iliac crest. The skin over this region is more firmly attached, and of such structure that it takes the razor edge better than in any other part. One thigh will supply enough for the average case. In this patient both had to be utilized.

The technique used is the following: The wound surface is washed with soap and water and rinsed with saline solution. The part from which the grafts are to be taken is shaved and washed in like manner. Under anesthesia the first procedure is a thorough removal of all the granulation tissue covering the wound. This should be scraped off right down to the white, fibrous, hard, and glistening base. Bleeding is free, but amenable to quick control by pressure with gauze pads wet with warm salt solution. When the area is extensive the hemorrhage in one portion may be thus checked while the next is being scraped. After having gone over the whole surface in this manner the first part is again uncovered, and any remaining shreds of tissue that may have previously escaped notice on account of the bleeding are now cleaned up, and the wet gauze pad replaced for hemostasis. This is obtained by the time the first graft, now to be cut, is ready for placing.

The thigh, previously prepared, is uncovered; an assistant, with his hand on the skin, stretches it in the axis of the extremity. The operator stretches it in the opposite direction with the left hand placed three or four inches from that of his assistant, while with the right he slices off with the razor, previously dipped in salt solution, as thin a layer of epidermis as he possibly can. As the razor advances he slides his left hand along, keeping the skin on the stretch, until some slip of the razor ends that cut of graft or until the desired length is obtained. The cutting is done by an advancing and sawing motion and, as the graft is detached, if properly done and it be thin enough, it folds itself into "accordion folds" on the blade, so that a graft of six inches or more in length will fold up to within a space less than that of the width of the razor blade, across which it will lie. The length of the graft is decided by the size of the area to be covered, the available space to cut from, and the operator's dexterity. The width of the graft is governed by more or less flattening or pinching up of the skin area under the knife by the two hands stretching it. For two good reasons the graft should not be disturbed from its position on the blade until it is finally placed. One reason is that if it be cut as thin as it ought to be its edges will curl up and so badly entangle it that it would be almost a hopeless task to straighten it out again; the second reason is that the simplest and easiest way to place it where it is wanted is to do so directly from its position on the blade. The cutting of a graft that is heavy enough to be handled after removal from the blade has the double disadvantage that it is not so likely to "take," and that it leaves a wound at the site from which it was removed, slow in healing, painful, and scarring in proportion to the thickness of skin removed.

To place the graft the wet pads are removed from that portion of the region to be grafted that was scraped first. The edge of the razor, with the graft folded across the blade, is approximated to one side of the wound and, with a probe, the end of the graft is displaced from the blade and held against the scraped surface while the razor is slowly withdrawn across the wound. The graft unfolds and, as it does, it spreads itself over and adheres to the raw surface. Any tendency to rolling up of its edges, as it unfolds, should be corrected by straightening them out with the probe as the graft falls on the surface during the blade's withdrawal. Air bubbles or blood under the graft should be pressed out. Once placed in this manner the graft will hold its position if not disturbed, and this must be looked out for while subsequent grafts are being cut and placed.

The grafting completed, the surface is covered with strips of gutta-percha tissue, about a half-inch wide, laid parallel to one another and leaving the minutest spaces between, so that any exudate or fluid from the wound can drain into the outer dressings. This is very important, as the stagnation of fluids, generally infected on account of the original condition of the wound, would interfere with the vitalization and union of the grafts. Just as important, again, is the character of the outer dressing. It should be arranged with the view not only of protection of the wound from outside influences, but also to remove, by absorption, the discharges from the wound surface. To assure such absorptive qualities in the dressing it must be put on moist and must be kept moist. Gauze, wrung out of normal salt solution, is laid smoothly over the tissue strips and the moisture retained by covering it with gutta-percha tissue. Over this, with or without a layer of dry gauze or cotton, the roller bandage is snugly applied.

The first redressing is done on the fourth day and is a repetition of the primary one. Subsequent dressings may be done daily or not so often, according to conditions. In the case here reported it was daily on account of the pyocyaneus infection which persisted. The appearance at the first dressing is not very encouraging to the uninitiated. The grafts look macerated and ready to fall off. But at the end of a week it becomes evident that they are vitalized. The bulk of the graft usually does come off, but leaves an epithelium covered surface beneath it. When the surface begins to dry and show its new epithelial covering a dry dressing or a salve dressing may be advantageously substituted for the moist one. The denuded surface left by the cutting of the grafts is treated in a similar manner; that is, by gutta-percha strips laid directly on the raw surface and covered with a wet dressing. This may usually be left on for a week, when it will be found that the surface is practically healed.

1325 Madison Avenue.

Sporotrichosis.—H. G. Adamson reports the case of a man who had lately been in Brazil, where he had got the infection. It was a classical case, with a chain of nodular swellings along the forearm. Numerous cultures of the sporotrichium had been grown from the lesions, and a positive Wassermann reaction, using a sporotrichium culture as the antigen, had been obtained. Several sections of the swellings showed the lesion to be a granuloma with giant cells.—*Proceedings of the Royal Society of Medicine.*

THE CLINICAL STUDY OF FORTY-FOUR CASES OF PNEUMOTHORAX OCCURRING IN THE COURSE OF PULMONARY TUBERCULOSIS.

By JOHN M. CRUICE, A.B., M.D.,

PHILADELPHIA, PA.

PHYSICIAN TO THE HENRY PHIPPS INSTITUTE AND WHITE HAVEN SANATORIUM; INSTRUCTOR IN MEDICINE AT THE UNIVERSITY OF PENNSYLVANIA.

THESE forty-four cases which I am reporting are all the cases of pneumothorax that have occurred at the Henry Phipps Institute from the time of its foundation, February 1, 1903, until February 1, 1910. In the fifth Annual Report of the Phipps Institute Stanton reported twenty-eight of these cases.

Frequency: The frequency of this accident in the course of pulmonary tuberculosis is given by different writers at quite varying figures. Drasche found in 10,212 cases of pulmonary tuberculosis 198 cases of pneumothorax or 1.98 per cent. West reporting on 101 cases of pneumothorax states that 5 per cent. of all cases of phthisis die from pneumothorax. Weil states that of his 55 cases of pneumothorax 46 were due to phthisis. These 46 were from a total number of 1,200 tuberculous cases treated, or about 3.8 per cent. But he thinks that only exact figures can be obtained from cases which come to autopsy. He had 36 cases of pneumothorax in 355 autopsies on persons dying of tuberculosis, or 10.1 per cent.

There have been up to February 1, 1910, 480 autopsies at the Phipps Institute. Of these 480 autopsies, 7 did not show pulmonary tuberculosis. Of my 44 cases, two of them, No. 433 and No. 3,855, were not autopsied, and case No. 889 did not die in the Institute. So in this series of 473 autopsies on cases dying of pulmonary tuberculosis there were 41 cases of pneumothorax, or a frequency of 8.6 per cent.

Sex: All of the writers seem to agree that pneumothorax is much more common in men than in women. In Drasche's series 158 (79.85 per cent.) were men and 40 (20.15 per cent.) were women. Weil's figures were 35 (76.08 per cent.) men and 11 (23.92 per cent.) women. In West's series the sex was specified in 98 cases. Of these 75 (76.53 per cent.) were men and 23 (23.47 per cent.) were women. Morse reported 44 cases, of which number 37 (84 per cent.) were men and 7 (16 per cent.) were women. In my own series 41 (93.18 per cent.) were men and 3 (6.82 per cent.) were women. This gives a larger percentage of men than any series of cases I was able to find in the literature, and is accounted for by the fact that the Phipps Institute had 34 beds for men and only 18 beds for women.

Color: There were 40 (90.91 per cent.) white patients and 4 (9.09 per cent.) negro patients. None of the writers specify the color of their patients, so I could get no figures on this, and none on the frequency of pneumothorax in negroes. My figures are not a fair criterion, as the number of negroes at the Phipps Institute has been much less than the number of white patients.

Age: Of the 44 cases, 18 (40.9 per cent.) were between the ages of twenty-one and thirty, 14 (31.81 per cent.) between the ages of thirty-one and forty, 5 (11.36 per cent.) between the ages of ten and twenty, the same number between the ages of forty-one and fifty, and 2 (4.54 per cent.) between the ages of fifty-one and sixty. The youngest case was fourteen years and the oldest fifty-four. This corresponds with the findings of all the investigators. Morse found 23 (53 per cent.) of his cases were in the third decade, Drasche states that the maximum number of cases were in the third decade, and West says that more than half of his cases were between twenty-five and thirty-five.

Side Affected: It has been stated pretty generally that left-sided pneumothorax is very much more frequent than right-sided pneumothorax. James says that of 85 cases it occurred on the left side in 49 (57.6 per cent.) and on the right in 36 (42.4 per cent.) In Weil's series 31 (67.4 per cent.) were left-sided, 14 (30.4 per cent.) right-sided, and 1 (2.2 per cent.) bilateral. Saussier in 81 cases found it on the left side in 50 (61.7 per cent.), on the right side in 25 (30.8 per cent.), bilateral in 1 (1.2 per cent.) and not stated in 4 (4.9 per cent.). On the other hand Drasche in his series of 198 cases found that 55 per cent. were right-sided. West in 83 cases, where the side was specified, found the left side affected in 42 (50.6 per cent.) and the right side in 41 (49.4 per cent). Emerson in his series of 22 cases had 11 (50 per cent.) on each side. Of the 41 cases that were autopsied at the Phipps Institute, 24 (58.8 per cent.) were left-sided and 17 (41.2 per cent.) were right-sided.

Cause of Onset: The cause of onset was given in only seven cases in my series. In five of them the pneumothorax developed during a fit of coughing. One case developed it on account of the exertion put forth in going up-stairs and the other one was seized while straining at stool. In Drasche's series of 30 4 followed coughing, others followed straining at stool, vomiting, lifting heavy loads, and one resulted from turning over in bed. Crowdy also cites a case where pneumothorax developed in a tuberculous man when turning over in bed.

Onset: Osler states that "the onset is usually sudden and characterized by severe pain in the sides, urgent dyspnea, and signs of general distress. There may, however, be no urgent symptoms particularly in cases of long standing phthisis." In the 30 cases of the series I am reporting, in which the onset was recorded, it was acute in 23 (76.6 per cent.) and gradual in 7 (23.4 per cent.). Thirteen of the 23 cases with acute onset had records of dyspnea and pain in the affected side, 4 had dyspnea but no pain, 3 had dyspnea but no record of pain, one right-sided case (No. 3,855) had dyspnea and pain in the left side. Case No. 6,116 complained only of marked palpitation and had no dyspnea and no pain. Case No. 6,171 had marked dyspnea with an expiratory grunt but had no pain. Nine of the cases showed more or less signs of shock. In the 7 cases with a gradual onset, after the establishment of the pneumothorax, 4 complained of pain and dyspnea and 2 of dyspnea alone and in one the symptoms were not recorded. It is in these cases of gradual onset, occurring in advanced phthisis where there is already a certain amount of dyspnea and general debility, that the condition is liable to be overlooked.

Previous Lung Condition. The study of the lung condition previous to the development of the pneumothorax is interesting, but does not seem to be particularly instructive. All these cases had advanced tuberculosis running an acute course; the temperature in some of them going as high as 104°

*Read before the Section on General Medicine of the College of Physicians, Philadelphia, April 24, 1911.

PNEUMOTHORAX

Case Number.	Age	Sex	Color.	Previous Lung Condition. R. Lung. Up. Lobe.	R. Lung. Mid. Lobe.	R. Lung. Low. Lobe.	L. Lung. Up. Lobe.	L. Lung. Low. Lobe.	Cause of Onset.	Onset.	Side Affected.	Pain.	Dyspnoea.	Shock.	Decubitus.	Side Enlarged.	Motion.	Fremitus.	Percussion.
433	35	M	W	1	0	0	2	2	N.R.	Gradual	L	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	H.R.
714	27	M	W	1	1	1	3	2	N.R.	Gradual	L	+	+	0	Left	+	Dim.	Decreased	Tym.
282	45	M	W	3	2	2	3	2	N.R.	Acute	L	+	+	+	N.R.	N.R.	N.R.	N.R.	H.R.
889	40	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	R	+	+	0	Right	+	Dim.	Absent	H.R.
1033	35	M	W	3	2	1	3	2	N.R.	Gradual	R	+	+	0	N.R.	+	Dim.	N.R.	Tym.
1160	32	F	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	Acute	L	+	+	0	N.R.	0	Dim.	N.R.	Tym.
1278	24	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	R	N.R.	N.R.	N.R.	N.R.	H.R.	N.R.	N.R.	N.R.
2238	25	M	W	3	2	1	2	1	Fit of cough'g	Acute	R	+	+	+	N.R.	N.R.	Dim.	Absent	H.R.
2289	14	M	W	3	2	1	3	2	Fit of cough'g	Acute	R	+	+	+	Left	+	Abs.	N.R.	H.R.
2632	24	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	Fit of cough'g	Acute	L	+	+	+	N.R.	+	Dim.	Decreased	H.R.
2764	24	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	R	+	+	0	Left	+	Dim.	Absent	H.R.
2855	29	M	W	3	3	2	3	2	N.R.	Acute	R	0	+	0	N.R.	N.R.	N.R.	N.R.	H.R
3388	36	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	Acute	R	+	+	0	Right	0	Dim.	Absent	H.R.
3404	30	M	W	3	1	1	3	1	N.R.	Acute	L	0	+	0	Right*	+	Dim.	N.R.	H.R.
3633	25	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	R	N.R.	+	0	N.R.	N.R.	N.R.	N.R.	Tym.
3749	18	F	W	N.R.	N.R.	N.R.	N.R.	N.R.	Exertion on going upstairs	Acute	R	0	+	0	Left*	+	Abs.	Absent	H.R.
3855	19	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	Acute	R	+	+	0	Left	+	Dim.	Decreased	H.R.
3915	38	M	Col.	3	3	3	3	2	N.R.	N.R.	R	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.
4021	34	M	W	3	3	3	3	3	Fit of Cough'g	Acute	R	+	+	+	Sitting erect	+	Dim.	Decreased	H.R.
4272	49	M	W	2	0	0	2	2	N.R.	N.R.	L	N.R.	+	N.R.	N.R.	+	N.R.	Decreased	H.R.
4522	28	M	W	3	1	1	2	1	N.R.	Gradual	L	N.R.	+	0	Either side	+	Dim.	Decreased	H.R.
4620	54	M	W	3	3	1	3	1	N.R.	Gradual	L	+	+	0	N.R.	N.R.	N.R.	N.R.	N.R.
4735	19	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	Gradual	L	+	+	0	Left	+	Abs.	Absent	H.R.
5165	25	M	W	3	3	3	3	1	N.R.	Acute	L	+	+	+	Right	+	Dim.	N.R.	H.R.*
5260	30	F	W	3	1	0	2	1	N.R.	Acute	L	N.R.	+	+	N.R.	0	N.R.	N.R.	H.R.
5462	22	M	W	3	1	1	3	1	N.R.	Acute	L	+	+	0	Cannot lie down	+	Dim.	Absent	H.R.
5588	40	M	W	3	0	1	3	1	N.R.	Gradual	R	N.R.	+	0	N.R.	0	Good	N.R.	Nor'l
5733	18	M	W	0	0	0	3	3	N.R.	N.R.	L	+	+	0	N.R.	0	Good	Absent	H.R.
5246	34	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	Cough	Acute	R	+	+	0	Right	+	Dim.	Decreased	H.R.
4743	27	M	W	3	1	1	0	0	N.R.	N.R.	R	+	+	0	Semi-reclining	+	Dim.	N.R.	H.R.
5071	24	M	W	3	2	1	1	0	N.R.	Acute	R	+	+	+	On back	+	Good	H.R.	H.R.
5774	32	M	W	3	2	1	3	1	N.R.	N.R.	L	+	+	N.R.	N.R.	0	Dim.	Increased	H.R.
6116	30	M	W	3	1	1	3	2	N.R.	Acute*	L	0	0	0	On back	0	Dim.	Increased	H.R.
6171	32	M	Col.	3	1	1	3	3	N.R.	Acute	L	0	+*	+	On back	+	Dim.	Decreased	H.R.
6221	24	M	W	3	2	1	3	2	N.R.	Acute	L	+	+	N.Z.	Right	+	Dim.	N.R.	H.R.
6367	45	M	W	3	2	1	3	2	N.R.	N.R.	L	0	0	0	Either side	+	Dim.	Decreased	H.R.
6377	33	M	Col.	3	2	1	3	1	N.R.	N.R.	L	0	+	0	N.R.	+	Dim.	N.R.	H.R.
6641	26	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	Acute	L	0	+	N.R.	Left	+	Dim.	Absent	H.R.
6693	50	M	W	2	1	0	3	1	N.R.	Acute	L	+	+	N.R.	N.R.	N.R.	Dim.	Decreased	H.R.
7195	52	M	W	3	3	3	3	3	Strain'g at stool	Acute	L	N.R.	+	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.
7248	40	M	Col.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	R	0	+	N.R	Cannot lie down	N.R.	Dim.	Decreased	H.R.
7299	39	M	W	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	R	+	+	0	Right	N.R.	Inc.	Normal	Dull
7414	24	M	W	1	0	0	1	2	N.R.	N.R.	L	+	+	0	N.R.	+	Dim.	Decreased	Tym.
7810	46	M	W	3	1	1	3	1	N.R.	Acute	L	N.R.	+	0	Flat on back	N.R.	N.R.	N.R.	N.R.

N.B. 0—Free of involvement. 1—Slight infiltration. 2—Marked infiltration. 3—Cavity formation. N.R—No Record.

F., and in all of them above 100° F. In the right-sided cases the clinical findings were recorded in nine cases. All of these had in the right lung cavities in the upper lobe, two in all three lobes, and one in the upper and middle lobes. In the lobes where no cavities were recorded there was more or less infiltration except in one case where the middle lobe gave no abnormal signs. The left lung in these right-sided cases was almost as much involved as the right. In only one case was the whole lung free of involvement. In the upper lobe of six cases there was cavity formation, one showed it in both upper and lower lobes. The other two cases had more or less infiltration. The left-sided cases

PNEUMOTHORAX (*Continued*)

Movable Dulness.	Breath Sounds.	Vocal Resonance.	Pectoriloquy.	Rales.	Coin Test.	Splash	Tinkle.	Heart.	Liver.	Duration of Pneumothorax.	Mortality.	Remarks.
Pres.	N.R.	N.R.	N.R.	N.R.	Pres.	N.R.	N.R.	Displace	N.R.	4 days	Death	No autopsy.
Abs.	Abs.	Exag.	0	N.R.	Pres.	N.R.	N.R.	Displace	N.R.	3 mos.	Death	
Abs.	Cavernous and bronchial	N.R.	+	N.R.	N.R.	N.R.	N.R.	Displace	N.R.	Less than 3 mos.	Death	
Abs.	Abs.	Less'n'd	0	Abs.	Pres.	Abs.	Abs.	Displace	N.R.	N.R.	Death	Removed to University Hospital.
Abs.	Feeble or absent	Exag.	0	N.R.	Pres.	N.R.	Abs.	Not disp.	N.R.	37 days	Death	
N.R.	Ampho.	N.R.	N.R.	Pres.	Pres.	N.R.	N.R.	N.R.	N.R.	12 days	Death	Examination unsatisfactory.
N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	Death	Not diagnosed until autopsy.
N.R.	Feeble	N.R.	N.R.	Pres.	Pres.	N.R.	N.R.	N.R.	Displace	4 days	Death	
N.R.	Ampho.	Exag.	N.R.	Pres.	Pres.	N.R.	N.R.	Displace	N.R.	2 days	Death	
Pres.	Feeble	Exag.	+	Abs.	Pres.	Pres.	Pres.	Displace	N.R.	14 mos.	Death	Several attacks of pneumothorax.
Abs.	Feeble	Abs.	0	Abs.	Pres.	Abs.	Abs.	Displace	Displace	3 mos.+	Death	
Abs.	Feeble	N.R.	N.R.	N.R.	Pres.	Abs.	Abs.	Displace	Displace	43 hrs.	Death	
N.R.	Almost absent	Abs.	0	Pres.	Pres.	N.R.	N.R.	Displace	N.R.	5 wks.	Death	
Abs.	Almost absent	N.R.	N.R.	Abs.	Pres.	Abs.	N.R.	N.R.	N.R.	4 hrs.	Death	*Sitting posture leaning toward the right.
N.R.	Ampho.	N.R.	N.R.	N.R.	Pres.	N.R.	N.R.	N.R.	N.R.	N.R.	Death	Case only in hospital a few hours. No history obtained and very slight examination.
Pres.	Almost absent	Abs.	0	Pres.	Pres.	Pres.	Pres.	Displace	Displace	3 mos.+	Death	*At first had to lie on left side. Later could lie on right, and later on back.
N.R.	Almost absent	Less'n'd	0	Pres.	Pres.	Abs.	N.R.	Displace	Displace	6 wks.	Death	*Pain on left side. No autopsy.
N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	Death	
Abs.	Broncho vesic.	Exag.	N.R.	Pres.	Pres.*	Abs.	Abs.	Displace	Displace	39 hrs.	Death	*Coin test doubtful.
Abs.	Distant bron.	Less'n'd	0	Abs.	Pres.	Abs.	Abs.	Displace	Not displ.	Less than a week	Death	
Pres.	Distant	Less'n'd	0	Pres.	Pres.	Abs.	Pres.	Displace	Not displ.	6 wks.	Death	
N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	2 days	Death	Not diagnosed in life. Occurred a day before death.
N.R.	Distant bron.	Exag.	0	Abs.	Pres.	Pres.	Abs.	Displace	N.R.	Over 6 mos.	Death	
Abs.	Distant bron.	N.R.	0	Pres.	Pres.	Abs.	Abs.	N.R.	Not displ.	3 days	Death	*Not diagnosed before death. Coin test just before autopsy.
Abs.	Cavernous or tubular	N.R.	N.R.	Pres.	Abs.*	Abs.	Abs.	N.R.	N.R.	24 hrs.	Death	*Very limited pneumothorax on account of adhesive pleurisy.
Abs.	Distant bron.	Abs.	0	Abs.	Pres.	Abs.	Pres.	Displace	Not displ.	2 mos.	Death	
N.R.	Ampho.	Exag.	0	Abs.	N.R.	N.R.	N.R.	N.R.	Not displ.	N.R.	Death	Not diagnosed before death.
Abs.	Distant bron.	Abs.	0	Abs.	Pres.	Abs.	Pres.	Displace	Not displ.	1 mo.	Death	
Abs.	Abs.	Abs.	0	Abs.	Pres.	Pres.	Abs.	Displace	N.R.	22 days	Death	
Abs.	Distant cavern.	N.R.	0	Pres.	N.R.	Abs.	N.R.	Displace	N.R.	Less than a month	Death	
N.R.	Faint vesicu.	Abs.	N.R.	N.R.	Pres.	N.R.	Abs.	Displace	N.R.	9 days	Death	Temperature fell for 24 hours after development of pneumothorax.
N.R.	Bron. vesic.	Exag.	0	Pres.	N.R.	N.R.	N.R.	Displace	N.R.	N.R.	Death	Pneumothorax not found until autopsy.
Abs.	Cavern.	Exag.	+	Abs.	Pres.	N.R.	N.R.	Not disp.	Not displ.	19 days	Death	*Onset with palpitation. No pain. No dyspnoea.
N.R.	Abs.	Abs.	N.R.	Abs.	Abs.	N.R.	N.R.	Displace	N.R.	2 hrs.	Death	*Marked dyspnoea with expiratory grunt.
Abs.	Abs.	Abs.	0	Abs.	Pres.	N.R.	N.R.	Displace	N.R.	6 days	Death	Occurred almost a week before examination.
Pres.	Distant bron.	Less'n'd	0	Abs.	Pres.	Pres.	Pres.	Displace	Displace	Over 6 mos.	Death	
N.R.	Ampho. or abs.	N.R.	+	Pres.	N.R.	N.R.	N.R.	Displace	Not displ.	Probably 2 mos.	Death	Not diagnosed before autopsy.
N.R.	Ampho.	Less'n'd	0	Pres.	Pres.	Pres.	Pres.	Displace	Not displ.	Over 5 days	Death	
N.R.	Abs.	Abs.	0	Abs.	N.R.	N.R.	N.R.	Displace	Not displ.	51 days	Death	Typical chart at time of occurrence.
N.R.	N.R.	N.R.	N.R.	N.R.	Abs.	N.R.	N.R.	N.R.	N.R.	48 hrs.	Death	Suspected but not diagnosed before autopsy. No coin test.
Pres.	Abs.	Abs.	0	Abs.	N.R.	N.R.	N.R.	Displace	Displace	Over 19 days	Death	Not diagnosed until autopsy. Empyena diagnosed.
N.R.	Distant	N.R.	+	Pres.	N.R.	N.R.	N.R.	N.R.	N.R.	Probably 10 mos.	Death	Case not diagnosed until autopsy. History of dyspnoea for eight months before admission.
Pres.	Distant	Exag.	0	Abs.	Pres.	N.R.	N.R.	Displace	N.R.	Over 10 mos.	Death	Case not diagnosed until autopsy History of dyspnoea for eight months before admission.
N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	About 12 hrs.	Death	Pneumothorax developed night before the day he died. (Died 2.30 P.M.) Found at autopsy, not before.

in which the clinical findings, before the development of the pneumothorax, were recorded showed approximately the same relative condition, advanced tuberculosis in both lungs with the condition a little more marked on the left side. Weil states that he never saw pneumothorax develop in a non-febrile case of tuberculosis. He also states that he had found that it developed on the side with the most advanced tuberculosis in 74.3 per cent. of the cases. West says: "It may be stated that as a rule the liability to the affection is greatest in the rapidly advancing cases, that is in those where the pleural adhesions have not had time to become firm, and as a corollary of this it follows that pneumothorax

does not always occur upon the most affected side."

Decubitus: James says: "As a rule the patient lies most comfortably on the opposite side, but occasionally the knee-chest position is preferred, while sometimes a sitting or half-sitting posture gives most relief." Rosenbach says, "the patient tends to assume an erect position and usually protrudes the healthy side somewhat so as to diminish the circumference of the diseased half of the chest." Emerson states "as a rule the patient prefers to lie on the affected side." The decubitus was recorded in 24 of my cases. In 7 the patients lay on the affected side, and in the same number of cases they lay on the unaffected side. In 4 cases the patients lay flat on the back and in 3 sat in an erect position. In 2 instances they lay on either side, one, however, assumed a semi-reclining position. It may fairly be stated that there is no fixed decubitus in pneumothorax, but that the sufferer assumes the position in which he has the greatest ease, and this position varies greatly in different cases.

Enlargement of the Affected Side: In 31 cases in which the size of the affected side was noted it was enlarged in 24 (77.4 per cent.) and not enlarged in 7 (22.6 per cent.).

Motion of Chest: In 33 cases in which the motion of the affected side was noted it was diminished in 26 (78.48 per cent.), absent in 3 (9.09 per cent.), good in 3 (9.09 per cent), and increased in 1 (3.03 per cent.).

Fremitus: In 24 cases in which the tactile fremitus was noted it was decreased in 12 (50 per cent.), absent in 9 (37.5 per cent.), increased in 2 (8.3 per cent.), and normal in 1 (4.2 per cent.). James states in 70 cases of his, in which the fremitus was noted, it was diminished in 52 (74.3 per cent.) and absent in 18 (25.7 per cent.). Nothnagel says that tactile fremitus is not absent, only diminished.

Percussion: In 39 cases in which the percussion note was recorded it was hyperresonant in 32 (82.05 per cent.), tympanitic in 5 (12.82 per cent.), dull in 1 (2.56 per cent.), and normal in 1 (2.56 per cent.). These findings correspond with the statements of a great number of the writers. Osler says, "the resonance may be tympanitic or even have an amphoric quality. This, however, is not always the case. It may be a flat tympany or it may be a full hyperresonant note, while in others it may be dull." Movable dulness was noted in 24 of the cases, being present in 7 (28.75 per cent.) and absent in 17 71.25 per cent.).

Vocal Resonance: In the 27 cases in which vocal resonance was recorded it was increased in 10 (37 per cent.), decreased in 6 (22.2 per cent.), and absent in 11 (40.8 per cent.).

Breath Sounds: In the 38 cases in which the breath sounds were recorded they were absent in 7 (18.42 per cent.), feeble or distant in 20 (52.63 per cent.), amphoric in 6 (15.78 per cent.), cavernous in 3 (7.89 per cent.), and bronchovesicular in 2 (5.26 per cent.). Of the cases with feeble or distant breathing some were qualified as distant bronchial, one as distant cavernous, and one as faint vesicular. Most of the authorities state that the breath sounds are usually absent or distant, or of an amphoric quality.

Râles: The presence or absence of râles was noted in 32 cases, occurring in 15 (46.9 per cent.) and absent in 17 (53.1 per cent.).

Pectoriloquy: In the 28 cases in which pectoriloquy was noted it was present in 5 (17.86 per cent.) and absent in 23 (82.14 per cent.).

Coin Test: The coin test was recorded in 32 of my cases and was present in 29 (90.6 per cent.) and absent in 3 (9.4 per cent.). This sign can be considered almost pathognomonic of pneumothorax although Osler has reported a case where it was obtained over a large cavity, and it is said to be found at times over a dilated stomach. Stanton says, "special peculiarities regarding the finding of the coin test must be borne in mind. It may not appear for the first day or so after the pulmonary rupture occurs. It may be present only when the patient is placed in a certain position. One is not justified in saying the coin test is absent unless the patient has been examined both sitting up and lying down. When recumbent the patient should be made to lie on the side and the coins and the stethoscope placed in every possible relationship to each other before a negative finding is recorded."

Succussion Splash: In 19 cases in which the succussion splash was recorded it was present in 6 (31.6 per cent.) and absent in 13 (68.4 per cent.). When present it is one of the most valuable signs we have for diagnosing pneumothorax. A rather similar sound is said to occur under certain circumstances in the stomach or intestines, and also in large cavities. With care these conditions can as a rule be excluded.

Metallic Tinkle: Metallic tinkle was present in 7 (38.88 per cent.) of the 18 cases in which it was recorded and was absent in 11 (61.12 per cent.). This also is a most valuable sign. James in his series of cases found it in a much larger percentage. It was present in 30 (85.7 per cent.) of his 35 cases in which it was recorded.

Displacement of the Heart: In the 31 cases in which the position of the heart was recorded it was found displaced in 29 (93.55 per cent.) and not displaced in 2 (6.45 per cent.). In one of these two cases it was found at autopsy that the pleural cavity on the side of the pneumothorax was completely obliterated from the apex down to the fourth rib by firm adhesions; below this was a pyopneumothorax with the air under only slight pressure. Morse found the heart displaced in every case but one in his series.

Displacement of the Liver: In the 8 right-sided cases in which the position of the liver was noted it was found displaced in 7 (87.5 per cent.) and not displaced in 1 (12.5 per cent.). In the 10 recorded left-sided cases it was found displaced in 1 (10 per cent.) and not displaced in 9 (90 per cent.).

Duration: In the 38 cases in which the duration of the cases was recorded (7.9 per cent.) died in less than twenty-four hours, 11 (28.9 per cent.) in less than a week, 6 (15.8 per cent.) in less than a month, 7 (18.4 per cent.) in less than two months, 3 (7.9 per cent.) in less than three months, 4 (10.5 per cent.) in less than four months, 2 (5.3 per cent.) between the sixth and seventh month, 1 case (2.6 per cent.) lived ten months, and 1 (2.6 per cent.) lived for fourteen months. The shortest duration was two hours. West says that 75 per cent. of pneumonothorax cases die within the first fourteen days and about 90 per cent. before the end of the first month. These figures are considerably higher than mine. In the first two weeks 42 per cent. of the cases died and within the first month only 52.6 per cent. of the cases died. Weil also found that one-half died in the first month.

Conclusions.—1. Pneumothorax occurs in the course of pulmonary tuberculosis in from 5 to 10 per cent. of all cases.

2. It occurs more frequently in men than in women.

3. It occurs most frequently between the ages of twenty and forty, at the time when phthisis is most fatal.

4. It probably occurs with equal frequency on either side.

5. The patient may assume any decubitus. Without reference to the side affected, he chooses the position in which he has the greatest comfort.

6. In the majority of cases the percussion note is hyperresonant, although tympany, dulness, or resonance may be found.

7. The breath sounds are usually absent or distant. The distant breath sounds may have any quality. In some few cases amphoric or cavernous breathing may be heard.

8. The most diagnostic signs of the condition are the coin test, displacement of the heart and, in right-sided cases, displacement of the liver. These signs occur in about 90 per cent. of the cases.

9. The succussion splash and metallic tinkle are most diagnostic but are found in a comparatively small number of cases, about 30 to 40 per cent.

10. Pneumothorax is a most grave condition. At least 50 per cent. of the cases die within the first month. Occurring in advanced tuberculosis, it is always the beginning of the end.

1815 Spruce Street.

NEUROPATHIC JOINT DISEASE.*

By L. S. MANSON, M.D.,

NEW YORK.

The affections of the joints that we meet with in diseases of the nervous system may be divided into those of hysteria, locomotor ataxia or tabes, and syringomyelia. I will not include the very intense and exquisite spinal tenderness of the hysteric, nor the painful sensations experienced by her half-sister, the neurasthenic, which may be felt anywhere along the vertebral column but most frequently only over the lower cervical, sacral, or lumbar region (which painful sensations are very similar to those that constitute their headaches and consist of a pressure, dragging, heat, or burning) because these pains do not indicate any involvement of the vertebral joints proper, are rather superficial in the majority of neurasthenics, are not intesified by deep pressure, and, in the hysteric, frequently become tolerant on deep and vigorous pressure if the patient's attention can be completely distracted.

Hysteria is the most common of all chronic diseases, and there is no affliction known to mankind that this protean malady cannot simulate. For instance, I have seen hysterical temperatures of 105° and 106° during most critical periods such as childbed, when I experienced some very anxious moments before arriving at a proper diagnosis, and more than once have I been asked by physicians to corroborate a diagnosis of brain abscess or brain tumor, when the condition proved to be nothing but hysteria. Many an hysterical girl has been mutilated and robbed of her healthy appendix simply because in addition to her hallucination of pain in the right side she displayed some elevation of temperature for a week or so. The most favorite joints it selects for its manifestations are the knee, elbow, wrist, and ankle, and it shows itself in three distinct forms, the main characteristics of which depend on some disturbance of the nervous system producing symptoms identical with, but unaccompanied by, structural changes or pathological lesions.

In the first variety we have pain in the joint of a most intense and excruciating character, too intense to correspond to any known organic lesion, out of all proportion to other signs of disease, without local evidences of inflammation, aggravated on the slightest manipulation, but frequently, however, displaying tolerance on deep pressure, if the patient's attention be distracted. Starr records an instance of hysterical pain in a knee-joint which kept a patient in bed for three years and appeared in the other knee when the leg was amputated as a last resort.

In the second variety we have rigid immobility due to persistent muscular spasm, and in the third variety we have inability to move the joint due to muscular paralysis. Here we have no pain, the electrical reactions are normal, there is not much wasting, and in reality we are dealing only with a nervous disorder involving the muscular system which indirectly produces a rigid or powerless joint. The spasmodic rigidity and contracture are most intense—more than is obtained in contracture from organic disease and, unlike the latter, becoming even more intense upon any attempt to correct or overcome the same.

The paralysis, likewise, is most complete—more so than obtains in organic disease—and, unlike what is noted in the latter, the patient does not even attempt to move the powerless limb, owing to the existing abulia or complete loss of will power. The patient invariably says "I cannot"; she should say, "I will not," or better still, as Sir James Paget aptly put it, "I cannot will."

The diagnosis in these cases is not difficult when in addition to the characteristic features above mentioned one takes into consideration the etiology, the neuropathic heredity, the hysterical temperament, including the vivid imagination, suggestibility, impulsiveness, desire for sympathy, emotional instability, and, above all, the various hysterical stigmata, particularly the insensitive throat and eye-ball, the zones of anesthesia or hemianesthesia, and the contraction of the visual and color fields.

The urine generally shows a reduction in total solids, especially in urea and phosphates, with the proportion of alkaline and earthy phosphates inverted. The knee-jerk is invariably exaggerated unless there is an accompanying multiple neuritis or locomotor ataxia. Before making a positive diagnosis, however, I must strongly urge the necessity of eliminating all possibility of a coexisting organic lesion, for not infrequently we find hysterical and organic disease of the joint combined. In this connection, I might mention the case of Jennie S., who came to us from one of our large hospitals, where the orthopedist and the neurologist expressed different views, but who showed unmistakably the coexistence of hysteria with a spastic paralysis due to a lateral sclerosis of the cord. This 14-year-old girl, as was to be expected, is now helpless and bedridden.

As to treatment we must bear in mind that we are dealing with a mental disorder which must be treated mentally and our sheet anchor must be, aside from attention to the general health, suggestion and persuasion; and in order to produce the

*Read at the clinical meeting of the Hospital for Deformities and Joint Diseases, May 23, 1911.

best possible results we must employ indirect as well as direct suggestion. The patient must be accompanied to the consultation room by a relative or attendant (a rule which for obvious reasons I cannot insist upon too strongly); and after making a few painful applications of the electric current to the joint or limb we should address the attendant, speaking in an undertone, presumably for the patient not to hear, but loud enough to make sure she does hear, stating that from all indications, such as the general appearance, the improved blood state, etc., a cure is gradually, but surely, taking place, and that the patient will be thoroughly well in even less than the allotted time for a promised cure.

We now come to two most interesting, though gloomy, conditions—the arthropathies of locomotor ataxia and syringomyelia, and I will speak of them conjointly for the reason that they have much in common. In 1868 Charcot first described the joint affections accompanying locomotor ataxia, hence the appellation Charcot's joint. Etienne, as far back as the latter half of the sixteenth century, first described the post-mortem findings in the spinal cord, which we now recognize as belonging to syringomyelia, but it was not until 1887 that Schultz and Kahler gave a good clinical picture of the disease which made the diagnosis possible.

In tabes the joints become affected in from 2 to 4 per cent. of the cases, while in syringomyelia fully 10 per cent., and, according to some authorities, as high as 33 per cent., show affections of the joints. In tabes in between 75 and 80 per cent. of the cases the joints of the lower extremities are involved, and in syringomyelia those of the upper limbs are involved in a similar proportion—a fact easily accounted for by the lesion involving primarily the lumbar segments of the cord in the former and the cervicodorsal segments in the latter. In syringomyelia the joints of the spine are frequently affected, giving rise to deviations of the vertebral column in the nature of a scoliosis or even angular deformity. Some of the cases of scoliosis, however, are due merely to the extensive wasting of the spinal muscles on one side. In tabes the joint affection may precede the onset of the cardinal symptoms of that disease. These are (1) loss of knee-jerk, (2) Argyll-Robertson pupil (insensitive to light but sensitive to accommodation), (3) lightning pains, and (4) ataxia or muscular incoordination. Of these the loss of knee-jerk is probably the earliest and most constant symptom.

The cardinal symptoms of syringomyelia are (1) thermoanesthesia or loss of temperature sense, (2) analgesia, and (3) progressive muscular atrophy, beginning in the small muscles of the hand and extending upward and to the spine. The changes in the joints are practically identical, which is, undoubtedly, accounted for by the similarity of the essential nature of the nerve lesions. In tabes we have primarily a degeneration of the sensory tracts —the posterior nerve roots, posterior columns, and horns, the disease process extending from without inward; while in syringomyelia we have a dilatation of the central canal with gliomatosis producing a secondary degeneration in the same nerve structures, the disease process extending from within outward.

The tabetic anesthesia and syringomyelic analgesia produce a loss of nutrition in the joints due to the absence of reflex stimulation and account for the similar nature of the arthropathy.

In nearly all the cases we find an abnormal range of joint motion, an almost complete absence of pain, and an enormous swelling extending to the adjacent parts, frequently of rapid or sudden onset, and without any local evidences of inflammation. Within the joint we find the capsule dilated or ruptured; a large collection of synovial fluid; the synovial membrane thick, rough, adherent, or destroyed; the ligaments soft, elongated, and loosened from their attachments; the cartilages become destroyed, the bone surfaces become absorbed and creak on motion, the erosion in some instances extending to several inches of their length. In some cases a hypertrophic form of arthritis deformans takes place, and in still others both varieties may be combined.

The subject of treatment I will relegate to my more optimistic colleagues, the orthopedic surgeons.

616 Madison Avenue.

ARTERIOSCLEROSIS.

By WILLIAM FRANCIS WAUGH, A.M., M.D.,
CHICAGO, ILL.
PROFESSOR OF THERAPEUTICS, BENNETT MEDICAL COLLEGE.

Hardening of the arteries has long been considered the essential characteristic of those changes that constitute old age. "A man is as old as his arteries," is true, truer than that he is aged according to the years he has lived. Indeed, it was probably the obvious fact that some men are physically older than others who have lived just as long, that directed the attention of men to the study of the physical causes of senility.

The morbid process in the arteries commences with irritation by some abnormal substance in the blood. This induces contraction, narrowing of the lumen of the vessels, necessitating the expenditure of more power by the heart to force the blood through the narrower outlets. Hypertrophy of the heart follows, with an increase in the pressure upon the arteries nearest the heart, where the increase of force is first felt. The result is a development of resistance in the arterial walls, with the anatomical changes well known. But what occasioned the first step of the chain of morbid processes?

We are confronted with a condition so common to the aging as to be held characteristic of senility, yet not necessarily present at any age, and much more marked in some cases than in others. We should seek for a cause common but not universal at this period of life, and for certain exceptional causes affecting some individuals but not very many.

The first, general, cause we find in that decline in the sensibility and the motor power of the colon, incident to advancing age. Fecal matter collects in the large bowel, and is retained beyond the normal period. There are no such safeguards here as in the small intestine and decomposition goes on unchecked. Toxins are developed which are absorbed into the blood, where they irritate the walls of the vessels through which they circulate. Here we have an adequate general cause, one whose presence and capability of inducing the first lesions are not questioned. It is not a difficult matter to demonstrate: Take the urine of any man over fifty years of age, and with Harrower's indicanmeter you may demonstrate the presence of indican, derived from feces, circulating in the blood, and excreted by the kidneys. There are clinical tests

quite as satisfactory. Senile pruritus is invariably dependent on fecal toxemia, and if affecting the anal region, it attends acidity and pyrosis. Dry, brittle nails and a scaly skin frequently accompany this condition. Pyorrhea alveolaris has recently been recognized as due to the same cause. Early loss of the hair may be an evidence of superior mentality, as has been asserted, but it is curiously frequent in the victims of autotoxemia. I do not wish to intimate that indican is the agent of these alterations. Acidemia will, I am confident, prove to be the most common pathogenic element, but indican furnishes the most readily available test for the general condition.

Of the accessory causes that determine the early or more pronounced forms of arteriosclerosis, we have the other maladies that may contribute toxic irritant elements to the blood. Among these we may enumerate gout, rheumatism, and those forms of indigestion that contribute acids to the blood; gonorrhea and suppuration—possibly dental caries—that supply bacteria or their toxins; syphilis, malaria, and other maladies furnishing protozoa; the metallic poisons, lead, arsenic, mercury, etc., and probably others as yet undetected. The influence of alcohol seems positive, yet this is rarely present without the concomitant influence of one of the other causal conditions enumerated. Whether tobacco causes arteriosclerosis I must be permitted to question. It is so purely a relaxant that its influence seems to counterbalance that of the irritants; it favors elimination, and if not used excessively has been found to be apparently innocuous even when continued to extreme old age. Those who seem to be injuriously affected by even moderate quantities of tobacco are the rather rare exceptions among men. All we can justly claim against tobacco now is that it should not be used by those to whom it is evidently injurious. But it should be the physician and not the patient who decides this.

There is no sufficient evidence for placing sexual indulgence among the causes of arteriosclerosis. Long-continued physical exertion, beyond the physiological limit of the individual's capacity, may induce atrophic and hypertrophic alterations in the muscular fibers of the arterial coats as well as in the skeletal muscles; but here also we recognize the action of the chemotaxis.

The treatment is deducible from the etiology. Keep up the activity of the large bowel. Study in each case the effect of various remedies for this purpose, and suit the individual peculiarities. Do not give simply "a" laxative or cathartic, but ascertain which is "the" one for this patient. Aloin acts most powerfully on the rectum, cascara on this and the descending colon, senna on the cecum and ascending colon. The latter wears out, if continued, sooner than either of the others. If the dose is exactly enough, and the patient resists the impulse to create an artificial diarrhea, aloin or cascara may be continued for years with undiminished efficacy.

Combinations are better than single remedies if made purposefully; the action is smoother, more uniform, with less stimulation of a single function. A morning dose of a saline laxative, such as sodium sulphate or phosphate, a scruple of either in a glass of water on rising, will often suffice. But the occurrence of a daily evacuation does not mean an emptied bowel, and the indican test should be employed regularly. As the disease advances the colonic enema must be brought into requisition.

Attention to diet is of prime necessity. Raw prunes are very useful. All fruits are laxative. The food supply must be carefully restricted to the needs and any excess of nitrogen forbidden. Yet, as "man is prone to evil as the sparks to fly upward," as the digestive powers decline, the easily digested meats that yield a quick return in assimilable nutriment, are apt to be preferred, unconsciously.

The use of sour milk, as advised by Metchnikoff, deserves especial study. Very often it is particularly relished, or even craved by these patients; and for this there is a physiological cause. Since commercial pasteurization has become general, destroying the protective enzymes and lactic acid generators, allowing the putrefactive organisms to multiply unchecked and the ptomaine formation to go on without the warning of souring, the use of all forms of milk has become more perilous. This favors the use of the Bulgarian bacilli, provided the preparations can retain these indefinitely in an active condition.

Nearly everybody who believes in the value of drugs in treating arteriosclerosis recommends some form of iodine. Personally, my best results have followed the use of arsenic iodide, in doses of a milligram before meals and at bedtime; increased to seven daily doses, or until irritation of the eyelids betokens the beginning of toxic action, and then held as closely as possible to that point without quite touching it. This treatment has been maintained for six, twelve, and eighteen months, with very satisfactory results. Arsenic iodide is an effective gastroduodenal antiseptic, stopping fermentation there; it stimulates absorption and elimination and carries the liquefied metallic and other toxins out of the system. With proper regulation of the diet and the bowels, it is effective.

When vascular tension is marked veratrin offers advantages to be secured from no other remedy. By its judicious use the arterial tension may be moderated at will, and maintained at the normal point for months or years, without a trace of harm, immediate or remote. It is not a mere symptom remedy, for while thus controlling the vascular tension it is stimulating all the eliminants to excrete the toxins that are working the evil. No form of nitrites is suitable for such continuous relaxation. Their place is where quick and brief effects are desired. The textbook dosage of veratrin is erroneous, because it was not fixed by those who had had wide experience in the internal use of this remedy. Of the pure alkaloid veratrin, the average adult dose is half a milligram, given in at least two ounces of water, and repeated every one to four hours until the desired effect has been secured. The dose thus ascertained may be divided into three portions and taken in the usual way, after meals. The advantages of this remedy are its uniform and certain effect, easily maintained, and its absolute safety, since under no circumstances can harm occur when it is administered as here suggested. It provides its own elimination, so that remote ills or cumulative perils are impossible.

It has been twenty-five years since I settled upon this treatment of arteriosclerosis. As may be inferred, my own age is such as to render the malady of some personal interest. Sufficient time has elapsed to permit a fair judgment of the results, in an affection where the prolongation of active, use-

ful, enjoyable life is the test of efficacy, and autopsies aid only by their absence. Judging by the clinical data, I feel warranted in recommending the treatment herein outlined to my colleagues.

1358 Fulton Street.

SOY BEAN COOKERY.

By JOHN RUHRAH, M.D.,

BALTIMORE.

The soy bean (*Glycine hispida*) sometimes referred to as the soja bean, is an annual leguminous plant which has been cultivated from very earliest times, especially in Japan and China, and in these countries it has been used for food since long before the time of Confucius. Although one of the chief articles of diet in these countries, its use has been very slow in spreading to other lands. In China and Japan the bean is utilized as a food in a great many different ways, a fact to which I have already called attention in previous publications.*

There are variations in the composition of the different varieties of beans. The yellow beans grown in America have the following composition:

Water	10.14	per cent.
Protein	34.63	per cent.
Fat	17.98	per cent.
Nitrogen free extract	30.50	per cent.
Fiber	3.69	per cent.
Ash	3.07	per cent.

Calculated to a water free basis:

Protein	38.50	per cent.
Fat	20.	per cent.

The soy-bean flour has the following composition:

Proteins (N x 6.25)	44.64	per cent.
Fat	19.43	per cent.
Mineral matter	4.20	per cent.
Moisture	5.26	per cent.
Crude fiber	2.35	per cent.
Cane sugar	9.34	per cent.
Non-nitrogenous extract	14.78	per cent.
Starch	None	
Reducing sugars	None	
Polarization normal weight due to optically active substance other than cane sugar included in proteids and non-nitrogenous extract	7.86°	

Egasse first suggested the use of the bean in the diet of various diseases, particularly in diabetes, and the first trials in this disease were made by Dujardin-Beaumetz at the Cochin Hospital in Paris.

Since publishing the articles referred to above, I have had so many requests for information about the preparation of the soy bean, especially for diabetics and also for its use in other diseases, that I thought it best to bring together a few of the methods of preparation which have been used with success. It may be noted that the soy bean flour yields about 13 grams of protein and has a food value of about 120 calories.

In diabetes the beans may be added to the diet simply to give variety, and they may also be used to great advantage in connection with an otherwise carbohydrate-free diet, particularly in those cases in which the sugar percentage is high, and it is with these cases we have had particular success.

The simplest way to use the beans is to cook them like the ordinary navy bean, preparing either bean soup, boiled beans, or baked beans, the flavor usually being rather improved by the addition of a piece of fat salt meat. It is also a good plan to soak the beans for eight or ten hours, stir them up, and remove the rather firm envelope which encloses them, most of which will be found to come to the surface, from which they may be easily skimmed off. The beans may be boiled and reduced to a smooth gruel and used in this way as a gruel, although this is rather a troublesome process, or the beans may be thoroughly boiled and mashed and may be flavored with some other vegetable, particularly stewed tomatoes. The soy bean flour may be utilized in many ways.

Archives of Pediatrics, July, 1909; *Journal of the American Medical Association*, July 10, 1909, p. 140; *American Journal of the Medical Sciences*, December, 1910.

Gruels.—A quart of gruel is made by boiling from 1 level tablespoonful to 6 ounces of the soy gruel in one quart of water for fifteen minutes, adding water to make up for loss by evaporation. Salt should be added to taste.

	Protein.	Fat.	Carbohydrates.
1 level tablespoonful to quart	0.35	0.15	0.08
1 ounce 4 tablespoonfuls to quart	1.40	0.60	0.30

These gruels do not thicken during cooking, as they contain no starch, and readily settle on standing. This may be overcome by adding 1 to 2 heaping teaspoonfuls of barley, oat, or wheat gruel flour before cooking, which will add 0.6 per cent. to 1.2 per cent. starch to the gruels, and also slightly increase the percentage of protein.

Broths.—Add 1 to 8 ounces of the flour to 1 quart of beef, mutton, veal, or chicken broth and boil for fifteen minutes, adding water to make up for loss of evaporation; or, boil the same quantity of the soy flour for one hour with one quart of water, to which has been added a piece of ham, bacon, or salt pork to give flavor. Each ounce of the flour will add to the broth about 13 grams of protein and 120 calories, or in percentage add 1.4 per cent. protein, 0.60 per cent. fat, and 0.30 per cent. carbohydrates. A broth made with 6 ounces of the soy flour to the quart would be half as rich in protein and fat as steak.

Muffins.—To make muffins from the soy flour, take 1¼ teacupfuls of the soy flour, ¼ teacupful of wheat flour, ½ teaspoonful of salt, 2 eggs, 1 teacupful of sweet milk, 2 rounded teaspoonfuls of baking powder, and 1½ tablespoonfuls of melted but not hot butter. Beat well together, adding the melted butter last, and bake in gem pans in a hot oven. This will make about twelve muffins which will contain about 150 grams of protein, and which will yield about 1,800 calories, of which the carbohydrates produce but 280. Inasmuch as the soy flour contains no starch, the addition of some wheat flour in making muffins is required. The mixture of wheat and soy flour in this formula will contain about 36 per cent. protein and 20 per cent. carbohydrates, against 14 per cent. protein and 60 to 70 per cent. carbohydrates in gluten flour. The proportion of protein to carbohydrates is eight to ten times as large in the mixed soy and wheat flour as in gluten flour.

In addition to these methods, the following recipe for muffins has been suggested by Dr. Skinner of New Haven, Conn.: Soy bean flour, 1½ cupfuls; salt, ½ teaspoonful; baking powder, 2 even teaspoonfuls. Mix well and add 2 tablespoonfuls of cream which has first been thoroughly stirred into a cup of cold water. Add 2 eggs and beat together. Then add 2 tablespoonfuls of melted butter and beat the whole mixture well together. Bake 15 minutes in a heated gem pan. The above makes 15 muffins.

Another recipe for muffins is to beat up 3 eggs, add 1 cup of milk, in which 1 grain of saccharin has been dissolved, and a lump of butter the size

of an egg. Enough of the bean flour should be added to make a batter with ½ teaspoonful of baking powder. This should be baked in buttered muffin pans.

Nut-cakes.—These may be made by using the above muffin recipe as a basis and adding chopped nuts, almonds, or any other kind desired; and the flour is improved by the addition of a small amount of spice.

Soy Bean Cakes.—These may be made by taking 1 tablespoonful of cocoa, 1 teaspoonful of cinnamon, 1 teaspoonful of allspice, and chopped nuts, adding them to the batter as prepared for the muffins.

Breakfast Food.—As a breakfast food it may be utilized by taking 1 cup of flour, enough milk or water to moisten it into a paste, a pinch of salt, and 1 grain of saccharin, which should be dissolved before adding. Boil 1½ hours in a double boiler and serve with rich cream.

Pancakes.—These may be made by beating up 2 eggs with a pinch of salt, adding enough meal to make a batter, and ¼ teaspoonful of baking powder. This should be fried with butter and made into small cakes.

Soy Bean Cheese.—In China and Japan the bean is used chiefly in the form of a cheese-like substance, the most common forms of this being natto, tofu, miso, yuba, and shoyu. These cheeses are eaten daily by almost all the inhabitants of the East, but they are said to have a lack of flavor that renders them more or less unsuited for European and American palates. In Seattle, Wash., and other places in the West, I am informed that tofu is made by the Japanese and sold to the Oriental residents. I have not had any personal experience so far with the bean cheeses, although they are evidently very easy to manufacture. One may be made from the gruel, which resembles somewhat curds and whey, but which in the only form I have tried is not sufficiently palatable for use, although very slight flavoring might make it a valuable food for American use.

The following suggestions for cooking the bean are made by Goff:*

Grilled Soy Beans.—The beans may be grilled like chestnuts, using the same method. If the beans are old and dry they should be first soaked in warm water.

Soy Beans with Butter.—Let the beans soak in warm water until the hulls are separated and float upon the surface, then let them strain for 24 hours, when they should be cooked, according to the age of the grains, from 1 to 4 hours, and seasoned to taste. They should then be strained again and served hot with butter on lettuce or romane.

Soy Beans au Gras.—Place a chopped onion in a casserole of fat and fry it until the onion becomes brown. Then add the soy beans cooked as above, and allow them to cook a few minutes longer.

Bread or Cakes of Soy Beans.—Triturate in a mortar 250 grams of soy flour with two fresh eggs and a large spoonful of milk. When this is perfectly mixed, add a pinch of baking powder, place in well-buttered molds, and cook from 15 to 20 minutes. This may be flavored with vanilla, orange flowers, or with pieces of citron. They may be divided into small cakes and then cooked in very small molds.

839 North Eutaw Street.

*Gazette des Hôpitaux, March 7, 1911, p. 399.

The Source of Bile Pigment.—Brugsch and Yoshimoto produce what they believe is absolute proof that bile pigment is derived from hematin.—*Zeitschrift für Experimentelle Pathologic und Therapie.*

Practical Treatment of Congenital Talipes Varus Equinus.—M. L. Lamy advances a new method of operative treatment of talipes equinovarus in the infant. When the deformity does not yield to massage during the first three or four months of life it may be considered irreducible. Operation of some kind becomes necessary. Tenotomy is satisfactory only in muscular cases. When the deformity is ligamentous or osseous it is insufficient. The various bony operations that have been proposed either shorten the foot, or give a bad appearance and gait, or destroy the motion of the ankle and foot joints, or leave adduction and rotation of the foot. The operation that is proposed by the author involves a subcutaneous removal of the osseous nodules of the astragalus, cuboid, and calcaneum, leaving the cartilaginous shell and the periosteum intact. The foot is then reduced and made malleable by movements of severe massage, and is immobilized in the correct position with plaster. After three weeks in bed the plaster is removed, and a fresh massage under general anesthesia given, with measurements for a brace which will raise the point of the foot and external border. Plaster is worn another three weeks and the child is then allowed to walk with the brace on. This apparatus is worn for two years, with frequent massage and voluntary exercises of the foot. The author claims that there are none of the inconveniences of the other methods and that this procedure preserves the advantages of all the others. There is no shock, no infection, no hemorrhage, no sutures, no cicatrices. It allows of complete reduction of the deformity without mutilation, and with preservation of the articular surfaces and the movements of the joints. It preserves the length of the foot and the elements of growth. It allows of acting upon the principal factor of the deformity, that is the bones themselves.—*Gazette des Hôpitaux.*

Auricular Troubles in the Course of Treatment of Syphilis by Organic Arsenical Products.—H. Gaucher and H. Guggenheim state that some of the new arsenical products used in the treatment of syphilis have been responsible for deafness in a number of cases. This disease, accompanied by tinnitus aurium is caused by a toxic condition due to the effect of the arsenic on the auditory nerves. Atoxyl has a very bad effect on the optic nerve; so has arsenophenylglycin. Arsacetin produces degenerative lesions of the vestibular nerve. Hectin has been responsible for deafness in two cases related by the authors. Bilateral deafness appeared suddenly, and examination showed that it was the labyrinth that was affected, especially the cochlear nerve. These affections come on as soon as doses of over three grams and a half have been given uninterruptedly. Hence we should be careful as soon as this dose is approached, and as soon as any symptoms are observed the dose should be diminished. As to the use of arsenobenzol numerous observations have been published of deafness occurring during its administration. Still there are a number of cases of syphilis that when untreated produce deafness. The authors believe that they can show that there are more cases occurring with than without the use of arsenobenzol. They appear during the first four months after the injections have been made; there is a lesion of the auditory nerve and it may be associated with a neuritis of the facial or optic nerves. It is the cochlear branch that is involved, and sometimes the vestibular branch. The bony conduction is lessened and acuity of hearing is lessened on both sides. There may also be vertigo. The condition undergoes retrogression as soon as the remedy is stopped and the prognosis is good for hearing.—*La Presse Médicale.*

MEDICAL RECORD.

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CYTORYCTES VACCINÆ.

CELL-INCLUSIONS in the Malpighian layer of the skin removed from patients suffering from smallpox or vaccina were seen and interpreted as protozoa as early as 1887 by Pfeiffer, but he had found protozoa in so many diseases that little attention was paid to the observation at that time. In 1892, however, Guarnieri inoculated the corneal cells of rabbits and guinea-pigs with vaccine virus and with pustule contents and found that the peculiar cell inclusions reappeared in each new epithelium inoculated. He regarded them as protozoa, naming them *Cytoryctes vaccinæ* and *Cytoryctes variolæ*. In 1901 Wasielewsky passed vaccine virus through forty-eight successive transplantations, the thirty-sixth giving successful vaccination against smallpox, and in each case these inclusions were present and in approximately the same number, showing that reproduction had taken place. Councilman, Magrath, and Brinckerhoff found that in variola the cell inclusions are present both in the cell bodies and in the nuclei, while in vaccina they are present only in the cell bodies. They concluded that the intranuclear position indicated a phase responsible for the greater malignancy of smallpox. Calkins ("Protozoology," 1909, p. 308) is inclined to think that the Guarnieri bodies are rhizopods and describes the probable life history of the organism. He interprets the finer granules as vegetative spores of merozoites; the body ruptures and the spores are liberated to be carried by the blood to new regions of the skin where the cycle is repeated. In vaccina this vegetative cycle appears to be the only phase of the life history. In variola, however, the nucleus finally becomes infected and the parasites develop in a more definite manner with the formation of chromidial fragments.

Recently J. Siegel (*Centralblatt für Bakteriologie*, etc., I Abt. Orig. Bd. 59, Heft 4, 406) has succeeded in obtaining this organism in pure culture. He recognized in 1904, in the blood and internal organs of calves and rabbits which had been vaccinated, minute bodies which he considered identical with the *Cytoryctes guarnieri* of the rabbit's cornea. In 1910 he made cultures from the tissues of a calf which had suered very severely from vaccina. Several tues were made of equal parts blood and bouillon, and small pieces of spleen were dropped into bouillon. These were all left at room temperature (not above 25° C.) in a dark place for ten days, when transfers were made to slant agar tubes. After eight days he found in each tube greater or smaller numbers of small transparent colonies, consisting of sharply circumscribed round and oval disks with granular contents. It is well known that the virulence of calf lymph quickly decreases and disappears when it is kept at a temperature of over 30° C., so one is not surprised to find here that the first culture at least grows best at 25° C., and indeed at incubator temperature generally refuses to grow at all. If the organism once becomes acclimated to agar media, it produces slimy, yellowish-white, raised colonies. The color varies, usually becoming brighter as the colony grows older. The virulence lessens with age, so that from old colonies it is necessary to transfer a much greater quantity of material in order to inoculate a fresh tube.

The morphology of Siegel's organism is very interesting. In the smear or in the spleen preparation, it appears as a delicate coccus about 0.2-0.3μ in diameter and is very difficult to find, being easily mistaken for a granule of precipitated stain. When grown upon agar, especially if the medium is fresh and rich in water of condensation, the forms are much larger and tend to acquire a mucous capsule and to clump together. They stain easily with Loeffler's methylene blue. The small forms are Gram negative, while the larger encapsulated ones are Gram positive. From their morphology they may be included with the diplococci or the staphylococci, but they have nothing in common with the pyogenic cocci, they never produce pus or cloud bouillon, and the growth is best at a low temperature. On account of these peculiarities he thinks it is perhaps better to include them in a separate group under the name *Cytoryctes cocci*.

Siegel inoculated one man in four places on the arm with the greater part of an agar culture. At the point of inoculation there appeared a slight inflammatory swelling of the skin, but no typical vesicles or papules. In five days everything had apparently disappeared. After twelve days, however, constitutional symptoms developed with fever and severe headache. Also there appeared solitary papules on various parts of the body, some being surrounded by an inflammatory areola. The whole attack lasted several weeks and gave the impression of a light attack of variola. He then turned to rabbits. Wasielewsky had convincingly demonstrated the specificity of the *Cytoryctes guarnieri* in the inoculated rabbit's cornea. Siegel using his cultures was able to get fairly constant, though not absolutely conclusive, results. Biological proof seems difficult, as all agglutination and complement fixation tests have so far yielded unsatisfactory results. He concludes that it is possible to find in the blood and spleen of vaccinated calves small bodies which, under the name of *Cytoryctes guarnieri*, are described as occurring in the rabbit's cornea when infected with vaccine lymph, and he has with some success demonstrated that the cornea shows the same changes when inoculated with a pure culture of this organism as those which develop in the presence of the *Cytoryctes guarnieri*.

Of course the demonstration cannot be regarded as final, but at the present time the burden of proof would seem to rest upon the opponents of this contention.

MILK DEPOTS AS A FACTOR IN THE REDUCTION OF INFANT MORTALITY.

Owing to the various articles of late appearing in the press and magazines of the country it is of interest to note the review written by Dr. Kerr of the United States Public Health and Marine Hospital Service, and published in Public Health Report for August 18 under the caption "Data Regarding Operations of Infant Milk Depots in the United States in 1910." Forty-three institutions located in thirty cities furnished details as to their operations, maintenance, method of instruction, number of children fed, average age, form of milk used, and mortality rate. Owing to the lack of uniformity existing in the various institutions it is difficult to make any accurate comparison of the data furnished. The general object seemed to be the protection of life and the effort to attain this end fell under two main headings; first, the teaching of the hygienic needs of the infant; second, the relief of distress due to poverty.

Twenty-nine of these depots were maintained by private funds only. Three cities supported stations out of the public funds. Forty-one gave instructions by means of literature or by the personal teaching of physicians and nurses in matters pertaining to infant hygiene. Some institutions furnished milk free, others sold it at varying prices. A number furnished milk to expectant mothers or as an aid to nursing women, thus indirectly enhancing the infant welfare. Several institutions distributed milk to sick children only, while at two none of the applicants were sick. In the vast majority, however, the applicants were already ill, which seems to show that it is for the sick infants that the milk depots are at present most needed. The proportion of children improving or remaining well while taking the milk indicated decidedly good results, although this statement has to be made with some reservation as the data furnished were somewhat indefinite and the most accurate conclusions could be drawn only from the statistics of such depots as furnished milk during the entire year. As a number were in operation only during the summer months, the value of the observations was necessarily less in such cases. The average age of the applicants was under one year, with extremes of two days to twelve years. As a rule, milk was prepared from standard formulæ, though in some cases private physicians were allowed to prescribe for their individual patients to meet the particular needs in question. About 15 depots furnished heated milk, 17 raw milk only, and 5 both heated and raw. The temperature used in pasteurization varied in different plants from 140° F. to 170° F., and the time from 10 to 40 minutes, or an average of 20 minutes minimum exposure. In some institutions the milk was heated winter and summer, in others in summer only. All reported using the best milk obtainable and in some cases certified milk was used.

When one takes into consideration that the majority of these infants were sick and came from poor surroundings the general impression is gained that the average mortality rate of those fed on dispensary milk for one month or over was relatively small. This, however, is only a general impression, for in order to have accurate mortality rates we must have accurate birth dates, and as in many cities the registration of births is woefully incomplete it is impossible to determine the infant mortality with accuracy. As the registration of vital statistics is universally conceded to be the true foundation upon which the science of preventive medicine must rest, the report of Dr. Kerr only emphasizes anew the truth that progress along these lines is greatly impeded by the lack of uniformity, not only in the recording of births and the causes of deaths, but likewise in the widely different methods and aims of our various institutions for research. The hopeless confusion existing might be easily remedied by the creation of a federal department with a central medical head whose aim it should be not only to safeguard the public health but also to establish a system of uniformity in the methods of observation and thus reduce the immense available data to some orderly system which would permit of accurate scientific interpretation at the hands of the trained statistician.

AVIATION SICKNESS.

It follows naturally that after the adoption of flying on a wide scale morbid manifestations peculiar to the change of meteorological conditions to which those who travel through the air at varying altitudes and at great speed are subjected should be the subjects of medical study. In the first instance, in the case of those who take part in the very hazardous occupation or excitement of guiding and managing an aeroplane there must be great stress placed upon the nervous system, more probably greater than in any of the strenuous pursuits, not even excepting automobile racing, to which the present generation is so prone, but this aspect of the matter is foreign to the present discussion. In the *Medical Press and Circular* of August 23 reference is made to a communication by Crouchet and Moulinier to the French Académie des Sciences as a result of their observations on several aviators who took part in the Bordeaux contest.

According to these observers there are two kinds of troubles from which aviators suffer. The first is due to the altitude attained, the second to the physical effort put forth. The special factors of the altitude question are difference in pressure and difference in the chemical composition of the air. Of course, the difference in pressure is very considerable and the difference in chemical composition of the air is also quite marked at great heights, and, further, there is the difference in the temperature. There are, however, in the case of aviators two very special adverse factors to which Crouchet and Moulinier attach great importance, viz., the rapidity of the ascension and still more the rapidity of the descent. The speed of the ascent is ofttimes very

great, but the rapidity of the descent is fantastic and almost gruesome. The biplane and monoplane differ somewhat with regard to the speed of ascension, but the rate of descent is about the same for both.

So far as the ascent is concerned respiration becomes shorter when a height of 1,500 meters has been reached and tachycardia increases. Nausea is not a symptom, but an undefinable kind of malaise is present. As for the auditive phenomena, a slight deafness is experienced at the height of 1,000 meters; at a somewhat greater height noises in the ears commence. Vision remains intact. The following are some of the other sensations which have been remarked: headache, sensation of cold above 2,000 meters (6,500 ft.), an intense desire to urinate, while the movements of the body are brusque and jerky. The morbid phenomena which distinguish the descent are chiefly these: a sensation of anguish like that which accompanies the sudden descent of an elevator, violent palpitations, greatly increased noises in the ears, and a more imperative desire to micturate. The most characteristic of all the troubles are a burning sensation of the face and disagreeable smarting of the eyes with an almost irresistible desire to sleep. On landing the aviator is not free from the above sensations for a considerable time. Respiration quickly returns to normal, but arterial hypertension is still well marked and persists for quite a long period after the flight is finished.

As may be imagined explanations of these phenomena differ as much as the phenomena themselves differ. Evident rôles may be attributed to variations of temperature, the cold, speed, and so forth. With regard to the troubles of circulation the authors are of the opinion that the cause may be sought in the rapidity with which the human organism passes through the different conditions of atmospheric pressure, though it is not reasonable to exclude altogether the nervous element.

Dr. Wiley Upheld.

After a very thorough investigation of the charges against Dr. Harvey W. Wiley, Chief of the Bureau of Chemistry, in connection with the employment of Dr. H. H. Rusby, President Taft, in a letter to Secretary Wilson of the Department of Agriculture, exonerates Dr. Wiley and refuses to administer the "condign punishment" recommeded by the Personnel Board and the Attorney-General President Taft finds that the recommendations of the board were based upon insufficient evidence and that the appointment of the Remsen Board was sufficient precedent to warrant the employment of Dr. Rusby at an annual salary, although only a portion of his time was devoted to the work of the bureau. Dr. Rusby is also declared guiltless of any attempt to evade the law in accepting compensation at the rate of $20 a day; but Drs. Kebler and Bigelow are to he reprimanded for "overzeal" in squaring Dr. Rusby's desire for adequate compensation with the contract which the Secretary of Agriculture and Dr. Wiley were willing to make with him. The President evidentally does not regard the "overzeal" as a very heinous offense, and the "reprimand" will doubtless be a mere formality. The boomerang which Dr. Wiley's opponents threw is still flying back, and may hit somebody even yet. And as for Dr. Wiley himself, if he will only acknowledge his error in the carrying out of the benzoate tests everybody will love him and peace will be his portion.

Mushroom Poisoning.

Every summer and autumn many deaths occur from the eating of poisonous mushrooms, but this season appears to be especially notable in the number of cases of poisoning by these fungi. The heavy rains coming after a dry summer caused the growth of mushrooms in profusion and men and women gathered and ate them with reckless disregard of the consequences. The majority of the sufferers are Italians who have more excuse for this fatal error than the native hunter. Most of the poisonous agarics in this neighborhood belong to the genus *Amanita*. Some of the species of this genus are edible, it is true, but the majority are poisonous and the distinction between the good and the bad is so subtle, except for an expert, that the safe rule is never to pluck any form of *Amanita*. In Italy, however, there is an edible species, *Amanita cæsarea*, or Cæsar's mushroom, which has supplied Italian peasants and Roman epicures alike with food for many centuries. It closely resembles the fly agaric, *Amanita muscaria*, and the newly arrived Italian roaming the fields naturally seizes upon the familiar object and brings it home for himself and family to feast upon. The edible mushroom is a delicacy, but its food value is greatly exaggerated, for it contains hardly as much nourishment, weight for weight, as a turnip. Those who like its taste and who can recognize it without the possibility of error may pluck it and enjoy it, but one who is not sure will do well to leave every form of mushroom severely alone. The risk is too great, for there is often poison in this cup.

Scleroma.

The affection once known as rhinoscleroma and classed among dermatoses has now by common consent become known simply as scleroma, while its localization as far down as the trachea has been responsible for placing it rather in the province of the laryngologist. The subject was discussed at the recent meeting of the German Laryngological Society (*Münchener medizinische Wochenschrift*, August 1), and some points of importance, if not of novelty, were brought out. The affection was formerly believed to be confined to two races not ethnically related, viz., the Jews and the Slavs, this resulting evidently purely from propinquity. Recently it has been encountered in Bohemia and thus seems to be traveling westward. Its cause is commonly accepted as Frisch's bacillus, which has been found even in the enlarged lymphnodes proper to the affected localities. The entire pathogenesis, including the mode of transmission, remains obscure. Ehrlich's 606 destroys the bacillus *in vitro*, but not *in vivo*. Many cases of improvement and even of cure have been accredited to the action of the *x*-rays. It behooves the health officers along the frontier of the area of prevalence of the disease to be on the watch for cases in the hope of preventing its spread.

News of the Week.

Health of the Canal Zone.—For the month of June, 1911, a total of fifty-one deaths from all causes among employees was reported. This gives an annual rate of 12.61 per thousand, which is somewhat larger than the rate for the same month of the previous three years. The following table gives the death rate among employees during June of previous years:

1904	5.02
1905	16.44
1906	41.55
1907	27.53
1908	12.35
1909	9.34
1910	10.66

Including both employees and civil population the death rate in the cities of Panama and Colon, and in the Canal Zone for the month of June of each year is as follows:

1905	50.57
1906	51.89
1907	33.45
1908	29.17
1909	16.42
1910	20.38
1911	25.33

Among employees the deaths from the principal diseases during the month were as follows: Nephritis, 6; hemoglobinuric fever, 2; malarial fever, 7; organic heart disease, 3; lobar pneumonia, 9; tuberculosis, 3; typhoid fever, 2. Thirteen deaths were due to external violence. The epidemic of measles noted in the reports for May and April had almost entirely subsided, but a slight epidemic of diphtheria prevailed, twenty-nine cases of mild type having been reported. All had yielded readily to antitoxin treatment. No cases of yellow fever, smallpox, or plague originated on or were brought to the isthmus during the month. The health officer of Colon reported a large increase in the number of deaths, 62 per cent. of the total number being of children under five years of age. The work of sanitation throughout the district has been carried on as usual.

Christian Science Deaths.—Attended only by Christian Science "healers," E. H. Carlmark of West Orange, N. J., died of typhoid fever recently. Two physicians were allowed to see the patient and diagnose the case, but both the sick man and his family refused to allow medical attendance.

A coroner's jury investigated the death of Arthur W. Eager of New York, and after listening to the testimony of the Christian Science "healer" who had attended him for three years returned a verdict that death was due to a complication of disorders caused by a lack of medical treatment.

Hospital in Danger.—The Fire Marshal of the State of New York reports that the inmates of the Long Island State Hospital at Kings Park are in danger through lack of proper precautions against fire. The report recommends the destruction of one building now used as a dormitory by 300 patients, which was not originally intended for the purpose and which is inadequately protected. It also calls attention to the lack of proper appliances for utilizing the water supply in case of fire.

Reports of Deaths in Illinois.—The State Legislature has recently amended the law covering the reports of births and deaths, making it the duty of the official giving burial permits or receiving reports of deaths to deliver to the State Board of Health on or before the tenth day of the month all certificates of death presented to him during the preceding month, and providing for the payment to such official of a fee of ten cents for each death so reported. These fees are to be a charge on the county in which they accrue.

Health of Houston, Tex.—During the year ending July 31, 1911, there were 1,400 deaths reported to the Health Department of Houston, a decrease of 102 from the total for the previous year, the death rate per thousand being only 13.7. During the same period the births numbered 1,821, exceeding the deaths by 421.

Typhoid Fever Outbreak.—A small epidemic of typhoid fever among the inmates of the village for epileptics at Skillman, N. J., has been reported. The source of the infection has not been determined.

School Children's Teeth.—The first report of the Dental Hygiene Council, appointed by the Board of Education of the City of New York, shows that about 60 per cent. of the children so far examined have defective teeth. The establishment of a free dental clinic and of a regular system for the inspection of pupils' teeth is being agitated as a result of the investigation.

Vaccinated Against Typhoid.—About 5,000 sailors from the ships in Admiral Osterhaus' fleet lying in Hampton Roads have received the vaccination treatment as a preventive of typhoid fever.

New University Hospital.—The new Elliot Memorial Hospital of the University of Minnesota was dedicated with appropriate ceremonies on September 5, Dean F. F. Wesbrook of the College of Medicine and Surgery presiding. The hospital building is situated at the extreme end of the University campus on a high bluff overlooking the Mississippi, and was made possible through the gifts of the late Dr. Adolphus Elliot. Under the regulations only patients unable to pay will be admitted. For the last two years the hospital service has been maintained in temporary buildings, and during that period more than 1,000 patients from all over the State have been cared for, and over 500 operations have been performed. In connection with the dedication ceremonies the corner stone of the new Institute of Anatomy of the University was laid.

Health Department Bulletin.—Arrangements have been made for the publication of a somewhat larger edition of the Monthly Bulletin of the New York Department of Health, and it is hoped that it will eventually be possible to publish an edition sufficiently large to enable every physician to receive it regularly. The paper is now sent free at the request of any physician in the city. Applications should be sent to the Commissioner of Health, New York.

Fatalities in India.—The British Government has published a record of the contest for existence between man and beast in India. During 1910 23 elephants were killed, but they caused the deaths of 55 persons; 1,421 tigers were killed, and their victims numbered 853. Altogether of the total population of 300,000,000, the number of persons killed by wild beasts during the year was 2,400, but this does not include the deaths caused by snakes, which amounted to 22,478, while 91,104 snakes were destroyed, a ratio of about 1 to 4. This seems a heavy toll to pay to the beasts of the jungle at this late day.

Tuberculosis Sanatoria.—Four large fraternal

orders, two international labor unions, and one of the great insurance companies now maintain sanatoria for the treatment of tuberculosis among their members. The sanatorium of the Royal League is at Black Mountain, that of the Modern Woodmen of America at Colorado Springs, and that of the Workmen's Council at Liberty, N. Y., while the Independent Order of Foresters have one sanatorium at Rainbow Lake, N. Y., and will soon open another at San Fernand, Cal. The Typographical Union and the International Pressmen's Union conduct institutions at Colorado Springs and Rogersville, Tenn., while the Metropolitan Life Insurance Company has a new sanatorium at Mt. McGregor, N. Y. One of the larger life insurance companies has recently established a "Conservation Department" in which the prevention of tuberculosis will be given special attention, and other insurance companies are considering similar action.

Disease in Haiti.—The second medical commission appointed by the Haitian Government, consisting of Drs. James Donnelly, Doucet, Boyer, and Delancourt, has gone to Ouanaminth, where the sanitary conditions have been a matter of much concern. A thorough investigation will be conducted.

The Cholera.—The cholera situation in Turkey, which has been very serious, is rendered worse by the attacks made upon the sanitary officers who are attempting to enforce the regulations in regard to the control of the disease. In Monastir a mob, led by a priest, drove the health commissioner from his office and compelled the reopening of the contaminated water supply and the withdrawal of the regulation against the sale of fruit. In Constantinople an average of 25 deaths and many new cases of the disease are reported daily. There has also been an outbreak of the disease at Mecca, and this is causing great alarm because of the approaching pilgrimages. In Italy, for the week ending September 3, there were 1,468 new cases and 648 deaths. The totals from June 26 to September 3 were 10,634 cases and 4,086 deaths.

Euthanasia Again.—Two members of a Shaker settlement at Kissimee, Fla., were arrested recently on the charge of having caused the death, by the administration of chloroform, of a sister member of the colony who was ill with tuberculosis. The accused persons admit the truth of the charge, and in explanation of their action state that the patient had been ill for a long time and had begged to have her sufferings ended, and that in administering the chloroform and thus making death easy they simply followed the guidance which came to them in answer to prayer. The two were admitted to bail, the judge having refused to consider a charge of murder in the first degree. Public opinion in the neighborhood of the settlement is divided, but ample money and legal talent have been secured for the defence.

The Quarantine Investigation.—The taking of direct testimony by Commissioner Bulger, who has been conducting an investigation of the New York Quarantine Station, was recently completed, and a brief analyzing the charges against Dr. Doty and reviewing the testimony has been submitted by his counsel, Mr. George Gordon Battle. Mr. Charles Dushkind, representing the Jewish newspaper which has been attacking Dr. Doty, has also turned in his brief, so that the commissioner now has the entire case before him.

Inebriety Board.—The first meeting of the new Inebriety Board for the reclamation of the habitual drunkard was held recently in the aldermanic chamber at the City Hall, New York. It was decided to open headquarters in the old police building at 300 Mulberry street on October 1, and after that date the police will be called upon to furnish the board with data as to all arrests for intoxication. The board expects shortly to acquire a site within a short distance of the city on which hospital buildings will be erected at a cost of about half a million dollars.

Bequests to Charities.—By the will of the late Thomas D. Crimmins of New York, St. Vincent's Hospital and Seton Hospital receive each $2,000, and St. Joseph's Hospital receives $500.

The Presbyterian Hospital of New York receives $1,000 under the will of the late Samuel Hall of Rye, N. Y.

A bequest of $500 is left to the Lynn Hospital in the will of the late David F. Adams of Lynn, Mass.

Columbia University, New York, receives one-half of the estate of the late Mrs. George Roe Lockwood, subject to the life interest of her husband, the income to be used toward assisting deserving students in the third and fourth years at the College of Physicians and Surgeons.

Reorganization of Medical College.—The University Medical College of Kansas City, Mo., has recently been reorganized and has received the endorsement of the American Association of Medical Colleges. The college offers only the work of the junior and senior years of the ordinary medical course, students being admitted on the completion of the first two years in other colleges. Special post-graduate work in bacteriology and pathology will also be offered.

Course in Internal Medicine.—During the coming season Dr. William E. Hughes and Dr. Robert N. Willson will as usual conduct six post-graduate courses in internal medicine at the Philadelphia General Hospital, each course to be of six weeks' duration. Both men and women physicians will be admitted to the lectures, which will take the form of informal clinical conferences on the cases in the wards of the hospital. No fees will be charged.

Death of Centenarian.—Mrs. Anne Murphy of San Diego, Cal., died at the Old Folks' Home in that city, on September 12, at the age of 110 years.

Harvey Society.—The Harvey Society announces that the following distinguished lecturers have been secured for the coming season: Prof. W. B. Cannon of the Harvard University Medical School; Prof. R. H. Chittenden of Yale University; Dr. Simon Flexner of the Rockefeller Institute for Medical Research; Prof. H. S. Jennings of Johns Hopkins University; Prof. Albrecht Kossel of the University of Heidelberg; Prof. H. F. Osborn of Columbia University; Dr., J. J. Putnam of Harvard University; Prof. T. W. Richards of Harvard University; Prof. W. T. Sedgwick of the Massachusetts Institute of Technology; Dr. W. S. Thayer of Johns Hopkins University, and Prof. Verworn of the University of Bonn. During the month of October the following lectures will be delivered: October 7, Local Specific Therapy of Infections, by Dr. Simon Flexner; October 14, The Chemical Structure of the Cell, by Prof. Albrecht Kossel; October 28, Anesthesia, by Prof. Verworn.

Dr. S. J. Meltzer of the Rockefeller Institute for Medical Research has recently been elected a member of the German Academy of Natural Science, Berlin. This is a very old institution, having

been established in 1652, and but four Americans have been honored by election to it.

Civil Service Examination.—The New York State Civil Service Commission will hold examinations on October 14, 1911, for the purpose of filling the following positions: Chemist, Department of Agriculture, at a salary of $900 to $1,500; pharmacist, at a salary of $540 to $900 and maintenance; trained nurse, at a salary of $420 to $900 and maintenance. Application blanks can be obtained from the State Civil Service Commission, Albany, N. Y.

Course in Clinical Physiology.—The Department of Physiology of the College of Physicians and Surgeons, Columbia University, New York, offers a new post-graduate course entitled Clinical Physiology, which will comprise a series of selected topics on the application of physiological principles to the problems of clinical medicine. These will include the newer methods of physiological registration, the viscosity of the blood in health and disease, edema, the measurement of blood-pressure in man, the electrocardiographic method and its application in diagnosis, the mechanism of the heart beat, etc. The course will consist of fifteen weekly exercises, and will be given by Drs. R. Burton-Opitz, F. H. Pike, Haven Emerson, and H. B. Williams of the Department of Physiology. It is open to doctors of medicine, and those who desire to take it are requested to communicate with Prof. Frederic S. Lee of the Department of Physiology, 437 West Fifty-ninth street, New York, before September 27.

A Young Swindler at Work.—Dr. George E. Davis of this city writes: "For the benefit of the other members of the profession I wish to make the following report of a swindle being worked in New York City. A boy of about fifteen years, rather stout, brown hair, purporting to be a messenger from Johnson & Johnson, calls at doctors' offices, out of hours, with a package of sand in collar boxes, wrapped in brown paper, marked with a pencil, "$3.00 Collect," or some such amount. In this instance the door-boy asked for the bill and was told it was inside of the package. The door-boy then paid the amount without opening the package and the fraud was not discovered until after the messenger had gone."

The Study of Tropical Medicine.—Tulane University, New Orleans, has established a Department of Tropical Medicine under the charge of Dr. Creighton Wellman, the first course to begin October 1.

Dr. Bull's Library for the Academy.—The children of the late Dr. Charles Stedman Bull have presented his entire medical library to the New York Academy of Medicine.

Cocaine Addiction Among Negroes. — The Grand Jury of Hinds County, Mississippi, has presented a report stating that "The use of cocaine is alarming, principally among the negroes, who in some sections of the county, when short of cash, have actually bartered their farm products for the drug. We trust good citizens will continue to assist the officers in rooting out this evil, which is demoralizing labor and filling the jails with criminals."

Dr. M. Howard Fussell has been elected professor of applied therapeutics in the medical department of the University of Pennsylvania.

American Electrotherapeutic Association.—At the twenty-first annual convention, held in Philadelphia on September 5 to 7, the following officers were elected for the ensuing year: *President*, Dr. William D. McFee, Haverhill, Mass.; *Vice-Presidents*, Dr. F. Howard Humphris, London, England, and Dr. George E. Pfahler, Philadelphia; *Treasurer*, Dr. Emil Heuel, New York; *Secretary*, Dr. J. Willard Travell, New York; *Registrar*, Dr. Frederick M. Law, New York.

Missouri Valley Medical Association.—The annual meeting of this society was held in Omaha, Neb., on September 7 and 8, when the following officers were elected for the ensuing year: *President*, Dr. J. M. Bell, St. Joseph, Mo.; *Vice-Presidents*, Dr. A. C. Stokes, Omaha, and Dr. S. Grover Burett, Kansas City, Mo.; *Secretary*, Dr. C. W. Fassett, St. Joseph; *Treasurer*, Dr. O. C. Gerhardt, St. Joseph.

Obituary Notes.—Dr. Maurice Dwight Clarke of Haverhill, Mass., a graduate of the Harvard University Medical School in 1882, a member of the Massachusetts State and Essex County Medical Societies, formerly president of the latter, and secretary and treasurer of the Haverhill Medical Society, president of the consulting board of the Danvers Insane Hospital, city physician of Haverhill from 1892 to 1897, and a member of the board of health from 1892 to 1909, died at his home of paralysis on September 8, aged 59 years.

Dr. Eugene A. Hultz of Perth Amboy, N. J., a graduate of Hahnemann Medical College, Philadelphia, in 1886, died at his home September 5.

Dr. John E. Lockridge of Nevada, Iowa, in practice in Indianapolis, Ind., until last April, a graduate of the Medical College of Virginia, Richmond, in 1863, died at his home last month.

Dr. Isaac Buckeridge of Beloit, Wis., a graduate of Hahnemann Medical College and Hospital of Chicago in 1883, died at his home after a prolonged illness August 30, aged 61.

Dr. Jacob Weber of Philadelphia, a graduate of the University of Pennsylvania, Department of Medicine, in 1858, died at Cape May, N. J., August 28, aged 86.

Dr. Starling Loving of Columbus, Ohio, a graduate of the Starling Medical College of Columbus in 1849, and the oldest alumnus of Bellevue Hospital, New York, and a member of the American Medical Association and of the Ohio State and Franklin County Medical Societies, died at his home on September 2 aged 82 years.

Dr. Frank E. Waxham of Denver, Col., a graduate of the Northwestern University Medical School, Chicago, in 1878; professor of laryngology and rhinology in the Colorado School of Medicine, Boulder; a member of the medical staff of St. Joseph's Hospital; laryngologist and rhinologist to the University Hospital, the National Jewish Hospital, the Children's Hospital, and the Central Free Dispensary, and consulting laryngologist to the Denver City and County Hospital; a member of the American Medical Association, the Colorado Medical Society, the Medical Society of the City and County of Denver, and the Denver Clinical and Pathological Society, died at home of paralysis, on September 4, aged 59 years.

Dr. Isaac Buckeridge of Beloit, Wis., a graduate of the Hahnemann Medical College of Chicago in 1883, and a member of the Wisconsin State and Rock County Medical Societies, died at his home on August 30, aged 61 years.

Dr. Alfred W. Mitchell of Humansville, Mo., a graduate of the Medical Department of Washington University, St. Louis, in 1879, died suddenly at his home, on September 4, aged 55 years.

Obituary.

THOMAS DWIGHT, M.D., LL.D.

BOSTON, MASS.

Dr. Thomas Dwight, Parkman professor of anatomy in the Harvard University Medical School since 1883, died at his summer home in Nahant, after a long illness, on September 8, aged 68 years. Dr. Dwight was a graduate of Harvard University, receiving the degree of A.B. in 1856, and of M.D. in 1867. In 1872 he became instructor in compartive anatomy in the Harvard Medical School, and in 1874 was made instructor in histology, and in 1880 instructor in topographical anatomy. In 1883 he was apointed professor of anatomy, succeeding Dr. Oliver Wendell Holmes in that chair. From 1872 to 1876 he was professor of anatomy in the Medical School of Maine, Bowdoin College. Dr. Dwight was a member of the American Medical Association, the Association of American Anatomists, and the Massachusetts State and Suffolk County Medical Societies, and an honorary member of the Anatomical Society of Great Britain and Ireland. From 1873 to 1878 he was editor of the *Boston Medical and Surgical Journal*, and in 1884 delivered the Lowell Institute Lectures. He was a convert to the Catholic Church, and only recently published an interesting book entitled "Thoughts of a Catholic Anatomist," in which he discusses a number of topics relating both to biology and to catholicism. In 1889 he received the honorary degree of LL.D. from Georgetown University in recognition of his contributions to medical science.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

SCIENCE CONGRESS—THE BREAD CONTROVERSY—THE TWO SANITARY INSTITUTIONS—SMALLPOX—MALINGERING—OBITUARY.

London, September 1, 1911.

We are now in the middle of our chief scientific congress—that of the British Association for the Advancement of Science, which is holding its eighty-first annual meeting. It was in 1830 that Sir David Brewster proposed the formation of such a society, and the next year the first meeting was held at York, when 325 members were enrolled. It grew rapidly in favor, and at the Manchester meeting (1887) the number rose to 3,838. Since then there has been a sad decline, although at the Liverpool meeting (1896) there was a rise again to 3,181. Last year the attendance had again fallen to 1,449. This year the meeting is being held at Portsmouth, and it was hoped that so interesting a town, with its numerous attractions of an almost unique character, and the nearness of other favorite places would bring a return of prosperity. So far, however, there seems reason to fear it will not be so—at any rate in respect to numbers, for up to this morning only 1,200 had put in an appearance. Something seems necessary to increase the popularity of the congress, but the solid work has not fallen off. I turn, then, to the proceedings, which were formally opened in the Town Hall at Portsmouth on Wednesday evening. Sir William Ramsay succeeds Professor Bowney as president, and delivered his address, which was chiefly devoted to an exposition of ancient and modern views regarding the elements. He referred to the fact shown by radioactivity of ome twenty-six unsuspected elements and to the amazing amount of energy stored up in radium. An illustration of the last point elicited no little applause. If, he told his audience, they could utilize the energy of a ton of radium it would suffice to propel a ship of 15,000 tons, with engines of 15,000 horsepower, at the rate of fifteen knots an hour for thirty years. The illustration was popular, but there is great virtue in an "if," and to this particular if he had to say that the production of radium would not surpass half an ounce a year. As coal is our principal source of energy, Sir William pointed out that the amount stored up in British coal fields, which is somewhere about 100,000,000,000 tons, if the rate at which it has been increasingly exploited for the last forty years continue, will be completely exhausted in 175 years. He recommended less wastefulness of the national wealth. Yesterday the sections, of which there are eleven, began their work, each with an address by its president.

For some months past there has been a good deal of loose talk about bread as the staff of life and the deceptions practised in its preparation. The newspapers took up an old cry about whole meal bread, and then the bakers offered what they called a "standard loaf." It was freely exploited and boomed by those interested, as well as a number of invalids and dietetic self-made authorities. But either the brown color or the sticky consistence did not please the public taste and the white loaf still retains its preeminence. Nevertheless the advocates of whole meal bread continue their efforts to extend its use, and some of them are rather extreme in their statements. As an example, Miss Yates, honorable secretary of a Bread and Food Reform League, read a paper on the "Standardization of Bread" at the recent congress of the Royal Institute of Public Health, in which she said boys fed on the standard bread gained more in height and weight than those who consumed only white bread. Then she talked of millions of workers making white bread the basis of their diet, not realizing that it was starvation food and tended to produce tuberculosis, physical degeneration, the drink crave, nervous diseases, and appendicitis! Is it not amazing that so many civilized people are yet alive? A resolution was adopted in the interests of poor children to encourage a demand for the supply of bread containing the maximum nutriment of wheat with a small amount of the indigestible woody fiber.

You may think in this case that the Institute's discussion was scarcely needed, but it has been supported by various authorities and some medical ones have expressed themselves almost as extravagantly. On the other hand, the Local Government Board has issued a valuable report on the subject, which may serve as a corrective to the many rash assertions that have been freely circulated. This report is prepared by Dr. J. M. Tamill and gives an account of the varieties of wheaten flour and indicates the chemical and physiological evidence as to their dietetic values. Only genuine flours are considered, and Dr. Hamill does not attach great importance to the differences in nutritive value between breads made from the several kinds of flour milled from good samples of grain. The notion that ordinary high grade and white "patent" flour is devoid to a great extent of protein, whereas it abounds in "entire" wheat flour, he pronounces to

be erroneous. The differences are not relatively of great magnitude and may well be neutralized by imperfect absorption. There are wider differences in protein content and nutritive value between flours from different wheats than between patent and entire flour from the same wheat. A "patent" flour from one variety of wheat may contain more protein and furnish more energy than an "entire" or "whole meal" flour from another variety of wheat. It is asserted that whole meal bread is not so likely to aid the production of dental caries by fermentative changes, but no evidence has been put forward which can be considered conclusive on this point.

On several occasions lately I have had to mention the Royal Institute and the Royal Sanitary Institute, and as both have now concluded their annual meetings, having held them simultaneously at Belfast, you may like to have a note as to their respective constitutions. The Royal Institute of Public Health was founded in 1886 in order to push forward the registration of diplomas in public health and compel the provision of such diplomas by medical officers of health. There are now about 2,000 members who may avail themselves of the chemical and bacteriological laboratories and undertake researches; there is also a literary and lecture room. The institute trains for health diplomas as well as for research, and is recognized by the university.

The Royal Sanitary Institute is somewhat older, was founded in 1876, hold meetings at which papers are read and discussed and lectures and demonstrations given on sanitary subjects. Examinations are also held and certificates given. The Parkes Museum is maintaied by this institute, open to teachers and students for demonstrations, etc. The library is rich in sanitary publications. You will see that these two Royal Institutes, though differing somewhat in their work, overlap a good deal and it looks as if they might very well amalgamate. At any rate the holding of two annual meetings together in one city, discussing sanitary questions, is rather a trial and militates greatly against success.

A report respecting the late outbreak of smallpox has been supplied by the Asylums Board. The first case occurred in a poor-law infirmary and six patients were infected. In all 70 cases were received, 33 from the same district as the first. There were 11 deaths, a mortality of 15.71 per cent. Of the total number 46 were vaccinated, of whom one died. Twenty-two were not vaccinated, and of these nine died. Of three said to have been revaccinated before infection all recovered. The point of interest and importance about the outbreak is that the majority of cases were the result of the admission of one unrecognized case into a large institution. This suggests the advisability of revaccination of all persons employed in such institutions. At the Asylums Board's hospitals revaccination is compulsory, but not usually in Poor Law Infirmaries. The consequent danger is exhibited in this outbreak, for not only 21 of the poor patients in the infirmary, but seven members of the staff contracted the disease.

The danger of malingering under the insurance scheme has been discussed in various meetings. Dr. R. A. Lyster, medical officer of health for Hampshire, from his experience has reported that the only way to prevent it is to arrange for all cases on the sick list for a certain period—say a month—to be examined by independent medical referees. Some kind of unification of medical services to the public, he thinks, ought to be introduced. By linking up this new medical work with the existing health services it would be possible to build up a national scheme in which all medical service could be included. The new committees will have similar duties and responsibilities to those of county councils and enormously increase the present overlapping, confusion, and inefficiency which result from the multiplicity of agencies dealing with the sick poor. Unification of the services would also prevent friction and disputes which otherwise are sure to arise between new and established authorities.

Mr. Adam Rolland Rainy, M. P., who died suddenly on August 26, was a member of the medical profession and practised in London as an ophthalmic surgeon from 1887 to 1900, when he retired to contest a parliamentary seat. He failed on that occasion, but was successful in 1906, and has since been in the House. He was a son of the eminent Presbyterian leader, Principal Rainy, and born in 1862. He was educated at Edinburgh University and took M.B. and C.M. in 1886. He also attended some time in the Berlin and Vienna Universities. He had traveled a good deal, visited Australia, New Zealand (1891), Spain, and Algiers (1899 and 1903), the West Indies (1896). He was a member of the Ophthalmological and other medical societies, and had been president of the Edinburgh Speculative Society and the University Diagnostical Society. His death is a loss to the small band of doctors in Parliament.

Surgeon-Major John Ince, M.D., late of the Indian Medical Service, has died at the age of 81. He took his M.R.C.S. in 1854 and the next year the M.D. St. Andrews. He served as medical officer in Kashmir and civil surgeon at Murree, Rawal, and Pindi. He was a member of various societies, contributing valuable papers to them as well as to the journals. He was author of the Murree Handbook, the Kashmir Handbook, and official reports on cholera in Peshawur district and similar investigations.

David K. Coutts, M.B., F.R.C.S., assistant surgeon to the Norfolk and Norwich Hospitals, died on August 21 with tragic suddenness. Only five minutes after talking, apparently in good health, he was seized with unconsciousness and died in a few minutes at the age of 30. He had only been elected to the hospital staff some three months.

Geo. E. Jeaffreson, J.P., died in his 77th year on August 17 at Framlingham, where he had practised for many years and continued to reside after retirement and to help forward every effort for the benefit of the community.

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 7, 1911.

Suits for Alleged Malpractice. G. W. Gay.
Some Comments upon the Probable Direction of Future Progress in Treatment of Chronic Joint Diseases. H. W. Marshall.
Humidity and Health. P. W. Goldsbury.
A Case of Pellagra. C. H. Dean.

Suits for Alleged Malpractice.—G. W. Gay quotes a court decision which states that "the medical practitioner is necessarily surrounded by doubt and uncertainties and unavoidably exposed to errors and mistakes, which may well furnish a satisfactory explanation of unfavorable results." Another element that is frequently suspected,

but unfortunately difficult to establish, is the contributory negligence on the part of the patient. Malpractice suits are brought from various motives, as, for example, to extort money from the defendant, to escape the payment of his bill, to avenge the disappointment at the termination of the case, to deliberately injure the reputation of the defendant out of spite, and to attract the notice and sympathy of friends and neighbors. A very important factor in many of these cases is the perniciously active attorney. Suits brought for the purpose of evading payment of the physician's bill may generally be successfully met by prompt legal action for the collection of the same. As long as the patient has his senses he has the right to refuse any and all methods of treatment of whatever nature. On the other hand, should an operation be performed in accordance with the dictates of common humanity, but contrary to the patient's consent and orders, the operator might be called upon to defend his action in court. In cases in which the patient is unconscious, or unable from any cause to decide these matters for himself, when coming under the care of a physician, the latter would be justified in performing any operation demanded by the emergency provided no one having authority should be present and refuse consent thereto. The physician should, however, protect himself by a consultation, if possible, and it might be well to explain the conditions and the reasons for the proposed operation to the bystanders. The entire transaction, together with the names of those present, should be a matter of record.

Treatment of Chronic Joint Diseases.—H. W. Marshall presents reasons and data to show how greater accuracy in diagnosis; greater skill in applying remedies accurately according to physiological needs of the tissues; discoveries of new methods of treatment through development of many medical researches; improvements in surgical knowledge and skill; and more keen appreciation of the advantages of preventive measures will all favorably influence progress in treatment of chronic arthritis.

Humidity and Health.—P. W. Goldsbury comments on the injurious effects of the indoor dryness of the atmosphere in winter. The irritation of the lips and throat and the parched feeling of the skin are common manifestations of these effects. On the other hand, rheumatism is an ailment which is particularly susceptible to moisture, as are also certain throat conditions. For some people the change from a moister to a dryer air may prove stimulating and produce favorable results. Others, probably of a more nervous type, would be benefited by the opposite change. The problem of constructing buildings in such a way as to keep the interior up to a fair degree of humidity is a large one. So far engineers have made little practical progress toward its solution. Clothing and covering of the body interfere more or less with an equal shading of humidity and evaporation and circulation of the air directly over the skin. Advantage may be taken of this fact. If the skin is allowed to enjoy longer periods of freedom from clothing upon retiring or rising, or when it is being changed, the body will be bathed more equally by air of a like degree of humidity and should benefit from such baths. If one must live much indoors he may improve the temper of his rooms by various devices, such as keeping growing plants and setting about porous dishes, as flower pots, full of water. After all there is nothing for humidity like the out-of-doors.

Pellagra.—C. H. Dean reports a case of this condition that he has observed in the Northampton State Hospital.

New York Medical Journal.

September 9, 1911.

Dilatation of the Heart in the Acute Fevers. H. Brooks.
Arteriosclerosis, Cardiosclerosis, and Intestinal Putrefaction. L. F. Bishop.
Greek, Ancient and Modern, and the Language of Medicine. H. C. Muller.
Crotalin Treatment of Epilepsy. R. H. Spangler.
A Preliminary Note on the Influence of Position in Relation to the Occurrence of Mastoiditis and Its Complications. C. A. Adair-Dighton.
Treatment of Fractured Thigh by a New Method, Involving a Principle Which Pertains to the Treatment of Fractures in General. W. H. Taylor.
Tendencies toward Race Degeneracy. J. H. Kellogg.
Treatment of Pneumonia Based on the Elimination of Sodium Chloride. H. G. Hughes.
A Curious Case of Tuberculous Meningitis. M. Freiman.

Cardiac Dilatation in Acute Fevers.—H. Brooks states that cardiac failure is common in acute rheumatic fever, in lobar pneumonia, septicemia, scarlatina, influenza, and especially in diphtheria. It is notably frequent in two definite groups of cases, first, those characterized by high and persistent fever and, second, those in which toxemia is pronounced. The lesion concerned is primarily an albuminous or parenchymatous degeneration of the heart muscle fibers as a result of which the elasticity, resistance, and contractile power of the muscle become diminished. Rapidity of heart action, particularly if irregularities in tension or in frequency occur, is indicative of impending dilatation. Auscultatory percussion will demonstrate this condition. A falling blood-pressure may be present and is a sign of great diagnostic and serious prognostic value. The treatment is preventive and directed against the condition itself. The toxemia is best combated by elimination. Drugs should not be given to slow the heart in these cases. The icebag to the precordium is a favorite method of controlling overaction of the heart in the acute fevers. The author does not favor digitalis in the acute condition, though he does employ it in convalescence. Morphine quiets the pain and lessens nervous excitement and the tension on the general circulation. Strychnine, adrenalin, camphor, and bleeding are other resources in this condition. Attention must be paid to conserve the heart muscle during convalescence. The patient should rest in bed and his diet should not contain too much fluid.

Arteriosclerosis and Intestinal Putrefaction.—L. F. Bishop believes that the majority of cases of arteriosclerosis are due to intestinal putrefaction which acts indirectly upon the blood-vessels and nervous tissue.

Greek and the Language of Medicine.—H. C. Muller in commenting on the movement to improve the language of medicine states that this reform cannot be accomplished apart from that to improve the language of other sciences, notably chemistry, botany, and zoology. The medical vocabulary consists of many hybrid terms. Medicine is not an exact science, but is a practical art which has formed its onomatology in the course of many centuries. The author doubts whether a radical reform will be possible. Medicine is above all a practical art and the majority of medical men will refuse to use modern Greek terms or those of a remote antiquity if there exists already a word of general use which is clear to the men of science and to the public. The reform can only be a partial one and can succeed in abolishing a great many incorrect and hybrid terms and in improving the artificial medical language as much as possible. The question is one that can be decided only by an international committee.

Crotalin Treatment of Epilepsy.—R. H. Spangler reports his results in the treatment of 36 cases of epilepsy treated with hypodermic injections of rattlesnake venom. These are given in doses of 1/200 grain, in most cases at intervals of five to seven days. The venom treatment is indicated in the so-called idiopathic form of epilepsy. Under the crotalin treatment the character of the convulsions is modified, the interval between the attacks lengthened, and the mental and physical condition of the patient improved. It is important to use a solution of the venom of definite and uniform strength.

Mastoiditis in Relation to Bodily Posture.—C. A.

Adair-Dighton presents a theory which apparently accounts for the predominance of mastoiditis on the left side. Owing to the position of the heart it is found by the great majority of people to be easier and at the same time more comfortable to lie on the right side when retiring to sleep. If chronic suppurative middle ear disease is present the position would favor drainage of the right ear but not of the left. This theory suggests the following line of treatment: The ears should be cleansed before retiring for the night, not by irrigation but by means of cotton wool mops.

Treatment of Fractured Thigh.—W. H. Taylor describes an elaboration of a method introduced by him of treating fractures by means of screws, to each of which, close to its head, a cross piece has been welded; the screw points to be inserted in the bone, the parts external to the skin to be imbedded in a mass of plaster of Paris, into which are incorporated a number of steel girders laid from cross piece to cross piece, converting the outer portions of the screws, their attached cross pieces, and the connecting girders into one continuous bridgework. It was further suggested that, without making an open wound, these screws might be inserted through the skin and the fracture set and immobilized under the *x*-ray.

Race Degeneracy.—J. H. Kellogg believes that the preservation of the unfit, while humane and altruistic, is nevertheless a menace to the race. Indoor life, the wearing of an excess of clothing, a diet containing an overabundance of flesh, alcohol and other poisons, city life, and race suicide are among the degenerative influences.

Treatment of Pneumonia.—H. G. Hughes states that an analysis of the urine of a pneumonia patient shows almost constantly absence of sodium chloride. He has found that the administration of potassium nitrate in full doses causes the sodium chloride to reappear in the urine within a few hours and to continue present as long as the potassium nitrate is given. The effect upon the course of the pneumonia is remarkable. The temperature almost invariably begins to fall within a few hours and continues to drop until it reaches normal. The physical signs remain for a few days, and then resolution begins and goes on to recovery without crisis. The author interprets these results as the manifestation of the early and gradual disassociation of the constituents of the exudate caused by the salt-free diet and the "dragging out" from the exudate of the sodium chloride by the administration of potassium nitrate.

Tuberculous Meningitis.—M. Freiman reports a case of this condition secondary to spinal tuberculosis.

Journal of American Medical Association.

September 9, 1911.

Clinical Physiology—An Opportunity and a Duty. Y. Henderson.
Spinal Fractures. Opinions Based on Observations of Sixteen Operations. A. F. Jonas.
The Pressor Action of an American Mistletoe. A. C. Crawford.
Histological Examination of the Faucial Tonsils with Reference to Tuberculosis. E. C. Sewall.
Report of Primary Infection of Bulb Sinus and Jugular in a Woman of 56. S. Voorhees.
A Case of Myositis Ossificans Progressiva. A. R. Elliott.
Fibroma of Nose. W. J. Collins and J. D. Collins.
Surgery of Experimental Lesion of Spinal Cord Equivalent to Crush Injury of Fracture Dislocation of Spinal Column. A. Preliminary Report. A. R. Allen.
Several Unusual Joint Cases, Their Treatment and the Results. G. W. Guthrie.
A Simplified Peritoneum-Grasping Forceps. J. R. Eastman.
Bone-Grafting to Fill a Gap Between Two Portions of a Tibia. F. A. McGrew.
Transplantation of a Portion of the Tibia into the Spine for Pott's Disease. A Preliminary Report. F. H. Albee.
Respiration Valves. C. C. Guthrie.
Excision of Parietal Portion of Tunica Vaginalis for Relief of Painful Testicle Following Gonorrheal Inflammation. G. T. Tyler.
Endemic Malta (Mediterranean) Fever in Texas with the Isolation of the *Micrococcus Melitensis* from Two Patients. Second Paper. E. R. Gentry, T. L. Ferenbaugh.
The Control of Typhoid Fever. L. L. Lumsden, W. C. Rucker, and A. W. Freeman.
How to Collect Old Medical Books in Europe. Where to Go and What to Look For. F. H. Garrison and F. Neumann.
Salicylates in Rheumatism. A. Lambert.
Herpes Zoster in Connection with Kidney Lesions. M. Krotoszyner.

Clinical Physiology.—Y. Henderson believes that internists and surgeons, and especially the professors of medicine and surgery in the medical schools, should be more interested, better trained, and more widely read in physiology. It were better if they read less in the clinical and more in the scientific journals; better if they talked and practised less, and investigated a great deal more. Physiologists must assume the duty of teaching not only normal but also abnormal physiology. Both should be taught in the second year of the medical course. In the future students who are being trained to be physiologists, whether in the field of physical and nervous or of chemical physiology, ought to have the medical degree.

Spinal Fractures.—By A. F. Jonas. See MEDICAL RECORD, July 8, 1911, page 100.

Mistletoe.—A. C. Crawford concludes from his pharmacological investigations that at present the data are not sufficient to identify the active pressor principles of our Southern mistletoes.

Tuberculous Tonsils.—E. C. Sewall finds that after removal of enlarged tonsils swollen tuberculous glands often diminish in size, though not always permanently. Certain tuberculous glands are not associated with tuberculous tonsils. The author believes that tubercle bacilli can travel to the glands without damage to the tonsil, and this accounts for the following facts (also for the higher percentage of tuberculous glands): Glands once tuberculous, associated with tuberculous tonsils or not, may enlarge even after the tonsils have been removed. One finds tuberculous glands more often than tuberculous tonsils. Even when there is a reappearance of the swelling the glands show more of a tendency to heal and the individual to enjoy health after the tonsils have been removed.

Sinus Infection.—S. Voorhees reports a case of primary infection of the bulb sinus and jugular in a woman of 56.

Myositis Ossificans.—A. R. Elliott reports a case of this condition occurring in a girl of 17. He notes that it has been thought to be a form of rheumatism, a trophoneurosis, a new growth, and a form of atavism, while Hutchinson claims it to be a morbid tissue perversion analogous to retinitis pigmentosa and xeroderma pigmentosum. None of these theories meets with acceptance, the present trend of opinion being toward the view that owing to some factor of congenital origin—indicated by so large a percentage of microdactylia and exostoses—the muscles seem to be endowed with very low resisting power and are consequently highly susceptible to inflammation from various exciting causes which ordinarily would not so operate, such as injury, chemical and bacterial irritants, etc. Combined with this low resisting power of the muscles there is a morbid disposition to aberrant bone growth which shows itself in the calcification and ossification of inflammatory products.

Fibroma of Nose.—W. J. Collins and J. D. Collins report a case of this condition secondary to rosacea, in a man 72 years of age.

Experimental Injury of Spinal Cord.—A. R. Allen as the result of his investigation reaches the tentative conclusion that in cases of fracture dislocation of the spinal column in the human subject in which there exists the symptom picture of transverse lesion of the spinal cord it would be well to perform the operation of laminectomy at the earliest possible moment, and, if the cord be not completely severed, to make a median longitudinal incision through the area of impact by means of a fine canaliculus knife in order to drain the injured tissue of the products of edema and hemorrhage.

Unusual Joint Cases.—By G. W. Guthrie. See MEDICAL RECORD, July 8, 1911, page 101.

Peritoneum-Grasping Forceps.—J. R. Eastman describes his modification of this instrument, whose advan-

tages rest in the ease with which the rubber tubing at the circular jaws may be replaced when worn or damaged in sterilizing, in the security of the grasp, and in its durability.

Bone Grafting.—F. A. McGrew describes a case in which bone grafting was resorted to as a means of filling a gap between two portions of a tibia.

Bone Transplantation for Pott's Disease.—F. H. Albee reports a series of cases in which a portion of the crest of the tibia was transplanted to furnish an internal splint and to bridge the gap in tuberculosis of the spine.

Respiration Valves.—C. C. Guthrie describes an improvement of his arrangement of valves for use especially in administering volatile anesthetics in laboratory experiments.

Excision of Tunica Vaginalis.—G. T. Tyler reports a case of painful testicle following gonorrheal inflammation in which the pain was relieved by the excision of the parietal portion of the tunica vaginalis which was bound down to the visceral layer by firm, dense adhesions.

Malta Fever in Texas.—E. R. Gentry and T. L. Ferenbaugh conclude from their investigations that epidemic Malta fever exists in Texas at the present time.

Control of Typhoid Fever.—L. L. Lumsden, W. C. Rucker, and A. W. Freeman conclude that the prevention of typhoid fever in the United States to-day depends on an improvement in the present methods of disposing of human excreta. Until all the people can be taught that the most dangerous material with which they come in contact in their daily lives is filth from human bodies, and until their sanitary habits are so changed that human filth is prevented from reaching human mouths, the prevention of typhoid fever cannot be consummated.

Medical Book Collecting.—F. H. Garrison and F. Neumann give some useful hints to collectors of old medical books for which Europe is the happy hunting ground. It is at the modest and obscure book stall of the Italian cities and other little frequented places that one can buy to the best advantage.

Salicylates in Rheumatism.—A. Lambert states that one can expect the full beneficial action of the salicylates only in true rheumatism. He has obtained the minimum of toxic and irritating effect from the use of a tablet made up as follows: Pure salicylic acid is mixed with sufficient sodium bicarbonate in excess, and with a sugar binder is made into tablets, so that on dissolving each tablet will give five grains of sodium salicylate. This is freely soluble in water with a pleasant acid taste and with a free elimination of CO_2. This seems to form a sodium salicylate in a nascent condition. By it a large amount of the active salicylate is gotten into the circulation at once in the least toxic and most effective form of the natural salicylate.

Herpes Zoster and Kidney Lesions.—M. Krotoszyner reports two cases of herpes zoster associated with kidney disease. The hyperalgetic peripheral zone of the kidney, according to Head, corresponds to that area of the integument innervated by the tenth and eleventh dorsal and upper lumbar spinal nerves. Within the last few months several cases of herpes zoster of this region, in connection with attacks of renal colic, have been reported. The author's cases illustrate the diagnostic value of careful investigation of Head's hyperalgetic cutaneous zones in all cases of abdominal colic of otherwise doubtful character.

The Lancet.

September 2, 1911.

Spinal Curvatures and Their Treatment by Physical Exercises. R. Timberg.
Omnopon: A Potent Adjuvant to Local Anesthesia. H. M. W. Gray.
Breast Feeding; the Value of the Test-Feed. E. C. Pritchard, H. R. Carter, and W. O. Pitt.
Pachon's Syphygmo-Oscillometer and Its Use in the Determination of Blood-Pressure, with Notes on the Theory of Oscillations. J. F. Halls Dally.
Fulminating Appendicitis; Presence of Liver Dulness; Ligature Temperature. F. W. Forbes-Ross and Q. Chalmers.
An Unusual Case of Intussusception. D. Wood.
A Dermoid Cyst of the Testicle. E. E. Hughes.

Spinal Curvatures.—R. Timberg describes the various physical exercises that are to be employed in the treatment of this condition.

Adjuvant to Local Anesthesia.—H. M. W. Gray states that omnopon, a watery solution containing nearly 90 per cent. of the soluble alkaloids of opium in chloride form, in conjunction with scopolamine, is apparently a safe narcotic, especially advantageous when used with local anesthetics in extensive operations in old patients.

Breast Feeding.—E. C. Pritchard, H. R. Carter, and W. O. Pitt have by means of accurate scales determined in a large number of infants the amount of breast milk obtained at each feeding. This amount is designated a "test-feed." The latter is a most valuable aid to the diagnosis of the ailments of breast-fed infants. It is mere guesswork to attempt to treat cases of this kind unless one knows how much milk the infant is receiving. Infants are often brought to the clinics who have been treated by drugs for constipation when the sole cause of the condition is starvation. Again, infants are often given supplementary feeds of cow's milk in amounts of four or five ounces when the test-feed proves that the amount they obtain from the breast is about one ounce—sometimes less. Under such conditions it is hardly surprising that cow's milk is found to disagree. As an aid to diagnosis and for accurately adjusting the amount of food given in supplementary feedings, or at the time of weaning, the test-feed soon becomes absolutely indispensable to those who have had experience of its advantages.

Pachon's Sphygmo-Oscillometer.—J. F. Halls Dally describes this instrument, whose use is based upon the estimation of movements or oscillations of the arterial wall at the level of compression.

Fulminating Appendicitis.—F. W. Forbes Ross and Q. Chalmers report a case of acute general peritonitis, due to the sudden onset of gangrenous appendicitis, and rescued by prompt surgical aid. The case presented a classical train of symptoms so typical of the condition, with the exception of the presence of liver dullness. The ligatures and sutures in the wall of the bowel and on the stump of the appendix are regarded as a cause of the post-operative febrile condition, so often seen for a limited period following the operation for removal of the appendix in septic cases.

Intussusception.—D. Wood reports a case of this condition in a child of two years, who after operation recovered in spite of the fact that there had been complete obstruction for two weeks before the child came into the surgeon's hands, and that there had been two grave operations involving resection of a considerable length of bowel.

Dermoid Cyst of the Testicle.—E. E. Hughes describes a case of this condition, which is considered extremely rare.

Surgical Treatment of Emphysema.—Pierre Delbet believes that some severe cases of emphysema are not due to changes in the lungs or bronchial tubes, but to alteration in the thoracic walls by which they become fixed and inexpansible. They are rigid in forced inspiration and dyspnea is extreme. The author presented the history of a patient operated upon by him by resections of five of the costal cartilages with great benefit. She was unable to lie down, had constant and severe dyspnea and attacks of suffocation. The good results of the operation were immediate. The costal cartilages in this condition have become inelastic and the enlargement of the upper part of the thorax becomes impossible. The articulations are normal. The patient presented a healthy and comfortable condition where previously she had been constantly cyanotic.—*Le Bulletin Médical.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

By THE INSURANCE EDITOR.

INCOMPLETE INFORMATION.

A special contribution on this subject is warranted in view of the difficulties experienced by the members of the home office staffs in securing full and complete reports. The busy practitioner, usually pressed for time, is too apt to make life insurance examinations with all possible haste, thereby missing important facts which a more searching inquiry would elicit or forgetting to record the answers to his inquiries in his report, all of which would probably be obviated if sufficient time were allowed.

An application, when signed and witnessed, becomes part of a regular contract, and it is not properly executed until each and every question is fully and correctly answered. It is the duty of the company to see that all requirements are satisfactorily fulfilled before allowing the release of the policy, especially for two reasons, viz., to protect the interests of those already holding policies by acquiring all possible information before assuming new risks, and to prevent any misunderstanding and chance for future trouble with the applicant himself in the event of the acceptance of his application. In order that this duty may be faithfully carried out, it is imperative to correspond with the examiner until all omissions, errors and incomplete information are properly supplied and corrected.

In a certain company which keeps careful records of the work of each of its examiners, an analysis of 100 cards taken at random from the files shows that in 1,279 consecutive examinations there were 239 in which omissions in answering the questions and 319 in which incomplete answers were found. As a result of such omissions and incomplete answers, the records in the same company show that about 50 per cent. of all applications reviewed by the approving officers during the year 1910 had previously passed over their desks one or more times, and were brought up again for further consideration on receiving information it had been necessary to ask for before final action could be taken. It is quite apparent from this statement that in order to correct these omissions and incomplete answers, the companies are compelled to conduct an enormous amount of correspondence and that there is a consequent heavy expense, much extra labor, and a great loss of time. Furthermore, the examiners themselves are put to considerable and unnecessary additional trouble in subsequently procuring missing information which could have been obtained when making the original examination. It may be added that, according to the records, examiners otherwise of undoubted skill may be numbered with those whose reports exhibit signs of haste and insufficient care.

Aside from the burden and expense to the companies, the delay resulting from the necessary correspondence gives rise continually to irritation on the part of the agent and applicant. The agent has learned from sad experience to dread delay in his business as it gives time for a change of heart in the applicant and a chance for his ever-ready rivals to wrest the results of his long-continued efforts away from him. Consequently he complains bitterly as soon as any obstacle tends to interfere with the prompt issuance of the policy. Realizing the difficulties of their solicitors in procuring business and finally placing the policies, the companies exert every energy to expedite and facilitate their work, though they continually find their efforts baffled through the receipt of incomplete information.

Examiners do not willingly and knowingly participate in causing all the troubles enumerated in this article. The individual examiner, when written to for some facts or details that should already have appeared in his report, will seldom realize that his shortcoming is one of very many. He is almost always eager to supply the missing data promptly, but even at the best he has caused a certain amount of inconvenience and delay. He has never had a good opportunity to learn how vast the proportions of these omissions and incomplete answers assume in the aggregate, and it would not occasion any wonder if he were to continue in the belief that these delinquencies are, after all, unimportant and of only occasional occurrence, unless he is enlightened in regard to this too common lack of thoroughness by some one in a position to speak intelligently on this subject.

The subject has been presented frankly with the confidence that every examiner who reads these lines will be glad to arrive at a better understanding of the situation and to exercise the utmost care and precision in making up his reports in the future if he has not already done so. The following suggestions are offered, as an observance of them will obviate much of the trouble referred to:

1. Allow sufficient time to make a thorough examination and careful inquiry.

2. Each question should be asked separately and the answer recorded at once.

3. Avoid the use of vague terms, such as "fair," "moderate," "child-birth," "change of life," etc.

4. Whenever the question can be answered intelligently by "yes" or 'no," these incisive monosyllables should be used rather than a lengthy answer, which may not be clearly understood.

5. When recording an illness, in addition to giving a clear description of the ailment, furnish a definite statement of the dates, duration of each attack if more than one, frequency of attacks, complications, and the date of last occurrrence and after effects.

6. An applicant will sometimes evade the question. This may be due to inability to concentrate or to a desire to conceal certain facts. The applicant will try to turn the conversation to other subjects, but the examiner should come back to his question, easily and tactfully, but persistently, until he has secured a definite answer.

7. Before forwarding the papers to the company always scrutinize the application carefully so that any omitted or incomplete answers may be discovered and corrected.

The Interstate Association of Medical Examiners.—At the meeting of this association, held at Spokane, Wash., on September 6, the following officers were elected: *President,* Dr. W. C. Cox of Everett, Wash.; *Vice-Presidents,* Drs. T. C. Witherspoon of Butte, Mont.; H. B. Luhn of Spokane, Wash., and Charles T. Cutting of Seattle, Wash; *Secretary,* Dr. L. L. Stephens of Seattle, Wash.; *Treasurer,* Dr. Frank M. Taylor of Portland, Ore. It was decided that the association unite with the American Association of Medical Examiners, but retain its identity as the Northwest Section of this Association.

Physician and Insurance.—L. Feilchenfeld communicates the deliberations of the Seminar für Sozial Medizin in Berlin on the above theme. Gottstein spoke of the importance of insurance for medicine and hygiene, the practical demands of insurance having often stimulated medical research. The insurance examiner is most interested in knowing why one individual is stricken with some disease, while another remains healthy. He must not simply determine that a given individual is healthy at the moment of the examination, but also assure himself that that individual's chances of a prolonged existence are good. Modern hygiene has had much to do with the practical questions of insurance. It has diminished mortality from infectious diseases. Yet it is indebted to insurance statistics for the knowledge of the professional dangers existing in many occupations. Insurance likewise has emphasized the importance of syphilis as a factor in shortening life, and the frequently permanent injury of blood vessels left by acute articular rheumatism.

Martius said that every disease results in a permanent damage to the organism, and leaves some defect. The latter, however, is only then of importance, so far as duration of life is concerned, when it involves an important organ of the body. History of past diseases must therefore be carefully entered into by insurance examiners. Another element in insurance is the greater or lesser constitutional strength of the organism, shown by adaptation to extra calls upon important organs and by resistance to infection. Dilatation of the heart after a long bicycle ride or the appearance of albumin in the urine after a long walk give evidence of a faulty constitution from an insurance standpoint. Hereditary influences are very hard to value. The mere existence of gout, diabetes, and obesity in an applicant's family may be of no influence upon his life expectation. Blindness, when total, excludes an applicant, yet color blindness may actually be a favorable factor in keeping the applicant out of several dangerous occupations.

Böhler gave some practical advice in the matter of medical examination of applicants for life insurance. In the first place, the medical examiner must take plenty of time for his work. He must take care not to excite the applicant who is already somewhat apprehensive of the ordeal. In getting the family history, one must inquire about pneumonia in the father, the character of the marital life in the mother, anemias in the sisters; these may point out the existence of an unknown tuberculous infection. In the physical examination, one should not forget to have the applicant march up and down the room to study his gait and effect of the exercise upon the pulse. Weight and height should be obtained by the examiner himself, not taken from any other physician's statement offered by the patient. The pulse frequency should be carefully noted; it may suggest an incipient tuberculosis. A full, slow pulse speaks against tuberculous infection, a soft and frequent pulse speaks in favor of it. Gastric "catarrh" is a frequent antecedent of this infection. The tuberculin test is not to be made except on direct request of the insurance company. Most important is examination of the heart. The pulse must be studied with the applicant sitting, standing, and after exercise. Arrhythmia is always suspicious, for it speaks for disease of the cardiac muscle. A slow pulse does not always mean disease of the heart muscle; Bismarck had a pulse of 40 all his life and yet reached very old age. Syphilis is always to be interprêted as a life-shortening disease. It is best to insure syphilitics early after infection and only for a limited number of years, so as to escape as much as possible the incidence of parasyphilitic manifestations.

Schönheimer spoke of insurance for physicians (most of his remarks are not applicable in American circumstances.) He especially insisted upon the necessity of insurance against damage suits. Any physician may become involved in a question of negligence or damages, because of another physician's blunder or misfortune. Badly interpreted *x*-ray photographs are a frequent source of false claims for damages. Insurance in such cases is further useful, because the insurance attorneys know better how to deal with those threatening suit than the average doctor. So far as accident insurance is concerned, a physician is a bad risk for the insurance companies. Small injuries may completely incapacitate him for work, his colleagues are always ready to certify to such incapacity, and he frequently neglects treatment or treats himself.—*Zeitschrift für Versicherungsmedizin*, July, 1911.

The Relation of the Medical and the Actuarial Departments.—C. B. Carr says that in the younger insurance concerns these two departments represent the forces of conservatism as against the aggressiveness and optimism of the agency department. In the beginning the work of the medical department is largely experimental. The medical director may have had insurance experience, but usually he comes from private practice and gives but a part of his time to his new work. He has no clerical assistance, has not studied insurance statistics and bases his selections upon individual impressions. He soon learns that it is easy to protect the company from high mortality if the protection of applicants by granting them insurance is not considered. Moreover, his reasons for denying applications soon appear to himself even erratic and inconstant. The medical director should seek all opportunities, therefore, to confer with the actuary department, not alone in individual cases, but in reference to the wide questions of insurance statistics and principles. This will lead to the formulation of determining the acceptance or refusal of applicants, founded upon principles and not individual and personal equation. In passing a risk, various advantages and disadvantages can be valued numerically in accordance with previously accepted values. Each individual case can then be brought under such valuations and a comparison with a hypothetic normal value will give the "figure of merit" or coefficient for each case. This coefficient will enable the actuary department to recommend the proper policy for the risk in question. Both the medical director and the actuary should be members of the so-called "insurance committee" which passes upon risks about which there is any question.—*Proceedings of the Medical Section, American Life Convention, New Orleans*, February, 1911.

The Agent and the Examiner.—Sexton thinks that the medical examination blank and the application blank should be separate documents and the agent should not get the medical report, the latter being forwarded to the medical department. The examiner should not allow the agent to be present during the medical examination. The applicant may not want to give a history of syphilis, for instance, in the presence of the third party. The agent, too, is interested in getting a favorable report and thus his presence disconcerts the examiner.—*Proceedings of the Medical Section, American Life Convention, New Orleans*, February, 1911.

Public Policy and the Sexual Question.—Eisenhodt contributes a lengthy theoretical and historical discussion on this theme, not adapted for abstracting. His conclusion is that both national welfare and the welfare of an individual, especially the prolongation of individual life, demand early marriages.—*Zeitschrift für Versicherungsmedizin*, June and July, 1911.

Simulation After Accident.—Windscheid writes a detailed account of simulation of mental deterioration after an accident accompanied by concussion. A careful physical examination and observation of the patient served to eliminate actual disease.—*Zeitschrift für Versicherungsmedizin*, July, 1911.

Book Reviews.

An Introduction to Therapeutic Inoculation. By D. W. Carmalt Jones, M.A., M.D. (Oxon.), M.R.C.P. (Lond.); Assistant Physician and Director of the Department of Bacteriotherapeutics, Westminster Hospital. Price $1.25. London: Macmillan & Co., Limited, 1911.

Few books have as yet been published dealing with the subject of vaccine therapy, and of these the present volume is one of the best. It is divided into two parts, the first dealing with the theoretical aspects of therapeutic inoculation which are presented in simple terms, and the second dealing with the practice of vaccine therapy. There are separate chapters discussing the value of this treatment in diseases of the skin, alimentary tract, respiratory tract, and one chapter on diseases of the joints and bone, lymphatic glands, genitourinary tract, and eye and ear. An appendix deals particularly with the technical details, which are substantially those employed in the laboratory at St. Mary's Hospital. These details are illustrated with the aid of large folded charts.

On Diseases of the Lungs and Pleuræ, including Tuberculosis and Mediastinal Growths. By Sir R. Douglas Powell, Bart., K.C.V.O., M.D. Lond., F.R.C.P., Hon. D.Sc. Oxon., M.D. Dublin, F.R.C.P.I., LL.D. Aberd. and Birm.; Physician in Ordinary to H.M. the King; Consulting Physician and Emeritus Lecturer in Medicine to the Middlesex Hospital; Consulting Physician to the Hospital for Consumption and Diseases of the Chest at Brompton, and to the Ventnor Hospital; Knight of Grace of the Order of St. John of Jerusalem; and P. Horton-Smith Hartley, M.V.O., M.A., M.D., Cantab., F.R.C.P., Late Fellow of St. John's College, Cambridge; Physician with Charge of Out-patients to St. Bartholomew's Hospital; Physician to the Hospital for Consumption and Diseases of the Chest at Brompton; Hon. Secretary of the Executive Committee of the King Edward VII. Sanatorium; Consulting Physician to the Daneswood Sanatorium. Fifth Edition With Illustrations. Price $6.00. Philadelphia: P. Blakiston's Son & Co., 1911.

This work, so familiar to students of the last generation, after a lapse of eighteen years since the publication of the fourth edition, has been completely revised and rewritten. This, the fifth edition, represents a labor of ten years, and the authors are to be congratulated on the production of a volume that comprises within the limits of its 712 pages the quintessence of present-day knowledge of diseases of the lungs and pleura and of mediastinal growths. The value of a work of this kind depends largely upon the experience and eminence of its authors, who in the present case, have brought to their labor a profound knowledge of their subject matter. This is illustrated in the thorough manner in which the entire subject of pulmonary tuberculosis is handled, nothing being omitted, from the discussion of *x*-ray diagnosis and the respective value of various climates to that of the merits of tuberculin therapy. The rarer diseases of the lungs, such as aspergillosis, come in for ample consideration. There are a large number of excellent plates and textual illustrations, and an exceptionally complete index.

A Manual of Surgery. For Students and Physicians. By Francis T. Stewart, M.D., Professor of Clinical Surgery, Jefferson Medical College; Surgeon to the Germantown Hospital; Out-Patient Surgeon to the Pennsylvania Hospital. Second edition, with 553 illustrations. Price, $4. Philadelphia: P. Blakiston's Son & Co., 1911.

It is no slight task to be able to present, as the author has done, a complete survey of the entire domain of surgery in one volume of 682 pages. This he has succeeded in doing by treating each subject briefly and with the omission of historical and bibliographical details. The completeness of this volume makes it available for the use of the student, while the general practitioner may find it a safe guide in diagnosis and treatment. Although the wide range of topics comprising modern surgery are described in a most condensed form, nevertheless this concentration does not sacrifice clearness or accuracy.

One Hundred Surgical Problems. The Experiences of Daily Practice Dissected and Explained. By James G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital; Instructor in Surgery, Harvard Medical School; Fellow of the American Surgical Association, etc. Price $3.00. Boston: W. M. Leonard, 1911.

The present volume is an admirable addition to the series of "Case Histories" that have amply demonstrated the didactic value of this method of presentation. The delightful literary style of Dr. Mumford enables the reader to approach any new book written by the well-known Boston surgeon with a sense of pleasurable anticipation. The discussion of many of the difficult problems in surgery by means of concrete instances enables the author not only to impart a lively interest to the subject, but also to introduce as comment many observations and inferences derived from his rich experience. The cases described are familiar to the busy practitioner, but each one is either a problem or an illustration of important features in diagnosis and treatment, a problem such as is usually presented to the surgical consultant.

The Principles and Practice of Bandaging. By Gwilym G. Davis, M.D., Universities of Pennsylvania and Gottingen; Member of the Royal College of Surgeons, England; Professor of Orthopedic Surgery, University of Pennsylvania, etc. Third edition, revised. Illustrated from original drawings by the author. Price, $1.00. Philadelphia: P. Blakiston's Son & Company, 1911.

In this third edition the text has been rewritten and the illustrations have been redrawn, so that it is practically a new book. The author, in simple language, describes all the bandages that are in common use, and by means of original drawings shows their method of application. Some years ago bandaging was a fine art, and there was much needless intricacy indulged in; now, the tendency is toward carelessness in the application of bandages, coupled with ignorance of their proper construction. The present work hits the happy mean between these two undesirable extremes.

Kurzgefasste chirurgische Operationslehre (Operationskurs). For Students and Physicians. By Dr. Ad. Oberst, First Assistant in the Surgical Clinic, University of Freiburg. With 232 illustrations, many in colors. Berlin: S. Karger, 1911.

This book is intended mainly as a guide to the various surgical operations to be executed on the cadaver. In addition to the directions for carrying out the various operations, attention is also directed to the topographical anatomy of the parts and the reasons for the various steps in the operation, and the indications for each. In order to appreciate the present-day developments of particular procedures, concise references to the historical development of the operations in question are also introduced. These features serve to distinguish the book from other manuals in this field, and deserve commendation. The book is very satisfactorily illustrated by photographs and original drawings, many of which are colored.

Unsoundness of Mind. By T. S. Clouston, M.D., L.L.D., F.R.S.E.; Formerly Lecturer on Mental Diseases in the University of Edinburgh; Physician-Superintendent of the Royal Edinburgh Mental Hospital, and President of the Royal College of Physicians, Edinburgh. With fourteen illustrations. Price, $2.50 net. New York: E. P. Dutton & Company, 1911.

This is a book written for the intelligent layman by an alienist of international reputation. The practitioner, who is not an alienist and who may not be familiar with the technicalities of the later works on insanity, may also find it interesting and profitable reading. Lawyers and judges who have much to do with insanity cases may use it as a book of reference. It is perhaps a little too general and written in too loose and popular a style to meet the requirements of the specialist himself. A knowledge of what constitutes unsoundness of mind, in a truly scientific or medical sense, is of the greatest value to the physician, the sociologist and the public at large, not only as an aid to its recognition when present, but also from the standpoint of prevention. It enables us to understand the differences and the relationships of mental disease or defect, on the one hand, and vice, inefficiency and crime on the other. Such a knowledge also enhances our interest in the study of history, biography and public and private character and morality. The author assorts mankind into eleven orders. Six of these he classes as legally sound in mind and five as unsound. The proportionate numbers of each class as estimated in the British Empire are stated. The classification is extremely interesting, but not entirely satisfactory from a scientific point of view. The chapters on the causation of insanity will be read by the laity with avidity; also those on early symptoms, borderland, speech, and unsoundness of mind and will-making. The American reader will rejoice with his British cousin that the bulk of the British population is made up of the "average man," legally sound in mind, and will sympathize with him in the possession of "100,000 cranks and anarchists." There is no reliable test between soundness and unsoundness of mind, but the subject is discussed in this book in such a way that it can at any rate be understood.

Clinique Chirurgicale. Anatomie, Diagnostic, Traitement, Opérations. Par le Dr. O. Laurent, Professeur a l'Université de Bruxelles, Chirurgien de l'Hôpital Saint Jean. Troixième Edition. Avec 1710 photographies et dessins. Price, 35 francs. Paris: Octave Doin et Fils, 1911.

As stated in the preface, the controlling method in this work is anatomical, synthetic, and clinical at the same time. The importance of an accurate knowledge of anatomy is emphasized in connection with every operative procedure. The wealth of illustrations with which this book is provided to an unusual degree enables the author to clearly indicate the anatomical foundations of every operation. The present edition shows that the author is alive to the latest advances in surgical technique, and his frequent references to the work of American surgeons, as well as those of Europe, show his familiarity with the literature. The difficult task of presenting in one volume a survey of clinical and operative surgery, as well as of topographical anatomy, has been accomplished by the author.

Handbook of Medical Treatment. A Guide to Therapeutics for Students and Practitioners: with an Appendix on Diet. By James Burnet, M.A., M.D., M.R.C.P., Edin.; Fellow of the Royal Society of Medicine; Lecturer on Practical Materia Medica and Pharmacy; Physician to the Marshall Street Dispensary, and Registrar to the Royal Hospital for Sick Children, Edinburgh. Price $1.50. New York: William Wood & Co., 1911.

In this handy little volume the author supplies the main facts of medical treatment. The various diseased conditions are taken up in alphabetical order, so that reference is easy. The methods of tratment indicated are sound, and will be generally acceptable; at times the author is somewhat dogmatic, but in a small handbook this is an advantage, especially when (as in the present case) the book is the outcome of wide experience. Though small in size, the volume will form a welcome addition to the library of the young practitioner.

The Medical Expert and Other Papers By Louis J. Rosenberg. New York: Broadway Publishing Company.

There are three very brief papers in this volume. The first, "The Medical Expert," is an address delivered before the faculty of a medical college which has since gone out of existence. The second, "Professional Secrecy," appeared in a medical paper which has since discontinued publication. The last, "The Metabolism of Morality," is here made public for the first time.

Neurasthenia. By Gilbert Ballet, Professeur agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôtel Dieu; Président de la Société de Neurologie. Translated from the third French Edition by P. Campbell Smith, M.D. Third Edition. Illustrated with seven figures. Price $3.00 net. New York: William Wood & Co., 1911.

The present English edition of Professor Ballet's eminently practical, accurate, and clear exposition of a very common complaint, is taken from the third French edition, which contains a great deal of new matter. One of the new sections, of noteworthy interest and value, is that devoted to the differential diagnosis of affections to which the term neurasthenia is unfittingly applied. The author believes that half the number of patients presenting themselves to the neurologist as cases of neurasthenia are really "affected by some quite different complaint." If this is true, the need of an exact diagnosis is great indeed. A careful physical examination and mental analysis are necessary to eliminate the various affections which may simulate or accompany neurasthenic symptoms. What these affections are the author clearly points out and differentiates. The sections on treatment comprise two-thirds of the subject matter of the entire book, and these have been amplified and made more complete by additions to the chapters on psychotherapy, on diet, and other hygienic measures, and on the treatment of intestinal disorders and other associated conditions of frequent occurrence in neurasthenia.

A Textbook of Medicine. By G. Dieulafoy, Professor of Clinical Medicine at the Faculté de Médecine de Paris; Physician to the Hôtel Dieu; Membre de l'Académie de Médecine. Authorized English translation from the fifteenth edition of "Manuel de Pathologie Interne," by V. E. Collins, M.D., Lond., M.R.C.S., L.R.C.P., and J. A. Liebmann, Ph.D., M.A., LL.D. In two volumes. Price, $12. New York: D. Appleton & Company, 1911.

Those who are familiar with French medical literature have often remarked upon the absence of a translation of the deservedly popular treatise of Dieulafoy, while English versions of other less worthy French and German books have abounded. In France new and revised editions of this work appear with the regularity of the seasons. The main reason for the remarkable favor that the book has enjoyed in France is no doubt its personal character, which gives it a charm and an authority that no other compilation can possess. Like some of the older English and American treatises on the practice of medicine, this is based on the personal experiences of the author and is throughout illustrated with reports of cases from his own practice. It is therefore clinical rather than didactic in its description of various diseases and their complication, and so possesses the interest of all first-hand observations. The articles are grouped under the following comprehensive classifications: Respiratory system, circulating system, digestive system, urinary system, nervous system, general and infectious diseases, disease of the spleen, pathology of the blood, rheumatic and dyspeptic diseases, parasitic infection, diseases affecting the locomotor system, venereal diseases, the intoxications, and an appendix on therapeutics, the latter containing papers only on mercurial treatment, arsenical treatment, and injections of artificial serum. All of the chapters under these headings are readable and instructive and cover with much satisfactory completeness the subjects included. A pupil of Trousseau, Dieulafoy, whose lamented death occurred in August of this year, was his worthy successor—a keen observer, possessed of the discriminating judgment necessary for the diagnostician, the reasoning faith that makes the successful therapeutist, and the facile pen of a ready writer. All these qualities are in evidence in his treatise, which is the work of a master. The translation is well done, the illustrations are few, but good, and the typography, paper, and binding are all that could be desired.

Carl Spengler, "Tuberkulose und Syphilis-Arbeiten." Herausgegeben von seinen Schülern und Freunden. Davos: Verlag von H. Erfurt, 1911.

This is a work edited and published by Spengler's pupils and friends on the occasion of the distinguished phthisiotherapeutist's fiftieth birthday. An American physician, Dr. F. M. Pottenger, of Los Angeles, Cal., had the honor to write the introduction to the work. As can be foreseen from the two names—Spengler and Pottenger—the book represents largely that side of tuberculosis therapeutics known as tuberculin therapy. Spengler has the unique distinction of being one of the few men who have never ceased to use tuberculin; who, in fact, have used it constantly and largely since its introduction by Koch in 1890, and Pottenger has been for years and is still one of the most ardent American advocates of the tuberculin treatment. To Spengler's credit it must be said that he has constantly aimed at the production of a less toxic preparation than the original Koch tuberculin. Spengler has given to the profession no less than six different culture products for the cure of tuberculosis, namely, the P.T.O., P.E., A.T.O., P.V., T.B.V., and his latest and supposedly most efficient of all is the I.K.

It would be going too far to define all these culture products here, but it may be interesting to those not familiar with the latest product (I.K. "immune bodies") to read a brief description of it: It is obtained from animals which have been immunized to such an extent that they are capable of entirely absorbing large quantities of tubercle bacilli of a virulent and deadly type, without themselves developing tuberculosis. According to Pottenger, this product has, by scientific experiment as well as by clinical tests, shown itself to be of great value in the treatment of tuberculosis. Spengler claims that it contains both lytic and antitoxic bodies, and that its action combines that of a passive and active immunizer.

Besides this interesting chapter on I.K., the book contains all the most important works published by Spengler, dating from 1890 to 1911. Of particular interest are "Diagnosis of Closed (Early) Pulmonary Tuberculosis"; "Diagnosis of Tuberculous and Syphilitic Phthisis"; "Tuberculin Therapy in High Altitudes"; "The Hereditary Predisposition to Tuberculosis, Its Diagnosis and Treatment"; "Methods of Coloring Bovine and Human Tubercle Bacilli"; "Examination of Tuberculo-Syphilitic Sputum by Coloring Agents and Animal Experimentation."

Why a whole chapter should be devoted to the discussion of tuberculocidin, a culture product found and recommended by the elder Klebs some fifteen years ago, but the use of which has to the best of the reviewer's knowledge been long since abandoned in this country and abroad, is hard to understand. Aside from this seemingly useless chapter much can be said in praise of the book for the many valuable clinical and therapeutic hints it contains. Even to one who is not such an enthusiastic believer in tuberculin as Spengler and Pottenger the perusal of this book of 500 pages will prove instructive and interesting.

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Thirty-seventh Annual Meeting. Held at Baltimore, Md. May 11, 12, and 13, 1911.

THE PRESIDENT, DR. H. M. THOMAS OF BALTIMORE, IN THE CHAIR.

Thursday, May 11—First Day.

President's Address.—Dr. H. M. THOMAS in this address said that the circumstance that this meeting, the first that the American Neurological Association had held in Baltimore, fell on the hundreth anniversary of the announcement by Charles Bell of his idea of a new anatomy of the brain suggested the appropriateness of a few words of comment. Bell was regarded by many as the father of modern neurology, and this idea as the first evidence of his paternity. When in the latter part of 1811 Bell had printed in London for private distribution the "Idea of a New Anatomy of the Brain," a complete transcript of it had been published in the *Baltimore Medical and Philosophical Lyceum* for 1811, a fact that of itself had more than justified the appearance of this journal for the one year of its life, for this reprint had remained for many years, as far as he had been able to discover, the only actual publication of Bell's tract. If we were to date the birth of modern neurology from the time of Charles Bell, it might interest us to inquire for a moment what had been the prenatal state of this lusty infant, now one hundred years old. Neurology had advanced perhaps even less than the other branches of medicine and little more was known of nervous diseases than at the time of Hippocrates, Aretæus, and Galen. Clinically very few of the organic nervous diseases that we now know had been distinguished, for they were usually all grouped under apoplexy and palsy. Many conditions were recognized as affecting the brain, spinal cord, and nerves, as, for instance, congenital abnormalities, traumatic injuries, tumors, hemorrhages into the brain, and pressure on the nervous system from neighboring structures. Almost no attempt had been made to localize these processes within the central nervous system. The clinical observations of this period had often been accurate and detailed and one found the descriptions of cases so complete that there was little difficulty in the light of present knowledge in determining the probable position and character of the lesion. Should we not take council and under similar circumstances endeavor to make our records so objective that they would be intelligible one hundred years from now, even though our explanation of the findings might then seem as fanciful as those then given now seemed to us. The anatomists had studied the surface of the brain, most of its irregularities had been named, and much attention had been given to the ventricles and their connections. The cerebral circulation had been partially worked out and the peripheral nerves had been carefully dissected. Of the actual structure and internal arrangement of the brain little was known. The commissures connecting the two halves of the brain and spinal cord had been recognized and some observers had called attention to the decussation of nerve fibers at the anterior pyramids, but even this fact had been denied by many. Bell, while contemplating the seemingly unsurmountable complexity of the nervous system, had been struck by the constancy of the intricate connections of the peripheral nerves. This he had thought must have a meaning, and, as he believed that the nerves had special functions and were not each capable of performing all the functions, it occurred to him that this intermingling of the nervous filaments was a method by which the various parts of the body were supplied by nerves which differed in office. As the nerves of the special senses could be traced to definite regions of the brain he concluded that those areas were designed to respond to special stimuli and that it was in them that the different sense impressions were perceived; that is, that different functions were represented in different parts of the brain. If this arrangement were generally true, and if nerves having the same office always arose from the central nervous system, then it was only necessary to discover the functions of the various nerves and to trace them to their terminations within the central nervous system to reveal the function of the different parts of the brain. That Bell had at times misinterpreted his results and had been led to wrong conclusions did not detract greatly from the credit due him. The technical methods at his disposal were inadequate, and he had also been limited by the emphasis which he put upon anatomical results rather than upon experimental methods. Although he had extended and altered the details of his scheme he had never changed the fundamental idea, and one can imagine his delight could he return and see how it had lived, grown, and borne fruit.

Analyses of the Results of Dorsal Root Section in the Treatment of the Spastic State of Cerebral Diplegia.—Dr. L. PIERCE CLARK and Dr. ALFRED S. TAYLOR of New York presented this paper. Dorsal root section was being urged for the relief of at least three quite distinct conditions, namely, for pain, athetosis, and spasticity. The entire subject of radiculectomy was very much older than some would have us believe. Spastic muscular contractures prevented motor functions by offering more or less resistance to extension; they slowed the movement, and the movement once performed, had a tendency to persist beyond voluntary desire. A sort of physiological myotonus obtained as a result of the approximation of the two points of muscular insertion. The inhibiting function of the pyramidal tracts was independent throughout of the function producing spasticity. Many surgical procedures had been undertaken to restore the normal balance in the spinal reflex arc in diplegias. Early operation on the pyramidal tracts, even at their inception in the cortex, had left much to be desired. The majority of attempts to ameliorate the lot of the spasticities in the diplegias had been devoted to correcting the abnormal reflex arc in the spinal cord. The sensory part of the reflex arc was anterior in point of physiological time to that part of the motor mechanism which directly induced the spasticities. This and similar reasons induced Förster of Breslau to come to the same conclusion which the authors here stated. It was freely admitted that the degree of muscle tone in an extremity was determined by the sensory impression from the parts, and especially from the muscles. Tonic spasm might, therefore, be regarded as an augmented degree of this state, due to various causes. The impulses arising in the peripheral arc were collected from the muscle spindles. The motor part of the reflex arc was obviously beyond attack, for, while the contraction would be temporarily relieved, a complete palsy of the muscles involved would result. Neurectomy in the peripheral nerves proper could not be employed, as these consisted alike of sensory and motor nerves. Hence the posterior sensory roots near the cord, dorsal to the individual ganglion, were the point of operation if one wished to attack the sensory side of the arc. Even though ataxia and loss of reflex irritability should supervene in the operation, this state was much to be preferred to the spastic condition which it relieved. However, sufficient data were now at hand to show that neither mishap obtained in the new operation. Just what part and how much of the sensory stimuli might be removed to gain the desired amount of flaccidity was even yet not quite clear. It was reasonable to suppose that the sensory supply of the spastic muscles was approximately

from those nerves which also originated from the zonal areas of skin immediately overlying the muscles involved. Sufficient data were at hand now to show the operation was of little or no use in any spastic state where sensory defect existed. One might thus exclude all the forms of myelitis, and, in fact, all cord affections *per se*. The reason for this was not difficult to understand. The sensory defect added by operation was already in evidence in the disease itself before operation. The indications for the operation lay in those cases of pure pyramidal disease of cortical or subcortical origin. Little's disease was the disorder to which the operation in future would be largely limited. Even cases of infantile hemiplegia seemed to offer less prospect of betterment than in diplegia, as shown in Förster's, Gottstein's, and in their own cases. On theoretical grounds it would seem as though removing a part of the inflow of sensory impulses to the hemiplegic cortex might lessen or remove much of the cortical instability and thus make the operation of use to better the condition of hemiplegic epilepsy, but as yet data corroborating this view were not at hand. All diplegics showing painful and ineradicable spastic flexures exhibited good indications for this operation; in such their spastic state might be easily converted into flaccid palsies of normal anatomic rest. Unfortunately most of such cases presented such a degree of mental impairment that the important after-care and training were of little use. However, in diplegics of moderate intelligence with "scissors" gait or even "crossed-leg progression," the operation was of the greatest value. The value of the operation did not stop at a better gait for the little patient. The hope of further mental development in the diplegic and feeble-minded patient was in no small degree bound up in the freedom of movements of the extremities which was made possible after such an operation as here proposed. From a summary of all the cases, it might be said that in operating upon the lower extremity the posterior roots of all five lumbar, and the first two sacral entered into consideration. In a general way it sufficed in spastic palsy of the leg to resect the second, third, and fifth lumbar, and second sacral, in mild cases; or the third and fifth lumbar and second sacral if the spasticity was attended by adductor spasm largely, or the third and fifth lumbar and first sacral, if one desired to limit the completeness of the relief, for any cause. In the very severe cases, however, where there was extreme flexion of the knee, the second, third, and fifth lumbar and first sacral, or the first sacral, or the first, second, third, and fifth lumbar, and the first and second sacral should be resected. In brachial spasticities perhaps the best and completest results followed resection of the fourth, fifth, seventh, eighth cervical, and the first dorsal roots. It should be borne in mind that a part of the spastic conditions should be left as a physical brace for the paretic muscles.

Slow Compression of the Spinal Cord by Bone.—Dr. Pearce Bailey of New York said this might be a part of a general osteoarthritis and then have the same causes as that disease. It may also result from traumatic lesions of the vertebræ. The symptoms were those of slow compression with pain simulating the symptoms of tumor. Skiagraphs showed lesions in the bodies of the vertebræ, in the narrowing of the intervertebral foramina, and sometimes lesions elsewhere in the osseous system. Selected cases were suitable for operation.

Dr. James J. Putnam of Boston said he was not quite sure whether Dr. Bailey intended to make a distinction between cases of paraplegia and cases in which the symptoms might be explained by extensive irritation and compression of nerve substance. The first case that he saw was a good many years ago. The pain was so great and muscular wasting was so great and extensive, involving muscles supplied by both the lumbar and sacral nerves, that, while he thought it probably was cancer, nevertheless it occurred to him that the possibility of osteoarthritis was sufficiently great to justify treatment by immobilization. He was quite surprised then to see how much could be done by simple immobilization without any further operation.

Dr. B. Sachs of New York said that personally he would be in favor of preserving such well defined clinical types as the one now known as *spondylose rhizomélique*. Pathologically it might be related to those conditions of osteoarthritis. So far as osteoarthritis was concerned the question was of great interest, and the point they had learned at Mt. Sinai Hospital was that many of the symptoms which occurred in it were not only due to the compression by the bone, but also to exudative processes, which in nine cases out of ten were associated with the bone disease, so that the root symptoms were not due directly to compression by bone, but were often due to compression of the roots by an exudate in association with the bony formations.

Dr. G. L. Walton of Boston said he was impressed with the importance of investigating the spinal canal anteriorly in operation for cord tumor, and the possibility of an underlying osteoarthritis in supposedly uncomplicated trauma.

Dr. P. C. Knapp of Boston, Mass., said he would like to confirm what Dr. Sachs said about the dissociation of sensibility in these cases of bony disease of the spinal vertebra.

Chronic Hypertrophic Spinal Pachymeningitis.—By Drs. C. K. Mills and Edward Mercer Williams of Philadelphia. From the diagnostic point of view the subject of chronic hypertrophic spinal meningitis was of the utmost importance as indicated by the different opinions which had been given in the case which was the main subject of the paper and also in several other cases. They reported a case in a woman about 45 years of age, who suffered with recurring pain in the shoulder and arms, especially on the right side; who developed paralysis with atrophy in the distal portions of the upper extremities, impairment of power with exaggerated and abnormal reflexes in the lower extremities and also in the upper extremities, dissociated anesthesia, the changes in pain and temperature sense, especially the latter, being much more marked than those for the other forms of sensibility. A striking feature in the case was the great variability in some of the main features of the syndrome. Early in the history of the case the patient lost the ability to stand or walk, regaining and losing it again, and even late in the case the loss of power changed almost from day to day. Foot coldness and the Babinski reflex were present on one day and two or three days later were absent or very slightly marked. Even sensory conditions varied from time to time. Operation revealed marked thickening of the inside of the dura with flattening and displacement of the cervical cord, but the lesions were evidently too diffuse to warrant any attempt at removal of the thickened membrane. The patient died two or three weeks after the surgical procedure, and necropsy revealed widespread internal pachymeningitis most definite in the lower cervical and upper thoracic region, but present throughout the entire length of the vertebral canal. The cord was compressed and in some places invaded. The vessels both of the membrane and cord substance were sclerotic, changed in caliber, and in some instances obliterated.

Regeneration in the Sensory Root of the Fifth Nerve.—Dr. T. H. Weisenburg of Philadelphia read this paper, saying that in a case previously reported the patient, a man of 30, had pains in the face for seven years for which there were first performed peripheral operations,

and finally most of the Gasserian ganglion was removed and the sensory and motor roots cut. Two days after this the pains returned in spite of the fact that there was persistent anesthesia in the fifth nerve distribution. The pains were in the lower part of the jaw within the mouth, back of the tongue, and would radiate at times to the ear and down the throat to the shoulder, were especially severe on swallowing, and were not of the character that were present in tic douloureux. The patient lived for three years after the ganglion was removed. At necropsy there was found a cerebellopontile tumor which grew on the fifth nerve and compressed the pons and so separated the cerebellum from the former that it stretched the ninth and tenth nerves. During the man's life the lingual, the great occipital, and the cervical nerves were removed. The recurrence of the pain in this patient was undoubtedly the result of irritation of the ninth nerve. Physiologically the sensory distributions of the fifth and ninth nerves intermingled and therefore irritation of one should cause pain in the contiguous parts of the other. Moreover, no other conclusion could be arrived at because the distributions of the fifth and upper cervical nerves were excluded. In a study of the sensory and motor fifth roots distal to the tumor there were found dsitinct evidences of regeneration. In the motor root the regeneration of fibers was very marked, while in the sensory it was slight. These evidences of regeneration consisted in the formation of definite myeline sheaths and to a less extent of axis cylinders. There was hardly, however, enough regeneration to account for the return of pain. This finding was in total variance with previous experimental investigations, although not at all improbable, inasmuch as an opportunity to examine the fifth root had not been previously offered.

On Some Obscure Tumors Due to Midbrain Lesions.—Dr. Smith Ely Jelliffe of New York discussed the clinical and pathological aspects of some obscure tumors, due to lesions in the midbrain, particularly affecting the involuntary tonic arc. He also reported two cases: 1. A woman of 32, who had an apoplectiform stroke, was unconscious for a week, and later had paresis of the right side of the body, with slight sensory disturbance, some oculomotor palsies of the opposite side, and a more or less persistent hemitremor, resembling a paralysis agitans, with slight intention quality, of the side opposite the hemiparesis. Tremor was more noticeable in the upper than in the lower extremities. 2. This case was also a young woman, who fell suddenly, was not unconscious, but who had a slight hemiparesis of the right side, with possible diplopia, and possible hemianesthesia. She made a fairly rapid recovery, and was seen three months after the attack, suffering at this time only from a slight, but persistent, hemitremor in the right upper extremity resembling a paralysis agitans with slight intention quality. All trace of the hemiparesis and of the hemianesthesia had disappeared, save that the patient was somewhat stiff and awkward in the use of her right hand. She also had a right homonymous hemianopsia. The recent work of Marburg, von Monakow, Holmes, and Herz, all tended to show that hemiathetosis, hemichorea, and hemitremor were due to some interruption in the paths which have to do with the tonic innervation of the muscles. This arc might be interrupted either between the cerebellum and the red nucleus, or between the red nucleus and the thalamus, or between the red nucleus and the cortex; it might cut out either preponderatingly sensory tracts or preponderatingly motor tracts, and according to the proportion of tracts cut out and the precise localization of this cutting out the differences were to be accounted for. It would seem fairly certain that interruption of the rubrothalamic tracts tended to bring about the athetoid syndrome, that interruption of the rubrocortical, and corticorubro tracts brought about the hemitremor syndome; whereas the hemichoreic and hemiataxic movements usually spoke for a lower lesion, probably caudate to the red nucleus, and implicating the superior cerebellar paths close to the nucleus. There should be closer analysis as to the movements themselves, serial sectioning should be done, and the degenerations in the traits in question followed. Until both of these factors were carried out some uncertainty would persist in the interpretation of these posthemiplegic tremors.

Tumors of the Corpora Quadrigemina.—Dr. Herman H. Hoppe of Cincinnati, Ohio, read this paper saying that tumors involving and practically limited to the region of the corpora quadrigemina were not frequent. There was especially a dearth of literature of accurately observed cases, clinical and pathological, or the relations between lesions of the corpora quadrigemina and the functions of sight and hearing. The chief features of the case he reported were in brief: double vision, staggering gait, falling to the right, gradual loss of vision, ending in three or four months in total blindness, sudden attack of rigidity in all muscles, falling to ground without loss of consciousness, equal pupils, atrophy of optic nerves, no light response in pupils, all movements lost in the left eye except downward movement. All movement was lost in right eye except inward and downward, and there was slight ptosis of both lids. There was normal hearing. There was extreme static ataxia with retropulsion, so that the patient was finally unable to walk at all. Motion and sensation and reflexes were not affected. There were at no time forced position or forced movements. The anatomical structures in a position to be injured by the tumor growth would be the nuclei and roots of the fourth pair of nerves (injury to the third probable but not ascertainable), the posterior corpora quadrigemina (anterior probable), the termination of the lateral fillet, the superior cerebellar arms, and to a slight extent the left middle cerebellar arm, the spinaltectal, and thalamic tracts and the posterior longitudinal fasciculus. The other structures, as the fillet and pyramidal fiber system, and especially the sixth pair of nerves, would be subject to indirect compression and injury.

Lumbar Puncture in the Treatment of Aural Vertigo.—Dr. James J. Putnam and Dr. C. J. Blake of Boston read this paper. It was now about nine years since Babinski's observations on this subject were first published, and five years since the first cases of this series were observed. Babinski's interest in this matter grew out of his studies into the nature of artificial galvanic vertigo (with nystagmus and inclination of the head) in normal subjects, and it was of interest to note, as a sign that some change in the functional excitability of the labyrinth was brought about by lumbar puncture, that after the withdrawal of 15 c.c. to 20 c.c. of cerebrospinal fluid the reactions of the labyrinth to the galvanic stimulus were found to be no longer what they had been before. This applied, at any rate, to cases where these reactions had become changed in consequence of disease. Since Babinski's first communication a number of studies had been made, both by him and others, mainly in France but also in Germany, and results had been obtained which in general corroborated his statements. The experiences of Dr. Blake and himself had been of just the same kind with that of the other physicians. In brief, it might be said that the best cases were those where the symptoms did not indicate any very considerable disorganization of the labyrinth or any high degree of middle-ear disease, but rather an increase in functional excitability. Sometimes the favorable result was obtained at once, sometimes only after some days. Occasionally a second puncture was required. The amount withdrawn was usually 15 to 22 c.c. The only untoward

result thus far observed was headache, which might last some days or even a week or more. Good results were obtained in a considerable proportion of the cases.

Cases of the Dentate Nucleus.—Dr. E. E. Southard of Boston, Mass., read this paper saying that focal lesions of the dentate nuclei had been found in 19 out of 250 Danvers State Hospital cases personally examined in the gross therefor. These included 11 instances of focal sclerosis, 4 focal vascular destructive lesions, and 4 cases of dentate nucleus involvement in more extensive cerebellar lesions. The bearing of these lesions upon the diagnosis of organic dementia, general paresis, and dementia precox, in which condition the lesions were chiefly found, was tentatively sketched.

Dr. Smith Ely Jelliffe of New York said that Klist in his study of the hyperkinetic motility disorders had advanced the general hypothesis on physiological rather that anatomical grounds that the frontal rubrocerebellar tracts, or reverse tracts, were immediately involved in these hyperkinetic motor disturbances. Dr. Southard's suggestion was an interesting affiliation between the pathological disturbances in a definite portion of these pathological arcs with Klist's physiological hypothesis.

Dr. Southard said that Klist placed the lesions largely in the lower layers of the cerebral cortex, and in the thalamoneurons, thus approximating the claims which had been made for dementia precox in the lower layers of the cortex. His work was derived from work on chorea and on the midbrain.

The Sensory Tract in Relation to the Inner Capsule.—Drs. William G. Spiller of Philadelphia and Carl D. Camp of Ann Arbor, Mich., read this paper saying that different views were held regarding the position of the sensory fibers in the inner capsule. Some taught that they were posterior to the motor, while others held that the sensory and motor fibers were intimately mingled. In 1902 Dercum and Spiller published the study of a case in which hemianesthesia had existed about nine years, and degeneration was found confined to the posterior part of the posterior limb of the inner capsule and to the posterior part of the lenticular nucleus. They now reported another case of the same character. As in both these cases, studied by microscopical serial sections, the lesion was very sharply defined, the separation of the sensory from the motor tract seemed to have been clearly demonstrated, and it was concluded that the sensory fibers were posterior to the motor although some of the sensory fibers might pass through the posterior part of the lenticular nucleus.

A Pathological Study of Türck's Bundle.—Dr. John H. W. Rhein of Philadelphia said the exact anatomical relation of the fasciculus of Türck was still a matter of dispute. He had studied two cases. In the first case the three temporal convolutions were entirely atrophied or degenerated and the atrophy cut in large part the optic radiation of Gratiolet and the fasciculus longitudinalis inferior. The fasciculus of Türck was totally degenerated in the foot of the peduncle, though there were a few stained fibers demonstrable in the subthalamic region and some fibers which were probably not longitudinal ones in the foot of the peduncle. The second case showed atrophy of the middle portions of the second and third temporal convolutions with degeneration of the white matter of the first temporal convolution and slight atrophy of the posterior portion of the first temporal convolution. The fasciculus longitudinalis inferior and the optic radiation of Gratiolet were markedly implicated at the level of the subthalamic region. The fasciculus of Türck was in the main preserved, though its volume in the foot of the peduncle was perhaps reduced somewhat. It seemed from this that fibers from the occipital lobe did not figure greatly in the formation of the fasciculus of Türck, nor did the fibers from the middle portion of the second and third temporal or the posterior part of the first temporal convolution.

The Deviation of the Tongue in Hemiplegia.—Dr. Ernest Jones of Toronto, Canada, had investigated 313 cases of hemiplegia from this point of view. In 104 cases the tongue was protruded toward the paralyzed side (typical), in 40 toward the opposite side (atypical), *i.e.* the contralateral genioglossus was paralyzed nearly three times as often as the homolateral. In 67 cases the tongue could be put into the cheek on the side of the lesion more easily than into that of the side of the paralysis (typical), in 21 cases the reverse was the case (atypical), *i.e.* the contralateral styloglossus was paralyzed more than three times as often as the homolateral. The two atypical symptoms did not tend to occur in the same cases, so that four sets of cases are to be distinguished. There was every reason to believe that the genioglossus, the muscle of most significance in this connection, was represented in both hemispheres. The experimental evidence seemed to show that it was briefly represented in the homolateral hemisphere, and the clinical evidence that it was chiefly represented in the contralateral. Beevor's explanation of lateral deviation was incomplete, and did not account for all the facts just stated. A final explanation was impossible until the course of the corticohypoglossal tracts was more fully elucidated. The four symptoms just mentioned could probably be accounted for by a varying implication of the four different corticohypoglossal tracts that proceeded from each hemisphere; this might depend either on a variation in the crossing in different cases or on a variation in the position of the lesion.

Dr. T. H. Weisenburg of Philadelphia said that in the case of tumor of the cerebellopontile angle in which there was irritation of the ninth roots, the tongue was deviated to the side of the tumor. In this man there was spasm of the tongue and often when he would open his mouth you could see the tongue in spasm, always to the side of the lesion and never beyond the lips.

Dr. Harvey Cushing of Baltimore, Md., said he had a feeling that the tongue got its sense of position from the position of the jaw, and deflection of the jaw might mean that the tongue was getting its sense of position directly from the jaw, and, even though the tongue was deflected, it was really in position when compared with the deflection of the jaw. After trigeminal neurectomy the tongue deflected. The tongue sought its sense of position in the mid-line when it appeared to deflect.

Report of a Case of Beriberi from a Small Epidemic Occurring in Newfoundland.—Dr. John Jenks Thomas of Boston read this paper reporting this case of a man 31 years of age. Fifteen months ago the patient noticed that his legs were weak, followed by paralysis with double toe-drop without pain. There were digestive distress and tachycardia; they were followed by slow improvement. There was an absence of infectious diseases or intoxication to explain the symptoms. Twenty-five similar cases occurred in the small town, one resulting fatally. There was an absence of the usual factors considered responsible for this disease.

On the Relative Frequency of Traumatic Neuroses in the United States and Their Relation to the Employers' Liability Act.—Dr. B. Sachs of New York read this paper saying that it was probably noted that as a result of the social tendencies of the day, there was a general disposition in various States to pass what was known as the Employers' Liability Act, which provided that if an employee was hurt, whether it was due to the fault of the employer or not, he was to be indemnified. This law had been declared unconstitutional by the highest court of New York, but in other States laws similar to this had been passed, and he had no doubt that means would be

found to modify this law in such a way that it would be declared constitutional. In Germany and France and Switzerland they had such a law, and the result had been that the physicians, and particularly the neurologists of Europe, had been overrun and they had been almost maltreated in the abuse they had received in the way of determining the exact percentage of disability caused by accidents. They were not only called on dozens of times and asked what degree of disability existed, but Nonne wrote to him not long ago from Hamburg stating that when he was over here he was surprised to see so little traumatic neurosis, and he believed that the large percentage of traumatic neuroses found in Germany was due to the German Employers' Liability Act. In Germany the condition was known as traumatic neurosis, not neuroses, but a single traumatic neurosis. That disease was practically unknown in this country, and when we called it so we saw it only in connection with the suits entered against railroad companies, etc. These liability acts had not as yet been passed. There would yet be a period of a year or two in which the normal condition of things would exist. He would suggest that the men in various States determine the frequency of this condition. He was quite certain that with the present socialistic tendencies in this country these acts were going to be passed, and that in future years we would see whether this traumatic neurosis had been increased by the passage of these laws, and by comparing statistics of coming years with past years he thought we would be able to make some valuable deductions. He thought it would be a good plan to have at least one subject at their next meeting in which all the men would take more or less interest.

Dr. Russell of Canada said they had the liabilities act in Canada and he felt quite sure that the number of traumatic neuroses had increased remarkably in the last year since the Employers' Liability Act had come into force. He was quite sure the members of the association would see the same thing in New York when that bill was passed.

Dr. Ernest Jones of Toronto, Canada, said the frequency of traumatic neuroses had perceptibly increased in Canada since the passage of the Employers' Liability Act.

Dr. Hugh T. Patrick of Chicago, Ill., said he thought each member of the association, after another year of observation, could bring a statistical contribution. As a matter of fact, he did not think that any statistical contribution was in the least needful. Any man who had carefully studied as many as fifty cases or less of traumatic neuroses could arrive at a conclusion which seemed to be absolutely inevitable, particularly if studied in a broad sense and not in a purely technical neurological way. If he had studied the temperament of his patients and had been a little broader and applied the principles of human nature, human motives, and human susceptibility, he arrived at the conclusion that the Employers' Liability increased the traumatic neuroses so long as there was any prospect of recompense for injury received, whether that injury were a matter of fact, or whether it were only a matter of fact in the estimation of the patient.

Friday, May 14—Second Day.

The Etiology of the Occupation Neuroses and Neuritides.—Dr. W. E. Paul of Boston read this paper, saying that writer's cramp had been chiefly studied for a hypothesis of the etiology of the occupation neuroses. The symptom almost exclusively considered was cramp. The extensive symptomatic variations had received scant attention from the etiological standpoint. Paradoxical and contradictory statements were very numerous. A possible peripheral etiology was briefly and lightly dismissed. The hypothetical central theory had been incorporated into the definition. The symptom of cramp and the legend that cessation of the occupational act relieved cramp and permitted the muscles affected to do anything else perfectly had necessitated the central hypothesis; the fact that cramp might occur later in the left hand, put to the same use, was assumed to bolster up the theory of a central etiology. There had been emphatic dissenters from the belief in a central pathology, who had asserted the etiology was peripheral. Other occupation neuroses had the same etiology as writer's cramp which was universally chosen as the type. If undoubted peripheral nerve symptoms developed, a new classification was invoked. The symptomatology presented a greater variety of symptoms. The individual views of authors as to what was comprised in the term "occupation neuroses" were far from uniform. Experimental work showed that peripheral nerve injury or trauma could give rise to practically all the symptoms of an occupation neurosis. The majority of the symptoms could not be explained by the central hypothesis. Ten cases were reported in which the rule that all other acts than the occupational acts were done fully and freely did not hold. Also 200 cases were analyzed from the records of the Massachusetts General Hospital which demonstrated the frequency of pain located in many cases near or in joints. The impacts, squeezings, tensions, and stresses of excessive physiological functioning, acting on muscle tissue, or on sensory and motor nerve structures which run in the soft tissues and terminate in muscle, tendon, joints, or fasciæ, brought about neurolytic or myelytic changes responsible for the occupation neuroses and so-called neuritis and occupation pain.

Dr. George L. Walton of Boston said that Dr. Paul's paper was a timely plea for further knowledge of the terminal nerve expansions and their reaction to external influences. It was to be hoped that it would stimulate physiological study of this part of the neuromuscular mechanism. At present the whole study was theoretical and the most to be claimed for this theory was that it offered more logical explanation of the phenomena than the theory which we previously had obtained. It was perhaps too sweeping entirely to deny cerebral exhaustion as a factor, but it should be remembered that the higher cerebral centers had all to do with such movements as have become sufficiently constant to produce an occupation neurosis—such movements were largely automatic and relegated largely to the lower centers which could stand an enormous amount of work.

Dr. James J. Putnam of Boston said that Dr. Paul had done a real service in calling attention to this aspect of these disorders and he heartily concurred in what he had said. He would only add that he thought he ought to form the habit of realizing that the mental pictures which the patient formed of the difficulty itself reinforced the result.

Dr. J. Ramsay Hunt of New York said that his feeling in regard to the occupation neuroses was that we were in much the same position as we were in in regard to the term neurasthenia, that a great many cases were classed as occupation neuroses or occupation neuritides, which properly speaking did not belong to that group. He felt that there was a clear distinction between the occupation neuroses of central origin and the occupation neuritis which was entirely a peripheral affair, and he thought it complicated the subject very much to attempt to fuse them in any way. Of course there might be a peripheral factor in the production of a central neurosis just as there was in the production of a habit spasm which was a central neurosis, and also there was no reason why the occupation neurosis should not be combined with an occupation neuritis in a given case or given different cases, but he believed that they should be kept quite distinct.

Dr. M. Allen Starr of New York said this subject was to him a very interesting one, for at his clinic for many years he had a very large variety of occupation neuroses. They were indebted to Dr. Paul for having brought forward the peripheral theory and for having put it in a very interesting way, but as he looked back upon his experiences, both in the clinical cases that he had seen and in a large number of cases of pianists seen in private practice, there were certain points which had impressed him in a way to make him differ somewhat from Dr. Paul's general conclusion that these were all peripheral cases. He would be much more inclined to agree with Dr. Hunt that it was a mistake in any disease to limit one's view to a single standpoint. There was no reason why there should not be many cases that corresponded to Dr. Paul's idea that they were of a distinctly peripheral nature due to injury of muscle plates, but it seemed to him, on the other hand, that there were cases which were distinctly indicative of a central origin of the disease.

Dr. Alfred Gordon of Philadelphia said that several years ago he made a systematic study of a series of cases of pure occupation neuroses, telegrapher's cramp, pianist's cramp, etc., and that he obtained very satisfactory results with Bier's method. A circular band was applied around the wrist and kept on for an hour twice a day regularly. The patient was allowed to resume his work. The results were quite favorable. It was also true that in a series of cases he obtained good results with complete rest.

Some Effects of Underfeeding on the Growth of the Brain.—Dr. Henry H. Donaldson of Philadelphia said that underfeeding sufficiently severe to stop or nearly stop the increase in the growth of the brain during the active period of the albino rat did not modify the maturing processes in this organ, as indicated in the change in the percentage of water, nor did it modify the formation of the medullary sheaths, as shown by the usual methods for demonstrating this. These two processes continued under conditions which stopped the increase of the brain in size.

Differential Diagnoses Between Manic-Depressive Insanity and Dementia Præcox.—Dr. Alfred Gordon of Philadelphia read this paper, saying that a careful analysis of every phase of the mental affections in four cases observed for several days led him to the following conclusions: In spite of the fact that every one of the four patients presented at one time alternating phases of maniacal and depressive outbreaks and at another time symptoms of dementia pæcox, there were certain features which constituted very important differential diagnostic elements, to wit, if in an individual affected with outbreaks of depression and exaltation, each characteristic of mania and melancholia, a change of his affective and intellectual faculties, and particularly of the first, was observed, the presumption would be in favor of an eventual dementia præcox. If the patient began his mental disorder with symptoms of dementia præcox and later developed the picture of manic-depressive psychosis, but one following closely the other, the latter might carry with it some important features of the first and these very same features would present then a very significant diagnostic element.

The Early Symptoms of General Paralysis.—Dr. Phillip Coombs Knapp of Boston read this paper, saying that it included a study of 100 cases of general paralysis in 90 men and 10 women, seen on the average a year and eight months after the onset of morbid symptoms. Twelve were cases of taboparalysis. A comparison was made between the symptoms which were reported as the initial symptoms of the disease and the symptoms presented at the time of examination. Sensory symptoms, headache, pain, and paresthesia were the commonest initial symptoms, although of less relative frequency later in the disease. Apoplectiform and epileptiform attacks were relatively more frequent as initial symptoms than as symptoms of later onset. Motor symptoms were not very common at the beginning of the disease, but were almost universal later, occurring in 87 cases. Nearly every patient presented alterations of the knee-jerk (96 cases) and of speech or handwriting (93 cases). Mental symptoms were noted among the initial symptoms in 49 cases. There was no case which did not present either alterations in the knee-jerks, or in the pupils, or in the speech, or handwriting. There were 3 cases in which no mental disturbance was detected, and 12 more in which the mental disturbance was insignificant. This warranted the classification of paresis among the diseases of the nervous system in general rather than as a distinctly mental disease.

Dr. H. R. Stedman of Boston said that Dr. Knapp made a plea for the preponderance of physical over mental symptoms in the prodromes of mental disease, but he was very far from being convinced. General paralysis was primarily and essentially a disease in the cortex, whose highest functions were the mental processes. Therefore it seemed to him to go without saying that the mental enfeeblement must be present. There must be some shade or degree of enfeeblement in the beginning of general paralysis. Then, again, the average person was far less likely to notice and remember and give due weight to the purely mental, the minor mental changes like impairment of attention and slight changes in character and disposition and all that, while on the other hand the physical changes, like tremor and the pupillary changes, while far more noticeable and tangible, would be far more likely to make an impression upon him and be remembered.

Dr. Morton Prince of Boston said that Dr. Knapp had spoken of the relative difference in time in the onset of the sensory and mental symptoms. He thought there was a very great fallacy in statistics of this kind. Dr. Knapp said he depended upon the statement of the patient or of the relatives. That the patient could not give an accurate account in a case of insanity went without saying. A number of cases came to his mind where the relatives said that the person was a very highly intelligent individual; they were unwilling to admit that any mental symptoms had developed, partly because of their unwillingness to face the truth, partly to find some way of explaining those symptoms.

Dr. G. L. Walton of Boston said he was thoroughly in accord with Dr. Knapp's position. He did not deny the existence of delicate and elusive mental symptoms in the early stages, but agreed with Dr. Knapp that the mental symptoms were far less prominent than the physical signs at the onset. The practical bearing was that if a patient presented himself with a mental condition suggesting paresis, if there were no pupillary or other reflex disorders, no trouble in speech or writing, no tumor, and no history of apoplectiform or epileptiform attacks, or other of the physical signs of that disease, the chances were overwhelmingly against the diagnosis of paresis.

Dr. M. Allen Starr of New York said that a few years ago Dr. Hunt went over the records of 200 cases from his clinic as a result of which study many of the facts which Dr. Knapp had presented to them could be confirmed. There was one fact that came out in that analysis which had not been brought forward here, that was, among the early mental symptoms they found it was very much more common to have a period of mental depression than of exaltation. It seemed to him that a study of his cases confirmed the statement of Dr. Stedman that, when they began to fail, it was the highest

centers that went first and that in these cases it was not quite fair to make their estimation of the early symptoms from the statements of the patients when the disease had developed, or from the statement of relatives, notoriously inaccurate witnesses, but from the statement of their own mistake of cases which they had seen and not been able to make a diagnosis of, and which subsequent events had shown that they had before them cases of paresis.

Dr. C. L. Dana of New York said Dr. Knapp had brought forward a subject of great importance. But perhaps Dr. Knapp had ignored the fact that in those early symptoms which he described as early symptoms of paresis both the sensory and motor and the mental were all three important symptoms of a luetic disorder of the central nervous system. His experience was that paresis usually, or often, attacked a person first through a condition which we called luetic neurasthenia or luetic depression and more rarely luetic mania. If the disease goes on, as it usually did, then paresis developed; but if proper treatments were applied the sensory symptoms and motor symptoms were sometimes arrested and no paresis ensued. Now the test by which they could determine whether a luetic condition was one of luetic ischemia or early paralysis was to be found ultimately in a careful study of the blood and cerebrospinal fluid, and already they had gotten pretty nearly to the formula by which they could tell.

Dr. Theodore Diller of Pittsburg, Pa., said he was sure there were many cases of paresis with physical signs which were perfectly well developed before the appearance of the mental symptoms.

Dr. Ernest Jones of Toronto said there seemed to be involved four distinct classes of facts: first, as to which symptoms were first to occur; second, those which were first to be noticed by the patient; third, which were the ones leading the patient to complain and to seek medical treatment; and, fourth, which were the most constantly found when the case came under observation by the physician. His experience in regard to the four classes of facts, based on several hundred cases studied from the point of view of symptoms, was that the first symptoms to be noticed by the patient were physical, but the first symptoms of which they complained and which lead them to seek advice were the mental kind, and when the physician saw the case the mental symptoms were the most constant and pronounced.

Dr. Henry A. Cotton of Trenton, N. J., said that from the standpoint of the hospital physician he thought one would see in some cases the physical signs appear first, and in others the mental signs appear first. He believed that unless paresis was in a stage where there could be no mistake as to diagnosis one should make lumbar puncture, which in the early stages would show a lymphocytosis where one hardly suspected general paralysis from the physical or mental signs.

Dr. Knapp, in closing, said he did not think they had any data whatever which enabled them to say what symptoms were the first to appear in general paralysis. Hardly any one of them had observed a case with sufficient accuracy over a sufficient length of time to be able to say that they had seen the case from the first day paresis began to develop and followed it and noted all the symptoms until paresis had been definitely established from the diagnostic point of view. He had tried to make it clear that the statements of the relatives were of extremely little value. The data as to the initial symptoms which he had presented could not be accepted as definite and absolute facts. They were simply what the patients and their friends had reported. We did not know which were the first symptoms in the actual development of the disease. We must depend partly on the statements of the relatives and patient before we saw the patient.

Imperative Pains.—Dr. Frank R. Fry of St. Louis, Mo., read this paper, saying that the various psycopathic conditions presented characteristic reactions to pain. For example, in the hysterical patient the pain was focussed in some member or locality of the body and the patient was bewildered by the intensity of it. On the other hand, the hypochondriacal patient with his pain referred to a viscus had a very definite conception of his imaginary malady and the pain which he suffered was to his mind a part of the supposed malady. The incessant complaint of the nerasthenic of serious pain might be contrasted with the behavior of the melancholic who bore his pain in silence and in terror. The paranoid patient disturbed with dysesthesiæ believed some evil influence was working through them; while the psychasthenic carefully sought to convince you that he had a pain, that it was of long standing, that he did not know what produced it, but that it was a grievous thing and that he would like to have it cured. It was in this latter class particularly that they found the insistent variety of pain which he had demonstrated "imperative." He believed that this kind of pain occurred along with the obsessions, tics, and compulsive phenomena of the psychasthenics. In attempting to analyze psychic symptoms they should keep in mind the fact that one fundamental psychopathic trend or tendency might dominate the picture, but at any time there might appear the symptoms of other tendencies to obscure or distort it. Hence it was more important in each case to learn all of the patient's temperamental and psychopathic tendencies than to hasten too soon to classify him or his malady. For instance, a patient often started out with neurasthenic symptoms and afterwards developed hysterical signs. Again, it was sometimes difficult to draw the line between mere neuritic pains and psychic pains. In many of these cases there was a neuritic irritation, but there was at the same time present, as afterwards developed, a psychopathic tendency so marked as to make the pain symptoms and the consequent mental picture out of all proportion to the local irritation. It was only after studying many of these situations carefully that we could decide whether the poor resistance to pain was physical and local or whether it was mental. A familiarity with the possible pictures of mental pain was the only means of differentiating conditions.

Dr. G. L. Walton of Boston said the factor of fear was important, that the imperative nature of pain in the psychoneurotic resulted from his obsessive insistence on absolute safety and comfort.

Dr. Theodore Diller of Pittsburg, Pa., referred to the psychic or mental pains seen in the so-called traumatic neuroses. He had engaged in an investigation of this subject and after reexamination of old patients after from eight to ten years, he had been very much struck with the existence of pains in these conditions.

Dr. Charles K. Mills of Philadelphia said there was a class of cases in which imperative pains were a striking feature which he thought should receive more attention. They were cases which seemed to him to distinctly deserve the designation of hallucinations of pain. They were very serious cases. Two patients in whom he had observed these pains were men of very high intellectual attainments; one was a clergyman, a writer, a man of distinction in his own profession, and in the world of literature who, in middle life or perhaps a little later, became the victim of these hallucinations of pain. Surely they were imperative pains. No examination was made or could be made so far as he could tell in this case which revealed a physical basis for the pain. Another case which was well known in Philadelphia was that of a man who had been seen by a number of neurologists, surgeons, ophthalmologists, and others—a man of great

ability and distinction, a writer and teacher, who had suffered for more than ten years. His description of the pains was very much like the description given by a tabetic patient. All sorts of opinions had been given of neuritis, tabes, concealed except for this manifestation, the pains due to fibrous indurations, bone conditions, of phlebitis, and so on.

Dr. Archibald Church of Chicago, Ill., said they would find these ideas of pain, yet with no special physical basis, but with the fear of physical disability. They were absolutely analogous to, if not identical with, the phobias of psychasthenia. He had had the good luck in the last three months of dissipating some very protracted fears of this sort by the reiteration of suggestion, just as they undertook to combat the ideas of psychasthenics. This pain was associated almost invariably with some uncomfortable or unpleasant physical experience, and it therefore persisted, the starting point of suggestion having taken place in the ordinary way.

Dr. M. Allen Starr of New York said that imperative pains in the nerve distribution were very difficult to diagnose. He had had an experience of that kind in a patient who was struck in the inguinal region, and he came to the conclusion that the patient was suffering from psychasthenic pain in the nerve distribution. The patient stated that he was much relieved by the ethyl chloride spray, but the pain invariably came back. He then determined to find the effect of suggestion. He had ethyl chloride applied well upon the abdomen. The result was quite as good as before. He had entire relief of all this pain, even for a long time. Of course the pain recurred. These pains, which seemed to be in the nerve distributions, were more difficult to diagnose than were the more diffuse pains under discussion. It was generally recognized that these cases were often greatly benefited by hypnotism. He had seen the pain disappear after hypnotic suggestion.

Dr. W. E. Paul of Boston believed with Dr. Mills that in some cases the pain verged on the hallucinatory character. A man of 48 had a spot of pain in the left buttock. It was a constant pressing, boring pain limited to this single small cavity. It had not stopped a moment for 15 years. He was conscious of it as soon as he got up in the morning. He was a lawyer. His financial interests were varied and large and he was fully alive to them, but he complained that the zest and spirit of these were taken out by his affliction. In other respects his health was good.

Automatism in Insanity.—Dr. Theodore H. Kellogg of Riverdale-on-Hudson, N. Y., read this paper, saying that toxic insanity was accompanied by active automatic states. In all states of torpor in the acute psychoses there was habitual automatism. Automatism consisted of rocking of body, friction of body, beating the air, rhythmical gestures, insane antics. In more passive forms the patients continuously maintained the erect position or recumbency. These fixed positions were resumed as soon as forcible changes were made. Some repeated automatically any question put to them; some could read aloud without the remotest conception of what they were reading. In the case of young children the presence of automatism would enable the physician to make the diagnosis. In alcoholic dementia the automatism might point to the cause; in the climacteric the differential diagnosis between prolonged attacks of aberration which were recoverable from and those which were not recoverable would be denoted by automatism.

(To be continued.)

Nephritis Following Parotitis.—Cannata, in reporting a case of this condition states that there are forty instances reported in the literature, of which very few occurred in children.—*La Pediatria.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

New Jersey State Board of Medical Examiners.

June 20 and 21, 1911.

ANATOMY.

1. Describe the endocardium.
2. Give origin, branches, and parts supplied by the musculospiral nerve.
3. Name five muscles of the shoulder and arm. Give origin, insertion, and action of any *one* of the five.
4. Name the muscles attached to the great trochanter of the femur.
5. What are the functions of the superior mesenteric veins?
6. Mention an anastomosis between the portal and systemic veins.
7. Name, locate, and describe the largest of the cranial ganglia.
8. What nerves supply the knee-joint?
9. In what respect do the pulmonary differ from other veins?
10. Describe the facial vein. Name its tributaries.
11. Describe the long saphenous vein.
12. What muscles (*a*) elevate, (*b*) depress the os hyoides and the larynx?
13. In fracture of the shaft of the radius near its center, what muscles are involved in displacement of the fragments?
14. Name and describe the different glands of the stomach.
15. In what way do the axillary and deep cervical glands communicate with each other?

PHYSIOLOGY.

1. What chemical change is necessary for blood coagulation?
2. Is the alkalinity of the blood increased or diminished by exercise, lactation, or digestion, and why?
3. State the normal amount of blood in a man weighing 160 pounds. How is it renewed after hemorrhage?
4. What is absorption, and by what process is it accomplished?
5. What conditions favor, and what conditions retard, absorption?
6. State the origin and function of lymph. Is it coagulable, and why?
7. What tissues and organs are developed respectively from the ectoderm, mesoderm, and entoderm?
8. What are the Wolffian bodies, and what becomes of them?
9. Discuss the corpus luteum. Does it indicate pregnancy? Explain.
10. What principal centers are located in the medulla?
11. What are the functions of the brain membranes?
12. Compare the functions of the white and gray matter in the encephalon.
13. Name, *in order of importance,* the organs in which animal heat is developed.
14. What variations of temperature are found in different parts of the body? Why?
15. Can a man live on an exclusively meat diet? Why?

MATERIA MEDICA AND THERAPEUTICS.

1. What remedies may be used to induce emesis? Give dose of each.
2. Name three mineral acids with therapeutic properties of each.
3. State uses and doses of salol, guaiacol, and heroin.
4. Give the source and physiological action of opium; name four preparations with adult dose of each.
5. Define alteratives; name five used in medicine with the therapeutic properties of each.
6. Compare the physiological action of aconite and digitalis; give adult dose of each.
7. Describe symptoms of ptomaine poisoning; outline the treatment.
8. Differentiate the effects of strychnine, nitroglycerin, and strophanthus on the arterial system.
9. Mention three vegetable and three mineral astringents with adult dose of each.
10. Specify the precautions to be used in administering chloroform; give reasons therefor.
11. Diagnosticate uremic poisoning; outline an eliminative treatment.
12. Explain the action and effects of phenacetin; give adult dose.

13. Prescribe in proper form for chronic bronchitis in an adult; explain the action of the ingredients used.
14. Enumerate the official preparations of arsenic; state the dose of each.
15. Give three examples of animal extracts with indications for the use of each.

CHEMISTRY.

1. (*a*) How does uric acid form in the system (*b*) Of what are gout stones principally composed? (*c*) What is the solubility of uric acid?
2. (*a*) State the origin of tartaric acid and other tartrates. (*b*) Give chemical formula of cream of tartar. (*c*) Rochelle salt.
3. (*a*) What are fats chemically? (*b*) What becomes of the fats ingested and what is the province of adipose in the body? (*c*) Under what condition does fat occur in the urine?
4. (*a*) What is nitroglycerin? (*b*) How is it used in medicine and what is its effect on the vascular system?
5. (*a*) What is chloral hydrate? (*b*) How does chloral act as a poison?
6. (*a*) What is the difference between ferrous and ferric salts? (*b*) Give examples by formulas.
7. (*a*) What is potassium permanganate? (*b*) Give formulas and its action as a disinfectant.
8. (*a*) Which are the two iodides of mercury? (*b*) Give formulas. (*c*) What is the difference in action of the "ous" and "ic" compounds of Hg?
9. (*a*) Define the term hardness as applied to a potable water? (*b*) What does the presence of an abnormal quantity of chlorides in a drinking water indicate?
10. Name three pigments normally present in human urine.
11. (*a*) Name three univalent elements. (*b*) Name a monobasic, a dibasic, and a tribasic acid radical.
12. (*a*) Give source, symbol, valency, and atomic weight of bromine. (*b*) What is acidum hydrobromicum dilutum (U. S. P.)?
13. (*a*) What is oxalic acid? (*b*) For what salt is it liable to be mistaken? (*c*) Give treatment for poisoning by oxalic acid.
14. (*a*) What are the principal constituents of cow's milk? (*b*) Give chemical explanation of the souring and curdling of milk.
15. Name the alkaloids of belladonna, aconite, nux vomica, and opium.

HISTOLOGY.

1. Give composition of human blood.
2. Mention different leucocytes and derivation of names.
3. What are thrombocytes?
4. Give structure of the mucous membrane of the stomach.
5. What cells line the larynx, trachea, bronchi, and bronchioles?

PATHOLOGY.

6. Give rôle of white blood-cells in infection.
7. What is hemolysis?
8. Define agglutination. How produced?
9. Define atelectasis; give causes and effects.
10. What will cause and what are the effects of exclusion of bile from the intestines?

BACTERIOLOGY.

11. Give chemical composition of bacteria.
12. What are proteid bodies? Name varieties and describe them.
13. What substances must be supplied to bacterial cells for their food?
14. Mention other bacterial functions besides disease production.
15. What are the fermentations of milk? Which are innocuous and which harmful? State effects of pasteurizing and boiling.

PRACTICE OF MEDICINE.

1. Describe bubonic plague.
2. Differentiate tonic and clonic spasms.
3. Describe the different stages of syphilis.
4. Differentiate cystic and renal hematuria.
5. Give the causes and symptoms of cholelithiasis.
6. Give the causes and symptoms of edema glottidis.
7. Give four physical signs present in consolidation of lung tissue.
8. How would you determine high blood pressure? What is its significance?
9. What, how much, and how often should a four months-old bottle-fed baby be fed?
10. Differentiate ataxia and aphasia, and give the location of the lesion in each.
11. Where is bronchial breathing heard normally? What does it indicate when heard elsewhere?
12. What is the significance of (1) epithelial; (2) granular; (3) fatty, and (4) waxy casts in the urine?
13. Describe the prodromal symptoms, giving the duration of each, in (1) scarlet fever; (2) measles, and (3) small-pox.
14. Give three causes for specific gravity of the urine (1) under 1010, and (2) over 1030, and the significance of each.
15. Describe vesicular, papular, and pustular inflammation of the skin and name a disease of which each is characteristic.

OBSTETRICS AND GYNECOLOGY.

1. What are the characteristics of the female pelvis and how does the male pelvis differ therefrom?
2. Describe the vulva (*a*) of a virgin, (*b*) of a multipara.
3. Describe (1) the process of fecundation, and (2) the uterine changes resultant.
4. Describe pelvimetry and name the five most important measurements.
5. Describe Walcher's posture and its uses.
6. What precaution as to the urine should be employed in the case of a pregnant woman?
7. Differentiate accidental hemorrhage, placenta prævia, postpartum hemorrhage.
8. Describe fully the treatment you would use in postpartum hemorrhage.
9. How should asphyxia neonatorum be managed?
10. Cause, preventive treatment, and curative treatment of ophthalmia neonatorum.
11. What causes puerperal infection? How may it be prevented?
12. How do you prepare a patient for an operation which is to involve both the abdominal surface and the vagina?
13. What are the causes of pelvic abscess? Outline treatment.
14. Describe the menopause and name the diseases common to that period of life.
15. Differentiate vaginitis and vaginismus and give treatment of the latter.

SURGERY.

1. Diagnosis and treatment of perforation of intestine in typhoid fever.
2. Give etiology, diagnosis, and treatment of empyema of the frontal sinus.
3. Give symptoms and treatment of ischiorectal abscess.
4. Treatment of compound fracture of tibia and fibula.
5. Describe tertiary syphilis of the pharynx.
6. Diagnosis of embolism of the mesentery.
7. Mention the causes of incontinence of urine.
8. What are the symptoms of cerebral compression?
9. Describe in detail lumbar puncture.
10. Diagnosis and treatment of papilloma of the bladder.
11. Give indications for drainage.
12. Mention the causes and symptoms of stricture of the rectum.
13. Give treatment of tubercular peritonitis.
14. Give diagnosis of lipoma of the neck.
15. Give diagnosis and treatment of aneurysm of the femoral artery.

HYGIENE.

1. Define hygiene.
2. What would you advise a person to do that fears pneumonia, rheumatism, nephritis, insomnia?
3. What is absolutely necessary for the maintenance of the healthy functions of the body?
4. What is antiseptic? What is meant by the term disinfection?
5. Name five disinfectants.
6. Why does a heated atmosphere charged with moisture render sunstroke liable?
7. State the time that quarantine should be imposed in (*a*) diphtheria; (*b*) smallpox.
8. What instructions should be given a nurse respecting the prevention of the spread of scarlet fever from the sick room?

MEDICAL JURISPRUDENCE.

9. State the difference between criminal and civil malpractice.
10. Name some of the violent causes of death.
11. Give in detail the condition which would warrant the induction of abortion by the practitioner.
12. Define the word "insanity."
13. Name the post-mortem signs, external and internal, of recent drowning.
14. When is induced abortion lawful and what are the conditions in which it is called for?
15. In a case of suspected infanticide what are the evidences of live birth?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

NEW JERSEY STATE BOARD OF MEDICAL EXAMINERS.

June 20 and 21, 1911.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), pages 787 and 792; or Gray's "Anatomy" (1910), page 305.

2. MUSCULOSPIRAL NERVE. *Origin:* Posterior cord of the brachial plexus. *Branches:* Muscular, cutaneous, radial, and posterior interosseous. *Parts supplied:* Muscles of back of arm and forearm; and skin of back of arm, forearm, and hand.

3. *Five muscles of shoulder and arm:* Deltoid, subscapular, teres major, biceps, and triceps.

TRICEPS: The long, or middle, head arises from a depression on the axillary border of the scapula immediately below the glenoid cavity; the external head from the root of the great tuberosity on the posterior surface of the humerus, and the upper part of the musculospiral groove; the internal head from the posterior surface of shaft of humerus, below musculospiral groove, and the internal and external muscular septa. It is *inserted* into the back part of the upper surface of the olecranon process of the ulna. *Nerve supply:* Musculospiral. *Action:* Extends elbow and forearm; and extends and adducts the shoulder.

4. *Muscles attached to the great trochanter of the femur:* Gluteus medius, gluteus minimus, pyriformis, obturator internus, obturator externus, gemellus superior, gemellus inferior, and quadratus femoris.

5. *The superior mesenteric vein* returns the blood from the small intestine, cecum, ascending colon, and transverse colon.

6. *An anastomosis between portal and systemic veins:* The superior hemorrhoidal vein, a branch of the inferior mesenteric vein (portal), anastomoses with the middle hemorrhoidal vein, a branch of the internal iliac vein (systemic).

7. See Cunningham's "Anatomy" (1909, page 679; or Gray's "Anatomy" (1910), page 981.

8. *Nerves that supply the knee joints* are derived from the obturator, anterior crural, external popliteal, and internal popliteal.

9. *The pulmonary veins differ from the other veins:* (1) They carry arterial instead of venous blood; (2) they have no valves; (3) they are but little larger than the arteries which they accompany; and (4) they accompany the pulmonary arteries singly.

10. See Cunningham's "Anatomy" (1909), page 876; or Gray's "Anatomy" (1910), page 712.

11. See Cunningham's "Anatomy" (1909), page 900; or Gray's "Anatomy" (1910), page 743.

12. *Muscles which elevate the os hyoides and larynx:* Digastric, stylohyoid, mylohyoid, and geniohyoid.

Muscles which depress the os hyoides and larynx: Sternohyoid, sternothyroid, thyrohyoid, and omohyoid.

13. The upper fragment is flexed and supinated by the biceps and supinator brevis; the lower fragment is drawn down and pronated by the two pronators.

14. See Gray's "Anatomy" (1910), page 1277.

15. See Cunningham's "Anatomy" (1909), pages 912 and 914; or Gray's "Anatomy" (1910), page 786.

PHYSIOLOGY.

1. The formation of thrombin is necessary; this then reacts with the fibrinogen of the plasma and forms fibrin.

2. *Exercise* causes a decrease in the alkalinity of the blood; due, probably, to excessive production of sarcolactic acid in the muscles.

Digestion first causes an increase in the alkalinity of the blood, due to the secretion of hydrochloric acid; later, when the acid is absorbed, the alkalinity is diminished.

3. The normal amount of blood is said to be (roughly) about 1/13 of the body weight; so a man weighing 160 pounds should have about 12 to 13 pounds of blood.

Regeneration of blood after a hemorrhage: "If the bleeding does not go on to death the blood is restored by absorption from the tissues or from the food taken in; the first to be absorbed being the serum sanguinis, with the dissolved salts, and then the albumin. A longer time is required to form new red blood corpuscles. The regenerated blood is at first abnormally watery and poor in cells. As a result of the greater flow of lymph into the blood the number of the white blood corpuscles is greatly increased, and then their amount falls off; the red blood corpuscles again attain their usual number, and the composition of the blood gradually returns to the normal. We do not as yet know certainly how the restoration of the red blood corpuscles takes place. The most generally accepted view is that colorless corpuscles are being constantly formed in the lymph glands, in the spleen, the bone marrow, and in the liver, and a certain number of these colorless corpuscles change into the red disks."—(Tillmanns' *Surgery.*)

4. *Absorption* is the process by which the products of digestion are taken up by the circulatory system. The products of digestion find their way into the blood by two routes: (1) By the blood-vessels of the gastrointestinal tract, which unite to form the portal vein, and (2) by the lymph vessels of the small intestine, which converge to empty into the thoracic duct. The water, inorganic salts, proteids, and sugar go by way of the portal vein to the ascending vena cava; the fats go by way of the thoracic duct to the junction of the left subclavian and internal jugular veins.

The *process by which it is accomplished* is partly physical (osmosis and filtration), and is also due in part to selective action.

5. To be absorbed by the blood-vessels or lacteals the substances must be in a fluid state, and the more dilute the solution the more rapid the absorption. The absorbed matter must be rapidly removed and fresh blood supplied to the capillaries. Obstructed portal circulation delays absorption.

6. There are two theories as to the formation of lymph: (1) That it is formed from the blood plasma by the process of filtration, diffusion, and osmosis. (2) That, in addition to these, the endothelial cells of the capillaries exercise some influence.

Functions of lymph: To convey nutriment to tissues and cells of the body, and to gather up the waste material for elimination by the skin, lungs, and kidneys.

Lymph coagulates in the same manner as blood, but more slowly and feebly, owing to the less quantity of fibrinogen present in lymph. This property of coagulation is only found in the lymph in the vessels near the thoracic duct.

7. From the *ectoderm* are derived: The skin and its appendages (hair, nails), and glands (including the mammary glands); the nervous system (brain, spinal cord, ganglia, and nerves); the epithelial parts of the organs of special sense.

From the *mesoderm* are derived: The skeleton; connective tissues; muscles and bones; heart, blood-vessels, lymphatics, and spleen; the urinary and generative organs.

From the *entoderm* are derived: The epithelial lining of the alimentary canal and its glands; the epithelial lining of the respiratory tract, Eustachian tube, thyroid, and thymus.

8. The *Wolffian bodies* are the primitive sexual gland in the embryo; they later become the testicle in the male or the ovary in the female.

9. The corpus luteum is a scar on the surface of the ovary, where a vesicle has ruptured. It does not necessarily indicate pregnancy, though formerly it was supposed to be of some value in recognizing the former existence of this condition.

10. The special centers contained in the medulla are those for the following functions or actions: Respiration, salivary secretion, mastication, sucking, deglutition, speech production, facial expression; it also contains the cardiac and vasomotor centers.

11. *The function of the dura* is protection. It forms the internal periosteum of the skull, it forms three partitions for the support of the parts of the brain, it forms sinuses or venous channels for the return of the blood from the brain, and it forms sheaths for the nerves as they leave the skull. Of the *arachnoid*, lymph supply; of the *pia*, blood supply and nutrition.

12. The *function* of the *gray* matter in the encephalon is to receive and send out nervous impulses; the *white* matter conveys these impulses.

13. Muscles, secreting glands (and liver), digestive tract during digestion, and brain.

14. *Temperature of different parts of the body:* "The temperature of the skin at the middle of the upper arm is 35.4° C., while in the sole of the foot it is but 32.26° C. In the axilla it is about 37.1° C., although some observers have placed it as low as 36.25° C. and others as high as 37.5° C.; under the tongue, about 37.5° C.; and in the rectum about 38° C. The temperature of the liver, about 41.30° C. in the sheep, is regarded as the highest in the body, and higher here during digestion than in the intervals. The mean temperature of the blood may be stated as 30° C. The temperature of the muscles is increased in contraction 1° C. Mental exertion also increases the production of heat. After such exertion the temperature of the body has been found to be 0.3° C. higher than before."—(Raymond's *Physiology.*)

15. A man cannot live in health on an exclusive meat diet. A suitable diet requires carbohydrates and fat as well as protein material; meat has but little fat and practically no carbohydrate.

MATERIA MEDICA AND THERAPEUTICS.

1. *Emetics:* Ipecac, dose 15 grains; apomorphine hydrochloride, dose 1/10 grain; tartar emetic, dose ½ grain; zinc sulphate, dose 15 grains; copper sulphate, dose 4 grains; mustard and water, alum and water, yellow mercuric subsulphate, dose 2 to 4 grains.

2. THREE MINERAL ACIDS. Sulphuric acid, nitric acid, and hydrochloric acid. "They are all useful in fevers, if well diluted, hydrochloric being usually preferred, especially in typhoid. In atomic dyspepsia, acidity of the stomach, and locally in ulcerations of the throat, hydrochloric acid is best used. Nitric is the acid generally preferred as a caustic, its action being effectual and superficial. As such it is applied undiluted to phagedenic ulcers and sloughs, warty growths, and to the cavity of the womb in chronic inflammation thereof. Dilute nitric acid is used internally in oxaluria and lithemia, intermittent and remittent fevers, and aphonia of singers. Dilute nitrohydrochloric is more suitable in chronic hepatic disorders due to malaria; sulphuric in hemorrhages, diarrheas, colliquative sweating, and as a prophylactic against lead-poisoning. Dilute sulphuric acid is used as an acid drink in fevers and before meals in acidity of the stomach. It is very doubtful whether the latter has any special influence on the nerves or osseous systems." (Potter's *Materia Medica*, etc.)

3. SALOL. *Uses:* As a disinfectant, in inflammation of the mouth and pharynx, in cystitis, as an intestinal antiseptic in typhoid fever, in muscular rheumatism, in intestinal indigestion and fermentation, in cholera. *Dose:* gr. vijss.

GUAIACOL. *Uses:* In pulmonary tuberculosis, typhoid, diabetes mellitus. *Dose:* ♏viij.

HEROIN. *Uses:* In dyspnea, cough, whooping cough, asthma, and neuralgic affections. *Dose:* gr. 1/20 to 1/12.

4. OPIUM. *Source:* Papaver somniferum. *Physiological action:* It is analgesic, hypnotic, diaphoretic, narcotic, a respiratory and cardiac stimulant (later a depressant), it checks most secretions (not perspiration), it stimulates the brain, and contracts the pupil. *Four preparations and doses:* Extract of opium, gr. ½; tincture of opium, ♏viij; camphorated tincture of opium, 5ij; wine of opium, ♏viij.

5. *Alteratives* are remedies which alter the course of morbid conditions; their method of action is not known; it has been suggested that they promote metabolism.

Five examples: Arsenic, colchicum, phosphorus, guaiacum, and cod liver oil.

ARSENIC. *Physiological action:* Escharotic; irritant, tonic; increases cardiac action, respiratory power, intestinal secretions, and peristalsis; produces edema, itching, diarrhea, epigastric pain, irritable and feeble heart. *Therapeutic uses:* In stomach disorders, bronchial and pulmonary affections, diabetes, diarrhea, anemia, and chlorosis, chorea, malaria, and chronic skin diseases.

COLCHICUM. *Physiological action:* It causes salivation, irritation of the gastrointestinal tract, increased elimination of uric acid, and collapse; it is also a diuretic. *Therapeutic uses:* Chiefly for gout; also in neuralgia, headache, dyspepsia, and bronchitis in gouty people.

PHOSPHORUS acts locally as an irritant; internally it is a stimulant to the nervous system and also to the bone-forming cells, a tonic, a repairer of waste, a circulatory stimulant, and an aid to the formation of red blood corpuscles. It is partly oxidized into phosphorus acid or phosphoric acid by the oxygen in the red corpuscles. In large doses it increases the urea and other nitrogenous products, raises the body temperature, diminishes the glycogen of the liver, and may cause fatty degeneration.

GUAIACUM is a diaphoretic, expectorant, laxative, and gastrointestinal irritant. It is used for sore throats, tonsillitis, rheumatism, and constipation.

COD LIVER OIL is a demulcent and emollient, it is a tissue food. It is used in tuberculosis, rheumatism, strumous diseases, rickets, nervous diseases, and wasting diseases of childhood.

6. ACONITE. *Official preparation, with adult dose:* Fluid extract, ♏j; tincture, ♏x. *Medicinal uses:* For fevers, some inflammatory conditions, in high arterial tension, in nervous palpitation of the heart, and congestive dysmenorrhea; also externally for neuralgia, pruritis, herpes, chilblains, etc. *Therapeutic effects:* First stimulates and then paralyzes heart and also sensory nerves; lowers blood pressure; dilates peripheral blood-vessels; is a respiratory sedative; reduces body temperature; is a diuretic and dianhoretic.

DIGITALIS. *Physiological action:* It is a gastrointestinal irritant, it slows the rate of the heart, prolongs diastole, increases the force of the heart, it contracts the blood-vessels, and causes a rise in blood pressure; it also acts as a diuretic. *Therapeutic use:* Digitalis is indicated in diseases of the heart: (1) when the heart action is rapid and feeble, with low arterial tension; (2) in mitral lesions when compensation has begun to fail; (3) in nonvalvular cardiac affections; (4) in irritable heart, due to nerve exhaustion. Digitalis is contraindicated in diseases of the heart; (1) in aortic lesions when uncombined with mitral lesions; (2) when the heart action is strong, and arterial tension high. Digitalis is also a diuretic; and it is also used in some forms of nephritis, exophthalmic goiter, pneumonia, chronic bronchitis, etc. *Dose:* Fluidextract, ♏j; extract, gr. 1 5; infusion, 5ij; tincture, ♏xv.

7. See French's "Practice of Medicine" (1910), pages 996 and 997; or Osler's "Practice of Medicine" (1909), pages 381 and 385.

8. *Strychnine* is a vasoconstrictor, causes a rise of blood-pressure, and is a cardiac stimulant.

Nitroglycerin dilates the blood-vessels, causes flushing and rapid heart action, followed by fall of blood-pressure.

Strophanthus acts on the heart like digitalis (see QUESTION 6), but more promptly.

9. *Three vegetable astringents:* Gambir, dose gr. xv; tannic acid, dose gr. vij; nut-gall, dose of tincture 5j.

Three mineral astringents: Alum, dose gr. vij; copper sulphate, dose gr. 1/5; zinc sulphate, dose gr. j.

10. See Rose and Carless' "Surgery" (1908), page 1321; or Da Costa's "Surgery" (1908), page 1030.

11. See French's "Practice of Medicine" (1910), pages 906, 909, and 930; or Osler's "Practice of Medicine" (1909), pages 683, 685, and 702.

12. *Phenacetin* is an antipyretic and analgesic, it is a cardiac depressant, and has also been used in epilepsy. Dose, 7 grains.

13.

℞. Ammonii chloridi 5j
Ammonii carbonatis 5j
Ammonii bromidi 5j
Fluidextracti glycyrrhizæ 5iv.
Aquæ distillatæ q. s. ad 5vj. M.

Sig. A dessertspoonful every four hours.

The ammonium chloride stimulates the air passages; the ammonium carbonate stimulates the heart and respiration; the ammonium bromide allays the cough; the licorice hides the salty taste of the ammonium salts.

14. The official preparations of arsenic, with their doses, are: Arseni trioxidum, gr. 1/30; Liquor acidi arsenosi, ♏vij; Arseni iodidum, gr. 1/20; Sodii arsenas, gr. 1/6; Sodii arsenas exsiccatus, gr. 1/20; Liquor potassii arsenitis, ♏vij; Liquor sodii arsenatis, ♏v; Liquor arseni et hydrargyri iodidi, ♏vij.

15. THREE ANIMAL EXTRACTS:—(1) *Thyroid extract*, used in myxedema, goiter, sporadic cretinism, and arteriosclerosis. (2) *Suprarenal extract*, used in asthma, hay fever, Addison's disease, shock, as a local vasoconstrictor in minor surgery. (3) *Pituitary extract*, used in acromegaly.

CHEMISTRY.

1. (*a*) *Uric acid:* "In man uric acid has a twofold origin; one portion, coming from the breaking down of the nuclein-containing tissues or cell elements of the man's own body, and hence is of endogenous origin, while the other portion—usually the larger—is of exogenous origin, coming from the transformation of free and combined purin compounds present in the food." (Chittenden.)

(*b*) Gout stones are principally composed of: Sodium biurate, and potassium biurate; uric acid, sodium, potassium, calcium, and magnesium.

(*c*) Uric acid is insoluble in alcohol and ether; is slightly soluble in water; is soluble in sulphuric acid and hydrochloric acid.

2. (*a*) The tartrates exist in the juice of the grape, and are also obtained as a by-product in the manufacture of wine.

(*b*) *Cream of tartar:* $KHC_4H_4O_6$

(*c*) *Rochelle salt:* $KNaC_4H_4O_6$

3. (*a*) *Chemically*, fats are compounds of fatty acids with glycerin; they may be termed glycerides or glyceric ethers.

(*b*) The fats ingested finally exist in the small intestine as soaps and glycerin salts. These substances are absorbed by the columnar epithelial cells; they eventually pass into the lacteals, where they form an emulsion with the lymph and pass into the thoracic duct, and then into the blood. The fat droplets are then carried all over the body and are finally deposited in fatty cells in the adipose tissue.

"The *offices which fat subserves in the human body* are manifold: (1) It protects the underlying parts from injury as in the palm of the hand and the sole of the foot; (2) it serves as a lubricator, as in the sebaceous matter poured out upon the skin, which keeps it soft and pliable; (3) it acts as a nonconductor of heat, aiding in the retention within the body of the vital heat which would otherwise be lost so rapidly as to produce injurious results; (4) it serves as a reservoir when the supply of food is cut off or diminished: thus in wasting diseases the fat deposited in various parts of the body is absorbed, and contributes to its nutrition; (5) it is a source of energy and of heat through its oxidation, the final products of which are CO_2 and H_2O."—(Raymond's *Physiology.*)

(*c*) *Fat occurs in the urine*, in: Chyluria, pyonephrosis, fatty degeneration of kidney, chronic white kidney, acute phosphorus poisoning.

4. (*a*) Nitroglycerin is trinitroglycerol or glycerol trinitrate, $C_3H_5(NO_3)_3$.

(*b*) In medicine a 1 per cent. alcoholic solution is used, in doses of one minim. For effect on the vascular system, see MATERIA MEDICA, QUESTION 8.

5. (*a*) Chloral hydrate is trichloraldehyde and water; it has the constitution $C.Cl_3.CH(OH)_2$.

(*b*) Chloral acts as a poison by its direct action on the nerve centers; first in the gray matter of the center, then on the spinal cord, and medulla, and on the heart.

6. In the *ferrous* salts, the atom of iron is bivalent; in the *ferric* salts, the atom of iron is quadrivalent, and two of these atoms are united, thus forming a hexavalent group.

Ferrous oxide, FeO; Ferric oxide, Fe_2O_3; Ferrous chloride, $FeCl_2$; Ferric chloride, Fe_2Cl_6.

7. Potassium permanganate is a dark prismatic solid obtained by fusing a mixture of manganese dioxide, potassium hydroxide, and potassium chlorate. It has the formula $K_2Mn_2O_8$. It is a good oxidizing agent (each molecule having eight atoms of oxygen), and in this way acts as a disinfectant.

8. Mercurous iodide, Hg_2I_2; and mercuric iodide, HgI_2. The "ous" compounds of mercury make with KHO a black precipitate; the "ic" compounds of mercury make with KHO a yellow precipitate. In the case of the chlorides and iodides the "ic" compounds of mercury are more poisonous than the "ous" compounds.

9. (*a*) A water is said to be "hard" when it forms a curdy deposit with soap. (*b*) An abnormal quantity of chlorides denotes organic contamination, generally sewage.

10. *Three urinary pigments:* Urochrome, urobilin, and uroerythrin.

11. (*a*) *Three univalent elements:* Hydrogen, chlorine, and silver.

(*b*) HNO_3 is a monobasic acid, and its radical is NO_2.
H_2SO_4 is a dibasic acid, and its radical is SO_2.
H_3PO_4 is a tribasic acid, and its radical is PO.

12. (*a*) BROMIN. *Source:* Sea water and sea weeds. *Symbol:* Br. *Valency:* One. *Atomic weight:* 80.

(*b*) *Acidum hydrobromicum dilutum (U.S.P.)* is a liquid composed of 10 per cent. by weight of absolute hydrobromic acid, HBr, and about 90 per cent. of water.

13. (*a*) Oxalic acid is a dicarboxylic acid, with the formula COOH·COOH.

(*b*) It is liable to be mistaken for Epsom salt (magnesium sulphate).

(*c*) *Treatment for poisoning:* Magnesia or slaked lime suspended in a small quantity of water or mucilaginous liquid should be given as soon as possible. If vomiting does not occur and the symptoms of corrosion are not marked give an emetic. Do not use the stomach pump or tube.

14. (*a*) *Principal constituents of cow's milk:* Water, casein, albumin, fat, sugar (lactose), and salts.

(*b*) When milk is allowed to stand part of its lactose is changed into lactic acid; thus $C_{12}H_{22}O_{11} + H_2O = 4C_3H_6O_3$. This is due to the action of microorganisms. This lactic acid precipitates some of the caseinogen. The process is called *souring*.

The chief protein in milk is caseinogen; this, when acted upon by rennet, forms casein; the *curd* is casein and entangled fat.

15. ALKALOIDS. Of *belladonna*, atropine; of *aconite* aconitine; of *nux vomica*, strychnine and brucine; of *opium*, morphine, codeine, thebaine, narcotine, narceine, papaverine.

HISTOLOGY.

1. Human blood is composed of a liquid portion, the plasma, and solid bodies, the corpuscles. These latter are red corpuscles, white corpuscles, and platelets.

2. *Different leucocytes:* (1) Small mononuclear (having only one nucleus); (2) large mononuclear (having only one nucleus); (3) transitional (intermediate between mononuclear and polymorphonuclear); (4) polynuclear or polymorphonuclear (having more than one nucleus, or with various shaped nuclei); (5) eosinophile (readily taking the eosin stain).

3. Thrombocytes are blood platelets.

4. See Cunningham's "Anatomy" (1909), page 1059; or Gray's "Anatomy" (1910), page 1276.

5. The *larynx* is lined with stratified squamous and stratified ciliated epithelium; the *trachea*, with stratified ciliated; the *bronchi*, with stratified ciliated; and the *bronchioles*, with simple ciliated, simple columnar, and simple squamous cells.

PATHOLOGY.

6. See Rose and Carless' "Surgery" (1908), pages 11 and 32; or Da Costa's "Surgery" (1908), pages 78 and 127.

7. *Hemolysis* is destruction of the red blood corpuscles (by a specific antiserum or by poisons).

8. *Agglutination* is the loss of motility and the clumping in small masses of the microorganisms in a culture on the addition of a specific immune serum. It is supposed to be due to the development of agglutinins.

9. See French's "Practice of Medicine" (1910), page 700.

10. See French's "Practice of Medicine" (1910), pages 872 and 860; or Osler's "Practice of Medicine" (1909), page 547.

BACTERIOLOGY.

11. *Chemical composition of bacteria:* Water (about 80 to 88 per cent.); phosphoric acid, sulphur, potassium, chlorine, calcium, magnesium, iron, and silica; hemicellulose is often present; nuclein, hypoxanthin, guanin, and adenin are often present.—(From Jordan's *Bacteriology.*)

12. *Proteid bodies* are organic nitrogenous compounds containing carbon, oxygen, hydrogen, nitrogen, sulphur, and sometimes iron, of very complex constitution and whose molecule is undetermined.

Varieties: (1) *True or native albumins* (albumins proper, globulins, coagulating albumins, nucleoalbumins, histones, protamines).

(2) *Derived albumins or transformation products* (coagulated or modified albumins, acid and alkali albuminates, albumoses, peptones).

(3) *Proteids* (nucleoproteids, hemoglobins, glucoproteids, lecithoproteids).

(4) *Albumoids* (collogen, keratin, elastin, amyloid, spongin).

13. Most bacteria require proper temperature, generally at or near that of the body; oxygen is generally needed, those that cannot live without it being called aërobic and those that can grow without it anaërobic; nutriment of a proper kind, containing both organic and inorganic material (chiefly decomposable organic matter); a slight degree of moisture; a medium of slightly alkaline reaction; and rest. Individual bacteria may require modifications of the above essentials.

14. Besides diseases, bacteria may produce heat, light, colors, putrefaction, decay, fermentation, ptomaines, toxins, nitrites, odors, gases, acids, alkalies, and may liquefy gelatin.

15. The *fermentations of milk* are: Lactic, butyric, alcoholic. Of these the butyric is harmful, the others innocuous.

Pasteurizing milk kills the pathogenic germs and does not impair the nutritive qualities of the milk.

Boiling milk kills both the germs and their spores, and also impairs the digestibility of the milk.

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), page 281; or Osler's "Practice of Medicine" (1909), page 239.

2. In *tonic spasms* the muscular contractions are continuous; in *clonic spasms* contractions and relaxations rapidly alternate.

3. See French's "Practice of Medicine" (1910), pages 428 and 433; or Osler's "Practice of Medicine" (1909), page 267.

4. In *renal* hematuria the blood and urine are intimately mixed, tube casts are apt to be present, and there may be renal colic or pain in the lumbar region. In *cystic* hematuria the blood and urine are not so well mixed, and pure blood is apt to be passed at the end of urination.

5. See French's "Practice of Medicine" (1910), page 868; or Osler's "Practice of Medicine" (1909), page 548.

6. See French's "Practice of Medicine" (1910), page 662; or Osler's "Practice of Medicine" (1909), page 598.

7. *Four physical signs of consolidation of lung tissue:* (1) Increased vocal fremitus; (2) dullness on percussion; (3) bronchial respiration with prolonged expiration; and (4) increased vocal resonance.

8. High blood pressure would be determined by the use of a sphygmomanometer. High blood pressure is found in: Chronic interstitial nephritis, arteriosclerosis, nervous excitement, uremia, myocarditis, lead poisoning, gout, cerebral hemorrhage, and sometimes in acute nephritis.

9. *For a fourteen-months-old bottle-fed baby.* "Five feedings in twenty-four hours are required, the interval between feedings being about four hours. The daily amount of food needed is from 40 to 50 ounces. Each feeding, therefore, should consist of from 8 to 10 ounces, of which four-fifths is milk and one-fifth some form of farinaceous food, thoroughly cooked, and then strained. . . . In preparing the food the milk and the gruel are simply mixed together while the latter is warm, and salt and a small quantity of cane sugar added to make it palatable."—(Holt.)

10. *Ataxia* may be defined as lack of coordination in muscular movements, so that the performance of certain acts becomes difficult or impossible. The lesion may be in the cortex of the cerebrum, pons, crura, corpora quadrigemina, cerebellum, or spinal cord.

Aphasia is the inability to express ideas by either speech or writing. It is caused by lesions of the cortical centers, and is not due to lesions of the peripheral nerves or of the organs concerned in speech or writing. The center for speech is in the third left frontal convolution.

11. *Bronchial breathing* is that which is heard normally over the trachea, larynx, or large bronchi. It is characterized by an entire absence of all vesicular quality; inspiration is high pitched and tubular; and expiration is longer, higher, and of greater intensity; there is an interval between the two sounds.

When heard elsewhere *bronchial breathing* may indicate consolidation of the lung, or a large cavity communicating with a bronchus; it is heard in phthisis, lobar pneumonia, and hemorrhagic infarction; it is also heard normally over the trachea and large bronchi.

12. *Waxy casts* occur especially in chronic parenchymatous nephritis. *Epithelial casts* occur especially in acute parenchymatous nephritis. *Granular casts* are especially common in chronic nephritis, but may occur in acute nephritis. *Fatty casts* occur chiefly in chronic parenchymatous nephritis.—(From Stevens' *Practice.*)

13. See French's "Practice of Medicine" (1910), pages 317, 326, and 301; or Osler's "Practice of Medicine" (1909), pages 132, 110, and 141.

14. (1) Urine may have *specific gravity under 1010* in: Diabetes insipidus, chronic interstitial nephritis, and hysteria.

(2) *Above 1030* in: Diabetes mellitus, fevers, diarrhea.

15. *Vesicles* are circumscribed elevated areas of the skin containing clear or opaque fluid, varying in size from a pinhead to a pea. *Example:* Herpes zoster.

Papules are circumscribed solid areas of elevation of the skin varying in size from a pinhead to a pea. *Example:* Comedo.

Pustules are circumscribed elevations of the skin containing pus and varying in size from a pinhead to a fingernail. *Example:* Furunculosis.

OBSTETRICS AND GYNECOLOGY.

1. The chief differences between the male and female pelvis are thus tabulated in Morris's *Anatomy:*

MALE.	FEMALE.
Bones heavier and rougher.	Bones more slender.
Ilia less vertical.	Ilia more vertical.
Iliac fossæ deeper.	Iliac fossæ shallower.
False pelvis relatively wider.	False pelvis relatively narrower.
True pelvis deeper.	True pelvis shallower.
True pelvis narrower.	True pelvis wider.
Inlet more heart-shaped.	Inlet more oval.
Symphysis deeper.	Symphysis shallower.
Tuberosities of ischia inflexed.	Tuberosities of ischia everted.
Pubic arch narrower and more pointed.	Pubic arch wider and more rounded.
Margins of ischiopubic rami more everted.	Margins of ischiopubic rami less everted.
Obturator foramen oval.	Obturator foramen triangular.
Sacrum narrower and more curved.	Sacrum wider and less curved.
Capacity of true pelvis less.	Capacity of true pelvis greater

2. In the *virgin:* The fourchet is present, the perineum is tense and deep, the labia are in apposition, and the hymen may be present.

In the *multipara:* The fourchet is missing, the perineum is relaxed and probably torn, the vulva is frequently patulous, there is no hymen, and there may be caruncule myrtiformes.

3. See Williams' "Obstetrics" (1909), pages 88, 94, and 164; or Hirst's "Obstetrics" (1909), pages 67 and 180.

4. See Williams' "Obstetrics" (1909), page 683; or Hirst's "Obstetrics" (1909), page 448.

5. See Williams' "Obstetrics" (1909), pages 11 and 738; or Hirst's "Obstetrics" (1909), page 528.

6. See Williams' "Obstetrics" (1909), page 201; or Hirst's "Obstetrics" (1909), pages 188 and 245.

7.

PLACENTA PRÆVIA.	ACCIDENTAL HEMORRHAGE.
Most commonly manifests itself after the sixth month of gestation, but may occur as early as the second month.	Most commonly occurs during the first stage of labor, but may occur at any time during the last three months of pregnancy.
The hemorrhage is abrupt, but painless.	The hemorrhage is sudden, and generally is attended with sharp pain.
There are generally repeated hemorrhages of increasing severity.	Hemorrhage persists until the uterine contents are evacuated or the patient perishes.
There is an edematous condition of the cervix and lower uterine segment, with marked pulsation.	Vaginal examination reveals no deviation from the condition normal to pregnancy.
Cervix is generally quite patulous, and within may be detected the placenta.	The cervix is perhaps (if labor be initiated) slightly patulous.
The placental bruit is situated low down.	The placental bruit is in normal position.

—(Dorland's *Obstetrics.*)

The above two occur *before labor;* postpartum hemorrhage occurs *after* labor; for the last see Williams' "Obstetrics" (1909), page 820; or Hirst's "Obstetrics" (1909), page 586.

8. See Williams' "Obstetrics" (1909), page 821; or Hirst's "Obstetrics" (1909), page 587.

9. See Williams' "Obstetrics" (1909), page 846; or Hirst's "Obstetrics" (1909), page 939.

10. OPHTHALMIA NEONATORUM. *Causes:* The gonococcus or some other pyogenic microorganism; the secretions of the mother contain the infecting agent, and transmission may occur directly during parturition, or indirectly by the fingers of physician or nurse, cloths, instruments, etc. *Symptoms:* Swollen eyelids, with copious purulent discharge; ulceration of the cornea may ensue. *Prophylaxis:* Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 per cent. solution of nitrate of silver, immediately after birth. *Treatment:* Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burnt.

11. See Williams' "Obstetrics" (1909), pages 852 and 866; or Hirst's "Obstetrics" (1909), page 715.

12. See Williams' "Obstetrics" (1909), pages 371 and 445; or Hirst's "Obstetrics" (1909), pages 780 and 782.

13. PELVIC ABSCESS. *Etiology:* Pelvic cellulitis, rupture of tube (in ectopic gestation or pyosalpinx), pus from neighboring tissues, gonorrhea. *Treatment:* The abscess should be opened and drainage instituted, generally through the vagina. And see Williams' "Obstetrics" (1909), pages 863 and 888.

14. The *menopause* is the period when menstruation ceases. The symptoms of the menopause are referable to two stages: a stage of menstrual irregularity preceding the cessation of the menses, and a post-cessation stage of variable systemic disturbances. In normal or nearly normal cases the irregularities are not excessive: the systemic disturbances are slight. There is a period of unstable equilibrium. The woman may at times be unusually capricious and emotional; yet she passes through this physiological crisis with only a few minor disturbances. She may have the characteristic vasomotor flushes, perspiration, vertigo, somnolence, numbness, and faintness. The menstrual function ceases as it began, and other psychic disturbances are common in the abnormal cases, and may be exaggerated. The menstrual deviations vary in wide limits. The flow

may gradually decrease and come at lengthening intervals until it altogether ceases; it may occur at short intervals or become continuous; it may become so excessive as almost to amount to dangerous hemorrhage; or life may be jeopardized by a slow, continuous drain. There is an increased tendency to malignant disease of the uterus and breasts during this period. The excessive fear of this may prey injuriously on the mind of the woman.—(From Dudley's *Gynecology.*)

15. *Vaginitis* is a condition of inflammation of the vagina. It is characterized by redness, swelling, pain, heat, irritation, and increased secretion. There may be frequent and painful urination. *Treatment* consists in rest, cleanliness, douches, the application of soothing lotions, and removal of any cause; salines and anodynes are also indicated.

Vaginismus is a condition of painful and spasmodic contraction of the vaginal orifice, which renders coitus either painful or altogether impossible. The slightest touch causes painful spasms, and examination may be impossible without an anesthetic. Its *causes* are irritable hymen, ulcer, or fissure anywhere in the immediate vicinity, urethral caruncle, carunculæ myrtiformes, a long perineum with vaginal orifice placed too anteriorly. The *treatment* consists in removing the cause when possible, tonics and general constitutional treatment, dilatation of the vaginal orifice; local application of a 5 per cent. solution of cocaine will relieve the hyperesthesia and allow coitus. The condition is sometimes incurable.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), page 1014; or Da Costa's "Surgery" (1908), page 846.

2. See Rose and Carless' "Surgery" (1908), page 755; or Da Costa's "Surgery" (1908), page 766.

3. See Rose and Carless' "Surgery" (1908), page 1132; or Da Costa's "Surgery" (1908), pages 138, 142, and 1008.

4. See Rose and Carless' "Surgery" (1908), page 557; or Da Costa's "Surgery" (1908), page 543.

5. See Rose and Carless' "Surgery" (1908), page 871.

6. See Rose and Carless' "Surgery" (1908), page 986; or Da Costa's "Surgery" (1908), pages 191 and 187.

7. INCONTINENCE OF URINE. *Etiology:* Irritation of bladder, phimosis, adherent prepuce, caruncle, threadworms in rectum, fissure, overloaded rectum, stone in bladder, very acid or alkaline urine, paralysis, hip-joint disease, drinking too much fluid before bed time.

8. See Rose and Carless' "Surgery" (1908), page 763; or Da Costa's "Surgery" (1908), page 700.

9. See Rose and Carless' "Surgery" (1908), page 759; or Da Costa's "Surgery" (1908), page 763.

10. See Rose and Carless' "Surgery" (1908), page 1197; or Da Costa's "Surgery" (1908), page 1138.

11. See Rose and Carless' "Surgery" (1908), page 234; or Da Costa's "Surgery" (1908), page 70.

12. See Rose and Carless' "Surgery" (1908), page 1139; or Da Costa's "Surgery" (1908), page 1020.

13. See Rose and Carless' "Surgery" (1908), page 980; or Da Costa's "Surgery" (1908), page 872.

14. See Rose and Carless' "Surgery" (1908), page 195; or Da Costa's "Surgery" (1908), page 303.

15. See Rose and Carless' "Surgery" (1908), pages 327, 310, and 313; or Da Costa's "Surgery" (1908), pages 360, 361, and 368.

HYGIENE.

1. Hygiene is the science and art of all that tends to the maintenance and improvement of health, the prevention or shortening of the duration of diseases, and the prolongation of life.

2. The person should be advised to keep himself in as good health as possible, to shun the society of hypochondriacs, to lead an active and hygienic life. See also French's "Practice of Medicine" (1910), pages 153, 174, 223, 910, 915; or Osler's "Practice of Medicine" (1909), pages 165, 189, 219, 686.

For *insomnia:* The diet should be regulated, the evening meal should be light; exercise and laxatives may be required; the bedroom should be quiet, dark, well ventilated, and of moderate temperature; tea, coffee, and tobacco should be used sparingly, or avoided.

3. *For the maintenance of the healthy functions of the body:* Personal cleanliness, regulation of diet, avoidance of all excesses, suitable clothing, sufficient exercise in the open air, cleanly surroundings, plenty of suitable work.

4. *Antiseptic* is an agent which is destructive of microorganisms.

Disinfection is the process of destroying germs or inhibiting their activity.

5. *Five disinfectants:* Heat, steam, bichloride of mercury, carbolic acid, formaldehyde.

6. The extreme humidity prevents evaporation (which is one of the means of loss of body heat) so the body temperature is increased.

7. PERIOD OF QUARANTINE FOR: *Diphtheria:* till the patient is free from all signs of congestion or rhinitis, and continued bacteriological examination is persistently negative.

Smallpox: till all crusts or scabs have entirely disappeared.

8. See French's "Practice of Medicine" (1910), page 324; or Osler's "Practice of Medicine" (1909), page 138.

MEDICAL JURISPRUDENCE.

9. *Malpractice* is a failure on the part of a medical practitioner to use such skill, care, and judgment in the treatment of a patient as the law requires; and thereby the patient suffers damage. If due to negligence only, it is *civil* malpractice. But if done deliberately, or wrongfully, or if gross carelessness or neglect have been shown, or if some illegal operation (such as criminal abortion) be performed, it is *criminal malpractice.*

10. *Violent causes of death:* Wounds, burns and scalds, suffocation, strangulation, hanging, drowning, heat and cold, exposure, starvation, electricity, poisoning.

11. *Abortion is justifiable:* "(1) In pelvic deformity where there is sufficient space for a seven months' child to be delivered without injury. The object is twofold: (*a*) to save the child's life by obviating the necessity for craniotomy; (*b*) to spare the mother the dangers of craniotomy, cesarean section, symphyseotomy, or other operations that might be required if the pregnancy went to full term. (2) In cases where, in previous labors, the head of the child at full term has been prematurely ossified, or unusually large, or that labor has been difficult and dangerous, even though the pelvis were normal. The period of delivery need only be two or three weeks before 'term' in these cases. (3) In cases where the children of previous pregnancies have died *in utero* during the later weeks of gestation from disease (fatty, calcareous, or amyloid degeneration, etc.) of the placenta. (4) In conditions where the continuance of pregnancy seriously endangers the mother's life, such as: excessive vomiting; albuminuria; uremic convulsions, or paralysis; chorea; mania, organic disease of the heart, lungs, liver, blood-vessels, etc., threatening fatal disturbance of the respiration, circulation, and other disturbance of the respiration, circulation, and other vital functions; irreducible displacements of uterus; placenta prævia with hemorrhage; and in dangerous pressure upon neighboring organs from over-distention of uterus, due to dropsy of amnion, tumors, multiple pregnancy, etc."—(King's *Manual of Obstetrics.*)

12. According to Taylor, the term insanity is applied to those states of disordered mind in which a person loses the power of regulating his actions and conduct according to the ordinary rules of society. In all cases of real insanity the intellect is more or less affected.

13. In *death by drowning:* The surface is pallid, the face appears tranquil, the eyes and mouth being partly open. The skin often has the appearance known as gooseskin, and, if the body has lain upward of twelve hours in the water, that of the hands and the feet is sodden by imbibition. The most important external sign is the presence on the mouth and nostrils of a fine froth (possibly blood stained) composed of air, mucus, and the medium in which drowning took place; if the body remains three or four days in water the froth disappears. Exceptionally, fragments of weeds or other small objects may be found tightly grasped in the hands. On opening the thorax, the lungs, gray in color, with reddish staining, are seen to be very voluminous, a condition known as ballooning, partly due to infiltration of the lung tissue with some of the medium in which drowning took place, and partly to true edema. The lung substance is inelastic and pits on pressure. On section, fluid and froth resembling that found on the lips exude from the divided air passages. Minute subpleural hemorrhages are not infrequently present, and the pleural cavities may contain fluid. The stomach often contains water or other liquid which was involuntarily swallowed during attempts at respiration. Occasionally some of this fluid is forced by vital action into the intestines. With one exception, the remaining appearances are those met with after death from asphyxia. The exception is constituted by the blood, which is not only dark colored and fluid, as is usual after death from asphyxia, but is also diluted by the imbibition of water from the stomach and lungs.—(From Quain's *Dictionary of Medicine.*)

14. See QUESTION 11.

15. To constitute a "live birth" there must be (1) complete extrusion of the child from its mother's body, and (2) some certain sign of life. The latter would be established by one or more of the following: pulsation of the cord, beating of the child's heart, motions of the limbs, twitch-

ings of the muscles, wrinkling of the brows, puckering of the face, opening of the eyes, even if respiration does not take place.—(From Witthaus and Becker's *Medical Jurisprudence*, etc.)

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery	Montgomery	Jan. 9
Arizona*	Ancil Martin, Phoenix	Phoenix	Oct. 2
Arkansas	F. T. Murphy, Brinkley	Little Rock	Nov. 14
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	Los Angeles	Dec. 5
Colorado	David A. Strickler, Empire Building, Denver	Denver	Oct. 3
Connecticut*	Chas. A Tuttle, New Haven	New Haven	Nov. 14
Delaware	J. H. Wilson, Dover	Dover	Dec. 12
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	Oct. 12
Florida*	I. D. Fernandez, Jacksonville	Jacksonville	Nov. 7
Georgia	C. T. Nolan, Marietta	Atlanta	Oct. 10
Idaho*	O. J. Allen, Bellevue	Wallace	Oct. 3
Illinois	J. A. Egan, Springfield	Chicago	Oct. 26
Indiana	W. T. Gott, Crawfordsville	Indianapolis	Jan. 9
Iowa	G. H. Sumner, Des Moines	Des Moines	Sept. 19
Kansas	H. A Dykes, Lebanon	Topeka	Oct. 10
Kentucky	J. N. McCormack, Bowling Green	Louisville	Dec 19
Louisiana	A. B. Brown, Cusach's Bldg., New Orleans	New Orleans	Oct 19
Maine	F. W. Searle, Portland	Portland	Nov. 14
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec 12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Sept. 12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Lansing	Oct. 10
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	Oct. 3
Mississippi	S. H. McLean, Jackson	Jackson	Oct. 10
Missouri	Frank B. Hiller, Jefferson City	Kansas City	Sept. 25
Montana*	Wm. C. Riddell, Helena	Helena	Oct. 9
Nebraska	E. A. Carr, Lincoln	Lincoln	Nov. 8
Nevada	S. L. Lee, Carson City	Carson City	Nov. 6
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	Jan. 9
New Jersey	H. G. Norton, Trenton	Trenton	Oct. 17
New Mexico	J. A. Massie, Santa Fe	Santa Fe	Oct. 9
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	Sept. 26
N. Carolina	B. K. Hays, Oxford	Hendersonville	June 11
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	Oct. 3
Ohio	Geo. H. Matson, Columbus	Columbus	Dec 5
Oklahoma*	J. W. Duke, Guthrie	Muskogee	Oct 10
Oregon	B. E. Miller, Portland	Portland	
Pennsylvania*	A. R. Alcen, Carlisle	Philadelphia, Pittsburgh	Dec. 12
Rhode Island	G. T. Swarts, Providence	Providence	Oct 5
S. Carolina	H. H. Wyman, Aiken	Columbus	
S. Dakota	F. W. Freyberg, Mitchell	Huron	Jan. 10
Tennessee	C. A. Abernathy, Pulaski	Memphis, Nashville, Knoxville	
Texas	J. D. Mitchell, Fort Worth	Fort Worth	Nov. 14
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	Oct 2
Vermont	W. Scott Nay, Underhill	Montpelier	Jan. 9
Virginia	R. S. Martin, Stuart	Lynchburg	Dec. 21
Washington*	F. P. Witter, Spokane	Tacoma	Jan. 2
W. Virginia	H. A. Barbee, Point Pleasant	Clarksburg	Nov. 13
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	Jan. 9
Wyoming	A. B. Tonkin, Riverton	Riverton	Oct. 9

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Radiological Diagnosis of Alterations of the Hypophysis.—M. Bertolotti gives his experiences with radiography of the hypophysis, preceding it with a statement and diagrams showing the normal radiographic picture of this portion of the skull. He calls this the profile of the normal cranium. It presents a constant line beginning in front with the frontal plate and ethmoid bones, in the supraorbital region, with two niches traversed by the fontal sinuses, forming a regular line along the base of the skull to the foramen magnum behind. This crosses the ethmosphenoidal region. Pathological variations of this profile are of the utmost importance in diagnosis. Radiography enables us to see how the hypophysis is modified in dystrophies and pathological processes, and to follow its evolution. The most interesting study refers to the transformations of the hypophysis and the sella tunica in the stages of evolution of acromegaly. We can see the enlargement of the sella, and the atrophy of the quadrilateral lamina of the sphenoid, which assumes a curvature with the concavity forward. This atrophy of the perpendicular lamina and curvature of the clinoid apophysis is the most important radiological appearance that can be observed in early acromegaly. In the second period of evolution of the disease we get decrease of the sphenoidal sinus. When the pterigoid tubercle is not flattened the optic chiama is not yet compressed. In the last stages we see that the pituitary gland has increased beyond the capacity of the sella and has destroyed the clinoid apophysis anterior and posterior. Now the visual field is always affected and the ophthalmoscopic and radiological pictures correspond. The author gives the pictures seen in tuberculosis of the hypophysis in tumors, etc.—*Rivista Critica di Clinica Médica.*

Medicolegal Notes.

Opinion as to Condition of Prosecutrix One Year after Offense Not Admissible in Trial for Rape.—In the course of a trial for rape a physician was permitted to testify to a physical examination of the prosecutrix made more than a year after the offense was alleged to have been committed. This witness was allowed, while stating that he was not an expert, nevertheless to give it as his opinion from this examination that the prosecutrix was not a virgin. His testimony to this effect was held, on appeal, to be a pure opinion and nothing else, and not given as the opinion of an expert, and to be clearly inadmissible. Pearson v. State, Mississippi Supreme Court, 53 So. 689.

In Suit for Professional Services Plaintiff Must Allege His Registration—In Texas He Cannot Prove Patient's Financial Condition.—A physician practising in the State of Texas without the license required by the Texas statutes cannot recover for his services. And a compliance with the requirements of the law regulating the practice of medicine and surgery having been made a condition precedent to the right to so practise, it is necessary for a physician suing for his services to allege in his petition and prove such compliance. If the plaintiff fails to allege in what State his services were performed the Texas statutes will govern. If they were performed in Texas the statutes would apply as a matter of course. If performed in some other State the presumption would obtain that the same statutes have been there enacted and are in force. In an action by a physician for the reasonable value of his professional services, on the question whether the plaintiff may show this value by proof that the defendant is wealthy, coupled with further proof of a custom among physicians to graduate their charges according to the financial condition of the patient, on which point there is a diversity of opinion among the courts, the Texas court held with the view that such testimony is not admissible. Swift v. Kelly, Texas Court of Civil Appeals, 133 S. W. 901.

Medical Expert's Qualification to Testify as to Electricity's Power to Kill.—In an action against a telephone company for the value of horses killed by electric shock there was no claim that the horses were not killed by electricity, but experts for the defendant contended that they were probably killed by lightning. A witness for the plaintiff, a physician and surgeon of many years' practice, whose qualifications as an expert witness with reference to experiments with electricity the court had examined, was allowed, after having stated what voltage was used in cases of electrocution, to answer the question whether it takes less voltage to kill a horse than it does a man. Anthony v. Telephone Co., Michigan Supreme Court, 130 N. W. 659.

Degree of Care Required by and Liability of Hospital Physicians.—In an action by a hospital patient for personal injuries alleged to have been caused by hospital physicians in treating a knee joint and thigh bone injured by a fall from a tree, there being no contract between the plaintiff and the defendants, they owed him no duty imposed on them because of their contract of employment with the hospital or in any way springing out of it. They owed him, however, the duty in the course of their employment not to do anything they either knew or ought to have known would injure him. Having with his assent undertaken to treat the plaintiff, the defendants were bound to exercise care in what they did and were liable if their failure to exercise ordinary care injured him. If they received no compensation whatever, that fact, while material upon the question of the care required of them, would not excuse them for their failure to exercise such care as the circumstances demanded. If they did not own or manage the hospital, or did not bring the plaintiff there or advise his coming, they were not chargeable for default in the hospital equipment or management, that is, because of any delay in setting the fracture due to the want of proper splints, the absence of a fracture bed, and the failure to use ether or an *x*-ray machine, if the hospital did not provide them. They were not responsible for the use of the facilities furnished by the hospital unless in the exercise of ordinary care they should have refused to employ in such a case such as the hospital furnished and by like care they could have procured more suitable appliances. They were not of course responsible for any default of other employees of the hospital in the management of the case before or after they ceased to have charge of it or of the default of each other. Burnham v. Stillings, New Hampshire Supreme Court, 79 Atl. 987.

Malicious Prosecution—Probable Cause—Belief That Plaintiff Is Practising Medicine Without Authority.—An action against a medical society for malicious prosecution in instituting a prosecution against the plaintiff for practising medicine within the State without legal authority

resulted in a judgment for the plaintiff, which was reversed on appeal. It appeared that the plaintiff was not authorized to practise medicine in the State: that he held himself out as a doctor and claimed to have produced a medicine which would cure glanders. He wrote to a person in a hospital suffering from that disease offering to cure him. He subsequently visited him in the hospital, examined him, and declared that he had glanders. He allowed himself to be addressed as a doctor, stated that he could cure the case, and left medicine with directions for its use. Under these circumstances it was held on appeal that there was probable cause for his prosecution. There was nothing to indicate that the defendant was actuated by malice, or that it had any desire to do otherwise than carry out one of the objects of its incorporation, which was to prevent persons practising medicine without being authorized to do so by the statutes of the State. It was unnecessary for the court to determine whether the plaintiff was actually engaged in the practice of medicine within the meaning of the statute; it was sufficient for the purpose of the appeal that there was at least probable cause for the defendant's belief that he was doing so.—Schmidt v. Medical Society of New York County, New York Appellate Division, 127 N. Y. Supp. 365.

Right to Recovery for Services Rendered to Patient Unconscious from Insanity.—Where a physician renders services to a patient, either on an express contract of employment or with the patient's consent, the law raises an implied promise on the part of the patient to pay him what the services are really worth. And where, in a proper case, a physician renders services to a person without his request or consent, or where one is injured by an accident rendering him unconscious, the law will imply a promise from him who received the benefit of the services to pay for them. Where, however, the plaintiff, a physician, rendered services to the defendant at the request of a physician in attendance, and the defendant had a regular physician, and it appeared that when the plaintiff was called the defendant was unconscious from insanity, but the unconsciousness lasted only two days, and the plaintiff continued the services after that, it was held that the plaintiff was not entitled to recover as on an implied contract.—Edson v. Hammond, New York Supreme Court, Appellate Division, 127 N. Y. Supp. 359.

Hypothetical Questions Must Be Warranted by Testimony—Opinion Based on Another Expert's Evidence Excluded.—In a murder case a physician was called as a witness for the defendant. He testified that he had examined the latter two or three days before, and that the lobes of the defendant's brain might be affected by a disease that he testified that he had, and that, if so, it would have a tendency to cause irascible mania and crime. In his opinion irascible mania and emotional insanity were practically interchangeable terms. He said that the prisoner must have been suffering from this condition at the date of the homicide, and in his judgment subject to what is known as impulsive insanity. Thereupon counsel for the defendant asked the physician a hypothetical question covering more than eight pages, apparently attempting to get up as facts to be assumed the testimony as the counsel understood it. The physician's answer was held properly excluded. Another physician was then called who had testified to defendant's diseased condition. Several questions were asked him, based in part on his understanding of what the first physician had testified, and these were also held properly excluded.—People v. Bowen, Michigan Supreme Court, 130 N. W. 706.

Qualification of Medical Expert—Professional Privilege.—In a rape case it was contended that neither of the two physicians who examined the complaining witness after the alleged rape qualified himself, because neither testified that he had ever had practical experience in a case of this kind. Both testified that they were active practitioners and had been such for a number of years. This was held to carry with it the fair inference that their testimony was based on actual experience. It was open to the accused to cross-examine them as to their practical knowledge. It was also claimed that they should not have been allowed to testify because their information came within the inhibition of the Wisconsin statute which provides that no physician shall be compelled to disclose information acquired while attending a patient professionally. The court did not decide whether this statute applies to criminal cases. But, assuming that it does, it must affirmatively appear that the information was acquired while the physician was attending the patient in his professional capacity and that it was necessary in order to enable the physician to prescribe.—Smith v. State, Wisconsin Supreme Court, 130 N. W. 525.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended September 16, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	424	149
Diphtheria	130	12
Measles	79	5
Scarlet Fever	37	2
Smallpox	—	—
Varicella	7	—
Typhoid Fever	98	16
Whooping Cough	42	11
Cerebrospinal Meningitis	7	5
Malarial Fever	—	
Totals	824	200

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended September 15, 1911:

Places	Date	Cases	Deaths
CHOLERA			
Austria-Hungary: Fiume	Aug. 9–19	3	..
Ceylon: Colombo	July 23–29	1	2
India: Calcutta	July 16–29	..	20
Madras	Aug. 1–5	1	..
Indo-China: Saigon	July 10–Aug. 6	13	6
Java: Batavia	July 23–29	9	4
Persia: Mohammerah	July 29–Aug. 12	93	76
Russia:			
Total for Russia, Sept. 5–11, 174 cases, 80 deaths.			
Astrakhan	July 30–Aug. 12	48	20
Novoryssik	July 28–Aug. 3	6	..
On British steamer *Wakefield* in Black Sea.			
Odessa	Aug. 6–12	2	1
Rostov on Don	Aug. 6–12	1	..
Samara	July 30–Aug. 12	31	9
Saratov	July 30–Aug. 12	63	28
Simbirsk	Aug. 6–12	12	8
Stavropol	Aug. 6–12	1	1
Servia: Belgrade	Sept. 9	..	Present
Straits Settlements: Singapore	July 16–22	10	8
Turkey: Kamaran	July 10–11	6	4
Kavak	Aug. 1–8	..	Present
Saloniki	Aug. 12	2	..
Among troops.			
YELLOW FEVER			
Brazil: Pernambuco	July 1–15	..	1
Venezuela: La Pastora	Aug. 5	..	Present
San Juan	Aug. 5	1	..
PLAGUE			
China: Canton		..	..
No cases since July 15			
India: Bombay	Aug. 1–12	30	26
Calcutta	July 16–29	..	40
Kurrachi	Aug. 1–12	10	10
Indo-China: Saigon	July 10–30	39	6
Java: Pasoeroean Residency	July 23–29	35	11
Mauritius	June 11-July 10	2	2
Peru: Departments—Arequipa—			
Mollendo		..	..
July 10, present			
Callao—Callao, city		..	..
Aug. 3–10, 5 cases.			
Chiclayo	July 9–22	2	1
Libertad	July 9–22	1	1
Aug. 21, in vicinity of Moche.			
Lima	July 9–22	2	1
Venezuela: Santa Rosalia	Aug. 5	1	..
SMALLPOX			
Algeria: Algiers	June 1–July 31	..	5
Argentina: Buenos Aires	June 1–30	..	34
Rosario	June 1–30	..	50
Brazil: Rio de Janeiro	July 31–Aug. 5	1	..
Sao Paulo	May 15–21	..	1
Ceylon: Colombo	July 23–Aug. 5	7	2
Chile: Talcahuano	Aug. 5–11	5	1
Egypt: Alexandria	July 1–31	5	1
Cairo	July 17–Aug. 12	2	..
France: Paris	Aug. 6–12	2	..
India: Bombay	Aug. 1–12	10	8
Madras	July 31–Aug. 5	9	4
Indo-China: Saigon	July 10–30	17	9
Italy: Genoa	Aug. 1–15	2	..
Mexico: Mazatlan	Aug. 26	..	..
Abating			
Mexico	July 23–Aug. 5	22	15
Nogales	Sept. 12	8	..
Cananea mines.			
Juarez	Aug. 27–Sept. 2	5	..
Porfirio Diaz	Sept 2	3	..
San Juan Bautista	Aug. 13–26	..	..
Increasing.			
San Luis Potosi	Aug. 13–19	2	1
Portugal: Lisbon	Aug. 2–8	5	..
Russia: Odessa	Aug. 13–19	1	..
St. Petersburg	Aug. 6 12	5	..
Warsaw	July 2–15	15	8
Spain: Malaga	June 1–30	..	18
Valencia	Aug. 13–19	4	1
Straits Settlements: Singapore	July 16–22	11	..
Turkey in Asia, Beirut	Aug. 13–19	5	..

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Original Articles.

THE CLIMATIC AND HYGIENIC INFLUENCES OF FOREST GROWTH.*

BY JAMES M. ANDERS, M.D., LL.D.,

PHILADELPHIA, PA.

PROFESSOR OF MEDICINE AND CLINICAL MEDICINE IN THE MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA, PA.

IT is unreasonable to affirm, as some earlier writers have done, that desolation awaits the greater portion of the territory of the United States, on account of reckless denudation of the forests, and also that man's destructiveness and wastefulness of the national resources will only terminate with the direst unsought results to our civilization. Primitive man could not have found room for expansion without the preliminary removal of a portion of the forest growth, but there is clear and convincing historic evidence that wanton and thoughtless destruction of woods has too generally obtained during the past.

For the prevention of the evils of future unwarranted deforestation in this country we must look to the diffusion of greater knowledge on the subject and to the enlightened self-interest for which the American people are truly remarkable, and not trust to either state or national government alone, since these move with too slow a pace, as a rule. It would seem fitting, therefore, that this association should concern itself with those aspects of the question of forestry which bear more or less close relationship to meteorology, hygiene, and sanitary science. It is also clear that men of science, who, by virtue of their training, are peculiarly equipped to investigate the subject of the meteorological effects of the woodland, owe a debt in this respect to the general public—to others—yet it must be admitted that meteorologists have given less attention to this question in the past than it merits.

All progressive civilized nations aim to maintain and perfect an efficient system of forestry. While the United States has only recently begun to create a forest service, interest in the general subject is increasing at home, so that the present would appear to be an opportune season for making a brief survey of certain of its aspects, which possess more or less professional interest and importance. The diverse relations of forest growth to states of climate and the soil embrace numerous elements, many of which are not only complicating but also really conflicting; hence has arisen considerable divergence of opinion among the foremost authorities. Fortunately, the birth of forestry as a science has finally been witnessed in this country and important advances, the result of serious study, may be reasonably expected in the future.

*Read before the American Climatological Association, Montreal, Canada, June 13-14, 1911.

Formerly the conclusions of physicists respecting the meteorological influence of forests were in a great degree inferential, hence the conclusions reached by different writers were quite inharmonious. As Pinchot[1] pertinently remarks, it is a matter which is easily written and talked about without any thorough understanding of forestry itself. We are just beginning to approach the study of the question of the effect which forests exert upon climate in a proper manner, so as to give a clear conception, not only of the degree of their influence, but also the distance to which that influence reaches. It has been found that certain traditions concerning the influence exerted by forests upon climate have been fully confirmed by the results of recent scientific investigations, while others have been definitely shown to be unfounded.

Within the past two decades some knowledge has been gained by experiment or direct observation, and as the natural outcome of this work the balance of opinion at present writing favors the assumption that forests possess certain climatic effects of considerable practical significance. Unquestionably, the subject of the connection between forests and climate will require long and careful experiments and observations before a satisfactory solution shall have been reached.

It will be convenient to take up the various ways in which forests influence climatic factors seriatim: 1. Forests oppose resistance to the free passage of wind currents and moderate the extremes of temperature. Evidently trees are well adapted to check the movement of the air, since both branches and leaves, particularly in the case of bushy tree-tops, act as efficient barriers. The particles of air not checked by the first row of trees to the windward would have their force diminished and be promptly checked by the trees to the rear. Those of us who live in the Eastern States little realize to what extent wind breaks have been planted by farmers in the western part of our country to protect their crops and homes against the wind. In this manner considerable masses or even belts of trees, "by intercepting strong wind currents, not only afford shelter to man, the crops, and humbler vegetation generally to the leeward from the chilly blasts of winter but also the drying winds of summer, thus having the effect to modify extremes of temperature, rendering summer less sultry and winter less severe."[2]

The ameliorating influence of forests on the chilly spring and autumn winds is highly important to the agriculturist. It is well known that certain crops are slow in maturing, as in regions in which bleak winds prevail in unwooded districts, and it is undeniably true that, given similar soils, fruit grown in the city surpasses in quality and size that grown in the country—"a fact ascribable to the more effectual shelter in the former than in the latter locality." During the warm season the air of the woodland is

cooler than that outside. This fact is fully confirmed by the observations made abroad, more particularly in Bavaria and Württemberg, where it was shown that the highest temperature of every day in the year was lower by nearly 4° on the average, while the lowest temperature was higher by 2° in the forest. Says Pinchot:[3] "Prussian observations showed that for ten years the greatest heat of the day in July was, on an average, nearly 6° lower in the forest, and the greatest cold of the night in January nearly 3° less than outside." It is easily demonstrable that the air of the forest contains a somewhat higher standard of average humidity than that outside, and any increase in the amount of moisture in the air reduces the temperature, though the fall is not always proportional. M. Woeikoff[4] has called attention to the depressing effect of moisture upon the temperature, giving convincing illustrations from western Europe and Asia.

This influence may upon further investigation be found to be greater than the observations cited indicate, in our country at least, on account of the total absence of forests over immense areas of country and the extreme variability both as to temperature and humidity of our climate. It should be noted in passing that this action of forests upon the temperature is facilitated in a mechanical manner. The screen formed by the branches and foliar organs to a marked degree intercepts the solar rays, producing shade which has a delightful cooling effect by day, while it lessens the radiation of heat at night. The air coextensive with the shade being cooler than in the sun — these differences of temperature cause a slight motion in the air or draught. Von Pettenkofer's dictum, therefore, that shade in the open air always causes a slight draught, which acts as a kind of fan, is doubtless a correct one, and is due to differences in gravity of layers of air of unequal temperature.

Two additional ways in which forests affect the temperature of the air remain to be mentioned: First, the air is cooled by transpiration, or the evaporation of water from the leaves, and, secondly, the air below the covering formed by the forest leaves is kept cool in consequence of its absorption of the heat. The effect of the cooler air extends for some distance without the forest, since the falling colder air "flows off along the surface into the open country and causes local breezes" (Pinchot), while it is being replaced by a rising current of warmer air. It is well understood that these currents are reversed during the cold season, hence the forest is now warmer than the air at a distance. The opinion, therefore, that forests are natural equalizers of the temperature rests upon exact scientific premises.

Second, forests influence the atmospheric humidity in their vicinity. The effect exercised by growing forests upon the humidity of the surrounding air can justly claim a large share of importance. The explanation of the influence of the woodland upon atmospheric humidity includes certain well-known mechanical influences. In the first place, the vegetable canopy prevents, in a measure at least, the rays of the sun from reaching the earth and warming it, so as to facilitate evaporation from the soil. Again, forests, forming as they do a more or less perfect screen interposed between sky and earth, intercept to some extent the dews and lighter rains, "which are at once returned to the atmosphere by evaporation, a small portion of this moisture only reaching the earth." Ebermayer carefully computed evaporation from the soil of the forests as rather more than one-third as great as from the open soil. The amount of moisture arising from the soil of the forests is also potently influenced by the presence or absence of leaf mold. Ebermayer found as the result of experimental observation that evaporation from forest soil without a layer of mold was 47 per cent. of that from soil in the open, while with a layer of mold it was less than half as much, or 22 per cent. These facts have been advanced as powerful reasons for preserving forests at the headwaters of streams, more particularly in mountainous districts, since it has been definitely shown that the effect of the forest in preventing evaporation becomes greater with increasing altitude.

My own experiments with the view to determining the amount of aqueous vapor evaporated from known areas of leaf surface and land surface under similar conditions for the sake of comparison gave the uniform result that the evaporation from the former is greatly in excess of mere surface evaporation. From facts of observation it is reasonably certain that transpiration is one of the principal factors in connection with the influence exerted by forests upon atmospheric humidity.

While a leading effect of wooded districts is to preserve the moisture of the soil without favoring excessive humidity of the superficial strata by impeding evaporation from their soil, the trees are always supplied with an abundance of moisture for transpiration, owing to the power which they have to attract moisture from every direction as well as to retain the rainfall in their network of smaller rootlets, to be in due season absorbed by the myriads of root hairs. Much of the moisture drunk up by the roots of trees is returned to the atmosphere by the process of transpiration, which is practically uniform during clear, warm weather. For example, experiments long since conducted by the writer showed that "more than one and a quarter ounces of watery vapor per square foot of leaf surface for twelve diurnal hours" was lost by the average tree.

On comparing the mean transpiration from one square foot of leaf surface with an equal area of soil under like circumstances of exposure, it was found that the result obtained was 6 to 1 in favor of the latter. If it were definitely known how many times greater the leaf surface of a forest is than the land on which it is situated, it might with ease be computed what is the relative evaporation rate from a forest as compared with an equal area of open country. From certain personal observations it is safe to assume that the leaf surface of a wooded district is, as a rule, more than six times greater than that of the ground on which it stands, hence it follows that transpiration from the forests must exceed the evaporation from that of an equal area of open soil. It was also shown experimentally that the humbler specimens of vegetation exercise an effect in the same direction. It would seem to me to be entirely warrantable to draw the *a priori* conclusion that wherever a fair proportion of woodland exists, properly distributed, a considerable influence must be exerted thereby upon the hydrometeorology of the region. On the other hand, during the cold season forest vegetation obviously distills into the atmosphere little or no moisture, but their deeper underlying root terminals, after a spongelike fashion, hold considerable moisture in the soil, hence the earth in their vicinity is more humid than elsewhere in winter.

In view of the foregoing facts it is also clear that if the forest air be cooler its relative humidity must be greater than that of the air outside. It has been shown by actual observation that the average humidity of the forest air is from 3 to 10 per cent. greater than that of the outer air. These differences are exaggerated with the altitude above the sea level and the density of the forest vegetation. It is not pretended to claim that the increased humidity of the forest air as compared with that of the air at a distance is due alone to the function of transpiration, but this difference is also accounted for in part at least in other ways previously explained. On the other hand, what is definitely known concerning transpiration with respect to its almost inconceivable rate and uniformity during clear weather throughout the warm season may be restated, as showing that it is a factor not to be omitted from consideration. Moreover, the effects of this function are, for reasons before stated, manifested to a less marked degree within the forest area than upon the immediately surrounding atmosphere.

The question, however, to what distance the influence of the woodland upon the relative humidity of the air extends beyond its own borders is still imperfectly understood. In this connection Pinchot points out that a system introduced in Austria is expected to give a clearer idea; it consists of lines of stations beginning in the center of a large forest and extending step by step into the open country beyond.

The physiological function transpiration from facts of observation produces an appreciable effect upon the meteorological element humidity, but, more than this, it maintains a more nearly uniform degree of atmospheric moisture than is to be found at a distance. It is not too much to claim that forests are natural equalizers of both temperature and atmospheric humidity.

3. Forests produce ozone. One of the beneficial effects of forests is attributable to their energy in developing ozone. My own observations, which have been detailed elsewhere, showed that ozone is generated by odorous foliage and all of the flowering species, more particularly by scented flowers.[5] According to my researches the exhalations from the conifera were particularly energetic in the production of ozone—a fact that affords "an opportunity of entering a seasonable plea for the more careful preservation and cultivation of American pines."[6]

In this connection it is to be recollected that during the winter season forests do not develop any of this substance. This conclusion is measurably confirmed by the results of the careful researches of Nicholson, who found ozone more abundant in pine forests than in the open country in summer, and less abundant in winter. The writer found that the ozone-generating function is to a less degree under the control of the temperature than the action of the direct rays of the sun, so that outdoor vegetation, if we except periods of stormy weather, is constantly active in aiding to maintain the needful supply of atmospheric ozone.

Ozone through its power to combine chemically with pernicious organic impurities probably constitutes nature's principal means of purifying our atmosphere. It was the late Prof. Max von Pettenkofer who said: "It is the constant purifier of the atmosphere from all organic matter which passes into it and might accumulate. The air would have been long ago filled with the vapors of decomposition if it were not for ozone, which oxidizes all that is oxidizable if only time be allowed for it, and not too much is expected at once." It is interesting to note the intimate association of certain of the principal plant functions with the laws of hygiene, or, in other words, to behold important sanitary influences residing in mysterious physiological functions of living vegetation.

The sanitary influences of forest growth are principally dependent upon the two physiological functions already discussed, namely, transpiration and ozonification, but these do not extend to any great distance beyond the borders of the woodland, or, in other words, their effects are chiefly local in character; it follows that careful attention should be paid to the distribution and topographic arrangement of our forest growth.

Without detaining my hearers with a description of special places the value of forests and particularly pine groves to the consumptive will be readily conceded. There are no facts to oppose the practice of sending cases of laryngeal tuberculosis to the pine forests, where patients can obtain the superior benefits arising from a highly ozonized and terebinthinated atmosphere, if these resorts afford ordinary home comforts.

In view of the known effects of the plant functions, transpiration and the generation of ozone, there can no longer be any question as to the sanitary importance to a municipality of public squares provided that they be filled with appropriate growing vegetation. While this subject is not germane to the present discussion, it is desired to point out in passing that city parks, if properly supervised, possess hygienic advantages apart from their value as mere breathing spaces.

On reviewing briefly the foregoing discussion of the climatic and sanitary relations of forests we find them thrice illustrious: (a) as modifiers of extremes of temperature, particularly the diurnal range, which is of greater sanitary importance than seasonal variations, while at the same time rendering summer less sultry and winter less severe; (b) as natural atomizers of aqueous vapors, whereby they tend to maintain an unvarying degree of atmospheric humidity in their vicinity, and (c) as natural producers of ozone, which removes the organic impurities from the atmosphere by oxidation.

I have endeavored in the foregoing discussion to state only well-established facts, and if I have succeeded in so doing then the few conclusions which I have drawn from them are, it is hoped, logically sound. Lastly, there is a fair prospect that more definite beneficial effects will be attributed to forest growth as the result of systematic investigations now in progress and in contemplation.

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1. "Practical Forestry," Part II, 1909.
2. "House-plants as Sanitary Agents," p. 278.
3. Loc. cit.
4. Peterman's "Mittheilungen," *Pop. Science Mo.*, January, 1886, pp. 428-430.
5. Loc. cit., p. 300.
6. Loc. cit., p. 301.

1605 Walnut Street.

Changes in the Islands of Langerhans.—K. A. Heiberg finds no experimental support for the belief that these structures are affected by poisons such as arsenic or phosphorus, or that they undergo changes in association with diseases of the liver.—*Zeitschrift für experimentelle Pathologie und Therapie.*

THE PREVALENCE OF INTESTINAL PARASITES AMONG IMMIGRANTS.

By HERBERT M. MANNING, M.D.

PASSED ASSISTANT SURGEON, U. S. PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

While stationed at the U. S. Immigration Station, Ellis Island, New York, I was able to make a microscopic examination of the feces of 412 immigrants to determine the presence of intestinal parasites. These examinations were made during the period from October 8, 1910, to February 9, 1911. The immigrants examined were some of those sent to the immigration station hospital for medical observation and treatment, but none were admitted for causes that might influence the rate of prevalence of intesinal parasites except as will be mentioned below.

The feces were sent to the laboratory in a wide-mouth 3-ounce bottle and were examined by mixing a small amount with a drop of water on a slide, covering with a cover glass, and placing under both the high and low powers (Zeiss AA and CC). Generally at least two slides were examined, but as this was done in the course of other work I was unable to devote the time necessary to examine a greater number of slides or to use other special methods of examination such as sedimentation, etc.

The immigrants examined (Table 1) were from the following countries: Algiers 3, Austria-Hungary 66, Belgium 1, British West Indies 2, Canada 1, France 2, Germany 7, Great Britain and Ireland 7, Greece 43, Holland 1, Italy 108, Persia 2, Portugal 2, Roumania 3, Russia 105, Spain 2, Sweden 3, Switzerland 1, and Turkey 53.

The number of infections found with the following parasites were: whip worms (*Trichuris trichiura*), 91; eel worms, (*Ascaris lumbricoides*), 118; pin worms, (*Oxyuris vermicularis*), 1; old world hook worms, (*Ankylostoma duodenale*), 1; Cochin China worms, (*Strongyloides stercoralis*), 2; and tape worms, 7. Of the latter 1 was the *Dibothriocephalus latus*, 2 were *Tænia saginata*, and in the 4 others the oconospheres of *Tænia* were found in the stools, but no segments or worms were obtained so that the species were not determined, but they were in all probability *Tænia saginata*.

Forty-six were infected with both the *Trichuris trichiura* and *Ascaris lumbricoides*, 2 were infected with both *Tænia* and *Trichuris trichiura*, 1 with *Tænia* and *Ascaris lumbricoides*, and 1 with *Dibothriocephalus latus* and *Trichuria trichiura*. One was infected with *Trichuris trichiura, Ascaris lumbricoides*, and *Strongyloides stercoralis;* and 1 with *Ankylostoma duodenale, Oxyuris vermicularis*, and *Trichuris trichiura*.

TABLE I.

Immigrants Examined, Giving Country and Parasites Found.

Country	Number examined			Number infected			Whipworms			Eelworms		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Algiers	3	....	3	....	....	....	....	....	....	....	....	....
Austria-Hungary	35	31	66	8	8	16	7	5	12	4	6	10
Belgium	....	1	1	....	1	1	....	....	....	....	1	1
British West Indies	2	....	2	1	....	1	....	....	....	....	....	....
Canada	1	....	1	....	....	....	....	....	....	....	....	....
France	1	1	2	1	1	2	1	1	2	....	....	....
Germany	5	2	7	2	....	2	1	....	1	1	....	1
Great Britain and Ireland	6	1	7	....	....	....	....	....	....	....	....	....
Greece	37	6	43	10	3	13	8	1	9	6	2	8
Holland	....	1	1	....	....	....	....	....	....	....	....	....
Italy	72	36	108	40	17	57	19	5	24	32	15	47
Persia	2	....	2	....	....	....	....	....	....	....	....	....
Portugal	2	....	2	....	....	....	....	....	....	....	....	....
Roumania	1	2	3	....	....	....	....	....	....	....	....	....
Russia	65	40	105	35	18	53	24	10	34	23	13	36
Spain	2	....	2	....	....	....	....	....	....	....	....	....
Sweden	3	....	3	1	....	1	1	....	1	1	....	1
Switzerland	....	1	1	....	....	....	....	....	....	....	....	....
Turkey	45	8	53	17	3	20	7	1	8	13	1	14
Total	282	130	412	115	51	166	68	23	91	80	38	118
Per cent	....	....	....	40.7	38.4	40.2	24.1	17.6	22.0	28.3	29.2	28.6

Sixty-six from Austria-Hungary (Table 2) were examined, of whom 16, or 24.2 per cent., were infected with 1 or more intestinal worms. Of the 35 males, 8, or 22.8 per cent., and of the 31 females, 8, or 25.8 per cent., were infected. Twelve, or 18.1 per cent., were infected with *Trichuris trichiura*. Seven, or 20 per cent. of the males and 5, or 16.1 per cent., of the females harbored this parasite. Ten, or 15.1 per cent., were infected with the *Ascaris lumbricoides*. Four, or 11.4 per cent., of the males and 6, or 24 per cent., of the females were infected with this worm. Three males and three females were infected with both the above parasites.

Dividing these immigrants into four age periods after the manner of Stiles and Garrison in "A Statistical Study of the Prevalence of Intestinal Worms in Man," (Hygienic Laboratory Bulletin No. 28), the 15 examined who were under fifteen

TABLE II.

Austria-Hungary.

Age	Number examined			Number infected			Whipworms			Eelworms			Number infections			Infections per Hundred
	Male	Fem'le	Total	Male	Fem'le	Total	Male	Fem'le	Total	Male	Fem'le	Total	Male	Fem'le	Total	
0–14	6	9	15	1	4	5	1	3	4	1	3	4	2	6	8	53.3
15–30	19	19	38	5	4	9	4	2	6	3	3	6	7	5	12	31.5
31–50	10	3	13	2	..	2	2	..	2	..	..	..	2	..	2	15.3
51+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
Total	35	31	66	8	8	16	7	5	12	4	6	10	11	11	22	33.3
Per cent	..	..	..	22.8	25.8	24.2	20.0	16.1	18.1	11.4	24.0	15.1	31.4	35.4	33.3	...

years of age had 8 infections, or 53.3 infections per 100 persons; the 38 between 15 and 30 years of age had 12 infections, or 31.5 per 100; and the 13 between 31 and 50 years had 2 infections, or 15.3 per 100. None of the immigrants from Austria-Hungary were 51 years old or over. The total number of infections for the 66 examined was 22, giving the rate of 33.3 per 100 persons. For the 35 males examined there were 11 infections, or 31.4 per 100, and for the 31 females, 8 infections, or 35.4 per 100.

Among those from Austria-Hungary the whip worm was the most prevalent parasite. This was also more prevalent among the males than among the females, while the *Ascaris* occurred more frequently among the females. The total number of infections per 100 is greater for the females than for the males. Also the first 15 years of life show the heaviest infection, which gradually decreases with age.

Forty-three immigrants from Greece (Table 3) were examined, of whom 13, or 30.2 per cent., were infected. Thirty-seven were males with 10, or 27 per cent., infected, and 6 were females with 3, or 50 per cent., infected. Nine, or 20.9 per cent., were infected with the *Trichuris trichiura*. Eight males, or 21.6 per cent., and 1 female, or 16.6 per cent., harbored this parasite. Eight, or 18.6 per cent., were infected with the *Ascaris lumbricoides*, of whom 6 were males and 2 were females, giving the rates of 16.2 and 33.3 per cent. The eggs of a tape worm were found in the feces of a female. This was probably *Tænia saginata*, but as no segments were obtained, no diagnosis could be made. The rate for *Tænia* among the Greeks was 2.3 per cent. Four males and 1 female were infected with both the whip worm and the eel worm.

TABLE I (*Continued*).

PINWORMS			STRONGYLOIDES			ANKYL. DUODENALE			TAPEWORMS			NUMBER INFECTIONS		
Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	11	11	22
.	....	....	....	....	....	....	....	....	....	....	....	....	1	1
....	....	....	1	....	1	....	....	....	....	....	....	1	....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	1	1	2
....	....	....	....	....	....	....	....	....	....	....	....	2	....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	1	1	14	4	18
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1	....	1	....	....	....	1	....	1	....	....	....	53	20	73
.	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	1	....	1	....	....	....	....	1	1	48	24	72
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	2	....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
..	....	....	....	....	....	....	....	....	3	2	5	23	4	27
1	....	1	2	....	2	1	....	1	3	4	7	155	65	220
....	....	0.24	....	....	0.48	....	....	0.24	1.06	3.07	1.69	54.9	50.0	53.39

TABLE III.

GREECE.

Age	NUMBER EXAMINED			NUMBER INFECTED			WHIPWORMS			EELWORMS			TAENIA			NUMBER INFECTIONS			Infections per Hundred
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
0–14	2	1	3	2	1	3	2	1	2	1	..	1	..	1	1	3	1	4	133.3
15–30	28	3	31	7	2	9	5	1	6	5	2	7	..	..	..	10	3	13	41.9
31–50	6	1	7	1	.	1	1	.	1	..	..	..	..	..	..	1	..	1	14.2
51+	1	1	2	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	....
Total	37	6	43	10	3	13	8	1	9	6	2	8	..	1	1	14	4	18	41.8
Per cent.	..	..	.	27	50	30.2	21.6	16.6	20.9	16.2	33.3	18.6	..	..	2.3	37.8	66.6	41.8	

Among the 3 under 15 years of age there were 4 infections, giving 133.3 as the rate per 100; among the 31 between 15 and 30 years of age there

TABLE IV.

ITAY.

Age	NUMBER EXAMINED			NUMBER INFECTED			WHIPWORMS			EELWORMS			PINWORMS			ANKYL. DUODENALE			NUMBER INFECTIONS			Infections per Hundred
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Femlae	Total	Male	Female	Total	Male	Female	Total	
0–14	12	13	25	8	7	15	5	2	7	7	7	14	..	..	..	.	..	..	12	9	21	84.0
15–30	41	17	58	23	7	30	10	2	12	16	6	22	1	..	1	1	..	1	28	8	36	62.0
31–50	16	5	21	7	3	10	2	1	3	7	2	9	..	..	..	..	..	..	9	3	12	57.1
51+	3	1	4	2	..	2	2	..	2	2	..	2	..	..	..	..	..	..	4	..	4	100.0
Total	72	36	108	40	17	57	19	5	24	32	15	47	1	..	1	1	..	1	53	20	73	67.5
Per cent.	..	..	..	55.5	47.2	52.7	26.3	13.8	22.2	44.4	41.6	43.5	..	..	.925	..	..	.925	73.6	55.5	67.5	....

TABLE V.

Russia.

Age	Number Examinbd			Number Infected			Whip-worms			Eelworms			Strongy-loidls			Dib. Latus			Number Infections			Infections per Hundred
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
0–14	8	12	20	5	5	10	5	4	9	4	4	8	1	..	1	..	..	..	10	8	18	90.0
15–30	48	22	70	26	11	37	16	5	21	16	8	24	..	..	..	..	..	..	32	13	45	64.2
31–50	9	6	15	4	2	6	3	1	4	3	1	4	..	..	..	..	1	1	6	3	9	60.0
51+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Total	65	40	105	35	18	53	24	10	34	23	13	36	1	..	1	..	1	1	48	24	72	67.6
Per cent	..	..	..	53.8	45	50.4	36.9	25.0	32.3	35.3	32.5	34.2	..	..	.926	..	..	.926	73.8	60.0	67.6	....

were 13 infections, or 41.9 per 100; among the 7 between 31 and 50 years there was 1 infection, or 14.2 per 100; and among the 2 who were over 51 years of age there were not any infections. Among the 43 Greeks examined there were 18 infections, or 41.8 per 100. Among the 37 males there were 14 infections, or 37.8 per 100, and among the 6 females there were 4 infections, or 66.6 per 100.

Among the Greeks the *Trichuris trichiura* was the most frequent intestinal parasite and was also the most frequent in the male. The *Ascaris lumbricoides* occurred more frequently among the females. The rate of total infections was greater for the female than the male. The Greeks also show

One boy was found infected with the *Ankylostoma duodenale.* His anemic condition caused him to be suspected of being infected with this parasite so that it was not a case that was discovered purely by accident. If we consider this as being counterbalanced by the lack of thorough search for light infections, the rate of occurrence of this worm among the Italians would be .925 per 100. This boy was also infected with the *Oxyuris vermicularis,* this parasite being recovered along with the hook worms after the administration of thymol. The *Trichuris trichiura* was also present in this case. Fourteen were infected with both the *Trichuris trichiura* and the *Ascaris lumbricoides,* and

TABLE VI.

Turkey.

Age	Numbbr Examined			Number Infected			Whipworms			Eelworms			Tænia			Number Infections			Infections per Hundred
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
0–14	4	3	7	1	1	2	..	1	1	1	..	1		1	1	1	2	3	42.8
15–30	36	3	39	14	1	15	5	..	5	10	1	11	3	..	3	18	1	19	48.7
31–51	5	2	7	2	1	3	2	..	2	2	..	2	..	1	1	4	1	5	71.4
51+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....
Total	45	8	53	17	3	20	7	1	8	13	1	14	3	2	5	23	4	27	50.9
Per cent	..	..	..	37.7	37.5	37.7	15.5	12.5	15.0	28.8	12.5	28.3	6.6	25.0	9.4	57.1	50.0	50.9	

the heaviest infection in early life, which lessens with age.

Fifty-seven, or 52.7 per cent., of the 108 Italians examined (Table 4), 40, or 55.5 per cent., of the 72 males, and 17, or 47.2 per cent., of the 36 females, were infected with intestinal parasites. Twenty-four, or 22.2 per cent., were infected with the *Trichuris trichiura,* and of these 19 were males and 5 were females, giving the rates respectively 26.3 and 13.8 per 100. Forty-seven were infected with the *Ascaris lumbricoides,* of whom 32 were males and 15 females, giving a rate of occurrence 2459—Medical Rec., Sept.1—V A N L I E W for all Italians of 43.5, for the males 44.4 and for the females 41.6 per 100.

of these 11 were males and 3 were females.

Among the 25 Italians under 15 years of age there were 21 infections, or 84 per 100, among the 58 between 15 and 30 years of age there were 36, or 62 per 100, among the 21 between 31 and 50 years there were 12, or 57.1 per 100, and among the 4 51 years of age or over there were 4 infections. This shows that the rate of infection is heaviest in early life and decreases with age, except that the rate for those over 51 exceeds that for any other age period, but this may be purely accidental on account of the small number examined.

Among all the Italians examined there were 73 infections, or 67.5 per 100, among the males 53 infections, or 73.6 per 100, and among the females

TABLE VII.

All Immigrants Examined Divided into Age Groups.

Age	Number Examinbd			Number Infecteo			Whipworms			Eelworms		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0–14	36	40	76	18	20	38	14	11	25	15	15	30
15–31	190	69	259	78	25	103	41	10	51	51	20	71
31–50	51	19	70	17	6	23	11	2	13	12	3	15
51+	5	2	7	2	....	2	2	....	2	2	. ..	2
Total	282	130	412	115	51	166	68	23	91	80	38	118
Per cent	....	....	....	40.7	38.4	40.2	24.1	17.6	22.0	28.3	29.2	28.6

20, or 55.5 per 100. The *Ascaris lumbricoides* is the most frequent intestinal parasite among the Italians, and it is more prevalent among the males than the females. The males are also more frequently infected with the *Trichuris trichiura* than the females. The total number of all infections per 100 is greater among the males than the females.

One hundred and five immigrants from Russia (Table 5) were examined and 53, or 50.4 per cent., were infected. Of the 65 males 35, or 53.8 per cent., and of the 40 females 18, or 45 per cent., were infected. Thirty-four were found infected with the *Trichuris trichiura* of whom 24 were males and 10 were females. The rate of occurrence of this worm is 32.3 per 100 for all from Russia, 36.9 per 100 for the males and 25 per 100 for the females.

Thirty-six were found infected with *Ascaris lumbricoides* of whom 23 were males and 13 females, the rate for all Russians being 34.2 per 100, for the males 35.3, and for the females 32.5. One male was found infected with *Strongyloides stercoralis*, and 1 female with *Dibothriocephalus latus*, giving the rate of prevalence of these worms as .926 per 100. Eleven males and 5 females were infected with both the *Trichuris trichiura* and *Ascaris lumbricoides*. One female was infected with both the *Trichuris trichiura* and *Dibothriocephalus latus*, and 1 male with the *Trichuris trichiura*, *Ascaris lumbricoides*, and *Strongyloides stercoralis*.

Among 20 who were under 15 years of age there were 18 infections, or 90 per 100; among the 70 between 15 and 30 years of age there were 45 infections, or 64.2 per 100, and among the 15 between 31 and 50 years there were 9, or 60 per 100. There were 72 infections among all the Russians examined, 48 among the males and 24 among the females, giving the rates respectively of 67.6 per 100 for all Russians, 73.8 for the males and 60 for the females.

Among the immigrants from that country the *Ascaris lumbricoides* was the most frequent intestinal parasite and both this worm and the whip worm occurred more frequently among the males than among the females. The rate of total infections was greater among the males than among the females, and also the rate of infection was heaviest in early life and decreased with age.

Of the 53 immigrants from Turkey (Table 6) examined, 20, or 37.7 per cent., were found infected. Of the 45 males 17, or 37.7 per cent., and of the 8 females 3, or 37.5 per cent., were infected. Seven males and 1 female were infected with the *Trichuris trichiura*, making the rate of the occurrence of this worm among those from Turkey as 15 per 100, among the males 15.5, and among the females 12.5 per 100. Fourteen, or 28.3 per cent., were infected with *Ascaris lumbricoides* of these 13 were males and 1 female, the rates for the two sexes being respectively 28.8 and 12.5 per 100.

The eggs of *Tænia* were found in the stools of 3 males and 2 females. In the case of 2 males the tape worms were determined as *Tænia saginata* from the segments also present. In the other 3 cases the species were not determined. The rate of infection with *Tænia* was 9.4 per 100, for the males 6.6, and for the females 25 per 100. The following double infections occurred: 4 males with both *Trichuris trichiura* and *Ascaris lumbricoides*, 1 male and 1 female with *Tænia* and *Trichuris trichiura*, and 1 male with *Tænia* and *Ascaris lumbricoides*.

Among the 7 under 15 years of age there were 3 infections, or 42.8 per 100. Among the 39 between 15 and 30 years there were 19 infections, or 48.7 per 100. Among the 7 between 31 and 50 years there were 5 infections, or 71.4 per 100. Among the total of 53 examined there were 27 infections, or 50.9 per 100, among the 45 males 23 infections, or 57.1 per 100, and among the 8 females 4 infections, or 50 per 100. Among those from Turkey the *Ascaris* was the most frequent intestinal parasite, and both this worm and the whip worm occurred more frequently among the males than among the females. The infections with *Tænia* was more frequent among the females. The rate of all infections with intestinal parasites seemed to increase with age, and the rate of infection was slightly greater for the males than for the females.

The following immigrants (Table 1) were also examined but the number was hardly great enough to draw any conclusions as to the prevalence of intestinal parasites among any of these nationalities. There were 3 males from Algiers of whom none were infected; 1 female from Belgium, who was found infected with *Ascaris lumbricoides;* 2 males from the British West Indies, 1 of whom was infected with the *Strongyloides stercoralis;* 1 male from Canada who was found free from infection; 1 male and 1 female from France, both of whom harbored the *Trichuris trichiura;* 5 males and 2 females from Germany of whom 1 male harbored the *Trichuris trichiura,* and 1 male the *Ascaris lumbricoides;* 6 males and 1 female from Great Britain and Ireland; 1 female from Holland; 2 males from Persia; 2 males from Portugal; 1 male and 2 females from Roumania, and 2 male from Spain, all of whom were found free from intestinal worms, three males from Sweden, 1 of whom was infected with both the *Ascaris lumbricoides* and *Trichuris trichiura*, and 1 female from Switzerland who was found free from infection.

Of the 412 immigrants of all nationalities (Tables 1 and 7) examined 166, or 40.2 per cent., were infected with one or more intestinal worms. Of the 282 males 115, or 40.7 per cent., and of the 130 females 51, or 38.4 per cent., were infected. Ninety-one, or 22 per cent., were infected with *Trichuris trichiura*, of whom 68 were males and 23 females, giving the rates of 24.1 and 17.6 per

TABLE VII (*Continued*)

PINWORMS			STRONGYLOIDLS			ANKYL. DUODENALE			TAPEWORMS			NUMBER INFECTIONS			Infections per Hundred
Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	
....	....	....	1	....	1	....	....	....	....	2	2	30	28	58	76.6
1	....	1	1	....	1	1	....	1	3	....	3	98	30	128	49.4
....	....	....	....	....	....	....	....	....	....	2	2	23	7	30	42.8
....	....	....	....	....	....	....	....	....	....	....	....	4	....	4	57.1
1	....	1	2	....	2	1	....	1	3	4	7	155	65	220	53.39
....	....	.24	....	....	.48	....	....	.24	1.06	3.07	1.69	54.9	50.0	53.39	....

100 respectively. The rate of infection with this parasite was highest among those from Russia; the rates for the different countries were 18.1 per 100 for Austria-Hungary, Greece 20.9, Italy 22.2, Russia 32.3, and Turkey 15 per 100. It was the most frequent parasite found among those from Austria-Hungary and Greece, and among these the males were more frequently infected than the females.

The *Ascaris lumbricoides* was present 118 times, or 28.6 per 100. Among the males 80, or 28.3 per cent., and among the females 38, or 29.2 per cent., were infected with this worm. The rates for the different nationalities were: Austria-Hungary 15.1, Greece 18.6, Italy 43.5, Russia 34.2, and Turkey 28.3 per 100. Italy showed the highest rate for this parasite. This is the most frequent parasite found and occurs more frequently among the females than the males, although Italy, Russia, and Turkey show a higher rate for the males.

Only 1 infection with the *Oxyuris vermicularis* was found, but no doubt the reason for not finding it more frequently was due to the rarity with which the eggs are found in the feces.

Two cases of infection with the *Strongyloides stercoralis* were found, 1 in an immigrant from the British West Indies and 1 from Russia. The rate of occurrence of this parasite for all immigrants examined was 0.48 per 100. Both of these cases were in males, and in the case from the West Indies his anemic condition suggested the suspicion of hook worm infection, but after repeated examination of several fresh stools, no ova were found, but numerous larvæ of the Cochin China worm.

The Italian boy infected with the *Ankylostoma duodenale* was the only case of hook worms found. The rate of occurrence of this parasite among all the immigrants examined is .24 per 100.

Seven infections with tape worms were found, 1 a case of infection with the *Dibothriocephalus latus* in a Russian woman, 3 males and 2 females among those from Turkey, and 1 female child among the Greeks. Two of those among the Turkish men were *Tænia saginata* and in the case of the 4 others the species were not determined. The rate of prevalence of the *Dibothriocephalus latus* among the Russians was .95 per 100, the rate of *Tænia* among the Greeks being 2.3, and among the Turks 9.4 per 100.

Among the 76 immigrants under 15 years of age there were 58 infections, or 76.6 per 100. Among the 259 between 15 and 31 years there were 128 infections, or 49.4 per 100. Among the 70 between 31 and 50 years there were 30 infections, or 42.8 per 100. Among the 7 over 51 years of age there were 4 infections, or 57.1 per 100. This shows that among all the immigrants examined the heaviest infection occurred in early life and tends to diminish with age. The rise in the case of those over 51 years may be due to accident on account of the small number examined.

Among the 412 immigrants there were 220 infections, giving the rate of prevalence of intestinal parasites as 53.39 per 100. Among the 282 males there were 155 infections, or 54.96 per 100, and among the 130 females there were 65 infections, or 50 per 100, showing that intestinal worms are slightly more frequent among the males than among the females.

According to the annual report of the Commissioner-General of Immigration for the fiscal year 1909-10 of the 1,041,570 immigrants coming to the United States during that year, 278,737 came from Austria-Hungary; 25,888 from Greece; 215,537 from Italy; 186,792 from Russia, and 33,617 from Turkey. One can see that the United States is continually receiving thousands who are heavily infected with intestinal parasites. While the *Trichuris trichiura* and the *Ascaris lumricoides* are the most prevalent and the immigrants are heavily infected with them, those who are infected with the *Ankylostoma duodenale, Oxyuris vermicularis, Strongyloides stercoralis, Dibothriocephalus latus,* and *Tænia saginata* are also coming to this country in considerable.

As previously stated, generally only two slides from each specimen were examined, and as no special methods of examination were used, the number of immigrants harboring intestinal parasites must have been considerably greater than the number found by my examination, and therefore the percentage of those infected must have been considerably higher. As 40.2 per cent. of all immigrants were found infected with one or more intestinal parasites, among the 1,041,570 immigrants coming to the United States during the fiscal year 1909-10, there were probably over 418,711 infected with intestinal parasites.

I wish to express my thanks to Dr. John F. Anderson, Director of the Hygienic Laboratory, Washington, for his advice regarding this work and the preparation of this paper.

THE TREATMENT OF ANEMIC ENTEROPTOTIC DYSPEPSIA.

By CHARLES F. PECKHAM, M.D.,

PROVIDENCE, R. I.

As an introduction to this subject, it may be as well to consider the functions of the stomach as they are known to-day. They are: (1) The storage of food; (2) The absorption of water in infinitesimal amounts; (3) The secretion of hydrochloric acid and pepsin in the proper proportions for the chymification of the food as its chemical character demands; (4) The conveying of this chyme into the intestine promptly, as chymification is completed.

As this last function is by far the most important in the average individual, it must always be borne in mind in the treatment of cases of functional dyspepsia. A weakness of this function is characterized by the following physical signs and symptoms: (1) The tendency to anemia; (2) The so-called habitus enteroptoticus; (3) The absence of real pain, but distress and pressure occurring irregularly; (4) The hyperacidity and relative hypersecretion. I say relative, because this is not a true hypersecretion, but the excess of liquid found in the stomach arises from the retention of the chyme beyond the time required for chymification. In other words, the stomach does not have the strength to keep itself clear of chyme. There are, in fact, a weakness and sluggishness of the gastric peristalsis that is analogous to the condition found in the heart's action, called bradycardia. This might be called bradygastria for the want of a better term.

Secondary duodenal and intestinal disturbances, due to the irritation of hyperacid chyme, form another very prominent group of symptoms. In fact, as a general thing, it is the onset of intestinal symptoms that first brings these cases under observation.

It is difficult to account for the amount of gas

belched in these cases on the theory of fermentation. This gas usually has the formula of atmospheric air. It is not carbon dioxide, and therefore cannot be the product of yeast fermentation. I am led to believe that this gas originates in two ways, namely, by insufflation through the esophagus and by osmosis through the stomach walls. The latter occurs when the intragastric pressure falls below that of the blood stream; and in some of these cases of atony the pressure may even be several millimeters of mercury below the atmospheric pressure when the patient is in the upright position. Whatever the cause of the accumulation of gas may be it always may be taken as an indication of a deficiency in the tone of the gastric musculature.

The position of the patient has a very marked influence upon this conveying function of the stomach. In the upright position, through fatigue of the gastric musculature, it is sluggish or suspended. In the recumbent position, however, the stomach renews its peristalsis and begins to empty itself. This accounts for the restless nights so much complained of by these patients.

In undertaking the treatment of these cases it is well to begin with a thorough physical examination in order to avoid the embarrassment of newly discovered complications, necessitating changes in procedures after a few months' treatment. It is especially recommended that the gastric contents, the feces, the urine, and the internal organs be gone over carefully and any deviation from the normal be noted for future reference.

The fact that chymification is generally normal, or, indeed, stronger than normal, must be borne in mind, and also, that hyperchymification is as deleterious to the intestinal welfare as hypochymification. Therefore, all digestants, hydrochloric acid, or drugs calculated to increase gastric secretion should be omitted, unless especially indicated.

These patients are usually made worse by the measures taken, through the advice of friends, for their relief. Acting upon the principle that any foods that cause distress, or that can be tasted in the eructations, must be omitted, these patients place themselves upon a starvation diet. Stories of subsistence for weeks upon milk without improvement are recounted with great pride and used as a clinching argument to substantiate the severe and malignant nature of the fancied gastritis or cancer.

We may next turn our attention to the following problem: What is the best method to follow in order that the gastric conveyer may take care of the chyme that must be transported to the intestines? This problem may be attacked in the following ways: (1) By decreasing the weight of the chyme without decreasing the number of calories. (2) By stimulating the gastric musculature, in the hope that it will normally take up its load under the resulting improved general nutrition. (3) By apparatus calculated to raise the lower border of the stomach, and allow it to work at a better mechanical advantage. (4) By placing the patient in such a position that the stomach will empty itself with the greatest possible facility. (5) By measures directed to the improvement of the patient's general condition. (6) By supplying the gastric movements artificially. (7) By the relief of intestinal symptoms. (8) By the operation of gastrojejunostomy.

The estimation of the amount of work done by the stomach in handling and discharging the food, and the effect that a low position of the stomach has upon the number of foot-pounds of energy required for proper function furnish a very interesting mechanical problem. The fact must be borne in mind that the normally placed stomach practically is emptied by gravitation, the subject being in the upright position. In the stomachs of enteroptotic individuals, if the distance of a horizontal line drawn through the pylorus to the lower border of the stomach, the weight of the food in the stomach, and the time required for the stomach to empty itself be resolved into foot-pounds per hour much of the distress and pressure complained of in these cases will be accounted for. The following formula may be used in this calculation:

$$D/12 \times T/60 \times W = \text{foot-pounds per hour.}$$

In which D equals the distance of the lower border beneath the pylorus, expressed in inches; T, the time required for the stomach to empty itself, expressed in minutes; W, the weight of the stomach contents in pounds.

Example.—Mrs. R. Diagnosis: Anemic enteroptotic dyspepsia. Gastric acidity, normal; diet, milk; has lost 10 pounds in three months; lower border three inches below pylorus; stomach empties itself in 100 minutes; amount of foods taken at the average meal, 12 ounces. Then:

$3/12 \times 100/60 \times 12/16 = 5/16$ foot pounds per hour.

This energy has been expended upon 12 ounces of milk, containing 243.6 calories, or 1/779 foot-pounds per calorie. If an equal amount of lean beef had been taken, containing 780 calories, it figures 1/2496 foot-pounds per calorie. In other words, about three times as much muscular energy per calorie has been expended in handling the milk meal.

We conclude from this example that all foods of low nutritive value and large bulk had better be excluded from the dietary. Naturally, water with a caloric value of nil, is the greatest offender in this respect. We generally find that these patients take a great deal of water with their meals. Many of them are the victims of an insatiable thirst, and the colder the water the better. If they do not take water, beer or the ubiquitous high-ball is made to take its place. Water, beer, soft drinks, tea, coffee, soups, and other liquids should be absolutely prohibited at meals. However, any of these may be taken two hours after meals in such quantities as to satisfy the patient's craving or thirst. Milk should be absolutely forbidden in every case.

The ordinary table diet, omitting all soups and other liquids, should be the rule. The diet may also include butter, soft fats, such as olive oil, but no pastry. The food should be finely divided and unirritating. In laying out a diet for these cases the principle must always be kept in mind: High nutritive value and small bulk.

Stimulation of the gastric musculature works well in some cases, but is a good deal like goading the tired horse. Among the drugs found useful for this purpose caffeine and strychnine may be prominently mentioned. Intragastric faradization may be tried, one electrode in a stomach tube of decinormal salt solution and the other over the epigastrium. So far as the patient is concerned this is a very disagreeable procedure. It makes a great impression upon patients of a neuropathic tendency, however, and never fails to create a very strong impression that a remedy is being applied directly to the seat of disease. Light massage of

the abdomen may be used; especially the manipulation known as vibration. External hydrotherapeutic measures, either the spray, with variable temperature, or the volumn, are also of some service. All of these methods should be used with caution. Deep manipulation of the cervical and thoracic regions of the back often gives good results. The intragastric douche may be tried in selected cases, but great care must be taken not to overtax the gastric musculature through the use of too much water.

Much ingenious apparatus has been devised for the purpose of raising the lower border of the stomach, and thereby decreasing the distance from the level of the pylorus to the stomach floor. In many cases its use is followed by marked improvement, but in others its application seems to do more harm than good. In reading the literature upon this subject one would be led to believe that the panacea for the long-suffering dyspeptic had been discovered. This apparatus varies in form, from the complicated plaster device of Rose, to instruments designed upon the lines of trusses made of hard rubber, with a plate that engages the abdomen below the umbilicus, and, by pressure, elevates the abdominal organs. Belts of linen or silk elastic webbing are of little use, as they cannot be worn comfortably by thin people, and most anemic dyspeptic patients are of rather spare habitus.

The adhesive plaster belt of Reed seems to give the best results. This is made of 3½-inch zinc oxide plaster, spread on moleskin, and its length should be 4 inches greater than the patient's girth. It should be so placed upon the patient as to form a girdle, coming over the flanks just above the crests of the ilium and crossing in front midway between the umbilicus and the pubes. A few strokes of the razor will be found necessary in most individuals. At the place of crossing the two ends are made secure with a common pin. The point of this is then cut off and a small piece of plaster applied to prevent injury to the clothing. Frequent applications of soap and water to this plaster improve its lasting qualities very materially. This should be worn continuously.

The treatment by position may vary in its extensiveness, from the rest cure of Weir Mitchell to weeding in the garden on the hands and knees. Prolonged rest in bed is not usually required, although the constant attention of servants and trained nurses that is necessary for its successful operation seems to be much appreciated by many patients. Various forms of gymnastics are beneficial, the principle being to bring the pylorus and the lower border of the stomach upon the same level and to combine this position with exercises designed to contract the abdominal muscles. Exercises imitating the play of children are often used, the fact being noted that the onset of symptoms has some direct connection with the time of puberty, and in the belief that dignity of deportment, with the attendant lack of use of the abdominal muscles, may be the cause of the trouble.

Reaching exercises may be prescribed. One very useful exercise consists in extending the arms above the head as far as possible, at the same time rising on the toes, then bending forward with the arms still extended and touching the floor with the hands, assuming the upright position and inflating the lungs at the same time, and then, with the lungs still inflated, the clinched hands are brought to the chest and the elbows extended behind the body as far as possible. While this is being done the entire muscular system is put under tension. In practice these exercises are found rather difficult of application. Where they can be carried out under the direction of a trained assistant they uniformly do good.

Measures directed to the improvement of the patient's general condition may be considered under the heads of hygiene and of therapeutics. Under hygiene may be mentioned the sojourn at some spa, where the waters are of a mildly alkaline reaction, or in some place where an out-of-door life, freedom from care and a general change of scene may be enjoyed. The patient's tastes may be consulted upon this subject, but any fishing or shooting trips must be well considered with the amount of fatigue in view. Traveling in the wilds of Maine is apt to be rather heavy work for these patients, unless the pace is made sufficiently moderate. A course of treatment on the lines of the fresh-air cure is often of great service, especially if the patient is much reduced physically.

Regarding drugs there is very little to be said. General tonics may be used. Phosphorus or the pyrophosphates of iron, alone or combined with gentian, may be tried. Tonics very rich in alcohol should not be used. Ammonium carbonate is a valuable stimulant, if one is needed.

The gastric peristalsis may be very closely imitated by massage of the abdomen. This is best performed within two hours after eating. This manipulation consists in gently stroking the abdomen from side to side with the flat hand. Its proper performance requires some practice. The error is usually made on the side of too much force and too rapid stroking. This method must be used with caution, especially if there is any tendency to a spastic condition in the colon, when it will cause discomfort and pain. It may well be combined with general massage. In the atonic forms of constipation it is the treatment *par excellence*, as under its use the bowels become more active and nutrition is very much improved.

Measures directed to the relief of the intestinal symptoms have a very important place in the treatment of these cases. There is always a certain irritable condition of the pylorus present, resulting from the irritation of the intestinal mucosa. This is very apparent in those cases that show a very marked increase in the degree of acidity of the gastric contents. This may even reach the point of spasm. Whenever nausea is present we may assume that there is an irritation of the intestinal mucosa or that this irritation has even reached the point of a catarrh. Bismuth is probably the most useful drug that we possess for the relief of this condition. It should be given in large doses and upon an empty stomach. Besides coating the intestinal mucosa and protecting it from the hyperacid chyme, it also acts as a very efficient intestinal antiseptic. The bromides are also of service, reducing the secretion of hydrochloric acid and allaying many of the reflex nervous symptoms, which are so troublesome in these cases. Belladonna also may be tried, always bearing in mind that many people are very susceptible to its action. Menthol and valerian may be tried. Among the alkalies may be mentioned sodium bicarbonate, calcium carbonate, and the alkaline mineral waters, omitting those that have any cathartic action. Small doses of chlorate of potassium may also be administered with improvement in many cases.

Cathartics should be avoided as much as possible. In patients past middle life their use may be necessary, but in most cases little permanent good can be accomplished while the patient is the victim of the cathartic habit.

The operation of gastrojejunostomy has no place in the treatment of anemic enteroptotic dyspepsia. Cases in which it is of benefit are few and far between, and in many cases I have thought that it has done irreparable harm. In cases complicated with ulcus, however, it may be performed after medical treatment has failed.

These patients are deserving of more attention than is usually bestowed upon them. In no other class of cases are a thorough physical examination and careful and painstaking diagnosis more important. Serious errors in diagosis are without excuse. For example, the diagnosis of anemic enteroptotic dyspepsia in the presence of gastrectasia is a fault that is apt to reflect upon our medical skill. The most common mistakes arise from confusing chronic catarrhal gastritis, dilatation of the stomach, and carcinoma with anemic dyspepsia—in other words, an organic with a functional disease.

These cases belong to that class known as the physically deficient. They are, as a general thing, poorly fitted to fight the battle of life. Nutrition with them becomes a positive burden. They are apt to be the subjects of tuberculous infections or of other low grades of inflammation. They show a marked tendency to develop psychopathies, neuropathies, drug habits, and alcoholism. They are active mentally and are very quick to detect any inconsistencies in the statements made to them in the course of their treatment. They are constantly in search of the royal road to recovery, and the amount of time that they will spend in efforts to save themselves mental and physical labor is remarkable. It is very difficult to get them to follow a régime with any degree of consistency. Their idea of life makes it, to them, one of constant compromise.

Many of the results of treatment may be called truly brilliant, but, at times, our best efforts will end in failure. We should regard these cases as mechanical problems, in which we must so handle an insufficient gastric conveyor that it may serve the requirements of the bodily nutrition.

ALCOHOLISM AS A COMPLICATING FACTOR OF ANESTHESIA.

By F. HOEFFER McMECHAN, A.M., M.D.,

CINCINNATI, OHIO.

STAFF ANESTHETIST TO THE CITY, ST. MARY'S AND THE POLYCLINIC HOSPITALS.

Alcoholism is perhaps the most annoying complicating factor of anesthesia. The percentage of alcoholics coming to operation in the surgical clinics of the larger municipal and charity hospitals is deplorably high and constant, more especially among the male patients, although the same complication is not a negligible problem in the opposite sex. This fact is so prevalently recognized that the anesthetic charts of many operating clinics call for the report of alcoholism as present or absent, and, if found, of what character.

The recognition of alcoholism as a complicating factor of anesthesia, previous to any attempts at the induction of narcosis, will enable the anesthetist to modify routine technics of anesthesia, according to the exigencies of individual cases and the requirements of certain operative procedures. Unless the alcoholic complication is prognosticated, the induction of narcosis will be beset with unpleasant difficulties, and its conduct become unsatisfactory to the operator and the best interests of the patient. Consequently the presence of alcoholism should always be noted by the nurse or intern in charge and called to the attention of both the operating surgeon and the anesthetist. If no such precautionary measure has been taken, the anesthetist must at the time of operation determine for himself, by tactful but searching questions, the exact quantity and frequency of alcoholic consumption, in order to judge the alcoholic status in its relation to the prospective narcosis. Occasionally surgeons who have some knowledge of their patient's character may be misled with regard to the alcoholic problem involved. It is not unusual in municipal and charity hospitals to have the unpleasant duty of anesthetising patients for emergency, as well as routine operations, who are drunk; in some instances maudlinly combative, in others bordering on the verge of delirium tremens. *Acute alcoholism as a complicating factor of anesthesia, contraindicates any operative procedure, except in life-saving emergencies. Chronic alcoholism demands preliminary medical treatment before any operative interference is justifiable.* Such prophylactic treatment, no matter how thoroughly carried out, may not always prove altogether of avail in avoiding postoperative complications, but it is a necessary precautionary measure to safeguard the patient's interests.

While hospital records show a large number of cases transferred from the "strong wards" to the various surgical services for operation after the subsidance of tremor symptoms, without postoperative exaccerbation of the condition, still the recurrence of delirium in alcoholic subjects is a constant menace and must be duly considered in concluding to operate. Nor does abstinence in confirmed alcoholics, for some months previous to operation, obviate the alcoholic complications of anesthesia. For such saturation the use of the Lambert method, the complete withdrawal of alcohol, the exhibition of bromides, chloral, and ergot in conjunction with hypodermoclysis, will be found invaluable in putting the confirmed alcoholic into fair condition for operation under inhalation narcosis, or in combating the exigencies of delirium tremens, should this condition develop postoperatively.

The foregoing emphasizes the distinctive value of spinal and regional analgesia for operative procedures in alcoholic subjects, particularly when such surgical intervention is necessitated by life-saving emergencies and the alcoholic symptoms are pronounced. Under these circumstances spinal analgesia (Corning), regional analgesia (venous-Bier; arterial-Ransohoff), nerve blocking (Crile), and infiltration *en masse* (Matas), separately and in conjunction, offer methods which not only do not exacerbate the alcoholic condition, but in some measure decrease its effects and counteract any tendency to shock from the necessary manipulative and operative trauma.

Martin, alluding more especially to genito-urinary and rectal surgery, says: "Alcoholics are exceeding difficult to anesthetize and require excessive quantities of ether to obtain relaxation. They breathe badly and cyanosis supervenes rapidly, with consequent turgescence of the parts under operation. Hemorrhage is free and may inconvenience the op-

erator. These patients under spinal analgesia are quiet. There is complete muscular relaxation, with no congestion of the operative field and little or no troublesome hemorrhage."

Cases of fracture and dislocation, complicated by alcoholism, if the stupor of the debauch does not give sufficient narcosis to deaden the pain or relaxation enough to permit reduction, may be readily handled according to the method of Dr. Quénu (Paris), who injects mild cocaine solutions into those muscles which oppose reduction. While analgesia always produces flaccidity of musculature in alcoholic subjects, inhalation narcosis, on the other hand, is prone to produce jactitation and spasticity. However, in the large proportion of routine operative procedures it is possible to satisfactorily anesthetize alcoholic subjects by inhalation narcosis, if the presence of alcoholism is known and the proper methods for combating the complication are utilized.

Unfortunately gas-oxygen, at present considered the safest anesthetic method in vogue, is not very satisfactory or serviceable in anesthetizing alcoholic subjects. The reasons why are apparent. Nitrous oxide produces profound cyanosis, and alcoholics are prone to become cyanotic under all anesthetics, but more especially under gas. The addition of oxygen, even in low percentages, while it may have some effect in obviating the cyanosis, also brings the patients around, and it is exceedingly difficult for even expert anesthetists to carry alcoholics through operations requiring any length of time, under gas-oxygen narcosis, without having undesirable rigidity of musculature, arrest of respiration, and the inconvenience of steering between dangerous cyanosis and too light an anesthesia. This has also been the experience of such continental authorities as Hewitt, Buxton, Bellamy-Gardner and Blumfeld, whose written details on this phase of narcosis are of considerable interest. "In certain exceptional cases (alcoholics) nitrous oxid seems incapable of producing more than an analgesic state. If the gas is given without oxygen, clonic and tonic spasm come about abnormally early and cut short the administration; while if oxygen is mixed with nitrous oxide, the anesthetic element may be insufficient to induce true narcosis." (Hewitt.) That spasticity of musculature may sometimes be a purely alcoholic reaction during anesthesia is evidenced by its constant association with alcoholism, and its persistence during operations, despite the use of different methods, agents, and depths of narcosis.

In a personal communication, Dr. Charles K. Teter of Cleveland, Ohio, whose apparatus for gas-oxygen narcosis, and his vast experience with that method, have made him a foremost authority on the subject in America, contends that alcoholics are by far the most difficult subjects to anesthetize with gas-oxygen, but considers that with expert administration and cooperation between the surgeon and anesthetist even the worst cases may be handled with fairly satisfactory results. He also insists that in the presence of intercurrent complications, gas-oxygen, particularly in alcoholics, is the method of choice, in view of its increased safety to life during its administration, and more especially for its beneficent influence on postoperative recovery. While gas-oxygen will be used in exceptional cases to anesthetize the alcoholic, it is doubtful whether many surgeons will find it sufficiently satisfactory to encourage its routine use for such individuals. The gas-oxygen-ether sequence has this advantage, that the cyanotic effects of the nitrous oxid may be somewhat controlled by the concomitant use of oxygen, while the almost immediate addition of ether, in many instances, enables the anesthetist to satisfactorily overcome the usual combativeness of the alcoholic subject during the period of excitement. Also gas-oxygen narcosis, supplemented by ether as required (Gatch-Teter) is a feasible method in obstreperous alcoholics who cannot be satisfactorily controlled by gas-oxygen alone. However, ether by the drop, much less by any closed method, produces considerable and sometimes excessive cyanosis in alcoholics, so that the gas-oxygen-ether sequence, while serviceable, is not always entirely satisfactory as a routine method. "Alcoholics are best given nitrous oxid, followed by ether; but they often become greatly cyanosed, and to relieve this condition, chloroform must be given for a time, even if ether be subsequently resumed. As a rule oxygen, given with the ether, prevents this cyanosis, unless it is due to severe spasm. I have found that some confirmed alcoholics remain restless and rigid even during the profound narcosis." (Buxton.)

Ether by the drop method (Magaw), while obviating to some extent the occurrence of dangerous cyanosis, unduly prolongs the period of excitement during induction, and does not always give the requisite flaccidity of muscles demanded by the convenience of the operator, nor the clear air-way so necessary for the safety of the patient. Chloroform by the drop or vapor method is ineffective in the usual dosage or percentages, and, when used alone, is somewhat dangerous if pushed to effect. The point of danger lies in the propensity of alcoholic subjects to fixation of the chest and arrest of respiration, a condition which arises under all methods of narcosis complicated by alcoholism, but which is most dangerous to life when by its occurrence the intrapulmonary tension of the inspired chloroform is increased. "The author (Hewitt) has had to administer 5½ ounces of chloroform in 1¼ hours to an alcoholic male of 56 years. It is occasionally difficult, if not impossible, to secure total muscular relaxation in patients of this class, and reflex movements, during operations upon sensitive parts, may obstinately persist, even though dangerously large quantities of the anesthetic be administered. In confirmed alcoholics the stage of muscular excitement is usually prolonged, and at all events, with chloroform there is need for caution during this rigidity and irregular respiration. * * * (Under chloroform) other things being equal, the greater the vigor of the patient, the greater will be the tendency to development of muscular spasm, not only of the extremities, but also of the respiratory muscles, masseters, muscles of the floor of the mouth, larynx, and other parts. It is in this way that chloroform kills in the perfectly healthy subject. The fatal symptoms commencing when the cornea are sensitive and the circulation failing before the anesthetist can re-establish breathing. * * * It is by no means uncommon for clonic muscular phenomena to arise during the second and third stages of chloroformization, more particularly in cases in which the breathing is somewhat obstructed by stertor, jaw spasm, or laryngeal closure. In some of the recorded cases of this kind patients are reported to have had a 'fit' or to have been attacked by 'epileptiform convulsions.'" The danger arising from the necessary concentration of the anesthetic to produce surgical narcosis

is further emphasized by Gardner: "The author (Bellamy-Gardner) has known it impossible in the worst cases (alcoholics) to maintain anesthesia, except with chloroform vapor so concentrated by wrapping a towel over a Skinner's mask, that the same patient would have been overdosed past the hope of resuscitation if they had not been addicted to alcoholic intemperance."

The advent of ethyl chloride has given the anesthetist a preliminary anesthetic which makes the anesthetization of alcoholics somewhat easier and a trifle more satisfactory. Ethyl chloride does not produce cyanosis, and when properly administered has only a mildly depressant effect upon the circulatory system. Immediately followed by ether (drop method) or more preferably by a synchronous use of both agents after unconsciousness has been established until surgical narcosis results, this method obviates in the majority of instances all disconcerting cyanosis and unpleasant combativeness on the part of alcoholic subjects.

However, even this sequence is not entirely successful in some of the worst cases, and in these very exceptional instances the following technique has been found safe and reliable in the most obstreperous subjects. The ethyl chloride is followed by a C_1E_5 mixture by the drop method. The addition of chloroform to the ether in any proportion not exceeding the accepted ratio of two to three, meets the demands of anesthetizing alcoholics most successfully. The added chloroform counteracts, by its slightly depressant effect upon the circulatory system, the cyanotic tendency of the ether to venous engorgement, besides obviating to a remarkable degree spasticity of musculature and inconvenient neural reflexes. Occasionally after the preliminary use of the C_1E_5 mixture, until surgical narcosis supervenes, the anesthesia may be continued with drop ether alone, but the worst subjects may require the mixture throughout. With this sequence and combination it is not only possible to anesthetize recalcitrant alcoholic subjects with ease, rapidity, and safety, but it is also possible, in any case to carry the lightest degree of narcosis which may be consistent with the requirements of the operation in hand.

It happens frequently that during the conduct of narcosis in alcoholic subjects, despite expert administration, jacitation, spasticity, and clonic spasm develop from operative trauma, certain manipulations or turgescent cyanosis. Under such circumstances it has been the experience of Rowell and Kingsford that under chloroform or ether narcosis, the spraying of a few cubic centimeters of ethyl chloride upon the mask will almost immediately relax musculature and quiet jacitation. A perfecting detail of this method is the concomitant use of oxygen to control any imperiling degree of cyanosis which may arise during the conduct of narcosis. Oxygen not only renders anesthesia safer to the patient, but even when used in low percentages has a peculiar effect in maintaining the physiological balance of the gaseous constituents of the blood. It not only promotes the entrance of the ether vapor into the circulation, but also assists in its excretion by keeping the output of carbon dioxide to practically its physiological standard. The concomitant use of oxygen in this manner is not only more rational, but in the experience of expert anesthetists, more successful in obviating and combating anesthetic dangers than the concomitant use of carbon dioxide.

Postoperative recovery is exceptionally rapid in alcoholic patients, who are often able to talk and look about them within two or three minutes after withdrawal of the anesthetic. Postanesthetic vomiting is a rare after effect, and aside from suppression of urine or the supervention of delirium tremens or pneumonia there are few complications. Now that it is possible to establish the gauge of kidney function, the urinary output test should be used preliminary to operation on alcoholics whose history or pre-operative condition make them hazardous risks.

As Bellamy-Gardner has suggested, some alcoholic patients cannot be satisfactorily anesthetized by any known method, and in operating upon subjects of known alcoholic excesses a method of fixation to the table recently illustrated by Herb, Rush Medical College, and also in routine use at Bethesda Hospital, Cincinnati, Ohio, is remarkably effective. A heavy canvas surcingle is circled about the patient and table, just above the knees, and drawn sufficiently taut not to be uncomfortable, but to prevent untoward movements during the excitement stage of narcosis. The wrists are either held firmly to the sides of the hips by leather wristlets, joined by a strap under the gluteal fold, or may be circled by strands of twisted gauze, tied with an inch leeway, so that no movement of the patient can impede circulation by tightening the loop. The gauze is passed under the thighs or is tied to the table so as to flex the forearm on the biceps. The wristlets must have automatic catches which can be instantly released, and the gauze must be tied in single bow knots, so that in case of emergency, when artificial respiration must be resorted to, the arms of the patient may be quickly released. Bimanual pressure over the lower ribs is very effective in re-establishing respiration which has been arrested by spasmodic fixation of the chest.

The suggested restraint is not only harmless and convenient, but it also prevents any untoward movements on the part of patients at any stage of narcosis or operation, a precaution that is well worth taking in advance when confirmed alcoholic subjects are concerned. Also the customary stirrups attached to operating tables lend themselves poorly to securing alcoholics in position for perineal or rectal operations. The Clover-clutch, carefully adjusted and safely anchored; the Bierkoff stirrups, or the shoulder-strap leg holders, which flex the thighs on the abdomen, are decidedly preferable in use. Other stirrups, which secure the required position by straps about the ankles and insteps, give the patients a powerful purchase for pushing themselves up the table. Preliminary hypodermic injections of morphine alone, or in combination with hyoscine, or atropine are a serviceable routine in all alcoholics, not presenting symptomatic contraindications to the drugs mentioned.

Postoperatively, should there be suppression of urine, sparteine sulphate, if used in sufficient dosage, is a specific. Also, if there is likelihood of delirium tremens supervening, appropriate medical treatment should both anticipate and immediately follow the operation and be pushed to effect.

While attention to all these details will make the narcosis safe for the patient, as convenient and satisfactory as possible for the operator, still expert anesthetists will always feel, after gruelling experiences with alcoholism as a complicating factor of anesthesia, that it is deplorably prevalent and would gladly be dispensed with, could such an improbable event occur.

639 West Seventh Street.

TINEA VERSICOLOR IN THREE SISTERS; REVIEW OF THE UNUSUAL FEATURES OF THE DISEASE.*

By FRANK CROZER KNOWLES, M.D.,

PHILADELPHIA.

INSTRUCTOR IN DERMATOLOGY, UNIVERSITY OF PENNSYLVANIA; DERMATOLOGIST TO THE PRESBYTERIAN, THE CHILDREN'S, AND THE HOWARD HOSPITALS; ASSISTANT DERMATOLOGIST TO THE PHILADELPHIA GENERAL HOSPITAL; DERMATOLOGIST TO THE CHURCH HOME FOR CHILDREN, THE BAPTIST ORPHANAGE; ASSISTANT DERMATOLOGIST TO THE DISPENSARY OF THE PENNSYLVANIA HOSPITAL,

AND

EDWARD CORSON, M.D.,

CYNWYD, PA.

ASSISTANT DERMATOLOGIST TO THE DISPENSARIES OF THE PRESBYTERIAN AND THE CHILDREN'S HOSPITALS.

Robert Willan suggested the term pityriasis versicolor in 1799. Eichstedt of Griefswald, in 1846, demonstrated that the disease was due to the growth of a fungus. Charles Robin in 1853 classified the organism as the species *Microsporon furfur*. It has been exceedingly difficult to grow this organism. Sehlen obtained cultures in 1889; Sehlen and Unna cultivated the fungus in 1890 in five out of seven cases, but were unable to infect anyone with them. Matzenauer and also Gastou and Nicolau have cultivated the microsporon. Spietschka found that, while cultures in the same media were identical in twelve cases, when the medium was varied very different looking cultures resulted. Castellani has pointed out that there are three different varieties of tinea versicolor, the white, the yellow, and the black. Lutz points out that in the colored races it produces white or, where the fungus is very abundant, gray discoloration of the skin. The organism attacking the exposed portions of the body frequently produces an eruption of a much darker color than that of the covered parts, as shown in Gottheil's and also in Allen's cases.

Tinea versicolor involves almost invariably the trunk to the exclusion of other portions of the body. In extensive cases, or at times in those of less extent, the disease is found on the upper arms and the covered portion of the neck. Those who see a considerable number of cases of this fungus disorder realize the fallacy in attributing a relationship between the condition and the general health of the individual, particularly in regard to its association with tuberculosis. Daguet and Hericourt, however, take a different view and believe the *Microsporon furfur* produces phthisis, in some instances, as they found this organism in the diseased tissues and the injection of the same rendered guinea-pigs and rabbits tubercular. No other investigators have reached the same conclusion.

Although in the great majority of the cases the trunk alone is involved, in certain instances other parts may be attacked. Dubois-Havenith observed it covering almost the entire arm and forearm to the wrist, and on the neck. E. O. Smith has noted an instance in which the dorsal surface of the feet were alone attacked by the disease. Crocker has seen the condition in the popliteal spaces in three instances and on the elbows twice. Allen pointed out that there is frequently found in the pubic region, both of men and women, one or more patches of tinea versicolor.

A few authors have reported cases in which the exposed portions of the body have been attacked by the fungus. Biart has found the disease on the face. Allen observed several instances in which the face was involved. Powell states that in Assam it is very common on the face. Unna cited the case of a bearded man, the lower portion of whose face was attacked, and quoted his own case to the same effect. Payne found the *Microsporon furfur* abundantly in the scales from the scalp and beard, where there was apparently only a simple pityriasis; the trunk was also attacked. Delepine recorded a case of tinea versicolor occurring in a man with pulmonary tuberculosis; the face, thorax, the abdomen, and the palm of the hand were attacked by the organism. Gottheil related the case of a Cuban physician who had the disease on his left palm, lasting for fifteen years.

Experimental inoculation has been successfully performed in a few instances. Köbner succeeded in infecting himself over the sternum and then transferred the growth to rabbits. Huble produced the eruption by rubbing the scales of the disease fixed in glycerin thoroughly into the skin until the surface became red. He also produced the disease by raising the epidermic scales with a lancet and keeping the pityriasis scales in glycerin in contact with the skin. Pityriasis versicolor was plainly visible to the eye in from two to six weeks.

One is impressed after a careful review of the literature on tinea versicolor with the few cases of contagion reported, evidently showing that the condition is but slightly contagious or that instances of this character have not been reported. A. Coffin met with the case of a woman who contracted it from her husband seven months after marriage. Huble has found nine instances of transmission of the disease from the male to the female or the reverse. He thinks that the disease in these cases was transmitted by the intimate contact of sexual intercourse. Two other cases are also cited of mediate contagion, clothing being the intermediary. Lancereaux describes his own case. After examining some of the scales under the microscope from a case of this disease he placed the remainder in a piece of paper in his waistcoat pocket. When over a month had elapsed and while still carrying the fungus in his pocket he developed a typical case of tinea versicolor upon his chest. Jonathan Hutchinson recorded an instance in which the husband transmitted the disease to his wife, the pubic region in each being attacked.

A few articles have been written upon the epidemics of tinea versicolor occurring in institutions, among prostitutes, and in various armies. Nichols reported that in 709 male patients examined in an institution 42 had this disease. Matakieff reported an infection of 6.25 per cent. among 80 patients at a hospital in Nancy, and the infection of 10.8 per cent. among 1,201 patients in another hospital. In the Long Island Hospital for the Insane Winfield found an infection of 1.29 per cent. of 1,084 patients; 43.8 per cent. showed infection in the pubic region. In an apparent epidemic of the infection in Hamburg in 1879 Una found 20 per cent. of the 82 prostitutes infected. Huble examined carefully 2,360 soldiers between nineteen and twenty-four years of age, and discovered tinea versicolor in but 39. In a part of India 4 per cent. of 2,540 prisoners were infected (Bulkley).

Cases of the authors: Case I.—Fannie W., nineteen years of age, came to the skin dispensary of the Pennsylvania Hospital on June 1, 1910, with an eruption of some months' duration upon the

*Read before the Philadelphia County Medical Society, April 26, 1911.

shoulders and the upper part of the back. The lesions were typical in every way. A microscopical examination demonstrated the *Microsporon furfur.*

Case II.—Ida W., seventeen years of age, came to the skin dispensary of the Pennsylvania Hospital on June 27, 1910, with a typical outbreak of some months' duration upon the upper part of the back and the chest. The fungus was found microscopically.

Case III.—Sarah W., sixteen years of age, came to the skin dispensary of the Pennsylvania Hospital on June 27, 1910. The eruption was noted on the chest and the upper portion of the back. The microscope gave a characteristic picture.

The three sisters were all born in Russia although Philadelphia has been their place of residence for some years. They are healthy, but being extremely poor their cleanliness was not such as might have been desired. They occupied the same bed and occasionally used the same towel.

Comparatively few cases of tinea versicolor are seen by the dermatologist; out of 4,060 patients observed by one of us during 1910, in hospital and private practice, there were but eleven cases of this disease. The statistics of the American Dermatological Association for the year 1908 show that out of 36,500 cases of skin diseases reported there were but 211 instances in which tinea versicolor was noted, or 0.605 per cent.

In conclusion we wish to express our thanks to Dr. C. N. Davis for the prvilege of reporting the cases.

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Association of Measles and Scarlatina.—Hutinel states that if measles precede scarlet fever, the prognosis, according to certain clinicians, is not bad; in fact, the succeeding scarlet fever being of a mild type. Other clinicians hold the reverse. The simultaneous appearance of measles and scarlet fever does not make the prognosis grave, but if measles should follow scarlatina the danger is greater; the more so the nearer the measles is to the scarlet fever.—*Paris Médical.*

THE SIGNIFICANCE OF RELAPSES.

By O. L. MULOT, M.D.,

BROOKLYN, N. Y.

The possibility of the occurrence of a relapse in the course of certain diseases must always be duly considered in making the prognosis. Many cases that have been following the usual course of the disease and giving the medical attendant every reason hopefully to look forward to a recovery, by the occurrence of a relapse change the whole picture and terminate fatally. Even if a fatal termination does not always occur, the economy, weakened by the battle with the first assault of the disease, is indeed poorly fitted to fight this second attack, and if the patient does not succumb to this second attack, it gives him a much longer and more precarious convalescence than he otherwise would have had. It is, therefore, quite natural that this occurrence is one of considerable interest and importance. There are many who ask themselves, and quite seriously, too, "Was it my fault? If I had not done this and instead had done that, perhaps this relapse would not have occurred." Not alone is this misunderstanding about the mechanism of relapse prevalent among the rank and file, but we even find it among the leaders in the profession. Whenever we read about some new method of treatment or feeding, in a particular disease, space is devoted to the percentage of relapses and this percentage becomes either a point of attack or an element of defense for or against the particular method. I am far from ready to accord to this percentage of relapses such an importance, and I do not believe that it should be the touchstone of methods. I do not see how relapses can in any way be due to sins of commission or omission, either on the part of the medical attendant, the nurse, or the patient.

In order to substantiate such an unorthodox belief, we must understand what really constitutes a relapse. An exacerbation, or a sudden turn for the worse, in a case that has been running the usual course of the disease, these we must not confound with or call a relapse. Brouardel and Thoinot, in an article on typhoid fever, quote Hutinel's definition of a relapse in that disease: "A relapse in typhoid fever is the reproduction, after the apparent establishment of convalescence, in whole or in part, of the symptoms that characterized the first attack. We cannot speak of a relapse unless the morning and evening temperature, for at least two days, has flucuated near the normal." With particular stress he sounds the warning not to confound recrudescence and subsequent attacks with a relapse. The recrudescences, which are always accompanied with an elevation of temperature and a relative aggregation of all the typhoid symptoms, are very common during the period of defervescence of typhoid fever, but these cannot be considered as relapses in the true sense, for there has as yet been no real beginning of convalescence. Hutinel then takes up in his usual lucid style a discussion of the various temperature curves of relapses: the reappearance of the rose spots, the diarrhea, the tumefaction of the spleen, and the nervous phenomena. While we are here concerned with the question of relapses in general and not particularly with those of typhoid fever, this definition and the relapses of this disease will serve us well as typical for general consideration. With a definition that clearly establishes the limits of our

subject we can now take up the theories commonly held concerning the mechanism.

About this mechanism there are four principal theories. (1) Greisinger's: "A relapse is a new *ex corpore* infection. (2) Hamernyk and Macaglan's: "An infection of the patches and follicles that have escaped the first onslaught and have become infected by material coming from those diseased by the primary infection." (3) Jaccoud's: "The relapse is a peculiar evolution of the disease, expressing itself in two or more stages." (4) Sanarelli's: "The persistence of the germ at some point in the economy, which reestablishes the disease, an autoreinfection." Against all of these, except the last, one can raise valid objection to their correctness. If the first, that of Greisinger, be true, then carelessness to remove this possibility of *ex corpore* reinfection must lie as a terrible indictment. The second theory, that of Hamernyk and Macaglan, is still harder to accept. We know that certain patches do escape the first onslaught of the disease, but why this secondary infection does not occur in every case, since in each case these are exposed to the infecting substance, this theory does not satisfactorily explain. During the period of incubation and subsequently there is a very general infection and a swarming over the whole economy of the bacilli, and why these patches escaped this first attack only to succumb later is not made clear at all. There is nothing alluring in this explanation. The third theory, that of Jaccoud, is simply one of words and tells us nothing and therefore there is nothing to discuss. The fourth theory, that of Sanarelli, is very generally accepted; and yet, while apparently based upon laboratory experiments, these experiments prove nothing, and worse still he misinterprets them. His theory does not tell us why the pathogenic germs, in a certain corner of the body, should escape extinction. This theory does not help us to an understanding of the mechanism of the occurrence. To understand this we need no laboratory experiments.

Before we go further with our discussion we must recall that relapses occur only in the course of diseases of microbic origin and for a better understanding of what will be said later on it is necessary to study the *modus operandi* of cure in these diseases. For that we need not go over the various steps and means which the economy brings into play in fighting infection, for we are interested in a condition which has resulted from the failure of the economy to defeat infection, and, therefore, must study the tactics of the economy in dealing with an enemy fully established within its domain. The first repellants which the economy puts forth against infection, of course, are continued, and whether the elexins are formed in the leucocytes and liberated when these break down, as Metchnikoff claims, or are always present in the blood, helps us little; the main point is the formation by the economy of the particular antitoxin which must determine the end of the infection. Now, if this antitoxin is not sufficient, we simply have an arrest and not an extinction of the process. This is what occurs when we have a relapse; these arrests are familiar clinical occurrences in diphtheria when we do not use a sufficiently large initial dose of antitoxin. Relapses are more frequent in the diseases in which the formation of the antitoxin occurs late, and this explains why this event is so much oftener observed in typhoid fever and the economy is sapped and exhausted by the long continuance of the infection and the fever. How a nidus of germs should escape the antitoxin substance, which is carried by the blood to every part of the body in the same percentage, as Sanarelli imagines in his theory, is hard to understand, does not seem reasonable, and cannot be proven by laboratory experiments.

Viewed in this light, we can now see how very little we can do to assist or impede this formation of antitoxins. The lesson we should draw from this is that particularly during the period of defervescence we must do all we can to husband the strength of the economy and avoid every thing that might in any way divert its efforts. Too often at that time do we relax our orders about visitors. The alimentation should be particularly supporting, but must never tax the system and the patient must be guarded against meddlesome nursing, and for the rest we must trust to the economy to put forth an effort adequate to the entire extinction of the infection, and should it fail in this we can console ourselves that its failure is not due to any sins of omission or commission on our part.

424 Halsey Street.

REPORT OF A CASE OF PERISINUS ABSCESS, SUPPURATIVE LATERAL SINUS THROMBOSIS, JUGULAR LIGATION—RECOVERY.

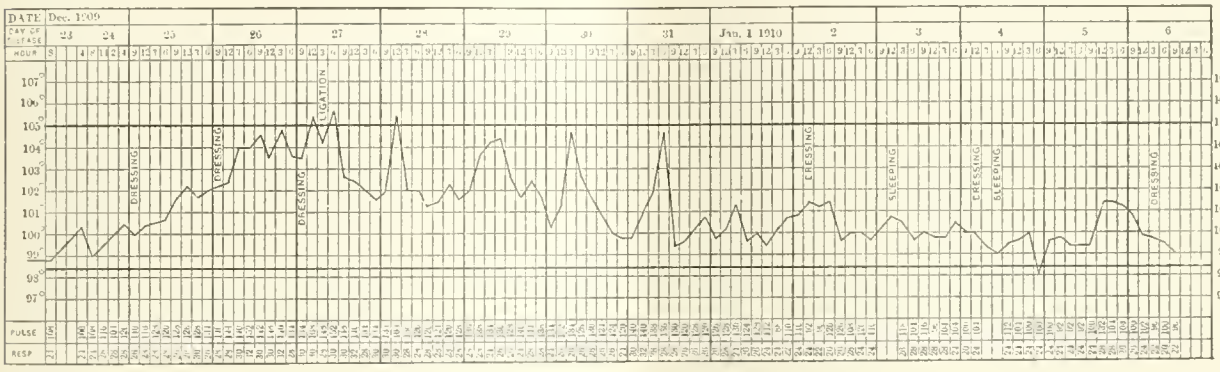
By CORNELIUS DOREMUS VAN WAGENEN, M.D.,

NEW YORK.

Elsie C., age 6 years, school girl, was first seen by the writer some eighteen months before the onset of the series of events herein related. She was then a pale, highly nervous child and decidedly incorrigible. Examination disclosed hypertrophied faucial tonsils and a well developed adenoid. Their early removal was advised, but the patient passed out from observation until December 7, 1909, when the mother, in great anxiety, again sought advice. Sore throat, the history of all previous sicknesses, had been the onset in this instance and was quickly followed by pain in and discharge from both ears. After five days of home treatment, delirium had developed during the previous night. The right ear was the seat of a moderately severe acute purulent inflammation. The left ear presented the classical clinical picture of a large, tense, postauricular and mastoid abscess, while a profuse discharge was issuing from its canal. Choreiform movements of the head and the upper and lower extremities were present; the child looked septic, and was evidently in considerable distress of mind and body. Prompt surgical measures were obvious. She was admitted to the writer's care, in the service of Dr. Arthur B. Duel, at The Manhattan Eye, Ear, and Throat Hospital.

Operation 8 P.M. Ether narcosis. At the onset this case aptly illustrated the caution necessary in making the initial incision, especially in children. Had the writer opened the abscess with a single bold sweep of the knife, as practised by some operators, the blade would have immediately encountered and undoubtedly freely incised the exposed lateral sinus, which, placed rather far forward and in effect subcutaneously, occupied the center of a large perisinus abscess. Mastoidectomy, including a thorough inspection of the zygomatic cells, was rapidly performed. The sinus, when cleaned up, exhibited two opposing pinhead spots, of a very dark and dubious appearance, situated about the

center of the 1½ cm. of exposed sinus wall. While one of the resident staff was removing the outer dressing, on the third postoperative day, a sudden hemorrhage saturated the gauze packing in the mastoid wound; yet, upon its careful and expectant removal, no bleeding point could be found. The writer then took personal charge of subsequent dressings, and, upon a recurrence of the bleeding a few days later, discovered its source and mechanism. Recalling the intractability and highly nervous state of this child, her aversion, amounting to terror, at the suggestion of a dressing may be easily imagined. Even the writer's step, approaching the ward, would evoke a crisis. While inspecting the open wound a complete collapse followed by a sudden and violent distention of the sinus was observed, synchronous with the acts of crying and screaming. It was noted that, during the latter phase of this cycle, one of the two dubious points above mentioned was forced open. A lightly applied tampon promptly controlled the bleeding. Subsequent dressings at increasing intervals were resorted to, but with four recurrent hemorrhages of the same brief character. A strip of sterile vaseline gauze was then applied to the vulnerable wall, in the hope of obviating the tearing of the sinus from the adherent dressings by the aspirating action of the pleural cavity during crying. Unexpectedly this strip became firmly adherent to the wall, while permitting an easy removal of all dressings from about a reinforcing tampon. On December 25, while redressing her, an unusually violent paroxysm of crying suddenly ensued. Not only was the tampon forced from under the restraining finger, but a stream of blood was thrown onto the adjoining bed, while the two, hitherto improved, spots of weakness on the wall were converted into one comparatively large ragged opening. Complete occlusion of the sinus was indicated. It is well to note here that with these exceptions the case had been making a slow and uneventful recovery. The right ear, under myringotomy and appropriate after-treatment, had long since reached resolution. The temperature had remained normal. Partly to relieve cerebral blood-pressure, partly to allay restlessness, the child was at first allowed to sit up in bed, but was soon given the freedom of the ward, where she became surprisingly quiet and manageable. Under the observation of Dr. Philip Van Ingen, attending physician, her general condition had shown improvement, though she was still quite excitable. Just prior to the sinus rupture the temperature curve had shown a slight elevation, but any significance this might have had was lost sight of in the rapid development of the case. Reference to the accompanying temperature chart will be of aid in following the progress of the case toward its crucial moment. During the rise to the 104° F. mark reached the following afternoon there were no other symptoms. The patient slept well and retained all nourishment. With the higher elevation simple nausea appeared, but whether due to interval medication, interdicted but continued, could not be determined. During the second night 105° F. was reached, followed during the next morning by several rapidly occurring remissions and elevations. There were nausea with vomiting, pain in the neck and left side of the head, and the formation of cutaneous metasteses, the forerunners of decubitus. Dr. Duel then saw the case in consultation and advised immediate operation for the isolation of infecting area. Operation. 4 P.M. December 27. Ether narcosis. A short incision was made along the anterior border of the left sterno-cleido-mastoid muscle. An enlarged superficial cervical gland momentarily retarded progress, and then a rapid dissection was carried down onto the junction of the common facial and internal jugular veins. Neither vein presenting anything abnormal, the latter was ligated in two places, just above its facial anastomosis and divided between ligatures. The sinus was then further exposed and explored without return flow. A gauze tampon to the torcular opening and a gauze drain to the bulb completed the operation. Dr. Jonathan Wright later reported streptococci and diplococci in the specimen of sinus wall and contained clot submitted to him for examination. A glance at the temperature chart will concisely illustrate the progress toward convalescence which was indeed uneventful. The child was finally discharged, at parents' request, from hospital treatment but with the hypertrophied tonsils and adenoids still untouched and still a menace.



Again she disappeared from observation until September 14, 1910, when she was brought back to the hospital with an acute suppurative postauricular process under the mastoid scars and requiring relief. Operation 3 P.M. same day. Ether narcosis. The knife opened a pocket of pus, afterward reported as pure streptococcus in origin, bathing alike the dura and a confusing amount of new bone, already somewhat involved in the suppurative process. Recovery followed a thorough evacuation of all diseased tissues. Determined not to again permit her discharge from the hospital with the hypertrophied tonsils and adenoid *in situ*, the writer was finally able to transfer her, under the rules of the institution, to the service of Dr. Walter F. Chappell, where tonsillectomy and adenectomy were performed.

A review of this case would seem to provide more points of interest than it is commonly the mis-

fortune of these patients to exhibit. Naturally the contention for early tonsillectomy and adenectomy receives additional confirmation. The sinus being found so exposed and displaced under pressure so far forward renders the determination of its original position, in respect to the antrum, one of doubtful accuracy, but the absence of a purulent focus in the bulb and the condition of the sinus wall and bony environment would seem to indicate an unusual relation and path of infection. The aspiration of the closed chest need not of itself arrest our attention, but when it so profoundly influences the course of disease, as in this instance, it becomes a matter of grave moment. The means adopted to combat this menace to the weakened sinus wall may seem crude and insufficient, but were the best suggested by the writer's judgment and experience. It is doubtful whether their earlier use would have met with any greater success, as they seem to have exerted only a deterrent effect upon the ultimate and apparently inevitable outcome. By this it is not intended to infer that, in the presence of every damaged sinus wall, palliative treatment should at once be discarded and more radical measures inaugurated. Quite the contrary seems to be the experience and practice of most surgeons when confronted with similar conditions. And so we naturally arrived at a consideration of the crux of the case. Here the attempt has been made to draw the picture, vividly yet impartially, and to permit the formation of individual opinion, but it seems possible to venture the assertion that jugular ligation and not jugular resection was both the operation of election and necessity. Indeed, it would seem possible to go a step further and affirm, with a fair degree of safety, that ligation is *the* operation in this type of case; avoiding as it does the increased shock and manhandling of the adjacent tissues (amounting in some instances to an avulsion), coincident with the resection of this important vessel from clavicle to foramen. Having demonstrated by inspection the condition of the visible avenues of entrance to the systemic circulation, prompt mechanical *isolation* with thorough drainage and a reliance on an aseptic petrosal clot would seem to be the chief allies to nature in the struggle these little patients must make toward ultimate recovery.

616 Madison Avenue.

A CASE OF CHYLANGIOMATA.

By C. P. FARNSWORTH, M.D.,

AND

W. T. LINDSAY, M.D.,

CHAMBERLAIN, S. D.

We wish to report a case of chylangiomata which occurred in a boy seven years of age which was interesting to us, as it baffled all diagnosis before the exploratory incision was made and because afterward we were able to find the report of only a few cases similar to this. There were about four large cysts as described in the report which contained a large amount of chyle and in our opinion would be classed as chylangiomata, or cysts formed by an enormous dilatation of lacteals in the mesentery of the bowel. We were prevented from making a post-mortem examination by the parents, so a complete pathological report could not be obtained.

This child had a prominent abdomen ever since birth, which was attributed to rachitic tendencies. The rachitic symptoms disappeared with the exception of the prominence of the abdomen. At times the child had complained of pain in the abdomen with more or less vomiting, which was attributed by the parents to bilious attacks. These symptoms would abate after a thorough catharsis. During one of these attacks, which was more severe than usual, the parents brought the child to the Chamberlain Sanitarium. Examination showed the presence of fluid in the abdomen with the accumulation of a large amount of gas. Symptoms of intestinal obstruction rapidly developed with the usual vomiting and paroxysmal pain, and though the large bowel was easily emptied by enema, there was no relief of the obstructive symptoms. A laparotomy was advised and the child was operated upon after the usual preparation. A median incision was made below the navel, when quite a quantity of ascitic fluid escaped. Four large cysts were located at the junction of the jejunum with the ilium, causing a complete obstruction of the bowel at that point by torsion. These cysts were located at the mesenteric attachment of the bowel extending down on the mesentery, and so large as to cover the bowel on all sides except the portion distal from the mesenteric attachment. They were intercommunicative as a trocar inserted into the largest evacuated the whole amount.

The bowel was then relieved of its tension by drawing off the contents through a trocar. The wounds in the bowel and also in the cyst were closed. The child lived forty-five hours after the operation. About four hours before he died a thorough normal bowel movement was obtained. The temperature did not rise above 99° or fall below 98°. The heart rapidly became weak with no apparent cause and refused to respond to stimulation, and the boy died in coma. The kidneys acted normally, but there was a slight bronchitis following the operation.

The analysis of the fluid by Dr. H. L. Peterson was as follows: Amount 3,150 c.c.; color, milky, no odor; albumin precipitated at 85° C. Microscopic examination showed many fat cells, a few leucocytes, and a few blood cells. A stained specimen showed fibrin and a few small mononuclear leucocytes. The chemical analysis showed the following: Reaction, slightly alkaline; specific gravity, 1.010; total solids, 23.30 grams; albumin, 1.5 per cent.; alcoholic extracts, 0.2925 gram; chloroform fat extracts, 2.4 per cent; etherial fat extracts, 0.0743 gram; lecethin present in moderate amount; nitrogen, 0.418 grams.

Chamberlain Sanitarium.

STRANGULATION OF UTERINE FIBROID BY TORSION OF THE PEDICLE.

By FORBES R. McCREERY, M.D.,

NEW YORK.

In *The Lancet* for July 15, 1911, there is an article by Charles A. Morton, F.R.C.S., entitled "Torsion of the Pedicle of a Uterine Fibroid," in which the author speaks of the condition as uncommon, occurring only seven times among 3,561 cases collected by Stephen Tracy in 1908. As the condition appears to be unusual, I offer the report of the following case:

Miss D., age 26. Seen October 9, 1909. Two days before she had been suddenly attacked by severe abdominal pain and vomiting. Examination

showed a large, hard, tender mass filling the lower abdomen and extending above the umbilicus. Similar masses were felt in both anterior and posterior fornices. Temperature, 99.6°; pulse, 110. Diagnosis: uterine fibroid, which had undergone inflammatory changes from unknown cause. Operation advised. On October 12 the patient was still vomiting, less pain, temperature, 99.8°.

On October 13 I opened the abdomen through the left rectus. A large, hard, dark mass presented, which was readily delivered out of the abdomen and found to be attached by a slender pedicle to the fundus of the uterus. The pedicle was twisted and the mass appeared to be hemorrhagic from strangulation. The pedicle was ligated. The entire uterus was so studded with smaller fibroids that it was removed together with the tubes and one ovary. The patient stood the operation well, but on the 19th developed a left femoral thrombophlibetis from which she made a satisfactory recovery. When last seen a few months ago she reported herself as well.

Incision through the pedunculated tumor showed it to be a fibroid everywhere congested and mottled with hemorrhagic infarcts. The tubes and ovary were normal.

123 East Fortieth Street.

Symptoms of Graves' Disease as a Sign of Tuberculosis.—F. Bialokur alludes to the frequency of the symptoms of Graves' disease as a sign of pulmonary tuberculosis. In his sanatorium in the course of one year he observed twenty-seven such instances among 330 cases. He believes that Graves' disease is often a sign of both latent and open tuberculosis, and the treatment of the former has a favorable influence upon the latter.—*Zeitschrift für Tuberkulose.*

Disorders of Nutrition.—Marcel Labbé says that nutrition is the sum of the processes of assimilation and disassimilation which take place in the animal in process of its cellular life. Nutrition has a triple end: to maintain fixed the composition of the living tissues and repair their daily waste; to maintain a constant body temperature; to produce the necessary energy for the labor of the individual. In the growing child and the pregnant woman and the nursing mother it must furnish material for tissue growth. In convalescence there is a supplementary need, the tissues must be repaired and the daily destruction replaced. The body is composed of 90 albumin, 210 fats, 590 water, 50 salts, and 60 connective tissue, making up 1,000 parts. This composition indicates the materials that must be introduced in the food to meet the needs of the body. The substances eliminated by the urine are more in relation with the ingesta than with the cellular destruction, and consist of burned materials used by the organism. The cellular waste is small. Albumins alone are not sufficient for the body; some fats and carbohydrates are necessary to maintain the composition of the tissues. Mineral salts are introduced in the fluids, and water by the various drinks. To establish the dose of different foods we estimate their value in calories. The food materials must be transformed and absorbed by the digestive tube; they must pass into the blood and so to all the tissues; and the useless portions must be eliminated. The albumins are absorbed as acid amines, the fats as soaps, and the carbohydrates as glycose. Absorbed by the capillaries the water and salts pass at once into the circulation; the albuminoids are decomposed into urea, uric acid, ammonia, etc.; the carbohydrates are held by the liver. Three great organs play a part in nutrition: the pancreas, small intestine, and liver.—*Le Progrès Médical.*

Electrical Treatment of Fibroma and Fibromyoma of the Uterus.—A. Moutier claims that there are cases of fibroma and fibromyoma of the uterus in which operation is unnecessary because one can get a symptomatic cure and reduction of the tumor by the application of a rhythmically interrupted continuous current. This application is used three times a week for ten or fifteen minutes with a strength of 15 to 60 milliampères. It stops pains and hemorrhages and reduces the size of the growth; it is perfectly harmless and should be tried always before operation. The shock and pain of the application are slight. When there is danger of malignant degeneration, dangerous compression of the viscera or great size, operation becomes necessary. This method has no chemocaustic action and is perfectly harmless; no electrolysis is made and no eschar is produced.—*Gazette de Gynécologie.*

Tuberculosis and the Tonsils.—Francesco Lasagna has made various researches with reference to the penetration of tuberculosis into the lungs through the tonsils. He injected the tonsils in cadavers, made experimental injections into rabbits, and examined the tonsils in 95 cases of death from tuberculosis. From the injections in the cadaver he concludes that the course of the lymphatics from the tonsils and from the upper air passages in general does not reach the thoracic organs, but enters directly into the large lymphatic trunks. From the examinations of tonsils from those who died of tuberculosis it resulted that pulmonary tuberculosis exists frequently with secondary tonsillar affections, that tonsillar tuberculosis is rare with intestinal tuberculosis, and that bacilli of tuberculosis and infections of the tonsils exist, accompanying specific affections of the various organs. From experimental injections in animals he showed that tubercle bacilli injected into the tonsils cause local lesions, diffusions into the lungs and intestines by inhalation and swallowing of bacilli. Tuberculosis of the tonsils is transported by the lymphatics to the glands of the neck but does not pass from these into the thorax. The final conclusions of the author are that the respiratory organs are a method of entrance for the bacilli into the lungs only by the circulation; only very rarely do the bacilli penetrate to the bronchial glands from the cervical glands.—*Archivio per le Scienze Mediche.*

The Internal Secretion of the Ovary.—Sauvé gives the structure and function of the ovary as double; the corpora lutea, organized on the type of the vascular glands, preside over the functions of menstruation and of conception; it causes the increase of the muscular and mucous tissues of the uterus in pregnancy, and for this reason in ectopic pregnancy the development of the uterus goes on for two and a half months. From the corpora lutea by injections in rabbits a serum has been obtained which immunizes against conception. The interstitial portion of the ovary with its cells acts upon all parts of the general system. It acts favorably on the formation of bony tissue, assists in the regulation of the circulation, the mass and hemoglobin content of the blood, increases the secretion of milk, the uninary secretion, the gaseous exchanges in the lungs, and the desire for nutrition, and maintains the equilibrium of the nervous system. Its removal brings about a menopause that is little different from the natural menopause, and that does not destroy the sexual instinct, but, on the contrary, in some cases increases it. There are few severe cases of ovarian insufficiency. To treat this condition there are three means: ovarian therapy, ovarian conservation, and grafting. Ovarian therapy is inadequate; ovarian conservation is at present seldom attempted; ovarian grafting is in its infancy and should be more frequently attempted. It has no bad effects that are important.—*La Riforma Medica.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE TURN OF THE TIDE.

EVERY dog, it is said, has his day, and to-day there are well-defined signs that even the teachers in the technical schools, including those of medicine, are about to have theirs. Those of us who live most of our time in the great American cities, and those others of us who are infected thereby from afar, sometimes never stop to realize that our accustomed gait is the pace that kills and one artificially stimulated beyond the age-long world-wide standard of normal human effort. We need occasional visits to communities where this city life of ours is seen from a greater height and therefore more broadly, for then we should sooner or later feel that the race is not indeed always to the swift nor the battle to the strong. The hustle and bustle and rustle are not always nor everywhere worth while, "for life is deeper than we think who fret along its shallow bars." The frank and well-informed individual realizes among other things that the craze for scientific research, over all obstacles, at any and every cost, financial or personal, is part of this unseemly scramble after many things that we can do almost as well without. This philosophy and this argument are obviously at their weakest when applied to human health and human life, but even then, so complex are the conditions and so uncertain, these considerations must have no little weight with many minds advanced beyond the age of thirty. Still, only one class, one kind of interest, has reason to have any real quarrel with the monomaniac researcher, for after all his efforts are wholly "to the good," save to the teaching interests, practical pedagogy, in the universities and technical schools, the seeker does no harm and often splendid good.

So much has been talked and written in praise of scientific research in the last twenty years and more, so glorious has been its apotheosis, so continually has it been dinned into our ears by certain magazine editors in season and out, vacation and term time, that the only possible ideal worthy the educated man is "original research," that, as so often happens, many who in their hearts know better have actually come to believe this and to preach it and even to live it to the exclusion of all other interests, social, family, and personal. But the advancement and the happiness of this great world of teeming millions of men need other things besides this, and above all else to-day, as in the fourteenth century buried in the dark, it needs widespread and accurate *knowledge*—for, in addition to being power, knowledge is health, long life, and happiness. The origin of this particular secular dogma we need not here attempt to trace, nor pause to describe its rise to influence; there is pride behind it and vanity and a degree of sophistry that strives to "make the worse appear the better reason." Obviously the large development of the graduate schools in the great universities has had something especially to do with it, and the avalanche of doctorates in philosophy, each crying forth for more worlds to conquer—in order to the fixation of a "job." This particular phase of the matter obviously is of German origin, tonic certainly, but, as the old pun runs, too tonic for a life-long rule for the multitude.

But, as we set out by saying, now the pendulum seems to be swinging, and ever faster, the other way, back to a recognition of the obligation of teaching institutions to *teach*, and that as well as they can. Trustees and college presidents and medical deans are gradually becoming better and better aware of something they really knew all the while, namely, that the advancement of learning depends in part on other factors than original research carried on by specialists as their life pursuit. The governors of the medical schools are beginning to realize, in fine, that the public benefit may be promoted as much by *extensive* knowledge and reason as by *intensive* learning—that to instruct ably many potentially productive minds helps in the evolution of useful science at least as much as to train and support a few whose actual "contributions" are always problematic and uncertain, however continuous.

How easy it would be were it not so ungracious a task to point out striking cases of years of research by men who draw large and life-long salaries, practically wasted if we look far enough ahead—and sometimes not so far after all! We often hear it explained in extenuation of this waste of time and talent that no man can say what apparently insignificant research may not in the future prove the indispensable link in an important chain, and allowance must be made always for this possibility. But, in opposition, no man can tell us either what raw, strong-minded youth reared on the wholesome back-farm along the Nova Scotia coast, stimulated by the best efforts of some talented teacher in some medical school, may not become another Pasteur and put them all to shame! The factor of "chance" in human nature's genius and scientific productiveness has been too little considered often times by the city-born proud wielders of scientific reputation. The typical seeker after new truth seldom reaches these new personalities to spur them on, yet these in the long run are the force and material by which the world gets on. They need first of all to be well taught, and in being well taught are included both "leading out" (education) and the highest sort of stimulation (inspiration). These can come only from the best men, men not only with learning, deep and broad, but with personality, and, moreover, with a consciousness of the supremacy of their privilege as teachers.

Meanwhile the medical schools, like the others of the technical class, suffer very generally from a lack of competent instructors. The chief aim in many colleges seems to be to employ men (who are meanwhile the only teachers) who are eminent for what they have discovered, often early in life for once, and, as all research men know so well, often by merest chance that favored them above their fellows. In the pursuit of original research the famous "man behind the gun" is not by any means the whole thing concerned. Research, of course, is commendable and constitutes one of the noblest of vocations or avocations, but it does seem that it should be done on a foundation entirely independent, financially at least, of the routine instruction in the medical schools. Its proper place, seemingly, is in institutes of research which to any desirable number might be supported almost by the interest on the interest of many of the great fortunes of this land. There is an ever-more urgent demand for skilled medical instruction that will raise the learning and the enthusiasm of the medical student into its proper elevated place. The aim of the medical schools, in short, should be to employ teachers as skilled pedagogically as can be found. Seldom indeed are such men newspaper heroes of discovery, yet no profession is nobler or more useful than theirs.

STATISTICS OF TUBERCULOSIS.

While in no way desiring to belittle the efforts of the enthusiasts in their laudable endeavors to check the ravages due to tuberculosis, it is difficult to resist the conclusion that the marked decrease in the death rate from this disease is probably to be attributed more to natural agencies than to human efforts. In the monthly bulletin of the New York State Board of Health for March of the present year it is stated that the deaths from consumption have fallen from 205 per 100,000 in 1890 to 158 per 100,000 in 1910. These figures apply to the whole State. It would be pertinent to inquire what was the rate of decrease before this time. In an article published in the *Journal of the American Medical Association,* October 20, 1900, Guy Hinsdale graphically showed that in the city of Philadelphia, from 1870 to 1897, there was a constant, regular decrease in the yearly death rate from tuberculosis. In the period from 1885 to 1900 it fell from 14 per cent. of all deaths to 10 per cent., but in the year 1899 there was an increase over the preceding year. It would seem only fair to infer that in a disease whose average natural course extends over a period of several years any sudden decrease in the death rate extending over a period of two or three years should not be hastily ascribed to any special prophylactic measures any more than should a sudden increase to the lack of them.

The majority of the statistical studies of this subject have been made by physicians who, as a rule, have received no special training in the interpretation of figures. The time is now ripe for a study of the data at hand by men who are trained statisticians and who have no interest or prejudices one way or the other in regard to the disease itself. So far, the most important work in this line is probably that of Karl Pearson in England, in 1907. His study was based upon the absolutely complete family records of 384 stocks or families in which tuberculosis had occurred. He reaches the conclusion that the tuberculous diathesis is certainly inherited, and that the intensity of its inheritance is sensibly the same as that of any other physical character as yet investigated by man. Although infection plays a necessary part he determined that it was secondary to that of inheritance in the families investigated. He considers it doubtful if the risk of infection can be escaped except by the absence of the diathesis; that is, by the inheritance of what amounts to the counter-disposition. The average age of onset was found to be 29 years in males and 25 years in females. The children of tuberculous family history who became infected suffered this infection at an earlier average age than those who became infected in non-tuberculous families. This earlier age infection, Pearson thinks, cannot be properly attributed to infection from the other members of the family, because the bulk of the parents must have passed the danger zone before the children had reached the average age of onset; and, moreover, in the laboring class, from which these statistics were compiled, many of the children must have already left the immediate home environment. The earlier age of onset in the children is probably associated with the same tendency to earlier inheritance noted in cases of cancer and defective vision, where the question of infection hardly arises. He further concludes that, strange as it may seem from the statistical standpoint, the marriage of the actually tuberculous is less productive of evil than the marriage of those of the tuberculous stock, for the actually tuberculous have a shorter period of time in which to propagate, consequently the children will be fewer in number, and this, taken in conjunction with the fact that these children will have a tendency to become infected at an average earlier age than the usual average age of onset, tends to the self-destruction of the actually infected stock.

The statement of Professor Willcox, the consulting statistician of the New York State Health Department (Report on Vital Statistics, August, 1910), that, "no influence of the special campaign against tuberculosis can be traced in the [mortality] figures," would seem to be entirely consistent with the general conclusions of Pearson. It is in accord also with the conclusion of Maher of New Haven (Medical Record, August 1, 1908) that "there has been a very marked decline in the tuberculosis death rate for the past fifty years, and this decline was as steep, but not as regular, before the discovery of the tubercle bacillus as it has been since."

SURGICAL TREATMENT OF NEPHRITIS.

When early in 1899 the late George M. Edebohls announced his observation of striking improvement following decapsulation of the kidney in cases of chronic nephritis the first tendency was to credit surgery with another great victory over the medical treatment of this disease. Since that time hundreds of patients have undergone the operation in ques-

tion, and the early enthusiasm has given place to an almost equally emphatic disapproval of the procedure in most medical circles. That this, however, is but the usual swing of the pendulum and that the operation has its well-defined indications is the theme of an interesting paper by Morris Booth Miller in the September number of the *American Journal of the Medical Sciences*. Miller shows conclusively that Edebohls' idea of the salutary changes produced by the decapsulation of the kidney cannot be accepted. New blood supply arising from the perinephritic areas and rejuvenating the diseased kidneys has only a theoretical existence. Reis examined six hundred denuded kidneys to find in one only evidence of a new blood supply, while the well known proneness of perinephritic tissues to suppuration depends upon their poor provision with arteries, which can hardly be expected to feed the kidneys in addition.

Yet there is no question that in many instances striking relief of symptoms that occasionally even threatened life were obtained by Edebohls and other surgeons. Still more to the point has been some of the experimental evidence offered. Rovighi found that in cases of cantharides-nephritis in rabbits all recovered after operation, while 50 per cent. of the controls died; in diphtheria-toxin nephritis 50 per cent. were saved by decapsulation, while 100 per cent. of the control animals died.

Long before Edebohls began to advocate boldly his operation, Harrison of London noted the amelioration of nephritic symptoms in patients upon whom nephrotomy was done for supposed calculus or other reasons. He thought that the changes in tension and the diminution of congestion of the kidneys were to be credited with the salutary effects, and Miller is disposed to accept this view. Decapsulation accomplishes all that the time-honored cupping and blood-letting, both admittedly helpful, can accomplish, and much more thoroughly and directly, as it acts at the very focal point of the disease. This is why the best results have been obtained in cases accompanied by hypertension of acute onset and those showing much edema within the kidney itself.

Miller concludes that the operation should be given a well-defined place in the treatment of nephritis. It may be hopefully done in acute forms of the disease, young patients being the best subjects. There exist sound reasons for operating for anuria or uremia occurring in chronic nephritis; but in any case the operation should be done only after medical treatment has failed. As a last desperate chance, however, it may be done in any form of nephritis.

The Pasteur Treatment of Rabies.

In the report of Jules Viala of the Pasteur Institute in Paris for 1910 (Annales de l'Institut Pasteur. Tome xxv, No. 7, p. 558) is found a forceful reply to that class of our populace which decries the Pasteur treatment as a danger, and productive of more cases of rabies than it cures. During the year 1910, 401 persons received this treatment without a single death resulting from any cause. This remarkable record is probably due in part to the greater popular appreciation of the value of the treatment in Europe so that the Institute is not called upon to treat patients in whom the disease is so far advanced that a fatal issue is certain. The report is, however, no less an impressive demonstration of the care with which the treatment is administered and its harmlessnes to the healthy person. A record of 401 successive series of inoculations without accident is strong witness to the ability of those using the method. During the past ten years 7,380 persons have been treated of whom only 21 have died from all causes, a mortality of 0.28 per cent. The report is altogether a most convincing argument except to those "who having eyes see not and having ears do not hear."

News of the Week.

Low Infant Death Rate.—For the week ending September 23 there were 324 deaths of infants under one year of age in New York, as compared with 343 for the same week in 1910. The total number of infant deaths so far this year is 11,442, as compared with 12,603 for the same period in 1910, a decrease of 1,161.

Pure Food Fight.—President Seth Low of the National Civic Federation has issued a call for two meetings of the Pure Food and Drug Department of the federation. Both meetings will be held in the rooms of the New York Board of Trade on October 2. At these meetings the department will determine upon a line of action after taking up the following questions: "What is the actual situation in this country with reference to the enforcement of the Federal and State pure food and drug laws?" and "What legislation and what changes in administration will more effectually safeguard the people against alleged food and drug adulterators, misbranders, and short weighers?" Among the announced speakers are Dr. Harvey W. Wiley, Dr. Thomas Darlington, and Dr. William C. Woodward, Secretary of the American Public Health Association.

Ban on the Public Drinking Cup.—Police Commissioner Waldo of New York City recently made public the Police Department circular which deals with the law prohibiting public drinking cups after October 1, 1911. The paper reads: The use of a common drinking cup for drinking water in any public place, or in any public institution, hotel, theater, factory, public hall, or public school, or in any railroad station or ferry house in the City of New York, or the furnishing of such a common drinking cup for use in any of such places, is hereby prohibited."

New University Department.—Princeton University opened on September 21 with a newly created department, that of hygiene and physical education, under the charge of Dr. Joseph E. Raycroft, formerly of Chicago.

New Cancer Hospital.—Plans for the new building for St. Rose's Free Home for Incurable Cancer, to be located opposite Corlears Hook Park, New York, call for a five-story building of brick with terra cotta trimmings. A chapel will occupy the top floors, and there will be a large reception ward and a number of private rooms, sun parlors, etc. The cost is estimated at $100,000.

Columbia University and the Presbyterian Hospital.—An article in a recent issue of the *New York Times*, evidently intended to convey the impression that some hitch had occurred in the

working out of the alliance between the College of Physicians and Surgeons, Columbia University, and the Presbyterian Hospital, was promptly answered by a letter from President Sturges and Vice-President De Forest of the hospital, who stated emphatically that there was no lack of accord between the officials of the two institutions, that the hospital managers were in perfect agreement as to the alliance, and that the erection of new buildings on the site selected by the late Mr. Kennedey at Avenue A and Sixty-seventh street was the ultimate intention. The scope of the hospital work has been broadened by the alliance, and the requirements for the new buildings have increased so that great deliberation in the preparation of the plans is necessary, and these are now being made the subject of careful study by the members of the building committee.

A Serum Farm in Ohio.—Plans for the immense Ohio State serum farm, the first of its kind in the United States, have recently been made public. The farm, which consists of ninety acres of land in Licking County, Ohio, was purchased by the State two years ago, and on the property it is now proposed to erect ten buildings, including laboratories, etc., in which the work of the institution will be carried on. The Legislature has already made an appropriation of $60,000 for the purpose. The progress and work of this innovation in medical work will be watched with interest throughout the country.

Gifts to Charities.—The will of the late John W. Gates, who died in Paris recently, contained only one public bequest, that of $100,000 to the Mary G. Gates Hospital at Port Arthur, Texas.

An Aged Indian.—Mrs. Sala Plummer, the oldest member of the Seneca Indian tribe, died at her home near Jimmerstown, N. Y., on September 18, at the age of 108 years.

Shaker Held for Murder.—After an investigation of the circumstances surrounding the death of a member of a Shaker colony in Florida, who was chloroformed by her coreligionists, the coroner's jury returned a verdict charging the head of the colony with murder. The autopsy showed that the woman's lungs were only slightly affected and that she was otherwise in good physical condition. The members of the colony had announced that the chloroform was administered at her own pleading to end her sufferings from tuberculosis.

University Isolation Hospital.—The trustees of Leland Stanford University, California, have finally selected a site for an isolation hospital for the university, the site consisting of two and a half acres of land near Felt Lake and about two miles from the university buildings.

Typhoid Epidemic.—An outbreak of typhoid fever at Torrington, Conn., is causing some concern. Up to September 23 two cases had been reported with five deaths.

Vital Statistics for Connecticut.—During the month of August there were 1,421 deaths in the State, 127 less than the average for August for the five years preceding. The death rate for the large towns was 14.3, for the small towns, 14.8, and for the whole State 14.4. The deaths from infectious diseases numbered 170, or 11.9 per cent. of the total mortality.

Cholera in Italy.—The official reports of the cholera situation in Italy indicate a slight decrease in the number of cases. From September 10 to 17, inclusive, there were 1,007 cases and 320 deaths. For the first time the disease has been reported in Sardinia, fifty-four cases and nineteen cases having occurred.

Hartford Baby Hospital.—The summer hospital for babies in Hartford, Conn., closed its fifth and most successful season on September 15.

War on Hookworm.—The California State Board of Health has requested the co-operation of the Public Health and Marine-Hospital Service in an investigation into the prevalence of hookworm infection throughout the State. Recent work of the immigration service has shown that upwards of 25 per cent. of immigrants entering the State are infected, and it has also developed that many of the State's deep gold miners are suffering from the disease. Dr. Charles W. Stiles of the Public Health Service is now engaged in investigating conditions in Texas.

Washington County (Vt.) Medical Society.—At the annual meeting held in Barre on September 12, the following officers were elected for the ensuing year: *President,* Dr. C. E. Chandler of Montpelier; *Vice-President,* Dr. C. J. Rumrill of Randolph; *Secretary,* Dr. E. A. Colton; *Treasurer,* Dr. L. A. Russlow of Randolph.

Obituary Notes.—Dr. George R. Vernon died at Clifton Heights, Pa., on September 16 at the age of 64 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1875.

Dr. William Flynn of Marion, Ind., a graduate of the Louisville Medical College, Kentucky, and a member of the American Medical Association and of the Indiana State and Grant County Medical Societies, died at his home of cerebral hemorrhage, on September 2, aged 61 years.

Dr. Eugene F. Rink of Burlington, N. J., a graduate of the Hahnemann Medical College of Philadelphia in 1877, died at his home after a long illness, on September 7, aged 60 years.

Dr. Granville W. Tinkham of Weymouth, Mass., a graduate of the Harvard University Medical School in 1871, and a member of the Massachusetts Medical Society and of the South Norfolk Medical Society, of which he was an ex-president, died in the Boothby Hospital, Boston, on September 10, aged 63 years.

Dr. Jacob Weber of Philadelphia died at his summer home at Cape May, N. J., on August 29, at the age of 64 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1858.

Dr. William F. Roth died at Manheim, Pa., on September 4, at the age of 40 years. He was graduated from Hahnemann Medical College of Philadelphia in the class of 1894.

Dr. Robert N. C. Tate of Gonzales, Tex., a graduate of the Medical Department of New York University in 1849, and a member of the Texas State and Gonzales County Medical Societies, died at his home after a long illness, on September 4, aged 84 years.

Dr. Thomas R. Ward of Omaha, Neb., a graduate of the State University of Iowa College of Medicine in 1873, and of the Bellevue Hospital Medical College, New York, in 1882, and surgeon to the Swedish Hospital and Training School for Nurses, Omaha, died at his home on September 9.

Dr. Henry Herbert Herbst of Allentown, Pa., died at Philadelphia on September 20 at the age of 53 years. He was graduated from the medical department of the University of Pennsylvania in the

class of 1881. For a year after graduation Dr. Herbst was examining surgeon for the Pennsylvania Railroad at Wilmington, Del. Subsequently he returned to Allentown to engage in general practice. For two years he was Coroner's Physician and City Physician for the Poor Directors, and he was President of the local Board of Health from 1890 to 1895. From 1888 to 1897 he served on the United States Board of Pension Examiners. He was president of the medical section and first vice-president of the Medical Society of the State of Pennsylvania in 1909. In 1908 he was elected Mayor of Allentown by City Council. He was at one time one of the physicians to the Allentown Hospital, and also professor of physical education in Muhlenberg College for fourteen years.

Dr. Walter Scott Holliday of Hamilton, Ala., died at his home on September 8, aged 69 years.

Dr. George D. Towne of Manchester, N. H., a graduate of Dartmouth College in 1875, and of the Medical Department of New York University in 1878, and a member of the New Hampshire State Medical Society, and of the Surgical Club of New Hampshire, died at his summer home in Dunbarton on September 11, aged 57 years.

Dr. Luther M. Zimmerman of Hagerstown, Md., a graduate of the University of Maryland School of Medicine in 1864, died at his home on September 13, aged 71 years.

Dr. Archibald A. Strange of Burkesville, Ky., a graduate of the University of Louisville Medical Department in 1889 and a member of the Kentucky State and Cumberland County Medical Societies, died at his home on September 11, aged 70 years.

Dr. William Lorenzo Goodale of Montpelier, Vt., a graduate of the Medical Department of the University of Vermont in 1888, died in the Heaton Hospital of cerebral embolism on September 17, aged 44 years.

The Thirteenth Annual Conference of the American Hospital Association.

The annual conference of the American Hospital Association was held in Murray Hill Hotel, New York, on September 19, 20, 21, and 22. The opening address was given by the president, Dr. Warren L. Babcock, superintendent of the Grace Hospital, Detroit, Mich. After alluding to the progress made by the association since its inception as, for example, in the production of hospital literature of its own, in the development of hospital training schools, in the advance in hospital construction, in which advance the association had played its part, the speaker went on to sketch the rôle of the association in the future. He pointed out that in specialism and broad generalization the immediate cure of illness is but one of the functions of hospitals, and the progress of the work of the association in the future will bear out the statement that the campaign for the prevention of disease, the teaching of the ordinary rules of hygiene to the public, the instruction of mothers in the care of infants, and the wiping out of infectious and contagious diseases will be part of the work of superintendents and others connected with hospitals. The hospital engaging to teach medicine in connection with a medical school should be an adjunct to a university. The need for the thorough training of hospital superintendents was emphasized, and finally the necessity for efforts by the association toward the standardization of work in all departments was insisted upon.

The secretary of the association, Dr. I. N. G. Brown of Toronto, read a paper giving his impression of a trip to Europe, during which he occupied his time in visiting hospitals in Great Britain, Germany, France, and Austria. He pointed out that Great Britain was the only country in Europe in which the hospitals with few exceptions are supported by charity, while on the Continent hospitals depend on the public purse for their maintenance. In America, excepting in parts of Canada and in Pennsylvania, few hospitals receive State aid. Dr. Brown was of the opinion that the European plan was better. In the large teaching hospitals of Germany not only does the State supply a full equipment for the care of the sick, but also for the training of medical students. The result is seen in commodious and well-equipped laboratories for chemical, physical, and bacteriological investigations. Moreover, there is also a full staff of assistants at the command of the investigator, the teacher, and the professor. With respect to hospital administration, the speaker was of the opinion that a medical man, *ceteris paribus*, is the best kind of director of a large hospital, but, if he is appointed to fill such a position he should be relieved of work which belongs to the medical staff. Furthermore, Dr. Brown believed that a hospital, large or small, should have but one head, and that the work of that head in a large hospital should be administrative only. Medical organization differs considerably in the United States and Great Britain from that in vogue in the hospitals of Europe. In European hospitals members of the visiting staff are servants of the State, they are paid for their services, and frequently move from one hospital and teaching center to another. As to hospital construction Dr. Brown believed that Europe is ahead of this country and of Great Britain, and he was particularly struck with the bath-house and disinfection building features of all large hospitals in Europe. With regard to ventilation the speaker observed that in European as in American hospitals the modes of ventilation were numerous, but he held the view that the more elaborate systems do not give so satisfactory results as the simpler, a view shared by perhaps the great majority of authorities on the subject. The next paper read was upon the same subject, the author being Mr. Edward F. Stevens of Boston, Mass., a traveling companion of Dr. Brown on his European tour. Mr. Stevens, who is an architect, dealt with details and equipment of the hospital, comparing the hospitals on the other side of the Atlantic with those on this continent from this point of view. The interest in this paper was greatly enhanced by the fact that the points were exemplified by illustrations on the screen from photographs taken by Mr. Stevens himself.

Mr. J. M. Cosgrove, manager of the Winnipeg General Hospital, read a paper in which he stated that until antityphoid vaccine came into use it had been almost impossible to prevent the spread of typhoid fever among nurses. In the discussion which followed, Dr. H. W. Austin of the United States Public Health and Marine-Hospital Service said the vaccine treatment for the prevention of typhoid fever was being more and more used in the marine hospitals, and with success. He thought it the best preventive of typhoid fever as yet introduced. Dr. Morrell of Baltimore related how effective its employment had been in the army camps at San Antonio, and stated that among 1,200 men who

submitted to the treatment but one had the disease, and in his case the attack was mild.

Mr. Robert W. Hebberd, secretary of the New York State Board of Charities, made somewhat severe reflections on the lack of hospital facilities in New York City. He declared that the city was a generation behind many other cities in public hospital and ambulance service. A paper was read on hospital social service by Miss Mary E. Wadley of New York, and in the after-discussion Miss Louise C. Brent, superintendent of the Hospital for Sick Children, Toronto, made some apt remarks on this question of rapidly increasing interest.

With regard to hospital organization in relation to education and research, Mr. Abraham Flexner had much to say. He said twenty small medical schools had closed their doors during the past year, a result due, he asserted, to the campaign undertaken against the hospitals that permitted them to flourish. He said that the main supporters of these medical schools are the hospitals in their respective towns, which permit the students to glean what knowledge they may from the institutions. According to Flexner, in many instances this assistance is given grudgingly. He thought if it were withdrawn altogether the result would be for the betterment of the profession. "Before the hospital opens its wards to educational uses," said the speaker, "it not only may but must satisfy itself that the medical school applying for its privileges has in the first place enrolled a competent student body, that it has provided adequate facilities for instruction in the underlying medical sciences, both in the way of laboratories and teaching staff, and that it is prepared to take upon itself whatsoever financial obligations are incurred by introducing teaching and research into hospital wards." Flexner then named several medical schools which he thought ought to be closed. At the end of the discussion of this paper Miss Margaret Englehart, president of the Association of the Frances E. Willard Hospital of Chicago, disputed the accuracy of Flexner's strictures on certain medical schools. She asserted that at least one medical school named by him to her knowledge produces as fine a student body as can be desired, and that any graduate of that school would be welcome on the staff of the hospital represented by her.

At the closing session of the meeting the Rev. A. S. Kavanagh, superintendent of the Brooklyn Methodist Episcopal Hospital, embraced the opportunity, when reading a report of the committee on hospital efficiency, hospital finances, and economics of administration, to praise the work of Dr. Doty, Health Officer of the Port of New York. Mr. Kavanagh said: "The finest achievement of the year has been the splendid and successful fight of Dr. Doty and his assistants against cholera, which threatened the city a few months ago. Every citizen who read this story felt a sense of pride, and for the humiliating investigation to which the doctor was subjected we can only feel a sense of shame. Our investigations for the public good must not degenerate into mere political attacks." Following the meeting, many of the delegates paid a visit to the Quarantine Station and saw for themselves the excellent conditions described by Mr. Kavanagh.

The officers elected for the ensuing year were as follows: *President*, Dr. Henry M. Hurd of the Johns Hopkins Hospital, Baltimore; *Vice-Presidents*, Dr. A. J. Ranney of the Lakeside Hospital, Cleveland, Dr. J. L. Judson of the Harper Hospital, Detroit, and Miss Nancy P. Ellicott of the Rockefeller Hospital, New York; *Secretary*, Dr. J. N. E. Brown of Toronto; *Treasurer*, Dr. Asa Bacon of the Presbyterian Hospital, Chicago.

Obituary.

JAMES C. HEPBURN, M.D., LL.D.,

EAST ORANGE, N. J.

Dr. James C. Hepburn of East Orange, N. J., the oldest alumnus of Princeton University, and a pioneer medical missionary in China and Japan, died at his home on September 21, aged ninety-six years. Dr. Hepburn was graduated from Princeton in 1832, and from the Medical Department of the University of Pennsylvania in 1836. Four years later he went as a medical missionary to China, where he remained for six years. After an interval of some years in New York Dr. Hepburn again took up missionary work, settling in Yokohama, where he remained for thirty-three years, retiring from active life in 1892. Dr. Hepburn compiled the first English dictionary of the Japanese language, which was published in 1867, and from 1872 until 1888 worked at a translation of the Bible in Japanese. In 1891 he published a Japanese dictionary of the Bible. Lafayette College in 1872 gave him the degree of Doctor of Laws, and in 1905 he received the same honor from his alma mater. In 1905, also, on the occasion of his ninetieth birthday, the Emperor of Japan conferred on him the decoration of the Order of the Rising Sun, in recognition of the services he had rendered to that country.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

SCIENCE CONGRESS—EXAMINATION SYSTEM—GREAT PROBLEMS OF BIOLOGY—RAINFALL—PLAGUE REPORT—INSECT CARRIERS—LEPROSY—HEAT WAVE—INFANTILE MORTALITY—OBITUARY.

London, September 8, 1911.

The Science Congress concluded its deliberations on Wednesday. As far as numbers go the meeting has been the smallest for thirty years, the total being 1,241. Yet one would have supposed Portsmouth would have been an attractive place, and the good people there were profuse in their hospitality and provision of entertainments. Some reporters indulged in lugubrious talk about the decay of the association, but, apart from numbers, the meeting was successful. Sir William Ramsay, who as president ought to know, speaking at the dinner given by the mayor, expressed that opinion emphatically, and added: "I don't think there has been any decay at all." Certainly there were interesting papers and discussions, both on the scientific and popular side, for the association embraces both, and in that holds a special position. Those who have forgotten this should be reminded that its name implies this in the words "for the advancement of science," and in the proposal for its formation in 1830 by Sir D. Brewster it was to be "an association of our nobility, gentry, clergy, and philosophers;" in fact it was to consist, not of pure scientists alone, but of all sufficiently interested in any branch of science to take part in it. This position has been maintained for

eighty-one years, during which the most eminent exponents of pure science have taken part in the proceedings. Perhaps, this year, what some have called the social side has been more represented than the technical, but there has been a good supply of papers in both. Those of strictly medical interest were not numerous, but questions cropped up in different sections which deserve brief mention.

Sir William Ramsay, the president, looked in at the Section of Educational Science during a discussion on the Plan of Examinations and made a short speech, in which he startled many of the audience and sent a thrill through the profession by saying he did not think it should be necessary for a man to pass an examination before practising medicine, if a doctor under and with whom he had worked certified that he was properly qualified so to practise. There will be plenty of objections put forth to this view, and, admitting with the president that examinations are a poor test of mental power and that they have taken too great a place in our general scheme of education, the public will hardly be willing to dispense with some security beyond an individual's certificate, and our numerous licensing bodies will agree on the necessity of their existence.

Prof. D'Arcy W. Thompson gave an address on the "Greater Problems of Biology," in which he said that to-day biologists are in no sense in an exultant mood. What above all they would like to explain baffles explanation, and the living organism is a fundamental fact. Now, as in the beginning, wonderment and admiration are the portion of the biologist as of all who contemplate the heavens and the earth, the sea and all that in them is. If wonderment, as Aristotle said, springs from seven causes, it does not cease when proximate causes are discovered. Beyond lies the final cause, the reason why in which are hidden the problems of organic harmony and autonomy, the mysteries of apparent purpose and design. Here the plain rationalism that guided us through physical facts and causes begins to disappoint us, and intuition, which is of close kin to faith, begins to make herself heard.

Dr. R. H. Mill, director of our Rainfall organization, gave a lecture intended for the operative class, but which I am told was equally attended by scientists and was very heartily appreciated by all. He described the organization he controls in popular terms and indulged in some humorous remarks, and ventured to forecast that we may be entering on a series of wet seasons after this unusually dry one.

The Local Government Board has issued the report of its investigation respecting the cases of supposed plague. The late Dr. Bulstrode took the leading part in this and was aided by the Lister Institute staff. The report is furnished with a map over which alleged human cases occurred from 1906-7 to 1910. The bodies of rats dead of plague were found in the locality, and it suggested that the epizootic had been present from the earlier date. Nevertheless only three, or at most four, cases of primary plague in the human subject can be admitted, all others being clearly secondary. This is attributed to the fact that only one variety of the fleas which infest rats seems inclined to bite man. And comparatively very few of this flea were found on the bodies of the dead rats examined. In the time of the great plague of London the black rat was abundant in this country, but some years later the brown rat arrived and eventually exterminated the native. The cases which had to be investigated on the eastern coast and which occurred in the winter 1909-10, were in number eight, and five of them were fatal. Two post-mortems were made and a suspicion that they might have been due to some form of poisoning caused great excitement in the locality. Dr. Bulstrode carried out a most careful and thorough investigation, and concluded that the cases were really plague. No other view explains all the facts collected as this does, but it seems uncertain whether the disease was bubonic or septicemic plague. Drs. Martin and Rowland of the Lister Institute contribute to the report an account of rat fleas, which will interest everyone practising in countries where plague is met with. Drs. Petrie and Macalister, also of the Institute, report on the rats which were collected and the pathological and bacteriological conditions observed in some of them. Changes in the liver and other glands were met with and in three instances a bacillus resembling *B. pestis,* but on later examination it was decided that this was of a pseudotuberculous type.

Fleas, like mosquitos and probably all blood-sucking insects, must be regarded possible carriers of disease. Dr. Sanders of Bobben Island Leper Asylum has contributed to the *South African Medical Record* of July 8 an account of experiments he has been making to determine whether leprosy may be propagated by these insects. He applied them, after confining them for a time without food, to the skin of patients. His most important result was with the bedbug, in which he found the leprosy bacillus in about 30 per cent. after such feeding, but none in controls. Not only in the stomach and intestines of the insects, but in much greater numbers in their tissues, were the bacilli found, and continued to be for sixteen days. He concludes that this species of insect is probably an important agent in spreading leprosy.

During the recent hot weather there was a sudden rise in the infantile mortality in London. At the end of July the deaths from diarrhea and enteritis under two years of age rose from 173 to 304, and toward the end of August, 635 per 1,000. Last week the number was 537. Many are blaming the heat wave, but that cannot be the direct cause, for the heat had been with us a month before the rise began. Indirectly it may be reckoned as a cause, and there is some evidence that the house fly is a carrier of infection. A great outcry is being raised in some districts where it is said swarms of flies have appeared earlier than usual. To restrain its multiplication thorough scavenging is necessary, and in some parts this has been effectually done. When the habits of this insect are considered, it is obvious that it may carry into the houses particles of the filth in which it has been exploring and laying its eggs. With filth adhering to its legs and body, it enters and explores and if not driven away walks over food, as well as everything else. We may drive it out by various fumes, but it is better to arrest the development by scavenging. It is to be hoped the present outcry will promote this sanitary measure.

The heat wave of which so much has been made has certainly been responsible for much, but it has given us the most delightful summer for many a year. Drought is admittedly a feature, but it has not been the driest season on record. In the past three months London received 3½ inches of rain, just about half our average, but 1 inch more than in 1808. But the splendid brilliancy of the summer is shown more by the records of bright sunshine. Greenwich automatic instruments registered ninety-two consecutive days of sunshine up to August 21.

July was the sunniest month with over ten hours' sunshine every day at nearly all the stations. For a spell of thirteen weeks we had two or three hours a day above the average. At Greenwich it aggregated 819 hours, or 176 above normal; at Westminster, with a total of 774, the gain was 255, equal to 50 per cent. And August does not close the record, for September is doing its best to rival it in spite of slight misty mornings, but temperatures in the eighties. Yesterday it reached 89° F., with eleven hours' bright sunshine.

Mr. Horace Nutt, M.R.C.S., 1861, said to be the last "King's" Coroner, died on the 6th inst., at 72. He had been Coroner for Sherborne and Yelminster from 1876. He had the title of King's Coroner, which carried special powers in his district, to which he was further Medical Officer of Health for many years.

Surgeon-Major A. A. Mantell, formerly of the Indian service, died on August 22 at Bath, aged 80.

Dr. Leonard Cune, formerly surgeon to the Peterborough Infirmary, has died at Eastbourne at the age of 63. He took M.B., London, 1872, and the next year M.D. and M.R.C.S.

THE GENESIS OF UTERINE CANCER.

To the Editor of the Medical Record:

Sir:—In reference to the uterine cancer research, concerning which you recently published two articles, "Uterine Cancer and Its Early Diagnosis. Original Research from Subjective Symptoms" (May 20, 1911), and "Cancer, a Suggestion as to Its Cause, and Its Relation to Displacements, Functional Disorders, and the Nervous System" (September 9, 1911), may I ask the favor that you notify your readers that interrogatory blanks are now completed for the furtherance of the research. Applications for and the prompt filling and return of these question sheets are earnestly solicited, and will be greatly appreciated.

E. Atlee, M.D.

4105 Spruce St., Philadelphia.

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 14, 1911.

Thoracic Surgery. J. G. Mumford.
The Treatment of Empyema. F. B. Lund.
Bronchiectasis and Abscess of the Lung. S. Robinson.
Chest Traumata. F. T. Murphy.
The Use of the Esophagoscope in Esophageal Surgery. H. P. Mosher.
Value of the Röntgen Rays in the Diagnosis and Treatment of Fractures; Moral and Legal Obligations. H. A. Lothrop.
Suits for Alleged Malpractice. G. W. Gay.

Thoracic Surgery.—J. G. Mumford states that while a differential pressure apparatus is extremely valuable, and while its use is leading constantly toward safer and surer methods of operating, nevertheless it is found that even without differential pressure the general surgeon is able to approach and to deal with disease within the thoracic cavity with increasing benefit to the patient. The lesions and diseases which fall within the surgical field are: (1) foreign bodies in the bronchi; (2) bronchiectasis; (3) empyema; (4) injuries, especially those associated with hemothorax; (5) tuberculosis; (6) pulmonary abscess; (7) pulmonary gangrene; (8) echinococcus cysts; (9) actinomycosis; and (10) tumors of the chest-wall, pleura, lungs, and esophagus.

Treatment of Empyema.—F. B. Lund describes the operation of excising a portion of a rib and draining the pleural cavity. Rib resection and very free drainage are efficient and less likely in the hands of most surgeons to be followed by accumulation of pus requiring secondary operation. The siphon methods have the advantage of ease and simplicity of performance, may be usually done under local anesthesia, and may be done without spilling pus about or even into the wound. But the former method has given the better results in the hands of the author.

Bronchiectasis and Abscess of the Lung.—S. Robinson notes that the surgery of bronchiectasis comprises two possibilities: immobilization of the lung or resection. If there is bilateral involvement, both are useless. If the involvement is diffuse in one lung, immobilization is alone indicated. If confined to one lobe, either immobilization or resection is to be considered. Immobilization consists in putting the lung at rest by collapsing it as much as adhesions will permit. This results in a reduction in the capacity of the bronchiectatic cavities and may lead to cicatrization. The conservative method of immobilization consists in the introduction of nitrogen gas into the pleural cavity, producing an artificial pneumothorax. Radical immobilization consists in an extensive resection of ribs over the infected lung. Complete resection of a bronchiectatic lobe is, theoretically at least, the indicated treatment. Acute abscess of the lung is generally a post-pneumonic process, though frequently occurring after tooth extractions and tonsil operations. Spontaneous cure by the gradual or sudden evacuation of pus by the bronchus is not of infrequent occurrence, and the patient should be given opportunity for this method of cure. The surgeon should relieve the internist of the duty of localizing suppurations. Exploration for deep abscess in the complete absence of adhesions is more safely performed under differential pressure.

Chest Traumata.—F. T. Murphy limits his remarks to penetrating wounds of the chest wall, the results of stab or gunshot wounds. Of 42 cases treated at the Massachusetts General Hospital during the past 30 years, only 4 died. The analysis of the symptoms of these cases brings out the following points: (1) The very frequent complaint of abdominal pain, even though the peritoneum was not affected. (2) The possibility of a serious hemorrhage from a wound of the intercostal artery, one case at autopsy showing this to have been the source of hemorrhage. (3) The great power of accommodation of the lungs to hemorrhage or pneumothorax, if the change comes on slowly. (4) Relatively slight danger of fatal hemorrhage because of the collapse of the lung and the adherence of the pleura.

The Esophagoscope in Esophageal Surgery.—H. P. Mosher states that there are three possible dangers in the use of the esophagoscope, namely, rupture of an aneurysm, perforation of the esophagus, and sloughing of the esophagus from pressure of the tube. The pathological conditions which are best determined by the esophagoscope are new growths and pouches, spasm of the cardia, foreign bodies in the esophagus, and corrosive strictures of the esophagus.

The X-Rays in the Diagnosis and Treatment of Fractures.—H. A. Lothrop states that it is advisable to have a skiagraph made before reduction is attempted, thus establishing an accurate diagnosis such as cannot be made by the usual clinical methods. This reduces to a minimum the amount of manipulation, which frequently increases the injury to soft parts, and, finally, permits of more intelligent replacement of parts. During the pliable period of the provisional callus the alignment can be controlled. The eye is sufficient for this control in many instances, but very frequently the skiagraph is the only means of control. If only one plate can be made the choice of time will be after the fracture has been carefully examined and reduced under a general anesthetic and the permanent apparatus applied. The skiagraph then serves for diagnosis and control. The diagnosis and treatment of dislocations and fracture-dislocations are more urgent than in the case of simple fractures, so that here again an early skiagraph is desirable.

Suits for Alleged Malpractice.—G. W. Gay states that no physician is legally obliged to respond to any call for his professional services. Having accepted service in any case, however, the law requires three things of him, to wit: "A reasonable degree of the learning and experience ordinarily possessed by the medical men of the time and neighborhood. Reasonable and ordinary care of the case committed to him. Exercise of his best judgment in cases of doubt. These promises he takes with him to every sick room."

New York Medical Journal.

September 16, 1911.

A Study of Fifty Cases of Syphilis Treated with Salvarsan, with Special Reference to the Clinical Result and the Wassermann Reaction. A. L. Wolbarst.
The Gastric Contents in Gastroptosis. T. R. Brown.
Duodenal Ulcer. J. P. Crozer Griffith.
The *Solace*. By M. F. Gates, Medical Inspector, U. S. N.
The Treatment of Acute Ailments Occurring in Persons Addicted to the Habitual Use of Narcotic Drugs. G. E. Pettey.
Infection: A Contest Between Host and Invader. D. H. Bergey.
An Unusual Case of Swelling of the Liver and Spleen with High Continuous Fever. K. L. Elsner.
Iritis Plastica Adhærens. A. M. WacWhinnie.
Scarlet Fever, Complicating Pregnancy, Labor, and Puerperium. S. Herzstein.

Salvarsan.—A. L. Wolbarst notes that of 150 cases of syphilis that he treated with salvarsan 74 per cent. were either cured clinically or greatly improved. He states that of the various methods of administering salvarsan the intravenous injection is by far the most agreeable from the patient's standpoint, and is probably the most effective. It should be carefully given and repeated once or twice at intervals of two or three weeks. For the sake of further security, it is well to precede and follow these injections with a course of mercurial inunctions or injections. Next to the intravenous method, the intramuscular injection of an iodipin emulsion is the most desirable, but it is still to be proved that it is as effective as the intravenous or the alkaline intramuscular method. It has the single advantage that the treatment may be given by the physician in his office, and the patient may then go home.

Gastric Contents in Gastroptosis.—T. R. Brown concludes that while in individual cases of gastroptosis one may meet with varying amounts of free hydrochloric acid, ranging from a condition of achlorhydria to one of hyperchlorhydria, nevertheless the tendency in the majority of these cases is toward a distinct diminution of the free acid. The extent of this diminution is dependent upon the amount of downward displacement of the stomach, the diminution being slight in the cases of slight descensus; very marked, with a tendency to complete disappearance, in cases where the ptosis is very great. The fact that so many of the patients with marked ptosis show a complete absence of free hydrochloric acid suggests that gastroptosis may be one, if not the most important causative factor of achylia gastrica. That this achlorhydria is functional in a large proportion of these cases is shown by the fact that under the appropriate treatment, overfeeding, a proper dietary, rest at appropriate times, the wearing of a suitable support, and postural treatment in conjunction with the administration of hydrochloric acid by mouth, there is usually a return of the free hydrochloric acid after the test meal, although it may require persistence along this line of treatment for many months before this occurs.

Duodenal Ulcer.—J. P. Crozer Griffith, noting the rarity of this condition in early life, reports two cases occurring in children aged ten years and six months respectively. He states that duodenal ulcer is undoubtedly a cause of melena neonatorum, the majority of cases of ulcer belonging to this period; and Moynihan has quoted from medical literature sixteen cases of melena in the first week of life in which duodenal ulcer was found at autopsy. Ulcer is also discovered occasionally in atrophic infants later in the first year.

The Hospital Ship "Solace."—M. F. Gates says that this is the only available hospital ship in the United States Navy and one of the very few in the world. In the hospital department the capacity for patients is stated as nine officers, each having a separate stateroom and 234 enlisted men for whom there are in place 166 fixed berths, the others being provided for in hammocks and cots. There are three wards on the hurricane deck, with twelve, ten, and eight berths, used as isolation wards for tuberculosis and for the diseases of childhood which are nearly always brought along by the drafts of young recruits of our enlisted force. The hospital facilities include a laboratory with microscope, ultramicroscope, incubator, laboratory animals, etc., a special dark room equipped for nose, throat, and ear work and for ophthalmoscopic examinations, a light ophthalmological room with 20-foot space for vision testing, dispensary, general operating room with two glass topped tables and with fully equipped sterilizing room adjoining, an exceptionally well equipped *x*-ray and electrotherapeutic room, well equipped dental office, three strong rooms for insane and alcoholic patients, two dressing rooms, electrically equipped diet kitchen, steam laundry, steam and formalin disinfecting chamber, and refrigerating morgue.

Acute Ailments in Narcotic Habitués.—G. E. Pettey notes the almost certain fatality of acute ailments, such as typhoid fever and pneumonia, when occurring in these individuals, and attributes this fact to the arrest of peristalsis produced by morphine. This arrest may be overcome by means of strychnine if this is given in sufficient dose and at the proper time.

Infection.—D. H. Bergey states that it is quite appropriate to regard infection as a contest between the invading organisms and the tissues and fluids of the host, and that one knows at least a little concerning the offensive and defensive measures which are brought into play in the contest. When the body is in normal condition and all its defensive measures are fully developed it is able to protect itself against invading microorganisms. It is only when overwhelming doses of the organisms are introduced or when the normal defenses of the body are defective that disease results. The occurrence of infection is practically always due to some defect in the normal defensive powers of the body.

Swelling of Liver and Spleen.—K. L. Elsmer reports a case of a female aged 32 years in whom a considerable enlargement of the liver and spleen was associated with a high continuous fever. The following possible causative conditions were ruled out: pernicious anemia, myeloid leucemia, lymphoid leucemia, splenic anemia or Banti's disease, Hodgkin's disease, internal abscess, tumor, syphilis, and malaria. There was no proof as to the presence or absence of kala azar. Numerous consultants agreed as to the clinical findings, but disagreed on the diagnosis and treatment. They were unanimous that the patient could not recover, at least not without a splenectomy; nevertheless the patient recovered. The treatment had been the administration of sodium arsanilate and the use of *x*-rays and high frequency currents.

Plastic Iritis.—A. M. MacWhinnie notes the increasing frequency of this condition with adhesions of the iris to the anterior capsule of the lens. In its treatment he recommends suction massage by means of a cupping apparatus that he has devised. The object is to create a vacuum, steadily drawing the eyeball well into the cup and the iris away from the anterior capsule of the lens sufficiently for rupture of the adhesions. The method is not applicable to adhesions of months' standing, but is applicable to cases in which the adhesions have not existed longer than a week. The ideal procedure is the extraction of an ounce of blood from the temple, instillations of 5 per cent. atropine solution, and application of the instrument for from two to five minutes.

Scarlet Fever Complicating Pregnancy.—S. Herzstein

concludes that a pregnant woman is not immune to scarlet fever. The septic process of scarlatina, though of a severe type, is not always a source of danger to the puerperal woman. The scarlet fever and the puerperium may each run its usual course.

Journal of the American Medical Association.

September 16, 1911.

The Relation of the Medical Practitioner to Health Departments. W. A. Evans.
Difficulties in Therapeutic Use of Tuberculin. F. M. Pottenger.
The Production of Immunity in Tuberculosis by Intravenous Injections of Tuberculin. C. A. Shepard.
A Plea for Larger Incisions and More Thorough Examinations in Abdominal Surgery. J. E. Moore.
Studies in Infarction. Experimental Bland Infarction of the Kidney and Spleen. H. T. Karsner and J. H. Austin.
The Importance of Mediastinal Glands and Failure to Diagnose Them Properly. J. A. Honeij.
Improved Technique of the Thiersch Graft, Following the Radical Ear Operation. C. F. Welty.
The Rational Treatment of Furuncles. P. G. Skillern, Jr.
The Nature of the Virus of Measles. J. Goldberger and J. F. Anderson.

The Physician and Health Departments.—W. A. Evans advocates a wide campaign for the promotion of the health of the community under the leadership of the medical profession and with the enlistment of the various welfare organizations.

Tuberculin.—F. M. Pottenger obtains the best results by the use of progresingly increasing doses. A condition of hypersensibility is more apt to occur when the small dose at infrequent intervals is employed. Small doses cause hypersensibility to further doses of the same proteid while larger doses cause immunity to it.

Tuberculin.—C. A. Shepard attributes considerable value to the intravenous administration of tuberculin in the treatment of tuberculosis.

Abdominal Incisions.—J. E. Moore states that the day of the short incision is past in all but exceptional cases. He asserts that it is infinitely better to make the opening large enough to admit the hand without force than to contuse the edges of the wound by a forcible introduction of the hand or with retractors. Faulty wound healing has very often been due to too great or too prolonged pressure from retractors or to forcing a tumor through too small an opening.

Infarction.—H. T. Karsner and J. H. Austin conclude from their experiments that, regardless of general circulatory conditions, all infarcts of the kidney and spleen of the dog are first hyperemic, then hemorrhagic and finally become pale from coagulation necrosis. The hyperemia of the early infarcts is, in a general way, proportional to the vascular pressure within the organ as a whole, and is not due to reflux of blood from the veins. Agglutination of the red blood corpuscles is the earliest demonstrable change in the blood of the infarct; removal of pigment from the infarcted area is probably due to plasmatic diffusion; definite fibrin formation appears relatively late in the course of the condition. Necrosis progresses more rapidly in infarcts in those organs in which the general circulation is altered in some way (either from damming back of blood by vein ligation or from cutting down arterial supply) than in organs in which the general circulation is normal. The pallor of the white infarcts is due to decolorization of the contained conglutinated and coagulated blood: decolorization begins in a general way in the middle of the infarct and extends peripherally. Organization progresses as well in organs in which the general circulation is diminished as in those in which the general circulation is normal. Regeneration is seen, in the kidney, only in the occurrence of mitotic figures in the epithelium near the margin of the infarct; it is diminished by any decrease in the general circulation. Regeneration of the cells of the splenic pulp or follicles is not demonstrable even at the end of one week.

Mediastinal Glands.—J. H. Honeij states that enlarged glands occur more frequently on the right side than on the left. Enlarged glands may cause the signs which are often considered as those of early apical tuberculosis. They occur in both tuberculous and nontuberculous patients and probably occur as frequently in adults as in children. Positive tuberculin reactions may, therefore, in clinically negative tuberculous cases be due to enlarged glands in the mediastinum, etc., when apical signs are not present.

Thiersch Graft Following Radical Mastoid Operation.—C. F. Welty reports a series of twelve cases in which the graft was applied at the time of operation. Besides eliminating a second operation, consuming almost as much time as the first, this procedure only lengthens the original operation about fifteen minutes.

Treatment of Furuncles.—P. G. Skillern states that the treatment of furuncle is divided into that of the boil itself and that of the low opsonic index of the blood. In the very beginning the puncture of the papule with a pointed stick dipped in pure carbolic acid will often abort the boil or, if this is rather deep, the injection by a hypodermic syringe of several drops of liquid phenol, though painful for a few moments, is often effective. The author does not believe in incising a boil in its first stage when hard. It shortens the process in no way and leaves an entirely unnecessary scar. He says, scratch off the little central vesicle. This causes no pain but exposes the ulcerating hair follicle and sebaceous gland. Apply a Bier cup and suck out as much as possible of the exhausted serum and blood, the place of which is taken by fresh leucocytes in the fresh blood which are going to cure the furuncle. Apply a dressing of plain sterile gauze wrung short of saturation from a solution of normal saline with sodium citrate, and this he uses also for the after-dressing.

Virus of Measles.—J. Goldberger and J. F. Anderson have found that this virus can pass through a Berkefeld filter, and that it can resist desiccation for twenty-five and one-half hours. All attempts to produce reaction by inoculation of monkeys after the virus had been heated to 55° C. or above for fifteen minutes were negative and the authors, therefore, conclude that this degree of heat destroys its infectivity. Frozen infected blood, however, was still infective after being kept in a solid frozen condition for twenty-four hours, though there is a possibility in one case that there was a slight reduction of its virulence.

The Lancet.

September 9, 1911.

Surgical Gastric Disorders, Their Treatment and Results. E. Stanmore Bishop.
Will National Health Insurance Ensure National Health? E. J. Schuster.
Lymphatism Occurring in the East. A. Whitmore.
Two Rare Manifestations of Bilharziosis. F. Cole Madden.
A Case of Eclampsia. G. de B. Turtle.
The Influence of Salicylates and Kindred Drugs on Thyroid Activity. H. Ewan Waller.
Mediastinal Causes of Chronic Cough in Children. H. French.
"Comforter" Otitis Media. W. H. Bowen.
The Treatment of Torticollis: A Plea for a Revision of Accepted Treatment. P. B. Roth.
A Case of Suppurating Inguinal Ovarian Hernia; Operation; Recovery. J. J. Waddelow.

Surgical Gastric Disorders.—E. Stanmore Bishop states that surgical procedures are to-day utilized in six distinct phases of gastric and duodenal disease:—(1) Perforation of gastric or duodenal ulcers; (2) acute or chronic gastric or duodenal ulcer during its course before perforation; (3) gastrectasia due to pyloric obstruction consequent upon cicatrization of ulcers at or near the pylorus; (4) hour-glass stomach (bilocular, trilocular, etc.) also due to cicatrization of ulcers in other parts of the stomach; (5) adhesions around old lesions dragging upon or compressing portions of the upper digestive tract; and (6) gastric carcinoma.

National Health Insurance.—By E. J. Schuster. (See page 692.)

Lymphatism Occurring in the East.—A. Whitmore reports a series of sixteen cases of lymphatism, and states

that although he does not think that these cases give very much information as to the connection between lymphatism and the liability to the occurrence of sudden death upon slight provocation, or as to the mechanism by which such death is brought about, yet they are useful in showing that such a condition is not confined to Western peoples, but is probably as widespread in the East as in European countries; that it is not a condition in any way dependent upon race or environment, but exists among all races and in all climes.

A Case of Eclampsia.—G. de B. Turtle reports a case of eclampsia which presents the following points of interest: (1) There was a rapid improvement in the patient's condition under treatment before labor came on. (2) There was fall in blood-pressure and an accompanying rise in the output of urine. (3) There were three attacks of dyspnea which the patient had during the puerperium. (4) The convulsions which the child had and from which it succumbed were of a peculiar nature. With regard to the third point, the author is of the opinion that the patient had a clot somewhere, possibly commencing in the left femoral vein, as evidenced by the swelling of that leg, and that small emboli were cast off and carried up to the right side of the heart and so into the lung. There were never any physical signs in the lungs and there was no hemoptysis. The alternative idea was that these attacks were due to cardiac dilatation, but it is noted that they commenced with dyspnea and cough and the pulse became rapid afterwards. With regard to point 4, the possibility of cerebral hemorrhage could not be excluded, but the way in which the fits came on with tonic spasm, finishing with clonus and stertorous breathing, pointed to their being of toxemic origin.

Salicylates and Thyroid Activity.—H. Ewan Waller believes that aspirin and possibly other salicylates and allied drugs will be found of inestimable value in Graves' disease. One might avoid the gastric disturbance and possibly get still better results by local use of one of the easily absorbed salicylic compounds directly applied to the skin over the thyroid gland. The final result naturally depends on whether thyroid control or exhaustion will cure Graves' disease or otherwise, which is another question and is not discussed. Further, in view of the beneficial results recently obtained by thyroidectomy in inoperable cancer, similar benefit might be obtained by the use of aspirin in such cases, many of which are also unsuitable for thyroidectomy. Aspirin has been used for the relief of pain in cancer.

Mediastinal Causes of Chronic Cough.—H. French states that not a few cases of chronic cough in children are attributed in an indefinite way to adenoids or to tonsils and adenoids, or to mouth-breathing; but there is another cause at work in at any rate one group of these cases—namely, chronic enlargement, sometimes no doubt associated with tuberculous caseation, of the glands at the bifurcation of the trachea. When a large number of post-mortem examinations are made the fact obtrudes itself that the bronchial gland immediately below the right bronchus is affected far more frequently than is the gland upon the left side, and the right phrenic nerve is frequently seen to be displaced by the enlarged lymphatic gland in such a way as probably to be much irritated by it and thus to lead to attacks of purposeless coughing—that is to say, coughing which does not succeed in the bringing up of any sputum. In a certain number of cases it is possible to demonstrate the enlargement of this right bronchial gland by means of the *x*-rays.

"Comforter" Otitis Media.—W. H. Bowen believes that a large proportion of cases of suppuration of the middle ear in infants are directly due to the comforter, which acts by introducing oral sepsis.

Treatment of Torticollis.—F. B. Roth advocates the following method of employing tenotomy for this condition without the subsequent use of retentive apparatus. After division of the muscle and fasciæ by the open operation the head is firmly manipulated into an over-corrected position. The child is then put back to bed with the head between sandbags, and on the second or third day is allowed up and gentle passive movements are begun. On the fifth or sixth day active movements take their place, and after removal of the stitches the mother is shown how to superintend the carrying out of these movements at home for five minutes twice a day.

Suppurating Inguinal Ovarian Hernia.—J. J. Waddelow reports a case of this condition, and notes that hernia of the ovary is usually an infantile condition and associated with a patent canal of Nuck as a congenital hernia. Hernia of the ovary coming on in adult life by itself and not as a portion of a preexisting hernia is a rare occurrence, as is also the absence of any sac. These conditions were present in the case reported.

British Medical Journal.

September 2, 1911.

The Mode of Transmission of Leprosy. T. Lindsay Sandes.
A Note on the Transmission of Leprosy. E. C. Long.
The Ophthalmo-Reaction of Calmette in the Early Diagnosis of Phthisis. A. Stroud Hosford.
Nasal Obstruction and Its Consequences in School Children. C. E. Reynolds.

Transmission of Leprosy.—T. Lindsay Sandes states that, considering the enormous numbers of lepra bacilli in the infiltrated or ulcerated skin and nasal mucosa of an active "tubercular" leper and the ingestion of bacilli by certain insects, direct contact and transmission by flies, fleas, mosquitos, or other insects are possible modes of spread of the disease; but such infection, if it ever does take place, is accidental and exceptional. Having found acid-fast bacilli answering, as far as the imperfect tests permit, to the characteristics of lepra bacilli in a considerable proportion (about 30 per cent.) of specimens of *Acanthia lectularia* up to sixteen days after feeding on lepers, there is reason to believe that this species of insect constitutes a very important agent in the spreading of leprosy. Unfortunately this view can be proven with finality only by the application of bugs previously fed on lepers to the persons of healthy individuals with the resultant development of the disease, unless, indeed, it be found, as there is some reason to hope, that certain monkeys and anthropoid apes are susceptible to inoculation with leprosy.

Transmission of Leprosy.—E. C. Long thought of the possibility of the bacillus of leprosy being carried by vermin. With a view to testing this hypothesis, bed-bugs obtained from huts which had never been inhabited by lepers were caused to bite lepers in the neighborhood of leprous nodules on the face. The bugs were then killed and the alimentary tract and its contents examined. In every bug that bit freely a bacillus was found which in shape, size, and staining reactions was similar to the *Bacillus leprœ*.

Ophthalmo-Reaction in Tuberculosis.—A. S. Hosford concludes that a negative result by no means excludes pulmonary tuberculosis; some very advanced cases fail to give a reaction. He has never obtained a positive result except in true cases. He has never seen any bad results whatever from the use of the test as regards the eye. If in a suspicious case the patient fails to give a reaction, then the test should be applied on three different occasions with an interval between each application of three to four weeks.

Nasal Obstruction.—C. E. Reynolds discusses the subject of mouth-breathing in school children, noting the causes in order of frequency as follows: adenoids, enlarged turbinate bones, thickened and deviated septum and spurs, and nasal polypi.

Berliner klinische Wochenschrift.

August 28 and September 4, 1911.

Treatment of Aphonia Spastica.—Seifert emphasizes the extreme difficulty of this problem, but he is not so pessimistic as some of his colleagues. There is much opportunity to choose cases having advantage in prognosis, and also cases suited to particular plans of treatment. He would first isolate a hysterogenous group, such as occur in males as well as females. The prognosis of these cases is often relatively good in the latter, and the treatment may be summed up as the psychophysical. A second group is made up of the so-called reflex cases. A third group comprises the occupation neuroses in the widest sense of the term. There may also be cases which are not comprised in any of these groups and it is claimed that on this account they are much the more serious. A fifth group is characterized by its central or cerebral origin. The treatment of the various types does not lend itself to summing up.

Oculoorbital Symptoms from Disease of the Nasal Sinuses.—Onodi concludes his study by advising therapeutic intervention where the rhinoscopic finds are negative as far as the sinuses are concerned and the turbinals are so swollen as to prevent the view higher up. It not rarely happens that resection of the middle turbinal and opening the ethmoidal and sphenoidal cells remove the ocular symptoms. In obscure cases of visual trouble the ophthalmologist is justified in taking this radical step.

Modern Laryngorhinology as a Separate Branch of Medicine.—Killian wishes to consolidate rhinology, laryngology, and bronchoscopy firmly, using special clinics and other utilities toward this end. He deprecates any attempts to subdivide them further. The joint field is naturally very wide and involves all the sinus work. Endoscopy is required in all the special fields involved, and radiography has also a general field of applicability. The combined specialty is preeminently one for diagnosis and exploring procedures. Killian evidently wishes to leave the ear to itself, as on account of intracranial complications this has also become a very wide discipline.

Results of Operations for Myopia.—Von Feilchenfeld states that renown achieved by Fukala's operation of extirpation of the lens for high grade myopia was short-lived. Many reports followed of detachment of the retina as a result of intervention. The author's personal expereience is as follows: In twelve years he has extirpated eleven lenses in eight patients. The indications were as follows: Objective—myopia above 16°. The vitreous must be clear to transillumination. The vision on both sides should be readily correctible. Subjective—incapacity to earn living, etc. As far as the latter goes the author believes that spectacles may be made to relieve the condition, and gives instances of rapidly advancing myopia successfully controlled. But cases occur in which high numbers cannot possibly be worn with comfort and which are made worse by such glasses. In the author's eleven operative cases there was no succeeding detachment of the retina. Hirschberg had but one detachment in twenty-four cases. Thus far the author has noted no other untoward sequence of any sort. The technique requisite for successful intervention which supplements the proper selection of cases is minutely given.

Banti's Disease.—In his series of articles on cirrhosis of the liver Klopstock comes finally to Banti's disease. Our present knowledge of the latter may be summed up as follows: In some of the cases the course is prolonged for years. The symptoms at first comprise anemia and enlarged spleen, and there is difficulty in distinguishing the cases from those of splenic anemia. At a later period, after hepatic cirrhosis has developed, the diagnosis between Banti's disease and ordinary cirrhotic liver becomes difficult. A special anatomical basis for the former cannot be predicated, despite claims to the contrary. Again etiologically we find no alleged causes of Banti's disease which have not already been claimed for ordinary cirrhosis (lues, malaria, etc.). The sole test at present of Banti's disease seems to proceed from the treatment. Many cases have improved notably after splenectomy, something which would be inconceivable for ordinary hepatic cirrhosis, in which splenomegaly has been looked on as a simple consequence of the former. The striking success attending splenectomy for Banti's disease shows plainly that the latter originates in the spleen, which produces certain toxins that are able to give rise to the blood and liver lesions. It is better to regard Banti's disease as a splenic syndrome rather than an affection *sui generis*.

Veronal in Seasickness.—Citron asserts that veronal has thus far proved itself the best medicament ever employed for seasickness. It is, however, sometimes impossible to administer it, as must necessarily be the case with drugs in general, owing to the constant rejection of all ingesta by the stomach. He therefore recommends the use of solutions of sodium-veronal by the rectum, and also suggests the use of the same drug in suppositories. Improvement from this use of veronal is usually in evidence inside of an hour. After this interval the patient is even able to take nourishment. The same treatment should be useful in carsickness.

Demonstration of Lipoids in the Blood.—Döblin and Grote state that we are as little able to understand something of the constitution of lipoids as to devise quantitative methods in connection with lecithin, cuorin, etc. It is claimed, however, that the percentage of lipoid material in the blood—or rather determination of an increase or diminution—may be recognized to such an extent as to be of some clinical service. The chief employment of the reaction is at present in regard to pregnancy and the climacteric. The method of use consists naturally in making lipoid-soluble extracts of blood, using different extractive substances. It is said that lipoids are decreased during menstruation and increased after conception, castration, and the menopause.

New Pathological Coloring Matters in the Urine.—Lehmann and Zinn state that twenty hours after laparotomy for adnexal tumor the woman passed a urine of a deep cherry color, previously unnoted. Ether anesthesia had been used. The patient showed great prostration, icterus, and after two weeks a syndrome of spinal paralysis. Hemoglobinemia and methemoglobinemia were present for days. The patient succumbed to sepsis from decubitus. The authors believe that the ether caused a toxic dissolution of the blood, while the hemoglobinemia was responsible for transverse spinal degeneration.

Münchener medizinische Wochenschrift

August 29 and September 5, 1911.

Indications for Use of the Peristaltic Hormone.—Fodkel believes that this substance is of remarkable efficacy if the cases are properly selected. He cites a case in a child of pain in the left hypochondrium with obstinate constipation. Purgatives brought away impacted feces without any permanent benefit. The health failed and a paresis of the lower extremities developed, with tendency to ascend. A most thorough examination failed to reveal sufficient data for a diagnosis. The nature of the fecal retention, whether atomic or spastic, could not even be decided. Upon the theory that the case was one of paralytic ileus a dose of 11 ccm. of the hormone was injected into the buttock. A painful local reaction followed but without constitutional disturbance. For the first three days no benefit was noticeable. Ordinary purgatives had to be used as before. Upon the fifth day a spontaneous evacuation occurred with normal feces, and daily stools of the same type succeeded. The case was followed only three weeks, but pain continued in the left hypochondrium.

Hyperglobulia.—Von Bergmann and Plesch, in discussing compensating hyperglobulia quote Münzer's view of compensation. If with normal blood the peripheral vessels, by contracting, shut off the normal balance of oxygen in the tissues, the dangers of tissue asphyxiation must be met by hyperglobulia. This view cannot be proved but is physiologically sound. Nevertheless we do not as a rule see hyperglobulia in arteriosclerosis, and it may be absent in the severest cases. Naturally hyperglobulia is not necessarily compensatory, for it could be due to hyperfunctioning of the bone marrow. Again if compensatory it need not depend on a single type of compensation.

New Methods of Treating Epilepsy.—Fackenheim calls attention to a new resource introduced of late years in the treatment of epilepsy. In 1908 Dr. Self of Texas claimed to have seen cured permanently a chronic epileptic following a rattlesnake bite. The snake venom or crotalin had already been used for this purpose and Spangler reported some results very recently. The present author obtained some of the venom for testing and found it to exert a specific or quasi specific action on the disease of the greatest promise. It is of course, true that the number of years which have elapsed since the treatment was first used is far too short to be conclusive.

Modified Coffee.—Prof. Harnack has written at length on this subject. The specifically pernicious action of coffee is exerted on the stomach and only indirectly on the heart. The active substances are volatile and brought out by roasting. Coffee is essentially different from tea, being more hypertensive. Tea is even hypotensive. The rational attempt is toward relieving the coffee of these substances, while the caffein remains. A recent process deprives the coffee of the pernicious volatile substances in such a manner that it still remains coffee.

Etiology of Hypertrophy of the Prostate.—Wilms refers to three prevalent theories of origin of prostatic hypertrophy, viz., the gonorrheal, arteriosclerotic, and neoplastic, and states that none has proved adequate to account for the disease. We know that there is an intimate connection between the prostate and testicles, and that is about the extent of our knowledge of the causation of prostatic hypertrophy. The surprising amelioration which follows castration and ligation of the vas deferens has led the authors to test the results of radiography of the testicles, this being also suggested as the result of the rays on uterine myoma. Recent studies have shown more strongly than ever the analogy which exists between the nodules of enlarged prostate and uterine myomata. It is possible that an overproduction of internal secretion of the testes is able to cause the prostatic enlargement, and a similar theory is held for the ovarian origin of uterine myomata. But one case has thus far been tested with the rays. This was in a man aged 69, with complete retention of the urine. Prostatectomy refused. Both testicles were radiated and the improvement was constant and pronounced. It began four days after the first radiation. Only two sessions seem to have been required to produce absolute recovery.

Ascending Colon Obstipation and Appendicitis.—Stierlin states that in a large number of cases of severe constipation with symptoms of chronic appendicitis the cause is fecal impaction in the ascending colon and cecum. In skiagraphy with bismuth, it is noted that the shadow of the latter persists for a long time. The ascending colon is much distended and sacculated in the region corresponding to the impaction. The causation of this obstipation may be both functional and mechanical. The former comprises both atony and so-called antiperistalsis. The latter consists of cicatricial malformations and other deformities. This stagnation in the ascending colon readily sets up obstipation.

Pseudofever in Children.—Avellis has often noted in children up to 8 years of age a temperature rise of over 1° C. in which the patients were subjectively normal, ate well, and showed no trace of emaciation after prolonged intervals. Such children go from one practitioner to another and get no relief. They are kept in bed, and while no real diagnosis is made a slight tonsillar infection or some other local ailment is assumed to exist. Thermometry simultaneously in several localities in the body shows such discrepancies that a general febrile reaction seems absent. If subjectively and otherwise well the child should not be kept in bed. The real causes of the slight, perhaps local, temperature rises must be varied. The "fever" often yields to the use of artificial sour milk, which seems to connect these particular cases with intestinal fermentation.

Deutsche medizinische Wochenschrift.

August 31, 1911.

Action of Radiant Energy on Experimental Tuberculosis.—Flemming and Krusius continue their researches on the action of radium, mesothorium, solar light, etc., upon experimental tuberculosis of the eye. They regard it as absolutely certain that the rays exert a definite action both on the germs and tissues, and that the disease intensity is weakened thereby. The solar rays surpass the emanations in bactericidal power. The so-called high solar rays are two or three times as powerful as the deep solar rays. Rays and emanations doubtless act favorably on the tissues chiefly by activating the blood-vessels.

Indications for Opening and Evacuating the Ethmoid Cells.—Stenger refers to endonasal procedures only. Ethmoidal disease is set up by ordinary colds, acute infectious diseases, adenoids, unskilful surgery, neoplasms, and foreign bodies. It may also be derived from disease of one of the other sinuses, and disease of one sinus readily mimics that of another. The symptoms comprise alterations in volume, abnormalities of secretion, and frequent participation of other sinuses, the orbits, the throat, larynx, etc. Pulmonary complications are frequent, chiefly asthma, and of course all the ill effects of mouth breathing will be apparent. The treatment may be conservative or operative. The former requires much time and is limited in scope. The mucosa must have its swelling reduced and drainage must be secured. We know so little about the true nature of many of these cases that conservative measures may be a waste of time. However, they suffice in simple and mild forms. Operations do not have to be radically performed. It may be possible to rank these procedures as conservative. When we have evidence or belief that there is an acute empyema of the ethmoid no time is to be lost before resorting to a radical operation.

Difficult Detubation after Diphtheria.—Martens has a series of 390 tracheotomies for croup with a mortality of 31.6 per cent. Of the 247 cases which recovered the tubes all came away save in two patients, who left the hospital before their regular discharge. Removal of the tubes in tracheotomia inferior must be promptly performed, but in tracheotomia superior the patient may go home with the tube *in situ*. The diphtheria service at the Bethany Hospital, Berlin, is enormous and it seems that primary intubation is never done there although tubes are inserted to prevent secondary stenosis.

Herpes of the Left Nasopalatine Nerve.—Bauer mentions some clinical forms of herpes of mucous surfaces and then relates a case of the preceding which comes in part under the head of zoster since it affects a twig of the trifacial. It belongs to so-called partial zoster. It is not, of course, a simple matter to distinguish a simple herpes from a partial zoster. The case was called by the author herpes neuralgicus, to further distinguish it from true zoster.

Insurance Medicine.

Four Prominent Causes of Mortality.—Luther Sexton says that of the many elements interfering with longevity of the human race, intemperance in drinking is one of the most important. The drunkard is not only exposed to various diseases, but is very apt to get into business or social difficulties that make his life hazardous. Drunkards, too, are most apt to carry on excesses in sexual relations and are exposed to infection of venereal nature. The descendants of a drunkard, Frau Jukes, who lived between 1740 and 1800, have been traced. Of the 709 found, 106 were illegitimate, 142 were beggars, 64 were charges of the State, 181 females were prostitutes, 69 were convicted of crime. These are supposed to have cost $1,250,000 during the period of seventy-five years

Heredity is another important element in longevity, though only a few diseases are inherited. The tendency to disease is, however, often handed down from parents to children. The following ten laws of heredity are acknowledged to be correct (Church and Peterson): (1) The child tends to inherit every attribute of parents. (2) Contradictory attributes cannot be inherited from both parents. (3) The child may inherit the attributes of either parent solely. (4) It may inherit the qualities of one parent in some respects, and of the other in other respects. (5) It may inherit the father's attributes for one period of existence, and of the mother's for another. (6) Some attributes have the quality of prepotency, or the tendency to push aside or overrule other attributes. (7) Attributes which are similar in both parents tend to become prepotent giving rise to convergent or cumulative heredity. (8) Attributes may be transmitted in latent form from one generation to another, to another in a third or fourth, or still more remote generation—a phenomenon termed reversion. (9) Attributes tend to appear in the progeny about the same time of life in which they became manifest in the parents. (10) Attributes of the father tend to be inherited by the sons, and of the mother by the daughters. Heredity plays an important part not only in tuberculous and cancerous affections, but likewise in albuminuria, rheumatism, gout and many other diseases. We do not inherit tuberculosis, but we do inherit a lessened vitality, or a tendency to contract tuberculous infection. Underweights are usually people who have inherited such a lessened vitality and they run the further risk of infection from their underweight brothers or sisters who are apt to be infected.

Syphilis and disease resulting from it add largely to mortality. The success of salvarsan, which is beginning to be doubted by some observers, may cause a rearrangement of our mortality statistics for syphilitics. Some specialists claim that one in six in the city population suffers from syphilitic taint. Some say that the negro race is quite syphilized, and tuberculosis with syphilis will finally end the race question. Sexton thinks that one in twenty-five is a more reasonable ratio of syphilitic infection. Syphilitics have double the mortality otherwise expected in a similar class of people. The following rules are followed by most conservative medical directors: No person under active treatment for a well defined case of syphilis is insurable until six years after the date of infection, and two years of actual anti-syphilitic treatment has been carefully carried out. Any evidence of tertiary syphilis is a ground for rejection.

Malaria has had much of its venom or sting extracted from it. The fearful mortality among the laborers in Panama under De Lesseps should be compared with the results of the work done by Col. Gorgas. Similar work on a smaller scale is being done in the South. Still malaria is fearfully prevalent, though care in treatment and a campaign of education should diminish it very much. In Italy it has been reduced sixty-five per cent by the free use of quinine. All duty on quinine should be removed. Boards of health should distribute it free to the needy population.

Overeating is a foe of longevity; it may result in gout, Bright's disease, and vascular disease. Gout is a frequent contributary cause in deaths from apoplexy, heart disease, or kidney trouble. The average well-to-do person eats twice as much as he needs.—*Proceedings of the Medical Section, American Life Convention, New Orleans,* February, 1911.

Determination of Cause of Accidents from Results of Autopsy.—Leopold Feilchenfeld says that in many instances the occurrence of accidental injury can only be diagnosed at autopsy. He has gathered material from one hundred and twenty such actual cases to illustrate the difficulties and the proper procedures. Cardiac death, death from kidney disease and from injuries of the intestines are first to be considered. Cardiac death does not occur in the presence of a normal heart. The adaptation of young men's hearts to the strain of athletics is a proof of this. But complete ability to follow the usual occupation is not proof that the heart was sound just before an accident; only functional tests can determine this question. A diseased heart often gives way in the face of very small stress. Autopsy may show sclerosis of the coronaries and of the aorta and degeneration of the heart muscle. Frequently microscopical examination alone shows morbid changes.

Apoplexy and traumatic cerebral hemorrhage are differentiated by the seat of the lesion. Now accidental hemorrhage usually occurs in the Sylvian fossa or in the ventricles. Collection of blood between the brain coverings, in the cranial fossae, or in the substance of the brain itself are usually due to injury. Occasionally typical cerebral hemorrhage—apoplexy—may be caused by an accident, accompanied by an unusual rise in blood pressure. Psychic causes may determine the latter.

Among abdominal conditions, appendicitis is frequently made acute by some injury. Adhesions and shortening of mesentery show that the affection is of old standing; the presence of fresh blood in peritoneum or free in the abdominal cavity give proof of the occurrence of an injury. Accidental incarceration of intestinal loops is usually not traceable to injuries; congenital defects play a more important role in these cases. Other injuries of intestines or internal viscera may, however, be caused by external accidental causes without showing external evidence of such accidents.—*Zeitschrift für Versicherungsmedizin,* June, 1911.

Locomotor Ataxia Following but Not a Consequence of an Accident.—Rigler details the history of a patient who fell from a considerable height, and suffered a fracture of the right leg and of several ribs. Convalescence was prolonged and accompanied by nervous symptoms: headache, slight inequality of pupils, etc., appeared at the time. The earning capacity was adjudged to be diminished by 50 per cent, and corresponding indemnity was allowed. Four years later the patient developed symptoms of tabes dorsalis and claimed that the accident was the cause of the disease. Expert decision was against the claim because of the following considerations: Although the rôle of injury in the etiology of locomotor ataxia has not been definitely settled, yet no authentic cases with injury as the only possible factor have been published. At any rate, in the present instance, the injury was not of a nature to affect the spinal cord. Changes in the pupils were noted before symptoms that could be referred to the accident. The injury could not be considered even to have caused rapid progress in a preexistent disease, as the symptoms appeared a considerable period of time after the accident. These considerations justified refusal

of the claim for increased indemnity.—*Zeitschrift für Versicherungsmedizin,* June, 1911.

Arterial Degeneration in Women.—T. M. Bruce presents a number of important facts relating to the relative incidence of arterial degeneration in women. According to the Registrar-General of Great Britain, in his Seventy-first Annual Report (for 1908), on the average of the last eight years the details at all ages from cerebral hemorrhage (together with apoplexy and hemiplegia) correspond to a death rate of 666 per million for males and of 750 per million for females. At ages above 35 it accounts for the deaths of 2,083 in a million men and of 2,284 in a million women. In the 20 years intervening between the thirty-third and fifty-fifth years women fall victims to the disease in greater proportion than men, while at ages above 55 years the mortality is higher among men. The temptation is strong to refer this remarkable liability in women to disease of the cerebral arteries to nervous influences, although many other explanations might reasonably be offered. One is also disposed to connect it with the familiar disturbances of the circulation in neurotic and hysterical women, attacks of precordial oppression, globus, flushing, faintness, and false angina, ending often in tears and other emotional manifestations.—*Lancet,* July 22, 1911.

Prospect of Life in Cases of Cardiovascular Degeneration.—T. M. Bruce states the conclusions which he has reached in a study undertaken to determine the prospect of arrest of activity and recovery of health or of disablement in various degrees or of remote or early death in the different kinds of cardiovascular degeneration. He found, for example, that in the course of thirteen years one-half of his cases of syphilis of the heart and aorta had died, and died at the early average age of fifty-two, while a decidedly smaller proportion of his cases of physical strain had perished, and these at the age of sixty-six. Again, he found that syphilis of the aortic region runs its fatal course in 5¼ years; degeneration connected with glycosuria in 12½ years, the patient dying on an average ten years later than the victim of syphilis.—*Lancet,* July 22, 1911.

Insurance for Medical Men.—*The Lancet* of July 15, 1911, reviews the work of the Medical Insurance Committee, which is composed of members of the British Medical Association, and which has now been carrying on its business close upon four years. The committee was started to secure for medical men the best terms possible for all classes of insurance, and after paying working expenses to distribute any surplus to deserving medical charities. It has fulfilled its objects in a satisfactory manner. To quote from the chairman's report, which was adopted at a recent meeting: "That the main object has been achieved is demonstrated when it is borne in mind that up to the present the committee has returned to medical men insuring through the agency, in the form of rebates, a sum exceeding $7,500, and has handed over to medical charities some $700." The "Red Cross" Doctor's Policies have been much utilized, as is proved by the large increase of business. It is stated that physicians can obtain substantial permanent benefit for themselves under the operations of this organization.

Malingering and the Workmen's Compensation Act.—J. H. Keay states that much is now being said about malingering. There is no medical man practising in an industrial district who is not well aware of the fact that the most fruitful source of malingering in England is the Compensation Act. The worker has only to make a complaint, and if the amount asked for is not more than a few pounds the company with which the employer is insured will not go to the expense of disputing it. What is the remedy? So far as the author's personal experience goes, industrial accidents and poisoning are far more frequently due to the carelessness of the worker than to defects in machinery; and yet England is the only country in Europe where the employer has to bear the full cost. Were the worker compelled, by a deduction from wages or otherwise, to pay a share, this would be a stronger check against malingering than any that has yet been proposed. And while much is being said as to free choice of doctor and payment according to attendance leading to malingering, there is now before the House of Commons an Insurance Bill, which professes to be national, in which the most prevalent cause of malingering is left untouched.—*British Medical Journal,* July 15, 1911.

National Health Insurance.—E. J. Schuster, in commenting upon the National Insurance Bill now before the House of Commons, states that as regards both the measures affecting the general health and those affecting the insured persons individually the provisions of the bill are insufficient to secure the fulfilment of the far-reaching hopes which have been held out by its author and its more enthusiastic supporters, and above all that the voluntary agencies which have hitherto been active in the fight against disease will be as necessary as they were before. It would be a disastrous result of the legislation for compulsory insurance if the efforts of these voluntary agencies were to be relaxed, or if they did not continue to receive the unstinted support of the public.—*Lancet,* September 9, 1911.

Appointment of Medical Examiners.—Ambrose Talbot says that the appointment of examiners depends frequently on the agency force, agents being furnished with blank applications for appointment as examiners, which applications they often "peddle" among physicians. The latter are requested to insure in the company or buy its stock. This method of selecting examiners should be changed, application blanks being sent out directly by the medical department. Appointment should not be a part of a bargain for a policy in the insurance company. If possible, a medical examiner should be appointed in a town before the agent has been sent to visit this town. The data given by the American Medical Directory should assist the medical directors in making choice among candidates. Best examiners for large towns are young men with hospital training who have not been in practice long enough to have their time fully occupied and whose hospital training offsets the short time they have been in practice. It would be well to have papers showing the relations between the medical profession and insurance companies read before county medical societies. Both are interested in questions of public health, and the companies are interested in all measures which will elevate the standard of the profession and secure them efficient examiners.—*Proceedings of the Medical Section, American Life Convention, New Orleans,* February, 1911.

Industrial Antituberculosis Work.—An important phase of the welfare work among employees which is now generally recognized as an essential condition of industrial progress is the introduction into a large manufacturing establishment of a scientific system of studying employees for evidences of incipient tuberculosis. It is reported that the International Harvester Company, actuated by motives both of philanthropy and of self-interest, is about to inaugurate this investigation among its 30,000 employees. Expense will not be allowed to interfere with the plan to aid the employee. The object will be to find out what number of employees of the company are suffering from tuberculosis and what remedies to adopt for their cure. For the latter purpose it is proposed in the complete plans to have an expert at each of the company's plants to give advice and assistance to those afflicted. Ultimately it is intended to install the scientific scheme in all of the workshops if it is found feasible. The expert will watch every employee at his plant, his method of work and his failings, will endeavor to detect the occurrence of abnormal fatigue, and by other means to discover incipient cases of tuberculosis.

Book Reviews.

Nervous and Mental Disease. Monograph Series No. 8. Mental Mechanisms. By William A. White, M.D., Author of "Outlines of Psychiatry;" Superintendent Government Hospital for the Insane, Washington, D.C.; First Lieutenant, Medical Reserve Corps, United States Army; Professor of Nervous and Mental Diseases, Georgetown University, Washington, D.C.; Professor of Nervous and Mental Diseases, George Washington University, Washington, D.C., and Lecturer on Insanity, U. S. Army and U. S. Navy Medical Schools. Price $2. New York: The Journal of Nervous and Mental Disease Publishing Company, 1911.

The author of this monograph has confined himself to an explanation of those fundamental principles of psychopathology which appear to him to be essential to an understanding of the problems of present-day psychiatry. Naturally the book is of greatest interest to the student of mental diseases. The general medical reader, however, who wishes to keep up to date, and has not the time to read lengthy treatises, in various languages, will find certain parts of the book both instructive and fascinating. The subject matter of the various chapters briefly stated may serve to outline the scope of the work: The constitution of consciousness and the relation of mental and physical; types of reaction, defense and compensation. The content of consciousness, dreams, symbolism, the psychosis, folk-lore; the complex; ; hysteria, current conceptions and clinical theories; the psychological approach to the problem of art; psychoanalysis; preventive principles in the field of mental medicine. To the general medical reader the chapter on the content of consciousness as illustrated by dreams, the content of the psychoses and certain phenomena of the content of race consciousness (folk-lore), will be of especial interest; also the chapter on hysteria, and that applying the principles of psychopathology to an explanation of the problem of art, both, as the author states, from the standpoint of the creation of art and the nature of its appeal. The chapter on preventive principles calls attention especially to those mental disorders that are dependent upon purely psychological factors. Among the physical causes of insanity, syphilis and alcohol are spoken of as being responsible for about one-fourth of the insane. The effects of child labor and of the employment of women are discussed.

The Surgery of the Diseases of the Appendix Vermiformis and Their Complications. By William Henry Battle, F.R.C.S., Surgeon and Joint Lecturer on Surgery to St. Thomas' Hospital; Formerly Surgeon to the Royal Free Hospital; Formerly Assistant Surgeon to the East London Hospital for Children; Hunterian Professor of Surgery at the Royal College of Surgeons of England, etc.; and Edred M. Corner, M.A., M.B., M.C., F.R.C.S., Surgeon in Charge of Out-Patients and the Surgical Isolation Wards to St. Thomas' Hospital; Lecturer on Practical Surgery; Surgeon to the Hospital for Sick Children, Great Ormond Street; Formerly Erasmus Wilson Lecturer at the Royal College of Surgeons, etc. Second and Enlarged Edition. Price $3.00. New York: William Wood & Co., 1911.

Although issued as recently as 1904, the first edition of this book has been subjected to very extensive alterations and additions necessitated by the contemporary advances in the subject treated, and the second edition appears, therefore, in a somewhat enlarged form. The plan is again followed of presenting as many as possible of the known facts about appendicitis in a compact and easily available form. On reading the book it is quite evident that the authors have succeeded admirably in accomplishing what they have set out to do, due credit being given to the important rôle played by American surgeons in the development of our knowledge of the disease. The preliminary chapters deal with the anatomy, physiology, and pathology of the appendix, in the course of which some stress is laid on the possibility of the production of stricture of the organ from irritation due to the assumed presence of iron particles in wheat flour ingested as food. The treatment of appendicitis is presented in a very complete manner. The numerous methods of approaching the appendix are fully described, and particular attention is naturally extended to the procedure already well known by the name of one of the authors (Battle). From the writers' collected statistics they have apparently shown that the disease is least frequent and most fatal after middle age, and most frequent and least fatal between twenty and thirty years of age. From the study of a series of one hundred personal operative cases it is shown that the highest percentage of mortality, even in operations done within forty-eight hours after the onset of the illness, falls on patients during their first attack of the disease. It is, therefore, urged that operations at the beginning of the attack should be advised in such cases instead of postponing the operative treatment until the quiet interval after the attack. Notwithstanding the apparently successful results obtained in this country and elsewhere with the conservative methods of treatment, it is quite probable that this view will soon obtain even more generally than at present. In this connection it is also shown that the mortality from operation is *nil* as long as the infection remains within the appendix, and increases rapidly as the process extends outward from the organ. It appears from the observations presented in a subsequent chapter that the presence of an appendical abscess does not necessarily destroy the appendix, and that a certain number of patients may have recurrent and even fatal attacks of appendicitis after the abscess has been drained. A very interesting chapter is that on the complications of appendicitis and also on the peculiarities of the disease in different periods of life. The book here referred to must be acknowledged as satisfying a demand for a complete yet concentrated presentation of this most important subject, and the authors are to be complimented on the success of their undertaking.

Tuberculosis Hospital and Sanatorium Construction. By Thomas Spees Carrington, M.D. 150 pages. Price 25c, postage prepaid. Free to all members of the National Association for the Study and Prevention of Tuberculosis upon Application to the Executive Office, 105 East Twenty-second Street, New York.

All municipalities, State and county authorities, as well as individuals interested in the construction of sanatoria or special hospitals for the care and housing of tuberculous patients, must feel indebted to the National Association for the Study and Prevention of Tuberculosis, its secretary, Dr. Livingston Farrand, and its assistant secretary, Dr. Thomas Spees Carrington, for bringing out so valuable a work as this. The book contains virtually all that is known of sanatorium construction, and a mere enumeration of the headings of the six sections will show the large scope of the book.

Chapter I deals with site and grouping of buildings, with sub-chapters on transportation, meterological conditions, extent and nature of the land, lighting, water, and sewerage. Chapter II describes the best methods to construct an administration building and various auxiliaries, such as ice houses, stables, milk houses, etc. Chapter III gives suggestions for planning buildings in which administration and patients' quarters are combined. Chapter IV gives admirable descriptions of hospitals for advanced cases. Chapter V describes the lean-to type, and Chapter VI the cottage type of building. The entire volume is richly illustrated with no less than 120 pictures of projected or existing institutions.

Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege. Herausgegeben von Dr. L. Katz, Spezialarzt für Ohren-, Nasen-, und Halskrankheiten in Kaiserslautern; Dr. H. Preysing, Prof. der Ohrenheilkunde, Ord. Mitglied der Akad. für Prakt. Medizin zu Cöln a. Rh.; und Dr. F. Blumenfeld, Spezialarzt für Nasen,- Hals,- und Lungenkrankheiten in Wiesbaden. 1. Bd., Lieferung 1-2, Preis Mk. 8. 1. Bd. Lieferung 3, Preis Mk. 6. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

This work is to consist of four volumes, which are to be issued in parts. Three parts of the first volume have already appeared. The object of this work is to furnish the specialist in otology and rhinolaryngology with a presentation of the modern aspect of these subjects from the practical viewpoint. The rapid progress made in this field during the past decade has justified the preparation of a book dealing particularly with the operative surgery of the ear, nose, and throat; first by means of a detailed description of the topographical anatomy of these regions, and then by a clear exposition of the various operative methods. The first two numbers take up the topographical anatomy of the skull, with the exception of the nasal cavities and the ear. This portion of the work is written by J. Sobotta, Professor of Anatomy in Würzburg, and contains thirty-seven full-page plates in colors. In beauty and clearness these surpass anything that has yet been attempted in anatomical art. The third part describes the topographical anatomy of the nasal cavities and of the accessory sinuses. The author is A. Onodi, Director of the Rhinolaryngological University Clinic in Budapest. In addition to numerous illustrations in the text, there are thirty full-page plates. The complicated anatomy of this region presents a difficult task to the artist, nevertheless the illustrations are as natural as the well-prepared anatomical specimens or dissections.

Society Reports.

AMERICAN CLIMATOLOGICAL SOCIETY.

Twenty-eighth Annual Meeting Held at Montreal, Canada, June 13 and 14, 1911.

The President, Dr. John Winters Brannan of New York, in the Chair.

Tuesday, June 13—First Day.

President's Address.—Dr. John Winters Brannan of New York said that for the first time in the history of the society they had come together outside the boundaries of the United States. At the meeting last year in Washington Dr. Hinsdale's interesting paper on the recent floods in France gave rise to an animated discussion on the influence of forests in regulating the flow of rivers; the opinions expressed were so divergent that it was suggested that the present meeting should have a symposium on the relation of forest growth to the increase or diminution of floods. The speaker said he would discuss only the relation of forest growth to neighboring water courses and the effects of deforestation upon the regularity of their flow. Until quite recently there seemed to be a general agreement that forests controlled the flow of streams, and that the extensive cutting away of the forests had increased the frequency and height of floods and had intensified the periods of drought. But now they were informed that there had been an increase of floods and that there was no statistical evidence to prove that the forests had any material effect upon either the high or the low water of rivers. During the past few months the speaker had made some study of the documents and arguments offered by the two parties to the controversy, and he found that it was a situation in which indeed "experience was fallacious and judgment difficult"; on the one hand it was asserted by the foresters that floods were steadily on the increase in the rivers of North America and of Europe, and that this increasing flood frequency was the consequence of deforestation on the watersheds and in the basins of these rivers. It was therefore urged by the foresters that the cutting away of the forests about the headwaters of the rivers should cease, and that an attempt should be made to reforest the areas that had already been denuded. On the other hand the engineers and meteorologists who had adopted the modern views asserted that the figures presented by the foresters were misleading, and in support of their statements offered other observations made upon the same rivers at the same stations to prove that floods were neither more frequent nor more severe than in former times. Consequently, there being no change in the flow of the rivers, deforestation could have no such injurious effect as they had been taught to attribute to it.

Further, it was claimed that all forested land which had been converted into agricultural land had been put to its best use and that no land which was suitable for the growing of crops to provide food for the people should be withheld for the growing of timber. It was of interest to note that this last view was shared by many, even of those who believed that forests were an important agency in regulating the flow of streams and surface water. The speaker did not attempt to reconcile the apparently conflicting data offered by the foresters on the one hand and by the engineers on the other. To show the difficulties of the situation he briefly referred to two publications, one by the French engineer, Belgrand, the other by Pierre Buffault. These were contradictory reports. The speaker had been hopelessly confused by the claims and statements of the two sides until quite recently; now he thought he saw a new light and would present a few conclusions for consideration. The forest floor surely protected the springs and controlled the surface flow of water better than ground that had been denuded of its natural cover, especially if it lay upon the hill or mountain side. If, however, the ground was fairly level and was suitable for agriculture and was under constant cultivation, the growing crops formed not a bad substitute for the forest. One should agree with Raphael Zon that "the fundamental principle upon which a wise national land policy should rest was that every acre of land should be put to the use under which it would bring the highest returns." One should not expect to reforest level or slightly rolling land which was now under cultivation, nor should one consider it advisable to do so. Practically all forested land which would serve for growing food crops would eventually be cleared for that purpose. In the mountain ranges, on the other hand, and upon steep hillsides the forests should be preserved, not only to insure a regular supply of water for great river systems, but also to prevent the danger of excessive erosion.

The Climatic and Hygienic Influences of Forest Growth.—By Dr. James M. Anders of Philadelphia. (See page 659.)

Professor Stupart of Toronto said that some years ago he undertook an investigation of the rainfall occurring along the Great Lakes of North America and other places, from which he concluded that, so far as he could judge, the rainfall to-day did not equal that of the earlier days, in 1840. With regard to the temperature since 1840 at Toronto it was fairly evident that the summer in Toronto to-day was but slightly increased—the spring months were not quite as cold as during the early years. With regard to the investigations regarding the winter temperatures it was shown that the ideas of the old inhabitants were erroneous; they believed that the winters some seventy years ago were colder than now; in 1840 in Toronto the temperature was 25.5°, while last year it was 23.4°. The daily range of the temperature to-day was probably the same as seventy years ago. The figures given from Montreal went back to 1873 and beyond; in the sixties the rainfall was 38 inches; during the next ten years 39.2, and then on it averaged 41.4, 41.7, etc. There was certainly an increase. It appeared that, so far as the meteorological records were concerned in Canada, the operations of man had but little effect upon the climate of the country. The speaker could not account for the greater liability of the summer frosts in the early days in Canada. The phenomenon of the great rainfalls was connected with the operations of Nature. In Canada and in the United States the rainfalls were of cyclonic origin. The forests had an inappreciable effect upon the amount of moisture which followed. The greater part of the rain which fell over the northern part of the United States and Canada was formed from the moisture brought from the Atlantic and the Gulf of Mexico. Floods to-day were no more disastrous in Canada than they were during the early years. In Canada they had snow until March and early April; the snow in the woods he believed must have some effect on floods. The rainfall occurring under such conditions would cause a rapid melting of the snow and this, of course, would lead to floods. However, if the snow fell in the wooded lands, in the early spring, there would be a gradual wasting away.

Dr. J. H. Elliott of Toronto, Canada, said that the question of deforestation was beginning to play a very important part in Canada as well as in the United States. The theory of Dr. Anders that forests modified the temperature seemed to be excellently borne out by facts presented by Professor Stupart.

Dr. Charles L. Minor of Asheville, N. C., said that it was not a question only of how deforestation affected the rainfall, but it was a question whether deforestation exerted a harmful effect on the flow of water in the

rivers and the water supply in the low-lying countries, causing water freshets and washouts. It all differed in different parts of the country. In North Carolina, with mountains ranging from 2,000 to 7,000 feet, with high hillsides, one could realize that if the hills were stripped they would practically be useless for other purposes.

Dr. William H. Bergtold of Denver, Col., said he had been in the Rockies for about thirty years and the conditions there were parallel to what Dr. Minor had described except that they were more accentuated. The question of deforestation and of the increase or decrease of floods was a complex one. In Wyoming, Colorado, and New Mexico so much water was used for irrigation that it was impossible to say to-day whether the streams were higher than in corresponding periods years ago. However, he did not believe their floods were higher to-day than they were forty or fifty years ago.

Dr. Alexander D. Blackader of Montreal said the value of any health resort should be estimated by both the amount of sunlight and of shade. One would not say that the presence of many trees was not conducive to health; however, where timber predominated and where sunlight seldom entered noxious influences were at work.

Dr. A. J. Richer of Ste. Agathe des Monts, Province of Quebec, told of the consumptives that were living in a lumber camp with the temperature 40° below zero and said that he was impressed with the extreme comfort in which they lived, without any of the advantages of real household living; there was a form of primitive life and the degree of comfort enjoyed by them appeared to be marvelous. There seemed to be some vitalizing influence.

Dr. J. Madison Taylor of Philadelphia said that in the discussion so far they were not looking close enough to the comparison of conditions to get a proper degree of the sense or knowledge in respect to the conditions that existed in the ancient countries where the forests had ceased to exist. They should take into consideration and present in a parallel way with what now existed the conditions that existed in Greece, in Mexico, and in the valley of the Euphrates. He thought that the whole subject was bound closely with another, anthropology; these subjects were more or less interwoven; the lines for research were closely associated. He called attention to Woodruff's article on "Expansion of the Races," which pointed out lines along which it was desirable to conduct investigation.

Dr. Guy Hinsdale of Hot Springs, Va., referring to Dr. Anders' remarks on ozone and to its great value, said that there had been some doubt raised as to its real value and the part it played. There was some doubt as to the accuracy of the test for ozone, and he would suggest that they should take up the real relation of ozone and the conditions concerning health.

Dr. James M. Anders of Philadelphia believed that stations should be thrown out in various places beyond the borders of the forests. There was no doubt that forests possessed certain influences in reference to the temperature and relative humidity, but he did not know how far this influence extended beyond the borders. As to whether the observations in reference to ozone might be conclusive or not, he confessed he could not say that the position taken was tenable. He had followed the usually recognized tests. He used glass cases which did not permit the entrance of the outside air. The results were uniform; certain species seemed to possess the power of producing ozone, even the nonodorous plants. His belief was that the balance of testimony was in favor of the flowering plant and odorous plant producing ozone.

A Résumé of the Opinions Upon the Nauheim Treatment of Chronic Diseases of the Heart.—Dr. John M. Swan of Glen Springs, Watkins, N. Y., read this paper. He said that his attention during the past year had been called to the criticism of the Nauheim method of treatment of cases of chronic heart disease contained in Mackenzie's book. After reading Mackenzie's statements over carefully he thought it might be valuable to review the books written on the subject of cardiac disease, in order to determine the opinions held by various writers concerning the efficiency of this form of treatment. All of the writers, except Mackenzie, conceded the benefit to be derived by a course of hydrotherapeutic treatment of a suitable case of chronic heart disease. Allbutt was opposed to its use in cases of "overstress of the heart" or heart strain, and Mott was opposed to its use in cases of angina pectoris and arteriosclerosis. The important point to determine was whether an individual case was a suitable one for the treatment. Mackenzie questioned the influence of the Nauheim baths on blood-pressure, referring to the statement made by the Nauheim physicians that the baths would raise a low blood-pressure and lower a high blood-pressure. In prescribing hydrotherapeutic measures the only method to be recommended was that which should be followed in prescribing any other form of treatment; to make a careful study of the case, its history, physical condition, urine, blood, pulse tracings, and then to prescribe the course of treatment which held out the most hope for ameliorating the condition found. Mackenzie stated that the same effect could be obtained by fresh water baths as by brine baths. The speaker had just begun a series of observations by which he hoped to be able to throw some light upon this subject. He was confident, however, that there was more to be accomplished by the use of carbonated brine baths and resistance exercises than could be accounted for by the mental effect. He was sure that these measures produced definite physical benefit in persons who had serious organic heart disease. Many patients had been sent to health resorts for "Nauheim" baths when such a treatment was not suited to them. By the term "Nauheim bath" he meant a cold brine bath in which free carbon dioxide was liberated. He urged the abandonment of the term "Nauheim" and the substitution of the term "brine" for these baths. The assembling of neurotic people in crowds was a bad feature; patients could not be stopped from detailing their symptoms to anyone who would listen. How these baths produced their effects was not definitely known. The speaker believed that the treatment was a purely empirical one. The most important effect was the equalization of the distribution of the blood in the skin and viscera by the vasodilation produced in the cutaneous vessels. He did not believe that the unbroken skin would allow the passage of gas and salts. The sanatorium régime in the treatment of chronic heart disease, which régime included rest, diet, hydrotherapeutic and mechanotherapeutic measures of various kinds, was productive of benefit. The carbonated brine baths in suitable cases did good by evening up the circulation through a dilatation of the cutaneous vessels, thereby relieving the peripheral resistance to the heart's work. He believed the treatment to be indicated in cases of cardiac weakness following the acute infections, accompanying debilitating and wasting diseases, following severe hemorrhages and the secondary anemias, and following surgical operations; in the early cases of failure of compensation in chronic valvulitis; in cases of simple dilatation; in cases of cardiac neurosis, and in cases of tachycardia and arrhythmia. The treatment was contraindicated in cases of nephritis, aneurysm, advanced arteriosclerosis, and in severe cases of broken compensation with edema. In early cases of fibroid myocarditis with high blood-pressure and beginning arteriosclerosis the baths, if given at all, should be given with great caution.

Dr. James M. Anders of Philadelphia thought that it

was unfortunate that the Neuheim method was not something more definite than it appeared to be at the present day in the literature. It should be kept clearly in mind that the Nauheim and the Shott methods were not synonymous. The majority of practitioners combined the Nauheim baths with resistance exercises. At the present day the tendency was more and more to individualize the cases. In other words, there was no single method of treatment for cardiovascular diseases as applied at Nauheim, but there was a treatment for individual cases. With neurasthenic patients the speaker had seen the Nauheim baths, plus the resistance exercises, cause patients to have sleepless nights. The resistance exercises practised alone were particularly beneficial when the myocardium was weak. In aortic incompetency the Nauheim baths were contraindicated. However, resistance exercises, if carried on carefully, often proved of the greatest service. In simple dilatation of the heart as the result of overstrain, in mitral regurgitant and mitral stenotic conditions, particularly during the early stages when there were a slight edema and dyspnea, in the early stages of arteriosclerosis the Schott method, so-called, gave brilliant results. Of course something must be attributed to a salubrious climate, to environment, etc. Many patients were sent to Nauheim that were not suitable for the treatment; of course they received no benefit. The question naturally arose with them whether the home use of the Nauheim baths could be made efficient; personally he did not think it would, because patients then remained in their customary environment, they were not freed from their worries and business anxieties. It was better to send these patients away from home, but not so far as abroad.

Dr. Egbert Le Fevre of New York said that there were practically three stages of arteriosclerosis. First, where the cardiac power was in excess, a cardiac hypertrophy with a high tension pulse. Here the pressure was largely due to disease of the blood-vessels and vascular control. In such cases carbon dioxide baths with resistance exercises had no place. Then there was the stage in which the reserve cardiac power was diminished; in this stage the anginoid attacks appeared. There appeared, too, a second factor, a spasm of the peripheral blood-vessels which raised the blood-pressure. In these cases the Nauheim baths and the carbon dioxide baths, associated with resistance exercises, were beneficial. In the third phase of the arteriosclerotic type of disease there was a permanent loss of cardiac power; this was called the asphyxia stage, and the only way to equalize the circulation was through the vasomotor system. In such cases there was a call for a higher pressure, nature's method of increasing the circulation. In the failing or failed heart the carbon dioxide baths only added to the burden.

Dr. Joseph H. Lowman of Cleveland, Ohio, believed that much could be done with the resistance exercises by the general practitioner, especially in the convalescing patient. The time the patient was compelled to lie in bed after an endocarditis, after pneumonia, and many other diseases was much diminished by graduated exercises. But the resistance exercises should not be begun first, and especially in those with feeble hearts. Passive exercises should come first.

Dr. John M. Swan of Watkins, N. Y., acknowledged that there was much ignorance abroad concerning the subject under discussion. The term "Nauheim" as used in this country was a misnomer. The best results were obtained by giving a series of baths and then giving resistance exercises after the baths had been discontinued.

The Causes of Death in Pulmonary Tuberculosis.—Dr. Lawrason Brown of Saranac Lake said that recent advances in the study of tuberculous infections clothed with fresh interest even the causes of death in chronic tuberculosis and lent to the study of their failures the hope that here also they might gain some knowledge to aid in the further struggle against this disease. Death in chronic tuberculosis was brought about most often through pathological changes in the lungs, less often by those occurring in the heart or brain. This study of the causes of death in chronic pulmonary tuberculosis was based on data obtained from the records of death of 1204 patients who had died at or after leaving the Adirondack Sanatorium, and from 378 deaths which had occurred in Saranac Lake Village. For various reasons it was impossible to obtain reliable data concerning 245 patients; this limited the study to 959 deaths. While the usual cause of death in chronic pulmonary tuberculosis was asthenia, the complications which terminated life were very numerous and might be grouped under four heads: (1) general miliary tuberculosis, (2) pulmonary, (3) extrapulmonary complications and (4) sudden death. It was comparatively easy to arrange such a classification, but most difficult to fit cases into it. Asthenia and asphyxia were really functional conditions or states. The classification of the causes of death in chronic pulmonary tuberculosis was presented as follows: A. Death associated with marked functional changes. (1) Asthenia, usual cause of death. (2) Asphyxia. B. Death associated with marked pronounced pathological complications. (1) General miliary tuberculosis. (2) Pulmonary conditions, hemoptysis, pleurisy, gangrene, pneumothorax, pneumonia (lobar), empyema, generalized subcutaneous emphysema. C. Extrapulmonary complications. (1) Meningitis, tuberculosis of the brain, laryngitis, enteritis, pericarditis, nephritis, Addison's disease, peritonitis, tuberculous obstruction of the intestines, spondylitis, and coxitis. (2) Circulatory conditions: Syncope, thrombosis and embolism of the pulmonary artery, heart disease, nephritis, diabetes, cancer, appendicitis, accident, suicide, typhoid fever, lymphatic leucemia, meningitis, cerebral abscess, sinus thrombosis, senile dementia, etc. In all 332 patients (58 per cent.)—163 males and 169 females—presented asthenia as the most marked symptom before death. It was of interest to note that twenty-eight patients died from asthenia following hemoptysis, of whom nineteen were men. Immediate death from hemoptysis occurred in eighty-two patients. Symptoms of enteritis occurred in thirteen women and in only five men. Symptoms of nephritis were present in fourteen patients. Asphyxia was described as the most marked cause of death in twenty-one cases. Pulmonary tuberculosis was stated as the only cause of death in 385 instances. Profuse sudden hemoptysis in the earlier stages of the disease was an unusual cause of death; when it occurred it was brought about more often by suffocation. Fatal hemoptyses were in practically every instance due to a rupture of an aneurysm of one of the terminal branches of the pulmonary artery. Death from pneumothorax occurred in three of the reported cases. Gangrene as a cause of death was exceedingly rare. Death due to extrapulmonary causes occurred in 111 cases. Syncope was given as a cause of death in thirty patients. Sudden death in pulmonary tuberculosis was unusual. A point that suggested itself in the study of the causes of death in a chronic disease like pulmonary tuberculosis was whether or not Osler's dictum that a patient rarely died of the disease from which he suffered held true. It was of interest to glance over the forty-four deaths that had occurred among the 3,300 patients during their residence at the Adirondack Cottage Sanatorium. Of these forty-four, thirty died with signs of pulmonary disease, eight of extrapulmonary tuberculous complications, and six of non-tuberculous diseases. The figures that related to the 378 patients who died at Saranac Lake from pulmonary tuberculosis showed that 256 died from asthenia, four from

asphyxia, fourteen from general miliary tuberculosis, forty-eight from hemoptysis, eight from pneumothorax, twenty-two from meningitis, ten from laryngitis, etc.

Dr. H. R. M. Landis of Philadelphia said that some years ago he made a study of seventy-five cases of death in pulmonary tuberculosis and he found that most of these died of general asthenia or because of a ceasing function. Three of the patients died from intestinal hemorrhage. It was amazing that so few cases died of complications referable to the gastrointestinal tract. So far as his observation went asphyxia in tuberculosis practically never occurred. Out of 600 cases not one died suddenly from heart failure; this was a rare form of death in this disease.

Dr. J. H. Elliott of Toronto, Canada, said that pneumothorax was very frequently overlooked by the general practitioner. During the past year he had seen three cases in consultation, and in none was the diagnosis made by the physician. In these cases asphyxia would probably be given as the cause of death.

The Class Method in the Treatment of Pulmonary Tuberculosis.—Dr. Joseph H. Pratt of Boston told of what he had tried to do and what he had accomplished by sanitary methods among the poor people who came to the Massachusetts General Hospital. He started a tuberculosis class in 1905, getting his financial support from the Emmanuel Church; in fact, during the past six years the expenses had been born by this church. The methods of treatment employed were probably familiar to all. Of course they met with some failures. Those who were improved returned to work. They had the homes visited by nurses and once a week the speaker saw all the patients under his care. Facilities for outdoor life were afforded. He found that it was easy to control patients and, if necessary, to keep them in bed; what he emphasized was the importance of absolute rest in bed; as soon as they gave the patients liberty regarding exercise recovery was often retarded. During six years they had had 117 patients, all selected. Of these sixty-four recovered. There were but three relapses. Two deaths occurred among those who were discharged when the disease was arrested, both being women, and during the pregnant state the disease returned and ran a rapid course. Twenty-five were admitted in the first stage of the disease and all recovered. Among those in the advanced stage of the disease ten were arrested and eighteen died. It was not easy to maintain supervision over these patients. The social aspects regarding pulmonary tuberculosis were important. The study of the treatment was an educational one and benefited the patients very much. The class method of treatment of pulmonary tuberculosis in New York City had been productive of excellent results, as it had been in Honolulu, Belfast, and other places. The climate of Ireland was more unfavorable in the treatment of pulmonary tuberculosis than that of England. He believed that the home treatment of these patients had advantages over the sanatorium treatment; if the patients got well under the home treatment they were more apt to remain so. The patients took a cold bath in the morning and drank from one to two quarts of milk a day.

Dr. Charles L. Minor of Asheville, N. C., believed that the most important feature of the class method was, in comparison with other methods, the broadening of the personal relation between the doctor and his patient. That was really the essential thing and was really the keynote to success.

Wednesday, June 14—Second Day.

On the Recording of Physical Findings in the Lungs, with a Scheme of Notation Therefor.—Dr. Charles L. Minor of Asheville, N. C., described the system he had used, illustrating it on the blackboard.

A Retrospect: A Few Thoughts and Suggestions Based upon Twenty-five Years' Experience with Tuberculosis.—Dr. Vincent Y. Bowditch of Boston read this paper. (See Medical Record, August 5, 1911, page 291).

The Economic Value of the Sanatorium Treatment of Pulmonary Tuberculosis.—Dr. David Russell Lyman of Wallingford, Conn., read this paper, the object of which was to set forth the economic return to any given community from money invested in the treatment of its cases of pulmonary tuberculosis by modern sanatorium methods. The Gaylord Farm Sanatorium was opened Sept. 20, 1904, and on May 1, 1911, they had discharged 676 cases who had been away from the institution six months and over. They could claim a high percentage of accuracy for their records. However, 34 were school children and, having no earning capacity, were omitted. This left 633 cases on which the studies were based. One table presented covered 140 incipient cases, 373 moderately advanced cases, and 120 far advanced cases. It was of especial interest in that it bore out the fact so often insisted upon that the results of treatment were in direct ratio to the stage of the disease at which the diagnosis was made. The incipient cases showed average total earnings of $1,020.60, the moderately advanced of $842,22, while the far advanced had earned on an average but $192.10. The same ratio held good in the relation of the "weeks of work" to the "weeks of life" in the several cases. The incipient cases showed a working capacity of 70 per cent. of their total time since discharge; the moderately advanced 59 per cent., and the far advanced only 23 per cent. The average weekly wages varied but little for the three classes. In another table presented the cases were classified according to the condition on discharge. In this table they dealt with 262 cases discharged "arrested," 253 "improved," and 118 "progressive." The arrested showed average total earnings of $1,039.48; the improved, $719.53; the progressive only $72.55. The percentage of "weeks of work" to "weeks of life" was 67 per cent. for the arrested, 47 per cent. for the improved, and 14 per cent. for the progressive. Table 3 showed the total earnings of all patients and the relation between this sum and the amount expended on the sanatorium. This showed a total expenditure of $236,744.51, whereas the amount already earned by discharged patients was $464,406.00, a return of about 200 per cent. within six years from the commencement of the work.

The Ventilation of Hospitals and Schools.—Dr. John Winters Brannan of New York presented this subject, which he illustrated with lantern slides. In planning the ventilation of hospitals and schools he said their aim should be to give both patients and school children air that was approximately as pure as that outdoors. Both hospital and school air should be standards of purity instead of being, as was usually the case, of various grades of impurity. The typical hospital ward was long and narrow, with the two long sides and one end freely exposed so as to secure the maximum of light, air, and sunshine. The windows and transoms on the long sides placed opposite to each other the entire length of the ward were admirably arranged to give cross ventilation. Often the windows seemed to be regarded simply as means to secure light; their function of permitting the entrance of fresh air was largely neglected. Architects and engineers devised elaborate plans for ventilation which were unnecessary if the ward was properly designed and the windows and transoms were properly used. In the medical pavilions of the new Bellevue Hospital, which were opened some three years ago, a complete modern ventilating plant was provided; this system had not been found satisfactory in operation, and during the past winter it had been entirely discontinued and the air in the wards

was simply warmed by the radiators and kept fresh and pure by open transoms, supplemented by open windows when necessary. The temperature in the ward was kept at 65° or less during the day and at 60° or less during the night. On entering a ward with the temperature between 60° and 65° one felt a freshness and exhilaration of the air that were totally absent in a ward ventilated and warmed by an artificial system of ducts and fans. The experience had been the same in Gouverneur, Harlem, and Fordham Hospitals, in all of which similar ventilating plants were installed and had been found unnecessary and had been discontinued. Profiting by this experience, they had provided a much simpler system of ventilation in the plans for the surgical pavilions of the new Bellevue Hospital which were about to be constructed. There was to be no warmed, filtered, and moistened air forced into the wards by means of fans and ducts. There were, however, to be exhaust flues to aid in the exit of foul air, with fans to draw the air upward and out. It was probable that hot coils in these flues would accomplish the purpose of drawing the air out. The speaker said he would like to see absolutely natural ventilation tried in the hospitals, with the exception of the operating rooms. The ventilation of the schoolroom was more difficult than that of the hospital ward, as the room had usually windows only on one side. There should be a transom over the door to allow the air in the room to pass freely between it and the corridor. The corridors should have windows at each end. Pivoted windows kept the air in the schoolroom fresh and pure at all times, and without drafts. The ventilation in practically all of the public school buildings of New York was very imperfect.

What Is a Tuberculosis Sanatorium?—Dr. Edward O. Otis of Boston presented the following questions: (1) In order to have a true tuberculosis sanatorium, must it receive only incipient cases? (2) Could it be regarded as such if, in addition to incipient cases, it received those moderately advanced or advanced if they presented possibilities of cure? (3) Must it be situated in a region with especially favorable climatic elements? (4) Could it be considered a sanatorium if advanced or hopeless cases were received? (5) What was the best method of selecting suitable cases for the sanatorium, or could this be done under any method of selection? (6) In a State or public institution was it practically possible to obtain all early or curable cases, and should such an attempt be abandoned? (7) Was it objectionable to receive into the same institution called a sanatorium the hopeless cases as well as the early or curable ones? (8) What distinction should be made, if any, between a sanatorium and a consumptive hospital?

The Relation of Tuberculosis to Chorea, Hyperthyroidism and Pharyngeal Hyperplasia.—Dr. Charles Miner of Wilkes-Barre, Pa., said that his interest in these relations had been aroused by the work at the State Tuberculosis Dispensary at Wilkes-Barre, where they had examined many children of tuberculous parents, and among them had found conditions present which seemed in some way related to the tuberculous infection they had contracted. They found a large number with chorea, or with a history of having had choreic symptoms; again among the older members of the families they found a number with the signs and symptoms of hyperthyroidism; finally they found a very large number with pharyngeal hyperplasia. The speaker said that the invasion of the tubercle bacillus was often a slow process, and the significance of tuberculosis in childhood was not limited to the disease itself, but by lowering the tone and resistance of the child it led to the development of abnormal conditions and other infections. They could not prove that chorea, hyperthyroidism, and pharyngeal hyperplasia found in tuberculous children and young adults were caused by the tuberculous infection, but the knowledge of their frequent association might lead, through further investigation, to the discovery of some definite relation of tuberculosis to these conditions.

Studies of the Leucocytes in Pulmonary Tuberculosis and Pneumonia.—Drs. James Alex. Miller and Margaret A. Reed of New York presented this communication. It had long been recognized that the leucocytes of the circulating blood played an important rôle in many if not all of the infections. The researches of Arneth, calling attention to the morphology of the nucleus of the neutrophile, especially in tuberculosis, had stimulated further studies in this direction. The results reported were often suggested by the work of Arneth and represented effort to corroborate and amplify those results by various experimental and clinical observations, and especially to determine their value in the diagnosis and prognosis of pulmonary tuberculosis and pneumonia. It seemed possible that Arneth had laid undue emphasis upon the significance of the neutrophile leucocytes and that it was important to study the other forms of leucocytes in connection with them. Pneumonia was chosen as a companion study with pulmonary tuberculosis as forming a contrast of an acute with a chronic pulmonary disease. The speakers concluded as follows: (1) The study of the leucocytes gave reliable information in the prognosis and clinical course of pulmonary tuberculosis. (2) In the diagnosis of incipient cases it was of no assistance; but in the differential diagnosis of acute pulmonary lesions due to the tubercle bacilli or to some other infection it was sometimes helpful. (3) Arneth's differential neutrophile count was important in tuberculosis. In pneumonia, while the shift of the blood picture occurred regularly, it had no constant relationship to the course of the disease. (4) In general the following changes in the leucocytes occurred in cases of pulmonary tuberculosis which were progressively doing badly, or during an exacerbation of the disease: a leucocytosis; an increased percentage of neutrophiles; a diminished percentage of small lymphocytes; a diminished percentage of eosinophiles; a marked shifting to the left of Arneth's blood picture; conversely, changes in the opposite direction were favorable. (5) In pneumonia their observations had made no material contribution to their knowledge of the behavior of the leucocytes.

Atypical Pneumonia.—Dr. Jay Perkins of Providence, R. I., said that under this heading he had chosen to include those cases of pneumonia the specific organism of which was not known. It thus practically included all cases of pneumonia except those produced by the pneumococcus and the tubercle bacillus and included cases of mixed infection even when these organisms were present. His paper was suggested by the paucity of literature on such cases and the error frequently made in diagnosing them as tuberculosis. Atypical pneumonia was more insidious in its onset than croupous pneumonia, unless caused by some infection secondary to a pneumococcus infection. These pneumonias were seen in the aged, in alcoholics and as postoperative sequelæ, as associated with typhoid fever, with heart disease, with nephritis, in the tuberculous, or in any condition in which the natural resistance of the body had been lessened, although it might occur in strong individuals as well as in the weakened ones. In atypical pneumonia, as compared with pneumococcus pneumonia, the fever lasted much longer, the termination was by lysis, or in abscess formation, or chronic pneumonia, or other secondary pathological conditions of the lungs, and there were complications not met with in pure pneumococcus pneumonia. In its onset a chill was not unusual, there was more likely to be a prodromal stage, the temperature was not so regular,

usually not so high, herpes labialis was absent, the spleen was frequently enlarged, and the disease was more likely to be of epidemic form. No regular course of atypical pneumonia could be given because, as the name "atypical" indicated, there was no regular course. In time, however, he believed that improved methods of diagnosis might remove many of these cases from the category of atypical pneumonia.

Physical Exercise and Blood-Pressure.—Dr. EDWARD O. OTIS of Boston said his attention was first called to this subject while making a physical examination of members of a large men's gymnasium. The men were young or middle-aged and the majority of them were engaged in indoor sedentary occupations. It occurred to him that perhaps, by means of the systolic blood-pressure, taken at three periods, namely, just before, immediately after, and then a little later, after a short rest or after the usual bath, he could thereby obtain some definite idea of the effect of the exercise in each individual case and thus have some practical guide as to the amount and severity of the work best suited to each person. Even the ordinary class work arranged for the average individual might be too severe for some and, consequently, defeat the purpose for which it was taken, namely, as a recreative measure. Of course he recognized that other elements besides the blood-pressure entered into the problem. He accordingly took the maximum blood-pressure at the three periods mentioned of 59 men, 6 boys, and 32 young women. In addition he took the blood-pressure of the first two periods, just before and immediately after exercise, of 29 men, making altogether rather over 350 separate measurements. In all the investigations, those of his own and others, practically the same results had been obtained as regards the variations of the blood-pressure before, during, and after exercise, depending upon the character, length, and intensity of the exercise. In brief, after prolonged and severe exertion there was a diminution of blood-pressure from the normal at the conclusion of the effort. After a short period of mild or moderately severe exercise, as in class work, the blood-pressure taken immediately at the conclusion of the exercise showed, in the majority of the cases, a rise, followed quickly by a fall to or near the normal or to subnormal. In his 126 cases of moderate general exercise 97, or 77 per cent., showed a rise of blood-pressure immediately after the exercise. In 9, or 8.1 per cent., there was no difference between the first and second measurement, and in 20 cases, or 16 per cent., there was a fall in the second measurement. To formulate the results he had obtained, as well as those of other investigators, one might say that physical exercise in the majority of the cases, of whatever nature it might be, excessive, long and continued, or more gentle and moderate, caused a rise in the systolic blood-pressure, the maximum occurring some time during the effort. As fatigue set in and advanced the pressure fell to normal or subnormal. If immediately after exercise the blood pressure was subnormal and remained so for some time, as in the case of the Marathon runners and football players, then for that individual, or for his condition at the time of taking the exercise, he might consider it too strenuous or too prolonged. Blood-pressure measurements might be applied to workingmen if thereby one might more accurately determine their fatigue point, apportion their work accordingly, and thus both conserve their energy and obtain their maximum efficiency.

The Dust Menace and Municipal Diseases.—Dr. HOWARD S. ANDERS of Philadelphia said that of the causes of what might not inappropriately be termed municipal diseases, mostly obvious, some subtle in their workings, infectious irritation and neurovascular lesions played a predominant part. To specify three concrete elements corresponding to and mainly responsible for these etiological processes, there were dust, smoke, and unnecessary noises, and the one that loomed largest in municipal morbidity and mortality was undoubtedly the widespread prevalence of an irritating, as well as an infecting, dust contamination of the city atmosphere. This dust menace and nuisance was preventable, not only in the streets, as was now demonstrated in a few of the large cities, but likewise in the living and working places. There was in fact a vicious circle when street dust was blown, swept, and tracked into habitations, to be swept back into the streets again. Much house dust pollution would be avoided if the original street dust were removed or allayed. Dr. George A. Soper of New York stated: "There is something incongruous about a Board of Health conducting a crusade against smoke and noise and, at the same time, allowing the streets to be filthy with dirt and dust." Now that for about seven years street dust as an element in the propagation of disease especially in the large cities had received such marked and spreading recognition, the problem of street cleaning, as well as of housecleaning, was a live and urgent one. Modern civilization being mainly materialistic and commercialistic was responsible for the creation of a multifarious, mixed, material refuse. Street dust was such a pernicious and persistent menace to the public health because it bodied itself forth a veritable synthetic pulverized compound of various more or less palpable particles of mechanical, chemical, and bacteriological substances, both irritating and infective when inhaled. Apart from the modicum of the mineral dust from the wear and tear of street pavements by horse, wagon, and railway car traffic, municipal dust represented the accumulation of débris of various kinds, animal and vegetable, such as dried sputum of human origin, horse and dog droppings and slobberings, dead and disintegrating insects, scattered garbage and house sweepings, loaded vehicle losses, smoke and soot, in short, mainly an organic combination which in warm weather was seething with rottenness; and in dry weather was mostly blown into houses, noses, and clothing by gusty winds, or sucked up as noxious, stifling clouds by automobiles and trolley-cars. To the average pedestrian dust was hardly more than an annoyance; hence the large opportunity and high duty of men in the medical profession to educate the public to the dangers of dust. For many years they had before them the deadly relation of the dust evil to tuberculosis; this alone should justify the fight for street cleanliness and a declaration of independence against dust distributors. But when one added to this the host of other dust-borne diseases, catarrhal, tonsillar, bronchial, influenzal, pneumococcic, rheumatic, cutaneous, etc., the need of efficient public service in remedying and removing the evil became intensely imperative, and the demand inexorable for right results. Most of the so-called "colds" were dust infections gotten in places where people congregated and traffic circulated freely. Human agency was principally at fault in polluting the air with disease-bearing dust and human agency and energy must be solicited and directed to arrest, subdue, and prevent its production and propagation. The so-called air-borne diseases of the great cities were really synonymous with dust-borne. The speaker told of the agitation against the dust menace in Philadelphia and of the results they had obtained; while to-day far from satisfactory, substantial improvement had been brought about. Circular letters of inquiry were sent to the mayors of some twenty-five cities of America and Europe as to the methods and results of cleaning streets and keeping them clean; in summarizing the results of these inquiries the speaker gave the following: (1) Thorough sprinkling before sweeping; sprinkling also done two to four times in dry (non-freezing) weather to

settle prevalent dust. (2) In the majority of the cities where the results were satisfactory the principal cleaning was done at night, or completed before six o'clock in the morning. (3) Flushing wagons or flushing from curb to curb with hose were used in preference to sprinkling and machine sweeping in the best cleaned cities. Indeed, sprinkling was seldom necessary where the streets were thus virtually washed two or three times weekly. (4) Hand sweeping by blockmen in daytime was always preceded by wetting with a hand sprinkler. (5) Immediate removal of the piles of dirt while wet in covered wagons. (6) Last but by no means least, and the method which, in the speaker's judgment, was destined before long to supersede all others in street cleaning, was the dustless operation of automobile vacuum street cleaners.

THE AMERICAN DERMATOLOGICAL ASSOCIATION.

Thirty-fifth Annual Meeting, Held at the Hotel Lenox, Boston, Mass., May 25, 26 and 27, 1911.

The President, Dr. Douglas W. Montgomery of San Francisco, in the Chair.

Thursday, May 25—First Day.

President's Address.—Dr. Montgomery, in his opening address, said the great subject of serology was now engaging a just measure of attention, and promised to give one a teleological insight into disease that had never been obtained before. The discoveries of the attributes of the sera of the body gave one a tangible, scientific insight into what had been vaguely designated as the patient's constitution, and it was probable that the phenomena of anaphylaxis would elucidate many of the eccentricities of diseases, such as eczema. Many now believed that eczema was merely a peculiar irritability of the skin that might be excited by various stimulants. The real riddle lay in bringing to light why a person would get an eczema under an irritation that had no detrimental effect whatever on almost anyone else, and that not at all times would the same irritant cause an eczema in the same person. This susceptibility or vulnerability of the skin was ascribed to the patient's constitution, and attempts were made to classify patients as having this or that diathesis. Now, both the matter of constitution and also the effects of foods and drugs were placed in a different light by the investigation of the bacterial toxins, and the curious reactions of the blood both to toxins and to normal albumins, such as serum, red blood corpuscles, and egg white. One now seemed to be in a fair way to know something about the constitution.

Sarcoid Tumors of the Skin, with Report of a Case of the Boeck Type.—Drs. George H. Fox and Udo J. Wile of New York stated that under the name of sarcoid tumors Kaposi provisionally grouped mycosis fungoides, lymphodermia perniciosa, and sarcomatosis cutis, his object being to point out the nosological relation between sarcoid and certain granulomata of probable infectious origin. Others adopted the same name, but restricted it to a group of neoplasms composed of round cells, and characterized by a limited growth and comparative benignancy. In 1899 Boeck published in the *Journal of Cutaneous and Genitourinary Diseases* a notable article entitled "Multiple Benign Sarcoid of the Skin," in which he reported a hitherto undescribed dermatosis for which he claimed characteristic and unmistakable clinical as well as histological features. Cases of identical or similar nature had been since reported by observers in various countries, and a rather extensive literature on the subject of this rare disease had already developed. In America the only cases reported were those of Pollitzer and Gottheil. In the Boeck type of sarcoid the lesions developed in the form of one or more large nodules, or occurred in the form of numerous papules or one or more infiltrated placques. It usually appeared on the face, back, shoulders and the external aspect of the arm. The patient's general health seemed to be but little affected, and the subjective symptoms were slight, if present at all. The tumors were firm and elastic, reddish or purplish in color, and showed delicate peripheral telangiectases and occasionally slight scaling. The course of the disease was chronic, and the lesions never ulcerated nor softened. When involution occurred, a central umbilication formed, with gradual flattening of the periphery until a pigmented area or slight atrophic scar remained. Dr. Fox then reported in detail a case of this type, in which the eruption persisted until a series of injections of arsenite of soda were given, when a notable improvement took place. A 4 per cent. solution was used, the dose being steadily increased from five to twenty minims, and then steadily decreased.

The Relationship of Vaccine Therapy to the Treatment of Certain Diseases of the Skin.—Dr. David King Smith of Toronto read a paper on this subject.

The Mottled Chin in Syphilis, and Other Dermatological Observations.—Dr. William B. Trimble of New York, in a paper with this title, discussed the following points: (1) The mottled chin in syphilis. In a number of cases of early syphilis, that is, during the first few weeks or months of the disease, the chin was marked with a macular, variegated eruption which was characteristic and identical in every case where it was present, varying only in degree. It was especially noticeable on that part of the chin in or near the commissure of the mouth. (2) The second observation was the frequent association of lichen pilaris with early syphilis. (3) The third point was the tendency of nitric acid to produce keloids or hypertrophic scars. (4) The effect of the Röntgen ray on lesions of the mucous membrane. This was a plea for the more frequent trial of the *x*-ray in cases of inoperable malignant disease of the tongue and mouth, and even in some cases that might be considered operable, but where total extirpation was necessary. (5) The last observation was that alcohol facilitated bleeding. The facility with which alcohol started or increased hemorrhage was observed while treating cases of acne by the curettage method. During this operation the tops of a number of papules were scraped off, followed by more or less bleeding. In one instance, after the bleeding had been checked, while wiping off the face with alcohol for cleansing and antiseptic purposes, it was noticed that all the bleeding points began afresh, and by merely brushing over the surface with a pledget of cotton saturated with alcohol they could be made to bleed almost at will. It was immediately divined that this phenomenon would be of benefit in cases where it was desired to increase bleeding, and it had been advantageously used in rosacea where scarification was practised.

Dr. William Allen Pusey of Chicago said that, in spite of the statement once made by Dr. Gilchrist that he considered it criminal to treat an epithelioma of the lower lip with *x*-rays, he had treated many such cases with the *x*-rays and he could corroborate Dr. Trimble's observation that superficial epitheliomata of the lower lip often yielded remarkably well to that treatment.

Dr. Montgomery said that in almost every case of epithelioma of the lower lip there was an accompanying seborrhea of the same region. The epithelioma must first be removed, and this certainly could be done in some cases by *x*-rays, but no matter how diverse the opinions or facts might be in regard to the treatment of the epithelioma of the lip with *x*-rays it was his opinion that they were an excellent remedy for the seborrhea, which was a precancerous condition of which the epithelioma itself was the result.

Dr. Jay F. Schamberg of Philadelphia thought that in

spite of the favorable results that had been reported one should use the *x*-rays very gingerly on the mucous membranes, and not at all in operable cancer.

Dr. James C. White of Boston said that, with regard to the production of keloid after the use of nitric acid, he had supposed that sulphuric acid was far more prone to produce such lesions than nitric acid. He had many times employed nitric acid as a local destructive agent, with or without the curette, as well as the acid nitrate of mercury, which was essentially the same thing, and he could not recall a single case of keloid produced by either of these agents.

Dr. Joseph Grindon of St. Louis said the acid nitrate of mercury had been a favorite application of his for many years, and he had never seen a keloid or large cicatricial lesion follow its use.

Dr. M. B. Hartzell of Philadelphia said that with regard to the use of the *x*-rays in epithelioma of the lower lip, with proper exposure, not too prolonged, favorable results frequently followed in selected cases. The mucous membranes were very sensitive to the *x*-rays, and for that reason short exposures were necessary.

Dr. Thomas C. Gilchrist of Baltimore said he was still willing to uphold the statement that it was criminal to use the *x*-rays in the treatment of epithelioma of the lower lip. In this condition one usually had early involvement of the glands, and these were not benefited by the *x*-rays. All cancers of the lips should be treated surgically, as every case required removal of the neighboring glands.

Dr. A. R. Robinson of New York said he had never yet been able to recognize a basal-celled carcinoma of the lower lip; all of his cases had been of the spindle-celled type. A rodent ulcer of the lower lip was unknown to him. As to the use of the *x*-rays in these cases, the speaker said he agreed with Dr. Gilchrist. He had always found that the *x*-rays only aggravated prickle-celled carcinoma; they were unreliable, and instead of acting as a destructive agent in these cases they rather stimulated them to increased growth.

Dr. Francis J. Shepherd of Montreal said he agreed with Dr. Gilchrist that it was criminal to treat a cancer of the lower lip in any other way but surgically, as in those cases the glands were almost invariably affected.

Dr. F. J. Leviseur of New York said the difference between the knife and the *x*-rays seemed to him to lie in the fact that one could easily control the former, while it was difficult to measure the latter.

Dr. Howard Fox of New York said he could bear out Dr. Trimble's statement that keloids might follow the application of nitric acid.

Dr. John A. Fordyce of New York said that during the past twenty years he had examined histologically many epitheliomata of the lip, and he had never seen a primary basal-celled epithelioma in this region. He agreed with Dr. Robinson that practically all of these epitheliomata of the lip were of the squamous-celled type, and he also believed that surgical treatment was the method of choice in these cases.

Dr. Trimble, in closing, said he agreed with both the surgeons and the dermatologists. If the case was operable surgical measures should be resorted to; if it was inoperable other measures had to be tried. Many of these patients refused operation, and in such a contingency some other method of treatment had to be found.

Dermatitis Vegetans in Infants.—Drs. Grover W. Wende and Herman K. DeGroat of Buffalo read this paper.

A Comparative Study of the Wassermann and Weil's Cobra Venom Reactions for Syphilis.—Dr. Hans J. Schwartz of New York reported the results of this work, which was undertaken at the suggestion of Dr. James C. Johnston. The author stated that a comparative study of the Wassermann and Weil's cobra venom reaction for syphilis carried on during the past year had brought out certain points which seemed to merit attention as indicating that Weil's reaction was a valuable adjunct to the Wassermann reaction in the diagnosis of syphilitic conditions. A study of the tables contained in the paper revealed: (1) That the Wassermann reaction was much more sensitive in the early, untreated stages of syphilis. In the primary stage the Wassermann gave a positive reaction in 73.9 per cent. of the cases; the Weil in only 54.3 per cent. In the early, active cases, with little or no treatment, the Wassermann was positive in 96.8 per cent.; the Weil in 67.1 per cent. In the early, latent cases with little treatment, the Wassermann was positive in 90.0 per cent.; the Weil in 75 per cent. (2) In the latter, untreated stages of the disease, the opposite conditions obtained, namely, the Weil was more sensitive than the Wassermann. In the late, active cases, with little or no treatment, the Wassermann was positive in 77.5 per cent.; the Weil in 81.6 per cent. In the late, latent untreated cases the Wassermann was positive in 34.7 per cent.; the Weil in 76.3 per cent. (3) In the treated cases it was found that the Weil reaction was much the more sensitive throughout; in other words, the Weil reaction persisted much longer after mercurialization, and therefore offered a further diagnostic and therapeutic test. In conclusion, the author stated that the Weil reaction seemed to be specific for syphilis with the sole exception of carcinoma. The Wassermann and the Weil reaction did not run parallel to each other, but one proved sensitive under conditions where the other failed. He therefore considered that the application of the two tests, both in the diagnosis and therapeusis of syphilis, was highly important.

The Results of the Wassermann Reaction in Sixty-one Cases of Syphilis Treated with Salvarsan.—Dr. Martin F. Engman and R. Buhman of St. Louis offered the following conclusions: (1) Of 61 cases, 32 received salvarsan alone; of these, none (28 per cent.) gave a negative reaction, and 23 (72 per cent.) gave a positive reaction. (2) Of the nine negative cases, two received two doses; therefore, only seven (21 per cent.) of the 32 became negative after one dose. (3) Of the group of persistent positives, five had two doses and one had three doses. (4) Of 61 cases, 29 received mercurial injections following the salvarsan, and of these fourteen (48 per cent.) gave a negative reaction. Four cases gave a persistent positive after two doses of salvarsan and mercurial injections. (5) Seven cases had two doses of salvarsan alone. Of these, only two (28 per cent.) became negative, while five remained persistently positive. These were all severe cases. (6) In the earlier syphilides salvarsan was used alone in six cases, with 33 per cent. of negative reactions. (7) In the later syphilides salvarsan was used alone in 26 cases, giving a negative reaction of 26 per cent. (8) Junkemann's method used in 43 cases gave a negative reaction in sixteen cases (37 per cent.), while 27 cases (63 per cent.) remained positive. (9) The intravenous method was used in sixteen cases with no negative after a single dose; two became negative after two doses, and five remained positive after two doses.

Dr. Howard Fox of New York thought it was difficult to draw any general conclusion as to the serological action of salvarsan, owing to the great discrepancies of different writers. A review of the literature showed that the proportion of negative reactions obtained ranged from 5 to 90 per cent. Most of the observations had thus far been made after a single injection, and it certainly seemed that one injection was an insufficient dose from the serological as well as the clinical standpoint. With regard to his own work, Dr. Fox said that 30 per cent. of the cases he had examined had changed from a positive to a negative

Wassermann reaction within six weeks after the administration of salvarsan. In general the action of salvarsan upon the Wassermann reaction was analogous to that of mercury. Every one would certainly agree that its action upon the clinical symptoms was much more rapid and marked than it was upon the Wassermann reaction.

Dr. R. Buhman of St. Louis said that, while the clinical symptoms following the injection of salvarsan seemed to subside very rapidly, the Wassermann reaction, without the aid of mercury, often remained strongly positive for some time.

Dr. E. Wood Ruggles of Rochester, N. Y., showed a small instrument which he had devised for the purpose of simplifying the puncture of the vein in giving injections of salvarsan, and also in obtaining blood for testing purposes.

Dr. William T. Corlett of Cleveland said that during a recent visit to medical centers in Europe he took occasion to investigate the work done, and had found that it was almost as indefinitely and carelessly done in Germany as in America, and the results were about the same. In Berlin a specimen of blood was sent to three different experts, one of them being Wassermann himself, and three different results were reported—one positive, one negative and one intermediate. It was claimed by those who had done the most work with the serum that the only place where the test was accurately made was at the Royal Institute of Serology in Copenhagen.

Dr. Jay F. Schamberg of Philadelphia said he had had some 60 Wassermann tests made, most of them being patients in private practice, and the readings had in a large part tallied with the clinical findings, and they had been of inestimable value to him from a diagnostic and therapeutic viewpoint. Salvarsan, particularly when administered intravenously, had a far more efficient effect on the manifestations of syphilis than had mercury, barring exceptional cases, and there were cases, particularly those of the malignant type, that utterly resisted mercury and in which the effects of salvarsan were magical.

Dr. James C. Johnston of New York said there was no doubt about the value of the Weil test in late syphilis. In one case of bilateral hemianopsia due to retinal arteritis the man gave a negative Wassermann and a plus Weil. He received an injection of salvarsan, and his visual fields returned almost to normal within ten days; he was then given a second injection, and his eyesight became practically normal. In syphilis of the nervous system the examinations they had thus far made seemed to show that the Weil test did not act as well as the Wassermann.

Dr. Engman said this entire question hinged largely upon the man who did the work and the reliability of his reagents. He regarded the Wassermann test as a most valuable adjunct in the treatment of syphilis.

Treatment of Malignant Syphilis.—Dr. Howard Morrow of San Francisco said the term malignant syphilis had been loosely applied to various forms of lues which ran a severe course. Some of these cases developed ulcers and rupial lesions in the early stages of the infection, and occasionally such cases ended fatally. In others there were severe constitutional symptoms, and different forms of syphilides appeared, notwithstanding the use of mercury. Another class of cases sometimes spoken of as malignant syphilis was associated with progressive destruction of the nasopharynx, violent headaches, loss in weight, and other severe constitutional symptoms. These were the cases in which treatment with mercury had been unsatisfactory, and a definite prognosis could not be given. Through the courtesy of Dr. Flexner, the writer said he had had opportunity of using salvarsan on a number of patients with malignant syphilis, and judging from the action of the drug in these cases the following conclusions seemed warranted: Salvarsan controlled malignant lues quicker and better than did mercury. Severe infections seemed to clear up as quickly as milder ones. In nasopharyngeal necrosis the action was quick and sure. If given early in lues, either alone or in conjunction with mercury, cases of malignant lues would become clinical rarities.

Dr. John A. Fordyce of New York said he was fully convinced that salvarsan had its most beneficial effects in malignant syphilis where the patients had become immune to mercury or were intolerant to this drug. In addition to its remarkable effects in malignant syphilis, it was most beneficial, in his opinion, in the early stages of the disease. It was his belief that the administration of salvarsan in two or more doses in the early period of syphilis, followed by a mercurial course of several months, offered the patient the best hope for a speedy eradication of the infection.

Dr. William A. Pusey of Chicago said that, like Dr. Morrow, he had seen the most striking effects of salvarsan in healing the serious lesions of syphilis, but it seemed to him that we must recast some of our previous knowledge of syphilis if we were to accept all of the cases of so-called malignant syphilis that were being reported in the articles upon salvarsan. All the works on syphilis, Dr. Pusey said, spoke of malignant syphilis as a very rare condition, and he had come to wonder whether the enormous number of cases which were coming to light in the literature of salvarsan, and which were being reported as unamenable to mercury and potassium iodide and rational treatment, was not a state of mind rather than a fact.

Dr. S. Pollitzer of New York said we heard more about these cases since the introduction of salvarsan because the results of the new therapy were so striking that they were often published.

Dr. E. Wood Ruggles of Rochester, N. Y., said he did not think that laboratory findings always corresponded with clinical results. It had been shown, for example, that argyrol and other germicides had no effect on certain microorganisms, particularly the gonococcus, in the test-tube, yet no one would deny their effect on these organisms in the human body.

Dr. Abner Post of Boston said there was no question about the very valuable effects of salvarsan in malignant syphilis.

Dr. Frederic J. Leviseur of New York reported a case of malignant syphilis which was interesting on account of the difficulties that surrounded the diagnosis, the long course of treatment that the patient had undergone, both in this country and abroad, and the remarkable improvement that followed the use of salvarsan.

Dr. Morrow, in closing the discussion, said that in the cases he reported the patients had received tonic and hygienic treatment in addition to the specific medication. Both patients had been given inunctions and large doses of potassium iodide.

Erythema Nodosum Syphiliticum (Mauriac).—Dr. Frederic J. Leviseur of New York read a paper on this subject, in which he offered the following conclusions: (1) Mauriac's disease was a form of syphilis. (2) The striking resemblance between Mauriac's and Bazin's disease was becoming more and more apparent. (3) It was a malignant form of syphilis (precocious tertiary), frequently preceded, accompanied, or followed by the formation of gummata. (4) It was liable to be mistaken for rheumatism or an accidental combination of both rheumatism and syphilis.

Friday, May 26—Second Day.

A Fatal Case of Blastomycosis.—Dr. Francis J. Shepherd of Montreal reported the case of an Italian, 25 years old, who had lived in Canada two years. Four

months prior to his admission to the Montreal General Hospital he first noticed an ulceration on the side of the nose, which became covered with a crust. When Dr. Shepherd first saw him, in August, 1910, in addition to the eruption on his face, there was a sinus, discharging pus freely, leading down to diseased bone at the sternal end of the right clavicle. Also a fluctuating swelling over the second lumbar vertebra. The growth on the face covered the upper three-fourths of the right side of the nose, extending up to the inner canthus of the eye, and was continuous with a fungating growth below the right lower eyelid. The lesion over the nose was ulcerating and discharging pus. The case proved to be one of blastomycosis, and the organisms were found in the discharges from the sternoclavicular sinus and the dorsal abscess. Subsequently, various sinuses developed in connection with the joints and bones, and the patient died from exhaustion four months after entering the hospital. The autopsy revealed disease of the lungs and the invasion of the organs and tissues with blastomycetes.

Considerations on Lupus Erythematosus.—Dr. A. Ravogli of Cincinnati read this paper.

Three Unusual Forms of Cutaneous Tuberculosis.—Dr. Howard Fox of New York gave a detailed report of these cases.

A Micrococcus with Unusual Characteristics as a Factor in a Resistant Dermatosis Resembling Acne Vulgaris.—Drs. Henry Rockwell Varney and L. T. Clark of Detroit reported in detail five cases in which a micrococcus with unusual characteristics was isolated. Some clinical features were common to all of these cases. They were uniformly of unusually long duration, all existing over eight years, and one twenty-four years. A summary of the findings in these cases indicated the following points: (1) A micrococcus considerably unlike the *Staphylococcus pyogenes albus* might cause lesions in the skin which were acneiform, and which differed in their clinical history and treatment. (2) This micrococcus differed in morphology and in some cultural characteristics from the strains of *Staphylococcus pyogenes albus* they had studied. (3) Antisera produced by the micrococcus agglutinated the cultures of their origin in higher dilutions than did sera from strains of the *Staphylococcus pyogenes albus*. Cross agglutination tests showed the agglutinations of these sera to be specific to cultures of the class of their origin. (4) The acneiform eruptions in which this organism was found persisted long after the acne age, and, while utterly resistant to the usual acne therapy, they had been cured by vaccines made from the organism. The authors stated that, while their experiments in attempting to differentiate between a micrococcus isolated from skin lesions and the easily recognized common organism were not decisive, they were convinced that sufficient differences existed to warrant further study.

Dr. Martin F. Engman said that when one isolated an organism from any skin lesion it was very difficult to say that it was the specific organism pathognomonic of that particular disease. Still, the work of the authors of this paper was very convincing on account of the serological tests that had been employed. There were undoubtedly many acneiform lesions that would have to be taken out of the vulgaris group. The speaker said he believed from his own investigations, as well as those of Dr. Gilchrist and others, that the acne bacillus was really the cause of acne vulgaris, but it was very probable that other forms of acne were due to other specific organisms.

Dr. George T. Jackson of New York said he had seen one of these cases while in Detroit last spring, and it was absolutely unique so far as his experience went.

Toxic Dermatoses: Dermatitis Herpetiformis, Pemphigus, and Some Other Bullous Affections of Uncertain Place.—Dr. M. B. Hartzell of Philadelphia opened a general discussion on this subject. He said that for the sake of convenience of discussion toxic dermatoses might be divided into two groups, the first comprising such affections as erythema multiforme, urticaria, and the eruptions produced by drugs and serums, in which the toxic character of the affections was definitely known and therefore undisputed; the second, comprising such diseases as dermatitis herpetiformis, pemphigus, and certain other bullous diseases of somewhat uncertain place, in which the definite proof of their toxic origin was yet lacking to a considerable degree. The writer then discussed in detail the relationship of the members of the second group to those of the first and to one another, and briefly considered the evidence for their toxic nature. He concluded by expressing the belief that the affections comprising the second group, as well as those belonging to what he had designated as the first group, were toxemias due to a great variety of toxic substances which might be introduced into the body from without, or might arise from autointoxication or from local or general bacterial infection; and that, although they differed from one another sufficiently in their symptomatology and course to entitle them to be considered as separate and distinct affections, they were essentially one in their pathogenesis.

Toxic Dermatoses.—Dr. John A. Fordyce of New York continued the discussion of this subject. He said the view was no longer held by dermatologists that erythema multiforme and urticaria were distinct entities, but that they were skin reactions due to irritants of most diverse origin. While the one was probably always the result of some irritant from within, uticaria might follow both the introduction of or contact with some toxic substance. The etiological factors concerned in urticaria were well known, and it had for a long time been recognized that a special susceptibility on the part of the individual must be invoked, but it was only within the last few years that an attempt had been made to explain this so-called idiosyncrasy. It was Wolff-Eisner who first claimed for urticaria a uniform etiology, namely, an anaphylaxis against alien proteid. Anaphylaxis had been familiar to the medical world for years, and many attempts had been made to study its mechanism, but it was not until 1902 that anaphylaxis and immunity were first differentiated. This was done by Richet in his classical experiments with actinia extracts, by which he demonstrated that an animal could be so sensitized to an injection of a nontoxic dose that a second injection of a minimal quantity, after a certain interval, proved fatal. The following year, Arthus, using horse serum, obtained similar phenomena. About the same time, von Pirquet and Schick, working along similar lines, first definitely classified the symptom-complex, which developed after the injection of therapeutic sera as serum disease. This they interpreted as a reaction to a specific foreign proteid The process of anaphylaxis consisted of the introduction of a foreign proteid to which the organism responded by producing an increase of antibodies for this substance. On the administration of a second dose, after the so-called incubation period, of even a minute quantity, the proteid was so rapidly disintegrated by the antibodies that toxic products were set free and then gave rise to the clinical phenomena. The further disintegration of these toxic products rendered them harmless, and the attack subsided. The familial susceptibility which was sometimes met with in addition to individual idiosyncrasy was not sufficiently explained, according to some authors, by the anaphylactic theory, and they would seek the cause of these phenomena in an inherited instability of the vasomotor system. Dr. Fordyce then discussed the various views regarding urticaria, and said the controversy to-day hinged on the theory of an angioneurotic or inflammatory origin. Reidl and Kraus, from their experiments, concluded that the

anaphylactic state was characterized by a fall in blood pressure and a vasodilatation of the peripheral vessels. Recently Hoffmann had called attention to the relation of internal secretion with the anaphylactic condition and emphasized the fact that urticaria was frequently associated with hay fever and asthma, and that all the conditions were commonly found in hyperthyroidism. He reasoned from this that the glands of internal secretion so influenced the vessel tone by their products that they were an important factor in the production of anaphylaxis. In conclusion, the author stated that, although the many and varied conditions under which the erythema group of skin diseases occurred pointed to a plurality of causative agents, we had no more plausible explanation of their *modus operandi* than that advanced by the theory of anaphylaxis. It elucidated the vague terms idiosyncrasy.

Some Toxic Effects in the Skin of Disorders of Digestion and Metabolism.—Dr. James C. Johnston of New York discussed this phase of the subject. He said there appeared no weighty reason for dividing the toxic disorders of the skin into classes, especially if the classification showed a tendency to rigidity and so limited a proper view of causative factors in any given instance. The difficulty of division lay in the overlapping of these factors. However, if this objection be kept in mind, a separation into three groups was permissible: first, disorders due to derangement of digestion; second, of intermediary metabolism; third, those due to anaphylaxis. For example, although urticaria was at present the only autotoxic eruption which had been experimentally demonstrated to be an anaphylactic phenomenon, it was rare to find a chronic case uncomplicated by gastric symptoms. Prurigo's relationship to urticaria was close, but it was associated with evidence of disturbance in intermediary metabolism, and if anaphylactic shock was a factor it must be only partial. Conversely, anaphylaxis in the human being commonly expended its force not on the respiratory apparatus, but on the gastrointestinal tract, as was amply proven by cases of serum disease. After all, it mattered very little whether indigestion was primary or secondary; it claimed attention in either event. Dr. Johnston then discussed in detail these three groups of toxic disorders, and reported illustrative cases.

The Toxic Origin of Erythema Multiforme.—Dr. Henry G. Anthony of Chicago said that erythema multiforme was a toxic dermatosis produced by many toxemias. It was closely allied to and often associated with urticaria, and also with purpura. In the presence of a case of erythema multiforme with urticaria one suspected that the toxemia was derived from the gastrointestinal tract, while when the association was with purpura the toxemia was more apt to be derived from some focus of infection, or from ptomaine poisoning. Erythema nodosum was one of the many manifestations of erythema multiforme rather than an independent affection, as was formerly supposed. A toxemia from pharyngitis or from an infectious disease such as malaria might assume the form of erythema nodosum in one case and any other form of the eruption in other cases. Clinical observations led one to believe that the form which the eruption took depended on the dose and virulence of the toxins absorbed, on the vitality of the individual, and on the functional integrity of the eliminating organs. In the terminal stage of nephritis, especially in the aged, the tissues frequently exhibited a diminished vitality, as was shown by the lesions which resulted from trivial traumatisms. Erythema multiforme occurring in such individuals usually assumed the bullous type. In discussing the treatment of erythema multiforme, the speaker said that in this condition elimination was frequently interfered with by the presence of toxins in the system, and such patients were salivated by doses of mercury which they could easily tolerate in health, administered under the mistaken diagnosis of syphilis. He had observed more cases of mercurial stomatitis from moderate doses of mercury in erythema multiforme than in any other dermatosis. The salicylates were toxin eliminators, and possessed the power of destroying microorganisms in the system. They were more powerful eliminators of certain toxins than of others: hence, they exerted a greater curative influence on some cases of erythema multiforme than on other cases, while in some toxemias they were entirely impotent. Still, they were the most powerful toxin eliminators which one possessed, and where continued for some time they were of value even in severe cases of thrombophlebitis.

Dr. A. Ravogli of Cincinnati said he agreed with Dr. Hartzell that dermatitis herpetiformis was nothing but the result of a toxic condition. The speaker said he regarded pellagra as a toxic erythema produced either by the absorption of mouldy substances found in decayed corn or from the presence of fermentative elements remaining in the intestines.

Dr. Schamberg said that some very interesting facts were to be gleaned from a study of the serum eruptions. The periods of incubation of serum phenomena from the sera of different horses varied considerably, from two to fifteen days or longer. Likewise, different horse sera varied greatly in their tendency to produce rashes. He had seen diphtheria serum uniformly produce an eruption in eight or nine days, whereas the serum from another animal would produce an eruption in two or three days.

Dr. Joseph Grindon of St. Louis said that eosinophilia in dermatitis herpetiformis, to which Dr. Hartzell referred, was of little value in establishing the differential diagnosis between that disease and pemphigus.

Dr. William T. Corlett of Cleveland, referring to Dr. Johnston's statement concerning hyperacidity associated with rosacea, said he thought it was well established that such was the case. For many years he had observed that an erythema surrounding the mouth was almost invariably associated with gastric disturbance.

Dr. Engman said there were a certain group of eruptions which were undoubtedly the result of intestinal toxemia. In certain individuals such a toxemia would produce a pompholyx, in others a multiple erythema, and in others a pemphigus. By putting our pompholyx patients on a vegetable diet, it was remarkable to see how rapid their recovery often was. In these cases the vegetable diet must be absolute.

Dr. Pusey said we were now groping in the dark, looking for tangible facts about the action of toxins in the body, and he called attention to the recent monograph by Martin Fisher, a prize essay of the Philadelphia College of Physicians, upon the affinity of colloids for water of different degrees of acidity. This, perhaps, pointed to a working theory for many of the phenomena that occurred in the toxic erythemata.

Dr. Hartzell, in closing, said there were certain toxic dermatoses, the so-called septic dermatoses following septic wounds, in which the symptoms were due to the absorption of bacillary toxins from localized foci of infection, as distinguished from a general infection.

Dr. Fordyce, in closing, said the discussion had emphasized very distinctly that the toxic dermatoses were not due to any one cause, but were skin reactions due to a variety of causes.

Dr. Johnston, in closing, said that while we heard a good deal of the multiplicity of these eruptions and their causes it was no less a fact that the same cause might produce multiple effects: for instance, from the same cause we might have a pemphigus, a pompholyx, or a purpura; the cutaneous type, however, generally ran true in the individual.

Xanthoma Tuberosum Multiplex.—Drs. S. Pollitzer

and Udo J. Wile of New York presented what was largely a pathological report, based upon the study of a number of sections from several cases of xanthomata observed during the past twenty years, and of material obtained by biopsy of a case recently under the authors' observation.

Saturday, May 27—Third Day.

A Case of Acanthosis Nigricans.—Dr. Charles J. White of Boston reported this case in detail, with histological findings.

Multiple Areas of Pigmentation of Eight Years' Duration Involving Chiefly the Trunk of a Girl of Twelve: Histological Examination and Review of the Literature. Dr Frank Crozer Knowles of Philadelphia read this paper.

Report of Eosinophilia in Scabies, with a Discussion of Eosinophilia in Various Diseases of the Skin.—Drs. Jay Frank Schamberg and Albert Strickler of Philadelphia read this paper.

Veronal Poisoning.—Dr. S. Pollitzer of New York said that since the introduction of veronal as a hypnotic about eight years ago a considerable number of cases of poisoning with the drug had been reported. The medicinal dose of veronal was from one-half to one gram, but the range of toleration was a rather wide one; single doses up to eight or ten grams or more had been taken without harmful effect. Umber reported the case of a healthy woman who recovered after a single dose of twenty grams. Among the symptoms recorded in cases of toxic effects from medicinal doses of the drug, vertigo, nausea and vomiting, stupor or mental confusion, muscular weakness, thirst, and a macular and vesicular eruption on the skin, resembling an antipyrin rash, were mentioned. The symptoms varied considerably, however, in different cases, and in general one might divide all these cases into three groups: those in which a single large dose was taken by accident or with suicidal intent; those in which patients had exhibited an idosyncrasy to even small doses, and those in which the continuous use of the drug in medicinal doses over a long period had resulted in the sudden development of toxic symptoms. Dr. Pollitzer then illustrated these types with a few cases from the literature, and reported in detail one case of the cumulative type that had come under his observation. In concluding his paper, he emphasized the importance of care in the administration of this valuable hypnotic. It should, of course, never be given undissolved, and it should not be administered daily over long periods of time, lest it exercise harmful cumulative effects.

AMERICAN ELECTROTHERAPEUTIC ASSOCIATION.

Twenty-first Annual Convention, held at Philadelphia, September 5, 6, and 7, 1911.

The President, Dr. Frederic de Kraft of New York, in the Chair.

Addresses of welcome were delivered by Mr. Gleason, Secretary to the Mayor of Philadelphia, and by Dr. C. B. Longenecker, President of the Philadelphia County Medical Society. Dr. Charles R. Dickson of Toronto responded on behalf of the Association.

Presidential Address: The Development of High Potential Currents as Applied to Medical Uses.—Dr. de Kraft traced the development of this mode of treatment from ancient times down to the present.

Report on Direct Continuous Current.—Dr G. B. Massey of Philadelphia read this report. The committee felt that too little attention was still bestowed in this country on medicamental ionization with low volt currents. It was possible that one failed to obtain the full results on account of defective technique. Too little skin surface was used for the diffusion of the ions through the skin. With the parts immersed in local baths, the electrodes would not irritate the skin unduly. Instead of the baths, one might employ very large electrodes of several layers of absorbent cotton wetted with the solution, over which a bandage-like strip of tinfoil might be wound, to which a thin wire was attached by simply threading it to a corner and bending the corner on itself.

Report on Induced Currents, Including Alternating and High Frequency Currents and Apparatus.—Dr. Frederick M. Law of New York made this report. In using the D'Arsonval current the amount of dielectric had a marked influence on the therapeutic effect, the greater the amount of the dielectric the more superficial the effect and the more influence felt on the sensory nerve endings. Eddy currents were generated within the body which acted as a gentle massage. A valuable use of this current was in intestinal autointoxication. The use of the bipolar D'Arsonval current might be fraught with danger unless carefully performed. Dosage should be governed by the effect on the patient. The construction of the resonator had a great bearing on the effect of the discharge. Very little could be done with a small resonator.

A Note on the Electrical Treatment of Obesity.—Dr. F. Howard Humphris of London, England, described the method of Prof. Bergonié of employing electricity in the treatment of obesity in order to provoke a general exercise or stimulation of the muscles of the body. This method consisted in causing the contraction of the muscles some one hundred times a minute by means of a current derived from what might be termed an induction coil, or a coarse wire faradic, whose coefficient of transformation was 2 or 3, the current being interrupted by means of a metronome. Rheostats were used so that each part of the body received that amount of electricity which it could comfortably bear. The electrodes covered as large a surface of the body as possible.

Report on Static Currents and Apparatus.—Dr. Herbert F. Pitcher of Haverhill, Mass., made a plea for the continuance of the use of static electricity. The men who claimed that with the advent of the high frequency apparatus the era of the static machine was passing were either warped in their judgment or were ignorant of the currents and therapeutic effect of the static machine. No high potential apparatus had yet been produced which would induce the physical effects of the tissue pulsation with resulting tissue drainage.

On the Use of Compressed Gases for Increasing the Efficiency of the Static Machine.—Dr. F. Howard Humphris of London, England, read this paper. Anything which would enable the physician to charge his static machine rapidly and in all weathers, and also to increase its capacity of voltage, must be welcome. Some time ago he conceived the idea of leading into the case some fresh air passed through sulphuric acid and ice, and removed by means of a suction pump at the other side of the case. But the simpler procedure of replacing the moist impure air by CO_2 or liquid air he decided upon trying first. On the subject of liquid air a report would be made later. The experiments with CO_2 had been so successful that, given a static machine in good running order and a cylinder of CO_2, it could be made to charge in all weathers and in all climates, and, moreover, in a given machine from which the current was insufficient with CO_2 the capacity and voltage could be readily increased from 20 to 30 per cent.

Report on Phototherapy.—Dr. Edward C. Titus of New York said that the committee had endeavored to determine whether the beneficial action of phototherapy was due to heat or to light, or both together. Considering the very powerful effect of certain invisible, noncaloric luminous radiations, the analgesic and soothing action of certain kinds of light, it must be admitted that their effect could not be attributed to heat, or only in a minor degree. The

luminous radiation was the principal, if not the unique, element of this action. The committee recommended plans for the construction of a modern electric light bath cabinet.

Report on Röntgenology.—Dr. G. E. Pfahler of Philadelphia reviewed in detail the recent advances in rontgenography and röntgenotherapy, dwelling particularly upon the use of the *x*-ray in the diagnosis of abdominal conditions.

Report on Standardization of Physical Therapeutic Measures.—Dr. William Benham Snow of New York read this report. The wisdom of the establishment of standards for the employment of electrotherapeutic and other physical measures was demonstrated as year after year the papers read before the Association partook less of the empiric. Rational medicine demanded rational standards and the universal recognition of the laws of physics and the action of physical agents upon the human organism in conformity with the various demonstrable physiologic effects and their action upon pathological conditions.

Some of the Therapeutic Indications of High Frequency Currents.—Dr. Herbert F. Pitcher of Haverhill, Mass., outlined some of the more common conditions and diseases in which the high frequency currents were indicated.

Static Electricity in Nervous and Mental Diseases.—Dr. J. J. Kindred of Astoria, L. I., dwelt particularly upon the use of electricity in the relief of pain, nervous instability and brain fatigue, anterior poliomyelitis, tabes dorsalis, dementia precox, hypertension and arteriosclerosis, and neurasthenia.

The Rational Treatment of Cardiovascular Disease.—Dr. William Benham Snow of New York said the rational treatment of cardiovascular disease consisted in the removal of the cause and the relief of existing conditions. If due to toxemia, the latter should be limited by evacuation with cathartics and high colonic flushings, the administration of intestinal antiseptics, and the limitation and selection of proper foods. Rowing teams in colleges should be abolished. College youths who had developed cardiac hypertrophy should be warned against lapsing into a quiet life. In tachycardia due to hypersecretion of the thyroid, treatment of the gland by the *x*-ray promptly relieved the tachycardia and dyspnea in these cases. The autocondensation method of treatment of hypertension was one of the most valuable additions to the materia medica, and might be used in all cases except where parenchymatous nephritis was present. This method had been used with uniform success, employing the couch, with a current of four or five milliampères for twelve minutes daily or upon alternate days, or less frequently, according to indications.

Benefits from the Employment of Electricity in Gastrotherapeutics — Confirmed Results and Deductions from Over a Thousand Cases.—Dr. Anthony Bassler of New York. The cases studied were uncomplicated primary cases of sensory, secretory, and motor disturbances. In the hyperesthesia cases continuous galvanism with the positive pole internally was useful. In obscure enteralgias and tenderness along the colon galvanism was worthy of trial. In neurasthenias the speaker's experience had been that the high frequency and static currents were best. In the secretory cases, if no motor disturbances were present, the galvanic current was used. The best results of treatment were obtained in the myasthenic and the atonic cases.

Elimination.—Dr. Charles O. Files of Portland, Me., said that elimination had always been considered of great importance in the treatment of disease. The old methods of bloodletting, large doses of calomel and jalap, or small doses of calomel for the purpose of inducing salivation, the use of tartar emetic, cupping, blisters, setons, and moxas had happily passed away. The necessity of getting the emunctories to work, of stimulating all the excretory organs, would never go out of fashion. One has in physical therapeutics the means of accomplishing the desired end without doing violence to other organs. These means were hydrotherapy, radiant light and heat, massage, electricity in many modalities, and vibration.

The Treatment of Constipation.—Dr. H. M. Imboden of Clifton Springs, N. Y., said that dyschezia would usually be corrected by the establishment of regular habits. Hot and cold douches to the perineum were good in some cases. The static wave current with the electrode introduced into the rectum had been very satisfactory, the treatment being given just before the hour selected for defecation. Glycerine suppositories might be used in some cases. Enemas must be used occasionally. In the class of cases in which the feces passed slowly through the colon the measures to be used were diet, exercise, the interrupted continuous current, cold sitz baths, the alternating pan douche, and deep abdominal kneading, with the hand or the vibrator.

Enforced Compensation.—Dr. Gustavus Werber of Washington, D. C., did not consider compensation in its usual application to designate the readjustment of the histological elements of various organs to bridge over the danger caused by morbid processes, but only in its broadest sense to include all those processes by means of which nature protected herself against the results of disease or accident. The paper was offered as a speculation as to the means of increasing control of these forces. Among the means that had been used to this end were faith, fasting, heat, cold, drugs, sudden loss of blood, hypnotism with suggestion, physical exercise, by challenge or placing the *vis* on the defensive, and by anything which depressed the index of vital resistance and is followed by reaction.

Acute Bronchopneumonia (?) Relieved by the Static Wave Current—Report of a Case.—Dr. A. B. Hirsh of Philadelphia reported a case of acute pulmonary infection in which, after other measures had failed to give relief, a metal electrode 4 by 8 inches placed over the front of the upper chest and a twelve-minute application of the static wave current was given. Its effects were so prompt in relieving the pressure and weight within the chest, the cough and bloody sputum, that the current was used morning and evening for several days, and the patient went on to rapid recovery.

A Rational Muffler for the Static or High Frequency Spark.—Dr. George E. Pfahler of Philadelphia presented a muffler that he had devised. It consisted of two glass plates (cleaned *x*-ray negatives, 14 by 17 inches were used), which formed the top and bottom of the box constituting the muffler. The sides of the box, made of hard rubber, were 5 inches deep and closely fitted the outside of the glass plates. Holes were cut in the ends for the passage of the sparking rods.

The Rational Treatment of Duodenal Infection.—Dr. Frederick H. Morse of Boston, Mass., read this paper. Duodenal infection might be acute and of little consequence. Rigid diet and a little antiseptic medication would bring about a cure. In the chronic conditions of duodenal toxemia where the infection had gone through the meshes of the diseased bowel the infiltration of the poison was so far outside of the immediate digestive tract that the usual medicinal efforts availed nothing. This was where vibratory impulses set up by electricity and other physical methods were the most effectual means of eliminating the infection. The modalities mentioned in the treatment were the sinusoidal, faradic and galvanic surging apparatus, and the wave current from the static machine. A long train of symptoms ordinarily called rheumatism, rheumatic sore throat, sciatica, constipation, neuralgia, etc., were usually cured when the pent-up toxemic infection was removed.

Is the Present Attitude of the Medical Profession Toward Physical Therapeutics Justifiable?—Dr. J. C. Walton of Richmond, Va., said that while it was frankly admitted that physical therapy had its limitations, and it was not claimed by its most enthusiastic devotees to be a panacea, still it filled a very important place in therapeutics, and there should not be any antagonism between this and any other progressive rational system of therapeutics, especially drug and serum therapy, and that very important branch of therapy, the therapy of the ductless glands. The sole object and aim of the true physician was to cure his patients, and to accept the truth wherever found. He should always approach the solution of these great problems in therapeutics with an open and unbiased mind, striving diligently to ascertain the truth.

Three Cases of Pellagra Treated by High Potential Currents.—Dr. D. H. Yates of Madison, Fla., presented this paper, which was read by the secretary. The author was led to use this treatment from the similarity of the skin lesions to those of chronic eczema. The method was applied as follows: The patient was seated on an insulated platform with the shoes removed. The feet were placed on the metal plate, and the plate connected to the positive side of the static machine. A crown electrode was connected to the stand support above the patient's head and connected by a wire or chain to the negative side of the machine. The machine was started with the spark gap closed, and the sliding rod was then drawn out as far as possible without causing painful contraction of the muscles of the leg. The machine was regulated so as to give about 200 discharges at the spark gap per minute. The author thought that the efficiency of this current in these cases, as in other cases, was due to its influence on metabolism.

Arsenionization in Inoperable Cancer—A Preliminary Note.—Dr. G. Betton Massey of Philadelphia said that the possibility that the ions of arsenic when electrically diffused might be more efficacious as a local surgical protozoacide than the zinc-mercury ions suggested itself to the author shortly after the announcement of salvarsan. The experiments to test the question were begun in October, 1910. All but one of the patients on whom the treatment had been used were still under treatment, and it was too early to state the results of these experiments. The pure arsenic ion was obtainable from metallic arsenic shaped into an electrode so that it might be applied as the anode of a direct current when thrust into the middle of the growth, the cathode being placed elsewhere on the body surface so as to secure a good contact with the least local action under this pole. The result of this treatment was the production of a dark slough. Each patient subjected to the treatment had improved in general health more rapidly than under the zinc-mercury ions.

Neurasthenia and Its Treatment by Electricity.—Dr. F. Howard Humphris of London, England, said that rest was applicable only to the milder forms of neurasthenia. The patient should not have too much to do with his relatives. The treatment most successful in the speaker's hands was that by one or other of the various forms of electricity. The form of electricity must vary with each class of case. Where the blood-pressure was subnormal the application of the static brush discharge to the bare spine was the most successful. During treatment the patient was encouraged to go on with his work, keeping regular hours and avoiding alcohol and fatigue. In cases in which the arterial tension was high the direct D'Arsonval current was employed. For insomnia the hot mustard foot bath was to be used. Where the appetite was poor bitter tonics were to be administered.

Thermotherapy.—Dr. Byron S. Price of New York said that body thermotherapy of 350° F. and upward was especially indicated as a general and rapid eliminant in septic and toxic conditions, and was of great importance as an addition to the action of currents. It reflexly produced profound tonic metabolism and elimination (through the nervous system and increased activity of circulation), measured by uranalyses, decrease in hypertension and later improved health. All depression to nervous and circulatory system appeared to be completely prevented by short high temperature treatments, and by maintaining the peripheral and glandular circulation. This was accomplished by inaction on the part of the patient, and immediate transfer to the hot water bath, followed by salt rub and suitable friction massage and upward of five hours' absolute rest.

Treatment of Poliomyelitis Anterior.—Dr. Grafton E. Day of Collingswood, N. J., said that the prophylaxis of this disease consisted in quarantine, disinfection of the secretions, and the giving of urotropin to those exposed. Urotropin administered in the beginning of an attack would prevent paralysis in the majority of cases. Curative measures were the following: Prompt and thorough elimination with calomel, castor oil, or an enema; the ice cap; easily digested foods; diuretics; hot pack to increase diaphoresis; the administration of urotropin from the beginning; lumbar puncture to relieve intense pain; sedatives where other measures failed to relieve suffering; affected member was to be wrapped in cottonwool; threatened deformity should be set by the use of properly fitting braces; massage and active and passive movements were most valuable. Galvanic stimulation should not be delayed beyond three weeks. Radiant light and heat were also good.

Report of a Case of Pyelonephritis Treated by the Static Wave Current, with Exhibit of Case.—Dr. S. Leslie West of Philadelphia exhibited a case, a girl 15 years of age, who presented the usual symptoms of parenchymatous nephritis complicated by a suppurative pyelitis. The Morton wave current was given over the region of the kidney and liver, followed by the brush discharge over the whole length of the spine. Improvement began from the start. Treatment was continued for twenty-five days. The patient had been well since the first of this year.

Subacromial or Subdeltoid Bursitis Often Mistaken for Brachial Neuritis.—Dr. Park S. Breneman of Lancaster, Pa., stated that since beginning his investigation of this condition he had examined twenty-five or thirty cases with pain in the arm more or less marked that might lead one to believe that bursitis was present. In eight of these cases a shadow of the bursa or contents of the bursa was distinctly shown. In one, a traumatic case, a shadow was shown which the speaker took to be a fracture of the tuberosity of the humerus with uplifting of the fragment, which might easily be mistaken for a bursa. In nine cases a more or less distinct shadow in the position of the bursa was shown. In the balance of the plates the condition of the shoulder appeared normal. All cases should be examined with the *x*-ray before treatment. In the acute condition where the shadow was not found the arm should be put at rest and palliative measures used. Where the shadow showed the remains of a bursitis the adhesions should be broken up under an anesthetic. Electricity and massage played an important part in the treatment.

The Question of Scarlatinal Immunity.—Von Szontagh agrees with Czerny that a scarlatinal immunity does not exist; that one attack does not protect one from subsequent attacks; that an individual may be exposed to cases of scarlet fever and not take the disease, while later, without exposure, he may acquire the infection. The poison of scarlet fever is ubiquitous and resides in and about the individual. Scarlet fever is naught else than a sepsis (toxemia) or pyemia (bacteriemia) of cryptogenic origin, or a combination of both.—*Jahrbuch für Kinderheilkunde.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

HANDBOOK OF MEDICAL TREATMENT By JAMER BURNET, M.A., M.D., M.R.C.P. Edin. 168 pages; cloth; price $1.50 net. Wm Wood & Co

ACTAS Y TRABAJOS DEL SEGUNDO CONGRESO MEDICO NACIONAL, 1911. 494 pages; flexible leather. Papeleria La Universal de Ruiz y C. S. Habana.

METHODIK DER KLINISCHEN BLUTUNTERSUCHUNGEN. By Dr. ERNST GRAWITZ. 79 pages; illustrated; cloth; price 5 M. Georg Thieme, Publisher, Leipzig.

KLINISCHE PATHOLOGIE DES BLUTES. By Dr. ERNST GRAWITZ. 992 pages; paper; illustrated. Georg Thieme, Publisher, Leipzig.

THE MEDICAL EXPERT AND OTHER PAPERS. By LOUIS L. ROSENBERG. 35 pages; cloth. Broadway Publishing Co., New York, Publishers.

DISEASES OF THE EAR, NOSE, AND THROAT. By HENRY OTTRIDGE REIK, M.D. 374 pages; illustrated; cloth. D. Appleton & Co., New York and London, Publishers.

TRAVAUX DE LA DEUXIÈME CONFERENCE INTERNATIONALE POUR L'ETDUE DU CANCER, 1910. Le Pr. PIERRE DELBET et le Dr. R. LEDOUX-LEBARD. 802 pages; paper. Librairie Felix Alcan, Paris.

AN INTRODUCTION TO THERAPEUTIC INOCULATION. By D. W. CARMALT JONES, M.A., M.D., M.R.C.P. 165 pages; illustrated; price $1.25 net. The Macmillan Company, New York, Publishers.

MATERIA MEDICA STEP BY STEP. By ARTHUR W. NUNN, F.C.S. 236 pages; cloth; price $1.40 net. J. & A. Churchill, London, and P. Blakiston's Son & Co., Philadelphia, Publishers.

THE REFRACTION OF THE EYE. By Gustavus Hartridge, F.R.C.S. Fifteenth edition; 270 pages; illustrated; price $1.50 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

ZABLUDOWSKI'S TECHNIK DER MASSAGE. By Dr. J. EIGER. 140 pages; illustrated; price 4 M. George Thieme, Publisher, Leipzig.

CARL SPENGLER TUBERKULOSE-UND SYPHILIS-ARBEITEN. H. Erfurt, Publisher, Davos. 505 pages; paper.

DER GYNÄKOLOGISCHE OPERATIONSKURSUS AN DER LEICHE. By Dr. WILHELM LIEPMANN. 456 pages; illustrated; cloth; price 22 M. August Hirschwald, Publisher, Berlin.

ANNUAL REPORT OF THE HEALTH OF THE IMPERIAL JAPANESE NAVY. For the Year 1908. Published by Bureau of Medical Affairs, Navy Dept. 170 pages; paper; illustrated.

YEAR BOOK OF THE PILCHER HOSPITAL. For the Period from March 16, 1910, to March 31, 1911. 84 pages with appendix; illustrated; paper.

BURDETT'S HOSPITALS AND CHARITIES. 1911. By Sir HENRY BURDETT, M.C.B., K.C.V.O. 941 pages; cloth; price 10/6 net. The Scientific Press, Ltd., London, Publishers.

THE HUMAN ATMOSPHERE. By WALTER J. KILNER, B.A., M.B. 329 pages; cloth; price $4.00; with screens $9.00. Rebman Company, New York, Publishers.

THE HOUSE FLY—DISEASE CARRIER. By L. O. HOWARD, Ph.D. 312 pages; illustrated; cloth; price $1.60 net. Frederick A. Stokes Company, New York, Publishers.

GRUNDLINIEN EINER GESUNDEN LEBENSWEISE. By Dr. PAUL SITTLER. 74 pages; paper; price 1.30 M. Curt Kabitzsch, Publisher, Würzburg.

PUBERTÄT UND SEXUALITÄT. By Dr. AUGUST KOHL. 80 pages; paper; price 1.50 M. Curt Kabitzsch, Publisher, Würzburg.

PSYCHIATRISCHE VORTRÄGE FÜR AERZTE, ERZIEHER UND ELTERN. By Prof. Dr. G. ANTON. 77 pages; paper. S. Karger, Publisher, Berlin.

PATHOLOGIE DES WACHSTUMS IM SÄUGLINGSALTER. By Dr. ERNST SCHLOSS. 155 pages; illustrated; paper. S. Karger, Publisher, Berlin.

KURZGEFASSTE CHIRURGISCHE OPERATIONSLEHRE. By Dr. AD. OBERST. 198 pages; illustrated; paper. S. Karger, Publisher, Berlin.

ÜBER SCHARLACH (DER SCHARLACHERKRANKUNG, ZWEITER TEIL). By Dr. DIONYS POSPISCHILL and Dr. FRITZ WEISS. 147 pages; paper. S. Karger, Publisher, Berlin.

INTERNATIONAL CLINICS. Vol. II. By HENRY W. CATTELL, A.M., M.D. 292 pages; illustrated; cloth; price $2.00. J. B. Lippincott Co., Philadelphia, Publishers.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended September 23, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	465	155
Diphtheria	192	11
Measles	86	3
Scarlet Fever	56	2
Smallpox	—	—
Varicella	23	—
Typhoid Fever	154	22
Whooping Cough	47	11
Cerebrospinal Meningitis	4	5
Malarial Fever	—	
Totals	1,027	209

Observations on Scarlet Fever.—Gigon of Basle, in reporting his study of 483 cases of scarlet fever, notes that, occurring as sequelæ, pertussis, measles and diphtheria do not run any abnormal course. On the other hand, varicella is a severe complication. Scarlatinal rheumatism was manifested only in adults. Adenitis, nephritis and cardiac lesions appeared chiefly in the third week, while otitis and arthritis appeared principally in the first and second weeks. Scarlet fever was particularly common after burns.—*Jahrbuch für Kinderheilkunde.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended September 22, 1911:

Places	Date	Cases	Deaths
CHOLERA			
Austria-Hungary: Arbe	Aug. 21–27	2	2
Cittanuova	Aug. 21–27	1	1
Trieste	Aug. 21–27	1	1
France: Pyrenees Department—			
Perpignan	Aug. 25	1	1
On a railway train.			
Italy		..	..
Total for Italy, Aug. 27–Sept. 2; Cases, 1,377; deaths, 613.			
Continental Italy, outside of Naples Province: Cases, 794; deaths, 314.			
Leghorn	Aug. 27–Sept. 2	220	138
Provinces—Genoa	Aug. 27–Sept. 2	..	..
Genoa	Aug. 27–Sept. 2	32	16
Milan	Aug. 27–Sept. 2	18	6
Naples	Aug. 27–Sept. 2	63	29
Naples	Aug. 27–Sept. 2	15	4
Sicily		..	..
Outside of Palermo Province: Cases, 111; deaths, 53.			
Palermo	Aug. 27–Sept. 2	48	24
Palermo	Aug. 27–Sept. 2	60	19
Rome—Rome	Aug. 27–Sept. 2	16	10
India: Madras	Aug. 6–12	4	2
Negapatam	July 9–15	4	2
Java: Batavia	July 31–Aug. 5	10	4
Roumania: Braila	Sept. 14	3	..
Russia: Governments—Astrakhan	Aug. 13–19	61	27
Daghestan	Aug. 13–19	27	..
Kuban	Aug. 13–19	1	1
Rostov on Don	Aug. 13–19	4	3
Saratov	Aug. 13–19	15	17
Yekaterinislav	Aug. 13–19	1	1
Turkey: Constantinople	Aug. 15–20	269	170
Turkey in Asia: Smyrna	Aug. 14–20	90	55
YELLOW FEVER			
Brazil: Manaos	Sept. 16	5	..
Mexico: Merida	Sept. 8	2	..
PLAGUE			
Brazil: Para	Sept. 16	2	..
Rio de Janeiro	Sept. 16	2	..
Egypt: Alexandria	July 27–Aug. 12	1	..
Port Said	Aug. 2–19	8	4
Provinces—Beni Souef	July 21–Aug. 10	1	..
Galioubeeh	July 29–Aug. 22	1	1
Indo-China: Saigon	Aug. 1–6	12	3
Java: Pasoeroean Residency	July 31–Aug. 5	36	11
Peru: Callao	Sept. 24	1	..
SMALLPOX			
Chile: Punta Arenas	July 1–31	1	..
China: Hongkong	July 23–31	1	1
France: Paris	Aug. 20–26	1	..
India: Madras	Aug. 6–12	12	5
Indo-China: Saigon	Aug. 1–6	4	2
Italy: Naples	Aug. 13–26	16	2
Palermo	Aug. 13–26	114	59
Mexico: Aguascalientes	Aug. 28–Sept. 3	..	1
Chihuahua	Aug. 14–20	6	1
Mazatlan	Aug. 27–Sept. 2	1	..
Mexico	July 31–Aug. 6	10	7
Tampico	Aug. 1–30	1	2
Portugal: Lisbon	Aug. 20–26	1	..
Russia: Moscow	Aug. 6–22	12	7
Spain: Valencia	Aug. 22–28	..	..
Turkey: Constantinople	Aug. 21–27	..	3

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Original Articles.

BACILLUS COLI INFECTION OF THE URINARY TRACT.

BY REGINALD M. RAWLS, M.D.,

NEW YORK.

ASSISTANT SURGEON WOMAN'S HOSPITAL; GYNECOLOGIST TO NORTHWESTERN DISPENSARY, PHYSICIAN TO DEMILT DISPENSARY.

DURING the past twenty-five years original workers have given much thought and study to the *Bacillus coli communis*. Early it was found present in the intestinal tract of man and the higher animals. When found in other organs, at autopsy, it was considered of no importance, as it was believed to be due to a post-mortem change. From some recent work of Conradi,[1] this may be but an exaggerated normal condition. He has shown that in health a few microrganisms, especially the *Bacillus coli* and *Streptococcus fecalis,* in small numbers are continually invading the solid organs, as well as the mucous tracts, and that they are as constantly being killed. Laruelle and Tavel, in 1889, first made known the pathogenic properties of the *Bacillus coli* and the latter first found it, in life, outside of the intestinal tract. Roswell Park[2] in 1893, in a paper entitled "The Importance to the Surgeon of Familiarity with Bacillus Coli Communis," reviews the literature and gives Welch and Councilman credit for the name "colon infection," and to Clado and Albarran priority for classifying the *Bacillus coli* as a urinary pyogenic organism.

In the early literature Roberts[3] (1881) first described bacteriuria, and as late as 1903 Blumenthol, quoted by Shaw,[4] pointed out that "bacteriuria occurs in cystitis and pyelonephritis, producing a diffuse but uniform turbidity of the urine," but he does not give special attention to the microorganisms causing this change. R. Barlow (1897) and Victor Blum (1904), quoting Shaw, give an excellent summary of the various clinical types of colon bacilluria. In 1895 Brown[5] reported a case of cystitis, pyelonephritis, and pyonephrosis due to the *Bacillus coli*, with illustrations of two kidneys in different stages of infection. In 1902 Burch[6] reported that for ten years he had observed a series of cases which ran a typical typhoid course for a week or ten days, but with a daily negative Widal, although the diazo reaction was always well marked. The urine was always acid and in many cases contained traces of albumin and sometimes a few granular casts. It was often turbid and swarmed with peculiar motile organisms resembling the typhoid bacillus, which on culture responded to all tests for the colon bacillus. He considered these as cases of colon infection pursuing the course of typhoid. From our present knowledge it seems we would be justified in classing these cases as colon bacillus infections of the urinary tract. In 1889 Kruse,[7] and in 1892 Reblaud,[8] first called attention to pyelitis of pregnancy, and in 1905 Smith[9] reviewed the literature and collected fifteen cases. In thirteen of these a bacteriological examination had been made, and all but one showed a pure culture of *Bacillus coli*. In 1905 Barnard[10] published an article entitled "Multiple Abscesses of the Kidney Due to Acute Ascending Infection of Normal Urinary Tract by Bacillus Coli Communis." In this article he collected all the cases reported from 1895 to 1905, six in number. In but two had a bacteriological examination been made, Wilms and Lennander's cases (1901), and both showed the presence of *Bacillus coli*. Blake's (1902) and Brewer's (1904) cases are among the remaining four in which no bacteriological examination was made. Barnard says that apparently the colon bacillus was responsible for these six cases. In 1906 Brewer[11] reported a series of thirteen cases of unilateral septic infarcts of the kidney, eleven occurring in women, and in eleven the right kidney was the seat of infection. From a bacteriological standpoint two showed colon bacillus, two streptococcus, one staphyloccus, and one showed no organisms after three days. In the remaining seven no mention is made of any bacteriological examination.

Among the early articles on cystitis are the observations of Melchior[12] (1895), in which he reports thirty-five cases with the colon bacillus present twenty-four times, and seventeen times in pure culture. Since his report it has been shown that we may have a bacilluria with a colon infection of the upper urinary tract and yet the mucous membrane of the bladder remains normal. Rovsing[13] (1909) thinks that a cystitis is the rarest manifestation of the colon bacillus, as this microorganism does not possess the power of attacking the intact mucous membrane of the bladder. Among the recent articles is one by Thomson,[14] entitled "Acute, Subacute, and Chronic Infection of the Kidneys and of Other Organs by the Bacillus Coli." He reports a number of cases and refers to most of the literature up to October, 1909. Since that time a number of articles have been published which substantiate the earlier reports and findings.

In the literature the presence of the colon bacillus in infections of the urinary tract is variously estimated at from 42 to 80 per cent. Billings[15] holds that "colon bacilluria occurs in 50 per cent. of cases of bacteriuria." On the other hand, it has been demonstrated that the *Bacillus coli* is present in a certain percentage of cases with normal urine. Murray, Williams, and Wallace[16] found the colon bacillus present in 44.5 per cent. of gynecological cases, with normal urine, examined before operation, and in 93 per cent. after operation. From these observations they conclude that simply finding the colon bacillus present in a catheterized specimen of urine, even with evidences of inflammatory changes, is not sufficient for a diagnosis of colon

bacillus infection, and that these findings should be substantiated by the agglutination test and the opsonic index, and if these are of no value, as thought by Dudgeon, then we are dependent on an improvement from the use of autogenous vaccines to prove our claim of colon bacillus infection of the urinary tract.

The mode of entrance of the bacillus to the urinary tract is in dispute. There are three possible modes of infection, namely, ascending, descending, and transparietal. Each has its advocates, and some accept all as necessary to account for the cases observed.

Ascending Infection.—By this method the bacillus enters the urinary tract by way of the urethra. This theory is favored by Barnard, Box, Bond, Parkinson, Sundberg, Stewart, and Herringham. They base their belief on the fact that the greatest number of cases occur in the female, in infancy and later life, and think this is due to the anatomical condition of short urethra and near proximity of the vulva and anus as contaminating agents. Also, in infancy there is the possibility of the thread worm carrying the infection directly from the rectum to the urethra and bladder. In the male this mode of infection is not so readily explained, although Melchior, quoted by Shaw, has found the colon bacillus in urinary meatus in 50 per cent. of males examined. Others have demonstrated that the foreskin often harbors the bacillus and there is always the possibility of instrumentation carrying the infection. Bond[17] has demonstrated, on postoperative cases, that there is an ascending current from the urethra to the bladder and from the bladder to the kidney, and suggests that this may be present in health. He found that this upward current was more marked when there was an obstruction to the outflow. As further proof of the theory of ascending infection is the frequent kidney infection following transplanting of the ureter into the intestine. Stewart[18] in some recent work has shown that the lumen of the ureter is less a factor in ascending infection than previously supposed, and has demonstrated that infection of the kidney can take place through the lymphatics and blood vessels of the ureter. This causes a perinephritis primary to kidney infection. The examination of some of the kidneys affected by multiple colon abscesses tends to substantiate the theory of ascending infection. Quoting from Barnard, "When the wedge is produced by an ascending infection it is intralobular and the apex passes down into the pyramid." "When embolus is the cause of the wedge, however, the area is interlobular and the apex terminates in the intermediate zone and between two pyramids." As early as 1899 Sunberg recognized this distinction and in his description of Lennander's case (1901) pointed out that wedge shaped abscesses ended in pyramids and were intralobular.

Descending infection, or infection through the blood stream, is advocated by Rovsing, French, Wilson, Dick, Brewer, Posne, and Lewin, Casper, and Kraus. Posne and Lewin, cited by McCrea,[19] injected animals with the bacillus and mechanically occluded the urethra and anus, and obtained a general infection, and the organisms were found in the urine. To exclude direct infection from the intestines, one renal artery was tied and the corresponding kidney did not show infection. Thus they proved the possibility of hematogenous infection. Rovsing thinks most cases are caused by the organisms being deposited, by the blood, in the kidneys, thus causing a diffuse nephritis which is most often slight, but occasionally acute. He says the infection may take place by way of the urethra when there is a paralysis of the sphincter, or by instrumentation, and occasionally it may spread from neighboring organs. Since 1897 he has treated 285 cases of *Bacillus coli* infections, and in 180 of this number the disease arose as an acute nephritis, and in no instance had the patient been catheterized. Some of the starting points in this series of cases were tonsillitis, cholecystitis, acute enteritis, colitis, cancer of the colon, and typhoid. French, cited by Wright,[20] strongly favors hematogenous infection in pyelonephritis of pregnancy, and considers that constipation, which is so often present in pregnancy, is a predisposing factor for the bacilli to pass from the intestines into the blood stream. He holds that it strongly argues against ascending infection, as we find, in these cases, the obstruction above the pelvic brim, the ureteric orifices not interefred with, and on cystoscopic examination there is no involvement of the bladder. Quoting Casper,[21] "The numerous cases of infection with the *Bacillus coli communis* which have been observed must be considered as hematogenous; for some unknown reason the system becomes flooded with these organisms and they are occasionally deposited in the kidney or its pelvis." It seems to me that the most conclusive proof of hematogenous infection is found when we have a colon bacillus bronchopneumonia with a bacteriuria and no urinary symptoms. The possibility of colon bacillus infection of the respiratory organs was first suggested by Welch, and recently demonstrated by Von Schrotter and Weinberger.[22]

Transparietal Infection, or Infection by Contiguity.—Early Reymond[23] proved by animal experiments that microorganisms could pass from infected neighboring organs directly into the bladder, and the blood and kidneys remain sterile. Recently Franke[24] has shown that bacteria are able to pass from the intestines into the lymphatic spaces, even if there is only a slight lesion of the intestinal wall. He has demonstrated, by experiments on rabbits, that there is a lymphatic connection between the cecum, ascending colon, and the right kidney, but has not proved a similar connection for the left kidney. Another and more direct method of infection is the rupture of a colon bacillus abscess into the bladder or some other part of the urinary tract. *Bacillus coli* infections of the urinary tract, according to Pardoe,[25] may be either autogenous; "infections not dependent upon any gross disease of the urinary passages, nor accompanied by conditions interfering with the freedom of micturition"; or they may be secondary to such predisposing factors as enlarged prostate, stricture, calculus, some lesion of the central nervous system, or to gonorrhea. These infections are either acute or chronic and their diagnosis is often difficult. In acute conditions the symptoms are those of other acute infections and have been mistaken for influenza, appendicitis, malaria, nephritis, tuberculosis, typhoid, and uremia. At other times the symptoms are so mild they may be overlooked. The chronic cases are most often mistaken for chronic nephritis. Thus we see the necessity of basing our diagnosis on a careful urinary examination plus a definite line of symptoms and clinical findings which I shall now consider.

In the following I offer nothing original, and

take this means of giving full credit to current literature. The cases reported, however, I have observed and offer them as true examples of *Bacillus coli* infection of the urinary tract.

Pollock[26] thinks there are prodromal symptoms of general malaise, slight pain in the kidney and perineum, a dull pain over the bladder with frequent and painful urination, an evening chilly sensation, and rise of temperature. These symptoms may be overlooked and if untreated are usually followed in a week or ten days by more acute symptoms, which may be most severe in character. Often the first symptoms are those of a typical malarial seizure. Herringham[27] found these rigors are but incidents in a continued fever and the pyrexia may fall by lysis, by crisis, or may be hectic; diversified by rigors which may be of almost daily, occurrence; or the temperature may be remittent in type. During the high temperature there is a feeling of general discomfort and aching, and at times there is more or less delirium and restlessness. The pulse is usually not high considering the pyrexia. During an acute seizure it may reach 120, but usually is 100 to 110, and often remains below 100. The local symptoms vary considerably and often are absent altogether. The most constant and early symptom, after temperature, is pain and tenderness referred to the bladder or kidney. Burnett[28] found tenderness in the costovertebral angle a valuable diagnostic sign. He also found abdominal distention frequently present, at times so marked that it was mistaken for intestinal obstruction. Sometimes there is evidence of a renal swelling or tumor on deep and careful palpation. Herpes labialis and urticaria have been observed in a few cases. In very acute cases we have the following picture described by Thompson as "well nigh pathognomonic, namely, sudden onset in an adult, with early cerebral symptoms, these soon passing with some into coma, but not convulsions, along with rapid rise of temperature and uncontrollable vomiting, a group of symptoms occurring in such sequence in no other renal derangement except those caused by invasion of the kidneys by some septic organism of which the colon bacillus is the most common."

The symptoms of chronic colon bacillus infection are impossible of enumeration, for, quoting Dudgeon and Ross,[29] they "may vary from a few apparently unimportant facts to a condition of considerable severity, while in some there is nothing to suggest from patient's symptoms that there is anything abnormal in patient's urine." As an example of chronic infection, Rovsing[30] reports the case of a woman, 65 years old, with colon infection of a number of years with recurrent acute nephritis. The last attack was septicemic, with coma and blindness in right eye from thrombosis. He used autogenous vaccine, and symptoms entirely cleared up. After an interval of six months there have been no recurrence of the acute nephritis. With such a clinical picture we must resort to the laboratory examination of the urine and blood to arrive at a definite diagnosis.

Dudgeon and Ross divide the urinary findings into the following types: "A. Urine quite clear, but on cultivation the *Bacillus coli* is detected. B. Turbidity of varying degrees; a bacilluria. C. Similar to type B, but with varying degrees of inflammation, as shown by a deposit of leucocytes. D. Pyuria and bacilluria. E. Pyuria, and on cultivation, the *Bacillus coli* is present." They describe the common reaction of the urine as acid, but say that it is more often alkaline than might be supposed, and that "in every case of bacilluria a centrifugalized specimen of the urine will show one or two polymorphonuclear leucocytes in a film preparation; in every instance the bacilli are mainly extracellular." "Here and there bacilli may be noted inside a polymorphonuclear cell, but not more than about 10 per cent. of the cells in the urine are phagocytic, and in these there are as a rule not more than ten or fifteen bacilli." From experimentation they found that it was "unusual for phagocytosis to occur to any extent in urine of patients suffering from either acute or chronic infection of the urinary tract due to the *Bacillus coli*. "The presence of blood in the urine is uncommon, and suggests that the colon bacillus is of secondary importance." Box[31] describes the urine as follows: "It is acid and opalescent, and when shaken it may show a 'mucous sheen.'" "When allowed to stand a slight sediment may fall; sometimes the sediment is rather abundant and consists of pus and epithelial cells, more rarely a faint mucous cloud separates, containing the bacilli in its meshes." He found that the opalescence of the urine is not removed by acids and boiling, the heat rather increasing the turbidity, owing to the precipitation of a small amount of albumin, which is often overlooked. He also finds filtration only diminishes the opalescence in so far as it removes the epithelial and pus cells, as the bacilli pass through. "Microscopical examination shows, in acute cases, pus and epithelial cells from various parts of the urinary tract, a few casts may possibly be recognized, and swarms of bacilli which are more or less actively motile." "The presence of casts points to infection of the parenchyma, but their absence does not prove that the kidney has escaped."

The ordinary routine urinary examination is insufficient for diagnostic purposes. The urine should be obtained under the most rigid precautions to prevent contamination, and the microscopical examination, as well as the culture, should be made from the centrifugalized sediment. One negative examination does not exclude the possibility of colon infection, as the specimen may have been obtained when the diseased kidney was secreting very little, if any, urine. At such a time the healthy kidney would be over-functionating, and the result would be a urine with very few, if any, pathological elements. A ureteral catheterization would obviate this difficulty, but in acute cases we are seldom justified in resorting to instrumentation.

Blood examinations are of doubtful significance as we have records of so few cases. Herringham says that the leucocytes are usually raised but reports that Lenhorlz has found them as low as 3,000 or 4,000. Dudgeon and Ross hold that while the opsonic and phagocytic indices of the patient's blood are low they are unreliable as aids to diagnosis. They found the agglutination test equally of no value and that normal human serum had no bactericidal effect on the colon bacillus. Davis[32] says "The fact that opsonification, bacteriolysis, and agglutination in cases of urinary colon infection do not run parallel is most readily explained by assuming the existence of specific opsonins, lysins, and agglutinins." I have been able to find but little in the literature on blood cultures in colon bacillus infection of the urinary tract. Until the condition becomes septicemic it is very difficult to find the *Bacillus coli* in cultures as it is only transiently in

the blood current. It has, however, been demonstrated in a few of these cases of localized infection.

In system infection we have the work of Coleman and Hastings,[33] who sum up their findings as follows: 1. Isolated reactions against *Bacillus coli communis* are without significance. 2. The blood serum in a case of infection by *Bacillus coli communis* may contain agglutinins for certain strains of this group, while the infection persists and not on the patient's return to health. 3. The detection of an increment of agglutinins in the blood serum for a particular strain of *Bacillus coli communis* is evidence of a local infection with that strain. 4. Some strains of *Bacillus coli communis* are capable of causing a disease clinically identical with typhoid fever.

Prognosis and Sequelæ: In all forms of colon bacillus infection of the urinary tract there is a tendency to spontaneous recovery, but in only about half does the bacillus disappear from the urine, the others pass a visible amount of pus for an indefinite time. In pyelitis of pregnancy there is a very low mortality and recovery usually takes place when the uterus is emptied. In abscess of the kidney the mortality is highest, but even in this condition we may have spontaneous recovery. In all acute cases there is the tendency for them to become chronic with acute exacerbations. Thomson regards "chronic interstitial nephritis as most frequently caused primarily by chronic infection of the kidneys by the *Bacillus coli.*" He also thinks that chronic colon infection may be the explanation of "numerous cases of human morbid conditions often of obscure origin such as progressive anemia with emaciation and nervous weakness often grouped under the vague term neurasthenia." Many people with a persistent albuminuria, with or without inflammatory elements in their urine, are suffering from chronic colon bacillus infection. The first knowledge they have that they are not physically sound is when they are refused life insurance. In many instances these people would be relieved of their so-called kidney disease by proper treatment.

Treatment: The treatment of colon bacillus infection of the urinary tract is absolute rest in bed and a bland non-stimulating diet, preferably milk, until all active symptoms have subsided. In convalescence a too rapid return to regular diet, especially when red meat is added, has been directly responsible for a relapse. In the subacute or chronic condition overfeeding or any indiscretion in diet has been the cause of an acute exacerbation of the infection. Drugs are given to produce free catharsis, to promote diuresis, to make the urine alkaline, antiseptic, and non-irritating. Diuresis is best accomplished by the free drinking of water, and in addition some of the simpler diuretics as spirits of nitros ether, ammonium acetate or citrate. The urine is made alkaline by large doses of potassium bicarbonate or citrate. Burnett[34] gives potassium citrate in 40 to 60-grain doses every two hours. The reason for an alkaline urine in the treatment of this infection was not understood until some recent observation. Houston, quoting Dick,[35] has shown that the ingestion of the *Bacillus coli* by leucocytes was much more active in an alkaline than an acid media. The value of urinary antiseptic drugs is in dispute. Pollock, Thomson, and Herringham hold that they are almost specific in their action. Box, Garnet Wright, and Dudgeon report no results from their use. Urotropin and sodium benzoate, 10 grains of each every three hours, have given me most satisfactory results in relieving symptoms, but in most cases have had but a temporary effect on the bacilluria.

Pardoe finds benzoate of sodium or ammonium with alkalies of value, but says that liquor potassæ should never be combined with benzoates. He finds that plenty of barley water, plain or with milk, or, better still, triticum repens (a wineglassful every two hours) will relieve the scalding sensation during urination. The best urinary sedative, in his opinion, is oil of sandalwood. Urotropin only gave him results in chronic conditions. Herringham says in some cases urotropin, the alkalies, and free water drinking is often sufficient to relieve symptoms.

Vaccines: The autogenous vaccines should be used when other means fail, as they are of value in many cases, although they are not the specific the early reports lead us to expect. There are reports *pro* and *con* and we shall review some of the more recent ones. Rovsing (1909) reports twelve cases of colon bacillus nephritis and pyelitis in which he used Wright's vaccine technique with a prompt cure in four cases when all other means had failed. He found that there was no effect on the proliferation of the bacteria in the urine and a very mild local and general reaction. Dudgeon and Ross (1910) in a series of a hundred cases report: "In a majority of the acute cases, which form a small proportion of the whole, complete recovery ensued, but in the case of those suffering from the chronic type of the disease complete recovery, *i. e.*, a sterile urine on more than one examination must be classed as exceptional." "In a large number of instances of pyuria and bacilluria associated with symptoms of various kinds, considerable improvement was effected; in some, conditions remained much as before, while those examples of pure bacilluria without symptoms, a few were treated, but the results as far as the condition of the urine was concerned must be regarded as unsuccessful." They found the best results from the use of 100 million to 200 million given every five days, and advise that the injection be made intramuscular and in different areas in rotation. In their cases a constitutional reaction of any degree was uncommon. Billings (1910) gives as an initial dose 200 million, gradually increasing until a decided local and general reaction is obtained. His maximum dose was one billion. In some cases he found it better to give small doses five million to one hundred million to prevent too great a reaction. He says "The specific effect of autogenous colon bacilli vaccine therapy is proven by the phenomena of reaction," which is both local and general. "The specificity is further indicated by an increase in the opsonic index, and finally by an immunity manifested by failure of reaction after vaccination and the disappearance of the bacteria from the urine." McCrea (1910) says that in those cases that do not respond to drugs, autogenous vaccines are most successful. He gives three million to a child one year old and twenty-five million to an adult every two days, gradually extending the time, depending on progress. Hartwell [36] (1910), basing his conclusions on twenty-five cases of pyogenic infections of the urinary tract, treated with vaccines, says that vaccines are indicated in acute pyelitis, which does not respond well to ordinary measures, and in cystitis they appear a less troublesome and possibly more rapid means of cure than irrigation and urinary antiseptics. Geraghty [37] (1910) in a series of thirteen cases of various urinary infections, the majority of which were due to *Bacillus coli com-*

munis in pure culture or mixed with other organisms concludes as follows: 1. "An autogenous vaccine was prepared in each case and doses ranging from 200 to 800 million were employed. No reaction whatever was noticed from the large doses. 2. All the patients were treated over a long period of time from three to twelve months. 3. In not a single instance was any improvement produced which could in any way be attributed to vaccine therapy." Williams, Cragin, and Newell[38] (1910) in a report on vaccines in gynecology and obstetrics say: "In infections of the urinary tract, especially those due to colon bacillus, it sometimes results in symptomatic cure, but rarely relieves the bacteriuria. The scant reports concerning pyelitis and pyelonephritis of pregnancy indicate that vaccine therapy is no more efficient than the usual treatment by rest in bed and the administration of salol and urotropin, as in neither does the bacteriuria disappear until after the termination of labor." Schwarz[39] (1910) in an article on "Serum Therapy and Bacterial Vaccines in Treatment of Puerperal Septicemia" makes the following observations: "1. Employment must be based on bacteriological diagnosis. 2. In the more localized infections, such as those of urinary tract by the colon bacillus, pelvic inflammation caused by gonococcus and various staphylococcus infections, vaccine treatment has a legitimate field and can accomplish much good. In acute affections of any kind the use of bacterial vaccines is contraindicated." Cabot[40] (1911) in a series of thirty cases, of which twenty-two had pure colon bacillus infection and in three others colon bacillus mixed with streptococcus or staphylococcus concludes: "1. The use of vaccines is followed by improvement of symptoms in more than half the cases. 2. Vaccines have little effect on bacteriuria. 3. The results are practically the same whether the lesion is in the upper or lower urinary tract."

Serum: Dudgeon and Ross find excellent results are obtained in acute cases by the use of anti-*Bacillus coli* serum, given in doses of 25 c.c., spread over seventy-two hours. The patient must remain in bed for a week during this treatment. They also warn us that great care should be taken to ascertain that patient has not received serum treatment for this or some other affection at a more or less recent date. In acute cases during pregnancy and in old people it is better to use vaccines because of the severe constitutional symptoms which follow serum treatment. They also find that in the late stages of acute cases when serum is supplanted by vaccines there is often distinct benefit noticed.

Topical Applications: Most observers are opposed to any instrumentation except in chronic conditions. Rovsing finds that the bacilluria is relieved by using a retention catheter, washing out the bladder with sterile water, and giving salol while administering the vaccines. Box reports that Dudgeon found by washing out the bladder with anti-*Bacillus* coli serum there was produced a marked but temporary diminution of the bacilli. He also says that Shattuck and Dudgeon have at present (1910) a scheme for acclimitization for the lactic acid bacillus in the urinary passages in hope that it may expel the colon organism.

Surgery: We should use all other means within safety before resorting to surgical interference. The definite indication is when the kidney or surrounding structures are so far involved that they endanger life. Even in multiple abscesses of the kidney, recovery sometimes takes place spontaneously. Furthermore, surgery may only relieve the result and not the cause, and later we are confronted by a similar condition in the other kidney.

During the past two years I have had the opportunity of observing quite a number of colon bacillus infections of the urinary tract. These cases, with others, I may observe, I hope to report at some later time. From a study of these cases and a review of the literature, I draw the following conclusions.

1. In a certain percentage of adults, even in health, the *Bacillus coli* is taken up by the lymphatics and blood vessels of the intestines and deposited by the blood current in the kidneys. The number and virulence of these microorganisms depend on the intestinal disturbance and the particular strain present.

2. The greatest predisposing cause of *Bacillus coli* infection of the urinary tract is anything that interferes with a free secretion of urine or causes any back pressure in the urinary tract.

3. The earliest symptoms of *Bacillus coli* infection of the urinary tract are apt to be mistaken for those of a mild cystitis, whereas the real site of infection is most often higher up in the urinary tract and of more serious pathological import.

4. With greater care in diagnosis we will find that *Bacillus coli* infections of the urinary tract are likely to be mistaken for other acute conditions, such as appendicitis, malaria, intestinal indigestion, toxemia of pregnancy, ether nephritis, and acute and chronic nephritis. This is especially true of post-operative gynecological cases

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233 West Eighty-third Street.

OBSERVATIONS IN FOUR CASES OF CHRONIC DYSENTERY NON-AMEBIC IN NATURE.

By ANTHONY BASSLER, M.D.,

NEW YORK,

VISITING GASTROENTEROLOGIST TO THE PEOPLES HOSPITAL AND CHIEF GASTROENTEROLOGIST TO THE GERMAN POLIKLINIK.

Dysentery has been divided into the acute and chronic forms; the acute due to infections by the Shiga bacilli or the allied strains identified by Flexner, Kruse, Park and Hiss, and the chronic to the ameba and perhaps to less known members of the colon group than the first- mentioned ones.

In the temperate climates chronic infections of the lower intestinal tract are met with in adults in which the causative organisms are neither the ameba nor those classed in the acute forms of dysentery—they being the true dysentery bacilli and the mannite-fermenting forms. It is very probable that most of these cases are today being described under the clinical terms of "chronic colitis" and "ulcerating" or "follicular colitis, "chronic diarrhea," and otherwise, the bacterial etiological connection of which has received but scant attention. The bacterial observations on four of such cases are reported here, the history of only one being presented in full.

Caes I.—Dentist; 31 years; father died of apoplexy at 65, mother living; habits good. Previous history—had measles and chickenpox as a child, and no illness worthy of note up to the present one, but never had been physically strong and always was underweight. Present history—twelve years ago began with gastric pains of an indefinite character and rather constant distress in the upper abdomen, both of which were independent of meals. With periods of remission, he continued up to five years ago, when his bowels became noticeably loose, he passing considerable quantities of mucus, which sometimes was blood streaked, and at times bright blood was voided with the stool. Beginning three and a half years ago and continued for a period of six months, he had normal movements and then again the characteristic discharges above described. At this time his condition was diagnosed as "ulcerative colitis" and an appendicostomy was performed and daily irrigations of the colon from the caput downward by means of saline solution were carried on for three months. For two and a half months subsequent to this treatment his bowel movements were normal—he having about two each day without noticeable mucus or blood. The symptoms of large amounts of gas formation, colicky pains and the diarrheal movements with mucus and blood then returned so that in one week his condition was about as before the last treatment. He was then placed on a fat free and low starch diet with some measure of benefit, but the dysenteric condition was always present. This diet was maintained for one year, at the end of which time the condition became worse than it had ever been. At this stage a diagnosis of prolapse of the abdominal organs was made and the wearing of an abdominal support (belt) advised. No benefit accruing therefrom, extirpation of the colon was suggested, but refused. Colonic irrigations with thymol solutions were then tried with slight benefit (probably not more so than would have been gained by any other form of daily colonic irrigations). At the time when he was first seen by me, he had had a steady dysentery for seventeen months, no special treatments and only some slight dietetic attentions having been carried out.

Examination: Pale, emaciated, muscles soft, nervous mien, heart and lungs negative, abdomen slightly distended, stomach and intestines low, liver just palpable, but not enlarged, manual gas displacement evident in the ascending and transverse colon, marked gastric splashing; chronic proctitis, rectal dome and lower portion of the sigmoid markedly congested with areas of attached mucus and a superficial ulceration in the sigmoid about 2 mm. in diameter; blood pressure 127 mm. Hg.; weight 112¾ lbs. Laboratory: Blood color index .8, Hb. 72 per cent. erythrocytes 4,050,000, morphology normal, leucocytes 7,200, differential count normal; urine* normal, excepting slight albuminuria, uric acid 1.1 gram, total sulphates 2.4 grams (preformed 2.09 grams, conjugate .31 gram), indican high; stomach contents normal (mixed test-meal used); feces* semifluid with blood-streaked mucus, acid reaction, many meat fibres and albumin loss above normal, putrefaction gas result low, bacteria 41 per cent of stool and Gram differential stained slides of the raw feces showed mostly negative organisms of the colon type, all of the negative bacteria being about 72 per cent. of the two types.

The report of the above case answers for the other three also, all of which were in men, with these notable differences. Ages, 37, 44 and 45. One had had typhoid fever seven years before the dysentery history began. In one the dysentery was of four years' standing, the next five and a half, and the third eleven years, all having periods of remission during its course. In one the blood examination showed a more decided anemia, although in the other two it was nearer to normal, one, however, having a leucocyte count of 9,750. One had a mitral blow, probably organic, with slight cardiac

*The urine and feces were collected under these conditions: After an enema to cleanse the lower colon, capsules of carmine were given by mouth to demarcate the stools. The patients were placed on the following diet, and after the carmine had been noted in some subsequent stool the entire next stool was used for examination together with the total output of urine in the twenty-four hours representing the day in which the stool had been obtained. Diet: Morning, two thin slices of well-baked bread with butter liberally applied; one pint of oat meal gruel, made of about 1½ oz. or 45 gm. of oat meal, ½ oz. or 15 gm. of butter, 6 oz. or 200 c.c. of milk, 8½ oz. or 265 c.c. of water, and one egg. 11 A. M., milk, one pint or 500 c.c. Noon, a good sized piece of steak or roast beef chopped or cut into very fine pieces (about 4 oz. or 125 gm.) and served on a slice of toast; one bowl (about 8 oz. or 250 gm.) of mashed potatoes with ¼ oz. or 15 gm. of butter. 4 P. M., milk, one pint or 500 c.c. Night, same diet as for breakfast.

hypertrophy. All were emaciated, and had the characteristic urine and feces described.

The reason of the observations in these cases was to note if possible whether there was anything distinctive in the character of the organisms predominant in the intestinal canal of the cases—which apparently were of the colon group. For this purpose loops of the mucus adherent to the upper rectum and sigmoid and scrapings of the ulcer bases were used in the examinations and the inoculating material in the culture work.

In each instance it was evident that the *B. coli communis* was the infecting organism, the mucus being charged with them, and in the ulcer scrapings it was shown that these organisms had gained entrance into the tissue walls of the gut and were living and probably proliferating there. Scrapings from the mucous membrane of the upper rectum and colon in seven healthy persons did not show the presence of the *B. coli communis* within the tissue of the gut wall when proper precautions had been exercised in the scrapings. In each of the cases the organisms grown in culture were Gram negative, flagella were noted in the form from one (not from the other three), they were non-liquefying, grew readily on all of the culture media (and characteristically in large opaque colonies on the gelatine and most abundantly on potato), produced organic acids in milk, fermented glucose solutions with the production of acid and gas, and did not produce indol in ordinary nutritive broth (two of them did in Witte peptone solution), and the intraperitoneal injections of the bacteria grown from all of the cases were fatal within four days to a rabbit, guinea-pig, and cat in each instance—all of the animals dying within 50 hours, excepting a cat, which lived 93 hours.

It was this definite pathogenesis in lower animals (in which it was evident that these organisms were more regularly fatal than is one's experience with the usual forms of *B. coli communis*) that suggested the making of agglutinating reactions with the serum and organisms from the cases with controls of those of other strains in the hope that some facts might be gained in identifying the type of organism at work in the condition. In each instance it was found that the serums from these individuals agglutinated their own strain of organisms more definitely than they did the *B. coli communis* obtained from innocent sources; still it was evident that the blood of these patients agglutinated the *B. coli communis* of innocent forms more actively than did the blood serums of normal individuals—this being manifested in seven cultures from different normal persons (swabs of the high rectum and scrapings of the sigmoid membrane and the separation of the *B. coli communis* used to obtain the innocent forms). The bacterial deductions from the observation of these cases suggested the following:

1. That there is a chronic form of dysentery due to the *B. coli communis*, and that these cases are not uncommon in the temperate climates.

2. That the form of infecting organisms does not correspond to the Shiga or the mannite-fermenting types, and that they are not possible of differentiation from the known forms of *B. coli communis* of high virulence.

3. That the serums from the cases strongly agglutinated the organisms obtained from that person and more definitely than they did the strains of *B. coli communis* obtained from innocent sources.

4. That the organisms were most fatal to lower animals, decidedly more so than in one's experience with the human *B. coli communis* ordinarily obtained and used in laboratory observations.

5. That the organisms existed in large numbers in the lower intestinal tract of the cases, mostly in the mucus, and that they are capable of destruction of tissue locally with the production of ulcers and then living within the tissue of the gut wall in the bases of them.

6. That in the etiology of these cases we are dealing either with a definite organism of the *B. coli* group, or with *B. coli communis* of a high virulence, strongly hemiparasitic in nature and from which the aggressin production is overwhelming and against the effects of which in susceptible individuals the body cannot resist local tissue infection.

7. That the clinical entity "Chronic dysentery due to the *Bacillus coli communis*" seems warranted, and further that there is reason for the belief that in the production of this disease we are dealing with an organism of the colon group specialized in nature.

A NEW THERMO-THERAPEUTIC METHOD IN GYNECOLOGICAL CASES.

By S. FLATAU, M.D.,

NUREMBERG, GERMANY.

THOUSANDS of years ago the therapeutic instinct recognized the heating properties of warmth and added them to its stock. But the employment of heat as a therapeutic measure founded on scientific principles dates from the time when August Bier collected, extended, and enlarged the earlier works of physiologists and pathologists in his system "Hyperämie als Heilmittel."

As a matter of course gynecologists too were desirous of securing the advantages of hyperemic treatment in their special branch, the employment of warmth appearing to be particularly suitable in these cases. The female genital sphere is locally rather sharply defined, and the accessibility of the interior genitals through the connecting vagina favors the introduction of heat. Finally, according to the researches of Goldscheider (*Archiv für Psychiatrie*, 1887), the abdomen seemed specially adapted to the stimulating properties of warmth on account of the numerous nerve ends susceptible to heat which it contains (Ruffini termini). We know, indeed, that warmth exercises an expanding effect on the vascular system and that the amount of blood in the skin operates on the neighboring, deeper-lying vessels in producing a more rapid exchange (Matthes, "Klinische Hydrotherapie," 1900). As a matter of fact, the subcutaneous cellular tissue—which is mostly well developed—by its low conductivity demonstrated by Fuchs (*Zeitschrift für Biologie*, vol. x, p. 73) forms a great obstacle to the penetration of heat when we desire to apply it only through the skin. But on the other hand, through the extraordinarily decreased speed of the blood in the pelvic venous system, we have the guarantee that the heat will not be too rapidly dispersed or lost; in fact that it accumulates. In addition to these premises we have the fact that the stimulating effect of heat therapy increases in a certain degree parallel with the temperature and the duration of the application.

Strictly speaking, the first applicable thermo-ap-

paratus was that produced by Polano (*Zentralblatt für Gynäkologie*, 1901, No. 30) while working side by side with Bier and Klapp in Greifswald, and which he constructed as a hot air apparatus. Hot air, up to a temperature of 100° C. (212°F.), was

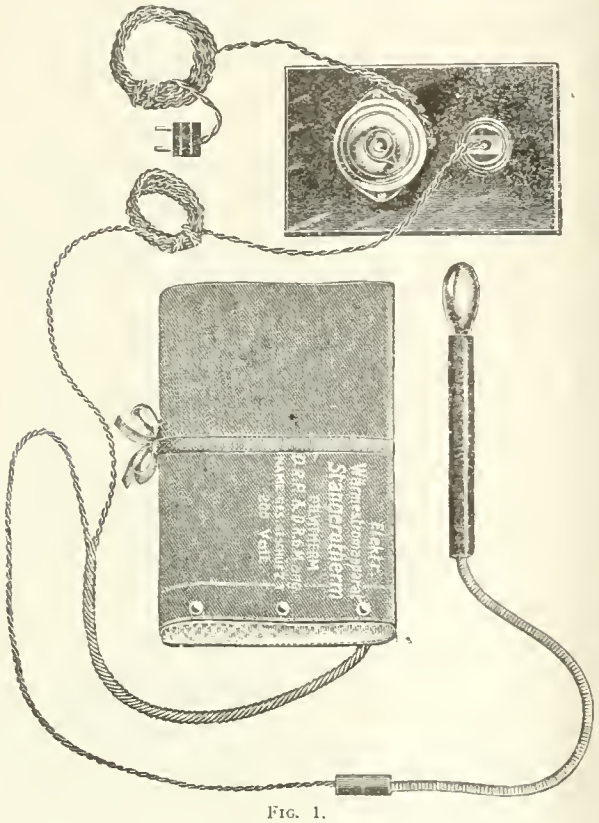


Fig. 1.

circulated round the abdomen of the patient, the abdominal regions being enclosed in a wooden case. But in spite of the excessive heat registered by Polano's thermometer, the temperature of the pelvic contents was very slightly affected, for heat which is applied to the skin penetrates only to a very small extent.

Neither was the problem of raising the pelvic temperature solved by the kataplasma ovens, heat boxes, and so-called thermophores, with highly saturated solutions of acetous sodium. But all these methods of applying heat are too evanescent in their results. Even if 20 pints of hot water are passed through the vagina, still the rise of temperature in the pelvic organs is practically nil; apart from which all these processes require too much attendance, etc.

Therefore the idea of Mirtl (*Wiener Med. Presse*, 1899, No. 16) and Stehlik (*Münchener med. Wochenschrift*, 1899, No. 27) to construct a thermophore in the form of a "colpeurynter" filled with thermophore salts, to be introduced into the vagina. Unfortunately the heating effect in this case is also insignificant, and the stock of heat in the thermophor decreases continuously instead of remaining constant. To produce a source of heat which would remain constant was the problem to be solved in heating the pelvis. Its practical solution was made possible only by the improvement in thermoelectric apparatus. When I first saw the electric thermophore cushions, as made by the firm Heinrich Stanger, in Ulm, a solution of the problem immediately occurred to me. I had a thick hollow rod made out of silver-plated metal, which ended in a sort of bulb (see Fig. 1). Within this there is a mass of asbestos powder, which is heated by passing an electric current through it. A small indicator makes it possible to increase or decrease the degree of temperature with sufficient delicacy.

The practical tests, which I at once made in my private clinic, answered the requirements which are expected of an apparatus for heating the pelvis. During the applications the pelvic contents were always raised several degrees in temperature, that is the pelvic organs were really heated. My experiments were still more successful when the introduction of the instrument into the vagina was combined with the application of an electrothermophore covering the abdomen. Through the vicinity of two hollow organs, the bladder and the rectum, we have a good opportunity to measure the increase of temperature and the influence of the heat introduced into the pelvis. Numerous measurements were made in this manner, and the temperatures were read on thermometers introduced into the bladder and rectum. Here I give the averages of a very large number of readings:

	After 1 hour,	2 hours,	3 hours,
Bladder.....	38.8°	39.8°	40.2°
Rectum.....	38.5°	39.2°	39.8°

The readings are expressed in degrees Centigrade.

The mode of application is the simplest imaginable. My apparatus can be connected with any switch contact or any electric lamp, either to a continuous or an alternating current. The regulation of the heat introduced, as shown by the indicator, is best attended to by the patient, whose best guide is her subjective sensations. There is no deposit of perspiration on the abdomen; the heat is absolutely dry. We know that, objectively considered, dry and damp heat are totally different phenomena and subjectively, too, are differently felt; and this indeed, in that dry heat is more agreeable to by far the most patients. My patients supported the process in all cases excellently. In other parts of the body, especially the breast and head, there was a sensation of increased temperature; perspiration also appeared. Although the thermometer in her axilla showed no increase of temperature in the body as a whole, increased activity of the heart and lungs (breathing) was observed, but this was not pronounced enough to cause the patient inconvenience. If one examines the vagina and the cervoix uteri shortly after an application of my thermal processes, one will find signs of hyperemia and supersecretion of a markedly high degree.

The diseases in which my apparatus is indicated are numerous, although greater experience is neces-

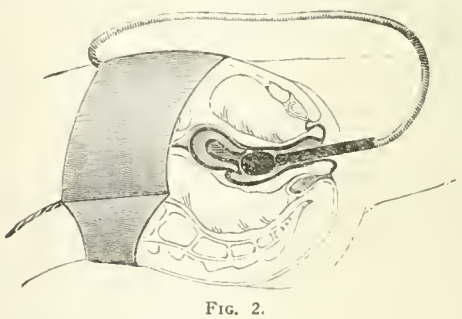


Fig. 2.

sary before drawing hard and fast lines. All chronic diseases of the para and perimentrium, chronic catarrh of the uterus and Fallopian tubes, so-called chronic metritis, exudation remains, dysmenorrhea without evident cause, amenorrhea in

cases of uteral atrophy during nursing have all shown symptoms of improvement under thermopenetration. Catarrh in the bladder of long standing has also been favorably influenced. On the other hand, the method is out of place in treating cases where there is fever; all diseases of the adnexa in which pus is present, or may be expected to form, and tuberculosis of the genitals. As is well known, the gonococcus is hypersensitive to high temperature, hence diathermal experiments in cases of infection with Neisser's diplococcus would probably be attended with success. Usually I apply the instrument for three hours daily, although, of course, there is no reason why this duration should not be increased. The temperature of the pelvis falls very slowly after the instrument is removed, so that the tissues assume their normal temperature only after one or two hours.

I demonstrated my apparatus before the Franconian Gynecological Society on October 24, 1908, and spoke then of the extent to which it may be employed.* This I wish to emphasize because the whole idea was evidently in the air during the development of our electrotherapeutic methods. I mean the idea of diathermy, the thermopenetration of segments of the body. Thus Sellheim described eighteen months later in the May number of "*Monatshefte für Geburtshilfe und Gynäcologie*," vol. xxxi, a process in which the temperature of the pelvic organs was raised to 40° and 41° C., by passing the so-called high-frequency current (de Forrest current) between two electrodes. For the present, however, there are two arguments against their general employment. Firstly, we still know too little concerning the physical and biological effects of the high-frequency current on the living tissues. Secondly, Sellheim's apparatus is too costly.

Next Feis, in Frankfort, without knowing anything of my first publication, announced his kolpotherm (*Münchener med. Wochenschrift*). In this instrument a small electric lamp is enclosed in a metal case and introduced into the vagina. Compared to the fragile carbon wire and glass case in Feis' kolpotherm, my device has the advantage of being absolutely unbreakable, and can be used for an unlimited length of time.

In conclusion I will recapitulate:

1. This vaginal heating instrument, "pelvitherm,"† raises the temperature of the female pelvis up to about 40° C. for any length of time.

2. Its use, in contrast to all other existing methods, requires no special superintendence, and therefore does not take up the time of the clinic staff.

3. It can be used anywhere where electric light is in use, as well as in the patient's home.

4. The instruments are so cheap and lasting that every hospital or private practitioner can procure a number of them.

I am recommending this diathermic method for application and test because it answers all the requirements of a practical, rapid and agreeable therapy.

*See official report in No. 2 *Münchener med. Wochenschrift*, 1909.

†Heinroth Stanger Ulm a. D. Germany.

Winckel's Disease.—Brandenberg supports the contention of Baginsky that icterus neonatorum, Buhl's and Winckel's disease are all different stages of the same process. The hemolysis caused by the infection (regarded by Czerny as of intestinal origin) produces an abnormally large amount of bile, which explains the icterus.—*Archiv für Kinderheilkunde.*

THE MASTERS OF MEDICINE AS EXPONENTS OF MEDICAL IDEALS.

By W. B. KONKLE, M.D.,

MONTOURSVILLE, PA.

In the *Déontologie Médicale* of Dr. Max Simon is set forth this device for medicine—"*Vérité dans la science et moralité dans l'art.*" A high mark that, indeed. And yet does the legend imply naught of exaggeration or untruth. Medicine has ever cherished and professed aims pure, dignified, noble—has ever been actuated by the Emersonian precept, "Hitch your wagon to a star." *Ever?* Yes; even the most distant voices that have spoken of healing, and whose tones still "echo down the corridors of time," ring true to righteousness and honor. And from age to age down to us of the living hour has the tradition been passed the same and inviolate. From the very beginning, and thereafter always, howsoever crude and imperfect otherwise medicine challenges respect and admiration by its ideals and motives; howsoever weak upon the sides of knowledge and practice it has, nevertheless, been constantly and invariably strong upon the side of moral principle.

And all this is so despite the fact that doctors alone and as a body have been nothing other than human—have lived and done much like the people about them—have, perhaps, reflected in any given social epoch the prevailing general ratio of good to bad. No class of men, not even the sacerdotal, has shown itself possessed of seven-league boots in the march along the road of practical virtue—the whole crowd keeps rather closely together in the forward movement. Now and then, forsooth, some choice soul outstrips the plodding masses. Such a life endures, an inspiration, a vindication of the ideal.

It should not be expected that doctors in character and conduct average much above the society of which they are components. Lapses from rectitude upon their part are to be judged by co-existing standards. Apollonides of Cos was guilty of a criminal relation with the widow of Megabyzus, to whose family he had been physician. But the Persian court was malodorous from like affairs. Eudemus maintained a scandalous *liaison* with Livilla whose husband, Drusus, he poisoned. Vectius Valens was one of the paramours of the abominable Messalina. Xenophon of Cos finished for the infamous Agrippina the poisoning of Claudius, the which delicate job had been botched by the notorious Locusta. But these things occurred at Rome when Rome was rottenness. Asclepiades of Prusa was a semi-charlatan exploiting the maxim, "*Mundus vult decipi*," at a day when in the Eternal City imposture was rampant. Avicanna died at 57, the victim of women and wine, when sensuality and luxury were sapping the foundations of the Arabian Empire. Paracelsus was a drunkard when bouts of drunkenness were the common pastime of high and low. John Brown was the base slave of alcohol and opium; but even now is that condition nothing rare in Scotland and England—and elsewhere.

And doctors have not been wholly free from bigotry. They have, indeed, manifested betimes the grossest intolerance of reform and progress. The greatest hostility toward improvement and advancement in medicine has been encountered within the medical fold itself. Such pathfinders as Paracelsus, Vesalius, Harvey and Jenner have at every move and turn found themselves confronted by the swords of their brethren. But in all their hanging

back and holding back doctors have been markedly conscientious. It has been a question of lack of light. Honesty unillumined is a blind gladiator. Conscience operating in God's open day is a true and worthy master. But there is no tyranny more stern, more inflexible, more inexorable than the tyranny of a benighted conscience. Liberty is a daughter of the sun.

Let us take a cursory glance at medical ideals in order that we may afterward notice how these are bodied forth in the expressed thought of the master minds of medicine from the earliest times on through the centuries. The doctor should be richly endowed in body, mind and heart. He should have soundness, vigor and endurance. He should be an upright man. He should be gifted with keenness of perception, clearness of reason and accuracy of judgment. He should be shrewd, tactful, cautious. The doctor's eyes should be *x*-ray eyes; his ears should be the ears of the Scandinavian god, Heimdal, who could hear the grass grow; and a special divinity should be the god of silence—Horus, the beautiful boy sitting in a lotus flower, his finger placed upon his lips. In truth, one of the best of working mottoes for the doctor would be, Eyes and ears open, and mouth shut.

The doctor should be a humane man. The traditions, the spirit, the genius of medicine are all for life-saving—to all these is the taking of life contrary. Of course, in his efforts to save again and again the doctor fails—he is not omniscient and he is not omnipotent. But first and last he tries to be a healer and a savior.

The doctor should be a broad, great-minded man. One of the best and most illustrious of Rome's emperors the eve of the night in which he died gave his guard the watchword, "*Æquanimitas.*" But there is something grander and nobler than equanimity, and that is magnanimity—the former is more egoistic, the latter more altruistic.

Finally, the doctor should be unfalteringly loyal to duty. To him "ought" and "ought not" should be as imperative and as inevitable as "must" and "must not." What a fine, royal fellow is the doctor who never flinches!

And now for the testimony as to these matters of some of the saints of medicine. We shall begin with the medical writings of the Hindoos, selecting passages from the Ayur Veda whose authorship is by legend attributed to Brahma, and whose date is assigned to somewhere between the fourteenth and the ninth century B. C. This about the medical teacher—"He should be kind and humble to everyone; he should always be ready to expose the good rather than the bad qualities of others; he should be clean and neat in his person; he should always be increasing his knowledge of books, and should be neither angered by the improprieties of others nor fatigued by their importunities. He should be kind and considerate to his pupils, and be able to explain the most complicated statements in the simplest and most perspicuous language." This about the medical student—"He should be inquisitive and observant, not covetous, jealous or lazy; he should be a philanthropist, possess a generous heart, and his disposition should be amiable and happy. He is to be taught to be chaste and temperate, to speak the truth, and to obey his teacher in all things." This about the physician—"He should preserve a healthy body; he should keep his nails and beard short, his body pure, his clothes clean. He should avoid especially any familiarity with women. Transactions in the house should not be bruited abroad. Money will be the recompense bestowed by the rich; friendship, reputation, increase of virtue, prayers and gratitude will be that of the poor."

In Egypt medicine was very closely bound to priestcraft, its teaching being conducted in the magnificent sacerdotal schools. Physicians being at the same time priests were subject to all the strict regulations of habit and life prescribed for the latter, and were imbued with their sublime philosophy and noble precepts. Here is an exhortation to a student—"Give not thyself to idleness, or thou shalt be smartly chastised; abandon not thy heart to pleasure, or thou wilt let thy books slip out of thy hands; practice conversation; discuss with those who are wiser than thyself; do the works of an elevated man. Neglect not thy books; do not take a dislike to them."

We must not pass by the great Greek schools of medicine, the schools of the Asclepiads, chiefly because to them belonged the so-called "Hippocratic oath." It is quite certainly known that Hippocrates was not the author of this famous formula—better had it been called the oath of the Asclepiads. Upon completing their course at Cyrene, or Crotona or Cnidos or Cos, or elsewhere, the pupils were obliged to take this oath. Hippocrates himself had doubtless subscribed to it, and as surely imposed it upon his own disciples. It is so well known that quotation may be omitted. The clause referring to the seduction of males, free and enslaved, would reflect discredit and shame upon the guild did its expediency not proceed from the fact that pederasty and sodomy had fastened themselves like a cancer upon lovely Greece, the imputation of their taint clinging to the memories of even Sophocles and Euripides, and the apology for their existence persisting as a foul blot on the immortal pages of Plato. Noble oath of the Asclepiads! Upward to the stars soars the name of medicine on the pinions of the vow, "With purity and with holiness I will pass my life and practice my art."

And now we come to Hippocrates, *our* Hippocrates, our lord and master, protagonist and paragon of physicians. Hear him—"Art is long and life is short, opportunity fleeting, experience deceptive and judgment difficult. The physician is a servant, not a teacher of nature. He must know what his predecessors have known if he does not wish to deceive both himself and others. The physician should be neat as to his dress, serious in his manners. He should be moderate in all his actions, chaste and reserved in the intercourse which he is obliged to have with the other sex. He should be neither envious nor unjust, nor love dishonest gain. He should not be a great talker, but it is necessary, nevertheless, that he should be ready to reply to everybody with mildness. He should also be modest, sober, patient, prompt to do his whole duty without anxiety; pious without going so far as superstition, conducting himself with propriety in his profession and in all the actions of his life. In a word, he should be a good man, and have at the same time the prudence and industry requisite for the efficient exercise of his art. As to the fee owed to the doctor, he should act in this connection with probity and humanity, having regard for the ability or inability of the patient to recompense him more or less liberally." A delightful Grecism is Hippocrates' short definition of a physician—"An upright man instructed in the art of healing."

Crossing the time equator of our Western peoples, Galen looms into view, a colossal figure, to whom appertained the undisputed autocracy of medicine for a thousand years and longer. Renouard says of him that, "for erudition, subtilty of reasoning, universality of information, he yields to Aristotle alone, over whom otherwise he bears away the palm by elegance, purity and force of style." Galen's father was the good and learned Nicon, who imparted to the son these lessons—"Do not give yourself up rashly and blindly to any sect. Sects are implacable despots; to accept their thraldom is to take away from one's actions and thought all liberty. Be just, temperate, courageous, prudent; flee immoderate desires; seek the truth before all else; remain in everything consistent with thyself, immovable in thy principles, firm in thy resolutions." Concerning himself Galen says this—"Neither the abuse of men, nor their injustices, nor the loss of honors can alter the peace of my soul. I have saved myself that degree of humiliation which I should suffer were such incidents able to divert my mind from the path of reason. It concerns me little to please men. I am affected neither by the flatteries of some, nor by the censure of others. I do not think of securing the good graces of all people any more than of possessing all things." Says Galen again—"The good physician should practice with disinterestedness, not for money, but for the good of humanity. It is not possible to covet riches, and at the same time to cultivate worthily medicine, that art so noble; if a man devote himself ardently to one, he will neglect certainly the other. How could he love labor who besots himself, who gorges himself with various foods and delivers himself to the pleasures of Venus, who, to put it in a word, is the slave of his belly and his wanton inclinations! It remains then established, that the true physician is the friend of temperance, and that he is, at the same time, the disciple of truth."

The Arabian period presents a group of highly illustrious philosopher-physicians. Of these one of the most eminent by reason of his talents and attainments was Rhazes, the cithern-player. From him is this upon the choice of a physician—"Inform yourself with care upon the antecedents of the man to whom you design confiding that which is the most dear to you in the world—namely, your health, your life, the health and life of your wife and children. If this man dissipates his time in frivolous distractions, in pleasure parties; if he cultivates with too much curiosity the arts foreign to his profession, as music, poetry; more important still, if he is addicted to wine, to debauchery, beware of committing into such hands a deposit so precious. He alone merits your confidence who, having opportunely applied himself to the study of medicine, has frequented able masters and seen much of the sick; who joins to the assiduous reading of good authors his personal observations. For it is impossible to see all, to test everything one's self; and the knowledge, the experience of a single individual, compared with the knowledge, with the experience of all men and of all ages resembles a thin thread of water placed beside a great river."

Guy de Chauliac is honored with the title of father of surgery. Portal declares that he "said nearly everything which modern surgeons say." This is from his *"Chirurgia Magna"*—"The surgeon should be learned, skilled, ingenious and of good morals; be bold in things that are sure, cautious in dangers; avoid evil cures and practices; be gracious to the sick, obliging to his colleagues, wise in his predictions; be chaste, sober, pitiful and merciful; not covetous nor extortionate of money; but let the recompense be moderate, according to the work, the means of the sick, the character of the issue or event and its dignity."

Fernel, the consummate medical scholar, great of mind and great of heart, for generations through his written work was a teacher of medicine. One of his utterances in this—"Medicine, the eye always fixed upon nature, and, as it were, made in her image and resemblance, takes her law for guide, studying and bending every effort to imitate her, in order to preserve man's health constant and exempt from maladies, to restore and re-establish it when it totters and becomes deranged, finally to prolong life itself sound and safe as long as it is possible."

Paré is a beacon-light that shines and shines undimmed and uneclipsed—a pure white light that charms, but never deceives. At a day when it was usual to keep as a secret any medical or surgical discovery we find this prince of surgeons affirming thus—"For my part, I have shared freely with all persons the gifts which God has conferred upon me. And for that I have not the less; just as the luminosity of the candle is no whit diminished although many come to it to light their torches."

Sydenham is a fixed star in the medical firmament—aye, a lodestar. Plain, unvarnished wisdom is characteristic of him—here is a piece of it—"All those hypotheses which are the products of the imagination and do not repose upon observation will be overthrown and destroyed by time; while the judgments of nature will not perish except with nature herself. If one pretended that hypotheses might serve as a basis for medical practice, such an idea would not be less absurd than that of an architect who should wish to construct the first story of a house before laying the foundations. This constitutes what is called building castles in Spain, but it is not to observe nature."

Let us end our list of references with the German physician-philosopher, Stahl. Sincere, earnest, profound, he was essentially and peculiarly idealistic. As a representative message from him, we select this—"In reality, the physician who loves and cultivates wisdom is almost divine, that is to say, almost like a god; for all which has affinity with wisdom is found, also, to make part of medical morality. Such are, in fact, contempt for money and for gain, modesty and respect, absence of ostentation in clothing, a good reputation, a sound judgment, a just appreciation of things, mildness, amenity, activity, politeness, cleanliness, a precision in language, the art of distinguishing the things which are most often useful and even necessary to life; in order that, by an intelligent discretion, the physician-philosopher may be able to shelter himself from the fear of reverses of fortune to which are exposed the avaricious and the superstitious."

We have gone far and fast, and have made but few and short stops. The journey accomplished more leisurely and by easier stages might have afforded greater pleasure and profit. Yet, nevertheless, have we not been treading upon holy ground? And have we not been breathing celestial air? Truly such voices from the past are refreshing, invigorating, inspiring. From such lofty communion there comes a new sense of dignity and honor. Should there not, also, come added feeling of responsibility and obligation? Should there not come

deeper purpose to climb as near as in us lies to medicine's ideals? Should there not come stronger resolve that medcine's high-flung standard shall not sink?

"Wherefore seeing we are compassed about with so great a cloud of witnesses, let us lay aside every weight, and the sin which doth so easily beset us, and let us run with patience the race that is set before us."

THE TREATMENT OF TETANUS.*

By J. NORMAN HENRY, M.D.,

PHILADELPHIA, PA.

CLINICAL PROFESSOR OF MEDICINE, WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA; PHYSICIAN TO THE PENNSYLVANIA HOSPITAL; ASSISTANT PHYSICIAN TO THE PHILADELPHIA HOSPITAL; FELLOW OF THE COLLEGE OF PHYSICIANS.

I CAN well remember the first case of tetanus I ever saw, and my surprise at its fatal termination. The case was that of a woman who was admitted to the Pennsylvania Hospital in 1896, suffering from a well-marked, but apparently mild tetanus. She was taken to a remote room in the attic and there isolated in order to secure quiet for herself, as well as for the patients in the general ward. The visiting physician, on making his round, examined the patient, concurred in the diagnosis, and prefaced his directions as to treatment by remarking that of course the patient would die, as did 99½ per cent. of all such cases. This woman seemed to do well for some days, having but moderate trismus, retraction of head and arching of the back, while the clonic convulsions were almost entirely limited to the small electric-shocklike contractions so commonly seen in tetanus. After a week or so the patient died of exhaustion and toxemia, which we were unable to relieve in any way by our treatment, which was directed solely toward the mitigation of the symptoms, as at that time no specific therapy had been attempted.

I quote this case because of its similarity in course and termination to a majority of those of acute tetanus, and because also it furnishes a good illustration of the difficulty of forming a prognosis and any opinion as to the efficacy of treatment in an individual case. This patient seemed but mildly ill, had little fever, few if any major convulsions, and not sufficient locking of the jaws to render food-taking very difficult. She was conscious, as practically all cases of tetanus are, throughout her illness.

Some years later I for the first time treated a case of acute tetanus with hypodermic injections of carbolic acid as advised by Baccelli, and increased the dosage to a large extent without inducing any symptoms of carbolic poisoning. The patient seemed to do well, and as day after day went by there arose a hope that the man might recover; a hope that was soon nipped in the bud by his death following a tremendous rise of temperature to 109° or thereabouts. Here again, as in the case previously mentioned, treatment *seemed* to be of value, while the result showed that in reality we were doing no good whatever.

The more chronic forms of tetanus are more favorable, of course, as are those in which the incubation period is long; but the question of the value of any given treatment is a most difficult one, as sometimes when dealing with a favorable case with fair prospects of recovery a sudden rise of temperature, accompanied by an overwhelming toxemia, will carry off the patient no matter what the treatment may be.

Very many drugs have been highly recommended for this disease, a fact which usually affords strong evidence that none is of much curative value. Some of these the writer has never used and therefore cannot discuss from a practical standpoint, while others have been given trial in a number of cases relatively large for a not common ailment. In looking over some of the records of the Pennsylvania Hospital it is interesting to note that there have been recoveries under various treatments. In some 32 cases admitted to the hospital since 1906 10 have recovered, a remarkably low mortality, but by no means a representative one. On the other hand one may see a number of cases occurring year after year in which all are fatal. Such indeed has been my own experience and I can recall but two cases of recovery in those under my care. The first recovery took place in a boy who had a well-marked case of tetanus, with the hopeful history of a long incubation stage of six weeks. In this instance I treated the boy with intraspinal injections of magnesium sulphate and was greatly pleased to note the immediate good results as shown by relaxation and sleep. After several injections at intervals of 48 hours or more recovery was complete. During the month following I treated three other cases of tetanus by the same method, in one case antitoxin being given subcutaneously in addition. All three of these cases died, and in one at least the magnesium sulphate injection showed a cumulative or a multiplied action and may have contributed in some degree to the patient's death.

A study of the ten cases which have recovered during the last five years at the Pennsylvania Hospital is interesting:

CASE I (815): This had an incubation stage of eleven days. Tetanus developed from a wound in the toe, and accordingly at the time of admission this member was amputated. The treatment consisted of hypodermic injections of carbolic acid (8 drops of a 2 per cent. solution every 4th hour, later on 15 drops of a 1 per cent. solution every 4th hour). No antitoxin given. Recovery.

CASE II (1453): Incubation stage three weeks. Antitetanic serum, 3000 units more or less frequently. Sodium bromide and chloral internally. Recovery.

CASE III (2334): Incubation stage eight days. Antitetanic serum 3000 units at intervals. Sodium bromide and chloral by mouth; carbolic acid 100 minims of a 1 per cent. solution at once and then 50 minims of a 2 per cent. solution hypodermically every 4th hour. Recovery.

CASE IV (3982): Incubation stage doubtful, possibly one day, but not likely. Treatment 6000 units of antitetanic serum, 4 minims of a 2 per cent. solution of carbolic acid every 4th hour by hypodermic method. Recovery.

CASE V (3697): Incubation stage 21 days. Treatment, antitetanic serum, 3000 units every 6th hour, hypodermically. Chloral and bromide by mouth. Recovery.

CASE VI (1047): Incubation stage about four weeks. Treatment, 60 c.c. antitetanic serum and then 30 c.c. and 15 c.c. daily. Sodium bromide and tincture of opium by mouth. Recovery.

CASE VII (1726): Incubation stage nearly six weeks. Treatment, magnesium sulphate by intra-

*Read before the Philadelphia County Medical Society, June 14, 1911.

spinal injection. No antitoxin. Sodium bromide by mouth. Recovery.

Case VIII (1761): Incubation stage cannot be computed. A child was born to the woman 17 days before admission. No history of a wound. Treatment intrauterine douches. No record of other treatment. Recovery.

Case IX (1960): Incubation stage cannot be judged. Large ulcer present beneath the tongue and other small ones in the mouth. Treatment, antitoxin 30 c.c. every 4th hour hypodermically. Sodium bromide and chloral by mouth. Recovery.

Case X (399): Incubation stage cannot be judged. No history of a wound could be obtained. Treatment, magnesium sulphate by intraspinal injection; Sodium bromide and chloral by mouth. No antitoxin. Recovery.

An analysis of these cases will show that four were treated with antitetanic serum alone; one with carbolic acid alone; two with carbolic acid and serum; two with magnesium sulphate alone, and one with no treatment at all excepting intrauterine douches. Several conclusions might be reached from this brief record: either that widely different treatments are effective, or that some cases will get well in spite of treatment, or even that treatment is of no avail. For many years I must say I had the latter opinion and have seen numerous cases die while none recovered until the first case in which I used the magnesium sulphate injections in 1907. I do not believe that magnesium sulphate is specifically *curative,* but it does afford the patient rest and sleep, and in so doing meets an urgent indication. Meltzer and Auer found that in monkeys intraspinal injections of magnesium sulphate retard the development of the symptoms and the fatal results, and this discovery seems to hold out a hope that if true also in human beings, antitoxin might be more useful if given more or less simultaneously with magnesium sulphate. The injection of magnesium sulphate should be given as follows: 1 c.c. of a sterile 25 per cent. solution should be given for every twenty pounds of body weight, but I feel sure that successive doses should be made smaller, as in at least one instance there was evidence of a much greater effect of second and third doses. The method is an attractive one, as in as short a time as 15 minutes after the salt reaches the spinal canal relaxation begins and in an hour is complete. The patient becomes somnolent or falls into a deep sleep, and in some instances becomes quite profoundly unconscious. The rest given the muscular and nervous systems must be of value in conserving the patient's strength, provided we do no harm in any other way.

The actual procedure is by no means easy and I remember two cases in which I was compelled to desist from attempts to enter the spine; in one because the attempted introduction of the needle without an anesthetic produced a tonic spasm which very nearly proved fatal, and in another because the administration of ethyl chloride preparatory to the operation caused a similar state. The introduction of the needle into the canal when opisthotonus is present is anything but easy, though it is possible,

The treatment by means of antitetanic serum has never come up to expectations excited by its usefulness in animal experimentation, particularly in its immunizing effect. The explanation apparently lies in the fact that the tetanus toxin has united so strongly with the nerve cells of the cord and brain, at the time that the disease has shown its symptoms, as to present an impossible situation for antitoxin to deal with. The antitoxin has been used hypodermically, has been introduced into the spinal canal by puncture and even into the ventricle of the brain, and the brain tissue itself, after trephining. The larger nerves of the extremity have been laid bare, and the antitoxin injected into the nerve itself, and into the sheath. The dosage of antitoxin should be very large at first, followed by lesser doses frequently repeated.

Bromides and chloral are probably more commonly used internally than any other drugs. Morphine and atropine are also used for their quieting effect. Chloretone has recently been recommended. Curare has been extolled by some writers for its paralyzing effect on the muscular structure of the body. Carbolic acid in my experience has not been very successful, though there is evidence which goes to show that it has value. Certainly if antitetanic serum cannot be obtained carbolic acid should be used.

In dealing with cases of such gravity as this disease always presents we should leave no stone unturned that might give the patient a little more chance in his battle with death, and yet the character of the disease itself should be taken into consideration, and no disturbing and painful measures should be taken which can be avoided.

To sum up as briefly as possible, a patient suffering from tetanus should be immediately given a large dose of antitoxin, say from 15,000 to 20,000 units American standard and about half the initial dose repeated every 6 to 12 hours as needed. The wound, if one exists, should be excised, cleansed with strong carbolic acid solution and subsequently dressed with a weaker solution. If the wound is situated in the finger or toe the member should be amputated, but it is not justifiable to amputate larger parts. Resection of suspected nerve paths is a logical procedure. Injections of magnesium sulphate may be given every few days as occasion arises and carbolic acid by hypodermic injection if thought advisable. Bromides and chloral may be prescribed, but unless used in very large doses are not very quieting in their effect. The nourishment should be given freely and the patient allowed to drink water frequently as the loss of fluid from sweating is very considerable. When feeding by mouth is impossible the nasal tube may be used or rectal alimentation begun. The patient should be kept in a quiet room, free from all noise and excitement.

In regard to the prophylactic treatment of tetanus there seems to be much evidence of the value of antitetanic serum as a preventive. It is difficult, of course, to form any opinion as to what wounds are in reality dangerous ones and what are not. Tetanus develops in many cases where wounds have been cleansed with antiseptic care and bound up with antiseptic dressings a short time after the wounds were received. It is not difficult, on the other hand, to say what wounds are in the majority as forming portals of infection of the tetanus bacillus; these are punctured wounds, particularly wounds from nails, wounds on the feet or hands acquired in or about stables, or where manure is present; Fourth of July wounds where powder and dirt are burnt into the hands or face. All such should undoubtedly be most carefully treated locally and an immunizing dose of antitoxin ad-

ministered, 1500 units being a minimum prophylactic dose. There does not appear to be sufficient evidence on practical grounds to conclude that either intraspinal or intracranial injections of antitetanic serum are called for. Theoretically also there is a question whether either of these procedures has any advantage over the subcutaneous method.

1624 Spruce Street.

THE STRENUOUS LIFE.

By I. L. NASCHER, M.D.,

NEW YORK.

SPECIAL LECTURER IN GERIATRICS, FORDHAM UNIVERSITY SCHOOL OF MEDICINE.

In a recent number of one of our New York dailies (*New York Times,* July 9, 1911), there is a lengthy article upon the early death of prominent individuals. It analyzes the cause of death of 591 persons, of whom the ages of 163 are not given and the death cause of 198 is unspecified. The article, while written in the popular language required for lay readers and lacking in scientific accuracy, furnishes the physician a subject for thought upon the extent and effect of the strenuous life. The article begins with the question, "Has the American reached the limit of his endurance?" An affirmative reply brings up several questions. Is the individual deteriorating mentally and physically? Is his mode of life tending to shorten his years? Are his mental and physical labors excessive? Are there unrecognized factors which shorten life? I believe an unqualified "yes" can be given in reply to each of these questions. While the duration of life has been lengthened through the better care of children and the better control of infectious diseases it has not been shown that more persons reach old age. Without statistics at hand to prove the assertion by figures it is a matter of common observation that we see comparatively few individuals of advanced years, while we see many who in the middle years, in the fifth and sixth decades, present the appearance and are subject to the ailments of old age.

I have previously ("Longevity and Rejuvenescence," *New York Medical Journal,* August 17, 1909), referred to the present day tendency to hasten the period of development and make a man of the growing child, pass over the period of maturity with indifference, and when the manifestations of decline appear, make frantic efforts toprolong the closing period of life. The tendency to hasten development is seen in our schools where the mental and physical labors imposed upon the child have about reached the limit of the capacity of the young organism. Compare the school curriculum of to-day with the curriculum of thirty or forty years ago. The child must learn all his parents did in their school days, all the advances in science made since then, and many subjects which were thought unnecessary in former days, yet the school age has not been lengthened nor the number of school hours increased. There is a limit to mental capacity as there is to physical capacity, and that the limit is often reached in school is evidenced by the brain fag which accounts for the inattention and irritability of the child during the later school hours. Class tasks are gauged by the capacity of the brightest minds of the class age, and the weaker minds must make excessive efforts to keep up with the leaders at their age who are already forced to extraordinary mental and physical exertion. From one-half to two-thirds of the child's waking hours are taken up with school work. This leaves insufficient time for recreation and violent athletics are taken up which are as injurious to the body as excessive studies are to the mind. The foundation of arteriosclerosis is laid in the schoolroom, of cardiac hypertrophy and high blood pressure on the athletic field. As a result of this hastened development and overdevelopment in our schools the city man starts out in mature life with mind and body impaired, with foci for senile degenerations awaiting the moment's irritation which would rouse the senile process into activity. The physician shares in the popular misconception that the limit of growth in stature is the limit of development. The brain is heaviest about the thirtieth year, the lungs have their maximum respiratory capacity about the same time, and the heart reaches its normal maximal size during the fourth decade. The period of development ends with the completion of growth of the vital organs, and this takes place between the thirtieth and thirty-fifth years. When, however, through excessive mental and physical labor the organs have reached the limit of their normal capacity before the time, we must expect that they will deteriorate earlier and senile changes set in sooner.

The country-bred youth is neither mentally nor physically the equal of the city-bred youth, who has been trained to the limit of his mental and physical capacity. He is not at his best until he has reached the limit of physiological development several years later than the city man, but from that time on he overhauls his city brother because he has developed slowly, lives slowly and ages slowly. The city-bred man ages more rapidly, not alone because he reaches maturity sooner, but because the strenuous life of the city favors earlier senile changes. He becomes aged before he becomes old. The man from the country coming to the city and taking up the rapid life of the city soon breaks down. He is not accustomed to late hours and insufficient sleep, restaurant food, overheated rooms and bad air, and the constant strain of exciting business. He does not age rapidly like the city man, the changes are not those of precocious senility, but those associated with clearly defined disease, generally beginning in neurasthenia. Even in pastoral districts the introduction of urban features has produced an unfavorable change in the mental and physical condition of the population. It has increased their wants and worries, and this is reflected in the increase of insanity among them. There can be no doubt about the deterioration of the race in civilized countries; the gradual diminution of the average stature of the French soldier during the past century, necessitating a gradual diminution of the minimum limit of size of the recruit, is evidence of this fact. The control of infectious diseases has been accomplished not through increasing the natural power of resistance, but through limiting the source of infection. The enormous increase in diseases of the heart, lungs, kidneys, and brain shows that the body is less able to stand the strain upon these organs. In this country the strenuous life which begins in the school causes an early weakening of the physical powers which is increased and hastened in the reaction following artificial stimulation.

Does the mode of life tend to shorten life? Notwithstanding the great advances made in sanitation, it has done little in improving the organism, either in its power to resist disease or in prolonging the span of life. Its great value is in the prevention of

disease, its effectiveness being directed to the etiological factor and not to the histological factor involved in disease. It can be shown that most of those who formerly reached advanced old age did so under unsanitary surroundings and in spite of the neglect of hygienic rules. They lived, however, quiet uneventful lives, had sufficient sleep and nutritious food, and were not subjected to the constant and intense strain of present day commercial and financial life.

Improper mode of living is undoubtedly the most important factor in causing early death among prominent persons of to-day. They do not sleep enough or at the proper time, they eat too much and improper food, they are irrational in their recreations. After five or six hours of intense mental strain the brain needs rest and brain rest means sleep. The German banker, broker, or merchant goes to the coffee house for an hour or two in the afternoon, takes a little nap, and is sufficiently refreshed to take up again his strenuous mental labors. The American, after five or six hours of intense mental concentration on exchange or in the office, with but a few minutes intermission for lunch, goes to the ball game or athletic event, substituting one form of excitement for another, or he goes to a meeting of business men and continues the mental strain of the day. He cannot spare an hour in the afternoon to give his brain rest, until neurasthenia sets in and he must spare weeks for his recovery. After the day's work an hour or two is spent at dinner and then comes the ball, the banquet, the theater, or another meeting with a midnight lunch followed by a few hours' sleep. Many men after the intense strain of the day seek diversion at the card table depending upon the brandy and soda and the strong cigars to supply the recuperation necessary to enable them to work. If we could follow the routine life of our prominent persons day after day for a week we would find that most of them have insufficient sleep and depend upon forced stimulation to keep them up.

It seems hardly necessary to dilate upon our national failing, improper food and improper feeding. In our hastily prepared and still more hastily eaten noonday lunches digestibility and food value are subordinate to taste. A small chop, the flavor of which is masked by the highly spiced dressing, a piece of lard-soaked pie, and a cup of coffee or a mug of ale, or perhaps the pie alone, is not the most wholesome meal even for lunch; yet this is one of the most popular of the noonday lunches. Dinner is usually taken at night, and is as a rule a heavy meal. Most men prominent in their vocations are also familiar with the banquet table, and within a couple of hours after they have had a hearty meal at home they are ready for a second meal at the banquet. Excessive drinking is not as marked as excessive eating and improper food, and alcoholism is rare, but gourmandizing seems to be a common failing among the great and nearly great, and many of them pay for it with their lives. Many of the deaths reported in the press as due to acute indigestion and those due to apoplexy during or following a heavy dinner occur in gourmands.

Improper recreation is another of the faults which tend to shorten life. In my paper on "Recreation as a Therapeutic and Hygienic Agent" (*Dietetic and Hygienic Gazette*, April, 1910). I formulated the rule that "recreation should be the antithesis of the work which necessitates it." Physical labor requires mental recreation, a sedentary occupation requires activity, etc. Chess does not relieve the brain fag of the writer nor is the play with a complicated plot the proper recreation for the man who has spent the day under mental stress in his office. To substitute one form of mental excitement for another is not recreation, however diverting it may be. Dancing may be a diversion, but it is no recreation to the tired mail carrier, and in like manner a pastime which demands mental effort is not a recreation to the mind. Other factors involved in the mode of life having a deleterious influence upon the organism are sexual excesses and perversions. Secret tippling is a common failing. A potent cause for nervous breakdown among those who have vast responsibilities is found in the secret obsessions and phobias, or fears founded upon threats. It is hardly necessary to refer to the many prominent men who have their body guards, house guards and private detectives.

Are mental and physical labors excessive? The fact that so many prominent persons break down and die in the prime of life from causes traceable to overwork or to excessive mental and physical strain is sufficient reply to that question. In the race for wealth and leadership men having less mentality or physical capacity than their competitors but equaling or surpassing them in ambition and energy, work to the limit of physical endurance and if still short of their mark further effort causes mental and physical breakdown. The work has been excessive. There are many positions involving responsibilities radiating in all directions and neither the mind nor the body can encompass them. Where the individual is already working under pressure a slight increase in the work will suffice to cause exhaustion. A school teacher who had a class of forty pupils received a class of fifty pupils and in a week she was suffering from neurasthenia. A typewriter working usually nine hours a day was obliged to work from twelve to fifteen hours a day for weeks and was then a physical wreck. A city official holding a position involving little actual work but occasional grave responsibilities was forced to face these responsibilities several times within one week and he was on the sick list for ten days afterwards. Such cases could be multiplied many fold. It simply shows that we are working under pressure and dangerously near the limit of human endurance.

Are there unrecognized factors that tend to shorten life? Anything which irritates the nervous system hastens its breakdown and shortens life. The vibration of motor vehicles certainly has such an effect upon the organism. We are becoming so accustomed to these vibrations that we no longer notice them unless the vehicle stops while the motor is still running. We then hear the rumble of the motor and feel the vibrations. When the vehicle is going these are masked by the noise of the running vehicle and the forward motion. Some persons complain of vertigo and present other symptoms of cerebral anemia after riding in such a vehicle and many persons complain of lassitude after the ride. A guard upon the elevated railroad found that if he stood all day upon the platform of the car containing the motor he became nervous, irritable and tired while he did not have these sensations if standing upon the platform of a car without a motor. The symptoms differ from the symptoms of sea-sickness and its allied disorder car-sickness, and there is a different cause, the latter being due

to unusual motion, the other to extremely rapid, fine vibrations affecting the entire organism. The effect upon the muscular structure is probably similar to the effect of the medical vibrators which stimulate the muscles, but if the stimulation is prolonged the reaction sets in in muscle exhaustion. I can only venture a guess at the pathological condition produced through the rapid and fine vibration of the organs, especially the brain. It is certain, however, that this motor vibration does irritate the nervous system and that the repeated iritation will produce a pathological condition which tends to shorten life.

Other factors referable to modern civilization and the strenuous life which irritate the nervous system and tend to produce disease, are the various forms of artificial light, some of which are painful to the eyes and produce actual mental distress, the express elevators of high buildings which produce momentary cerebral anemia, the wind pressure when riding in rapidly moving vehicles unprovided with wind shields; the telephone, requiring intense mental concentration to hear conversation and at the same time disregard other mental impressions of sight and hearing, etc. The American's ambition to go to the limit of physical ability, to reach the goal he has set for himself, has carried him to the limit of human endurance. He has already begun to deteriorate and degenerate, he is aged before he is old, he dies while apparently in the full vigor of his manhood. It needs no Daniel to translate the Mene, Mene, Tekel, Upharsin that is written in the death reports of our prominent men. It means today as it did in the days of Belshazzar "the strenuous life kills" though not by the sword of a Darius but by the slower but equally certain pathological processes of outraged nature.

631 East One Hundred and Sixty-eighth Street.

THE OPERATION FOR HYPOSPADIAS; ITS PRESENT STATUS.

By ERIC CARL BECK, M.D.,

NEW YORK.

ATTENDING SURGEON TO ST. MARK'S HOSPITAL, INSTRUCTOR OF SURGERY AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, CHIEF SURGEON AT THE GERMAN POLIKLINIK, ETC.

There are still so many general practitioners who doubt and distrust the efficacy of this very simple procedure that it is time to proclaim again that the operation for hypospadias is a successful operation, and can be made use of in the greater majority of cases. I use the term "greater majority of cases" advisedly and shall return to it later on.

It is a fact that many boys are born hypospadiacs, grow into manhood, marry, and create offspring. As long as the vivacious motility of the spermatozöon is preserved fecundation is possible. We know that spermatozoa have been placed in the human vagina by artificial or mechanical means and impregnation has resulted therefrom. But these cases of hypospadiac fatherhood are rare, and many a poor sufferer has shunned the married state because he knew his own imperfection and feared the eventual loss of his wife's love with the advent of her knowledge of his sexual shortcomings.

It is needless to state that a fair percentage of our annual suicides consists of men afflicted with this unfortunate malformation. I distinctly recall to mind a young man who was engaged to be married to a very charming young lady, and who entreated us to restore him to the normal state, as his fiancée insisted upon being married on a certain day about three months after the time he first came to us for advice. His ultimatum to us was that he would drown himself if we didn't succeed in making a man of him.

His was the balanic type of hypospadias and we had very little to contend with in displacing his urethra forward. His only complaint was that during the next few months he was unable to hold his urine longer than four hours at a stretch, probably caused by the irritation of the catheter. We have noticed this incontinence of urine in many cases, but they all return to normal within three or four months after the removal of the catheter.

There is no knowledge without experiment, and for experimenting we must have cases. But the cases alone are not sufficient, we must have the master mind and the master hand to carry these experiments out rationally. When a number have been completed and the years have rolled by, then, and only then, are we justified in making the definite statement that such an operation or such a chemical compound is truly efficient.

When the dislocation of the urethra was first mentioned and the technique later published, no one doubted but that it was feasible. But what would be its limitations? I was still a student when one of the older men of the Post-Graduate Medical School and Hospital made the remark to Carl Beck, "Beck, beware of the incurvation."

It is with the idea and the hope of placing this operation of dislocation of the urethra in hypospadias in its proper place that I have written this article. There are three forms of hypospadias, differing simply in the location of the false opening of the urethra. The balanic, the most frequent, the penile, and the scrotal. I think the nomenclature fully describes the location of the false opening.

Where do we hope to find the greatest extensibility of the urethra? Surely we should familiarize ourselves with the qualities and properties of the body or organ we expect to operate upon. According to the table of measurements of the penis taken from Waldeyr's "Anatomy" the distensibility of the urethra varies in accordance with the size of the pars libera of the penis. Length of entire urethra: Long urethra of adult, 24 cm.; short, 14 cm.; medium, 18 to 20 cm. Length in new-born, 5 to 6 cm.; in child of 1 to 2 years, 6 to 7 cm.; in child of 5 years, 8 to 10 cm. Length at puberty, 10 to 12 cm. The pelvic and perineal portions are fixed, urethra fixa. The penile portion is movable, urethra mobilis. In this movable portion of the penis the urethra is entirely dependent upon the state of the penis dilating with erection and vice versa. Taking the average figures given by Waldeyr as measurements of the penis in its state of laxity and erection, viz., 9 cm. and 16 cm., we find that the urethra is distensible, in the adult, to the extent of 7 cm. or 2.775 inches.

From the measurements given in Waldeyr's "Anatomy" we may gain a pretty fair estimate of the distensibility of the urethra, that is, of the probable limit of stretching. It is not wise to elongate the urethra to its fullest extent, as it is then that the incurvation of the penis occurs; when the organ becomes erect. I think the fair medium is to make use of about 50 per cent. of the distensibility. This naturally points out the possible and impossible operative cures in hypospadias by the simple use of Carl Beck's dislocation procedure. For instance in the adult, where the extensibility of the urethra is

a little over two inches, all cases in which the false opening is located within one inch of the tip of the glans penis, are curable by this method. In children and youths we must figure our proportions accordingly. The ideal case for operation, then, is one of the balanic type. I shall consider this form of hypospadias in describing the operation, as it is the simplest one.

The patient should be placed in deep narcosis to assure thorough laxity of the organ, and prevent possible erection of the penis. The entire penis is sponged off with alcohol and then coated with tincture of iodine. Cotton gloves on the hands of the operator facilitate handling of the organ and prevent slipping. An assistant grasps the glans very firmly with two fingers and exerts moderate traction so that the false opening becomes as prominent and as large as possible. A thin rubber catheter is introduced to act as a guide while the process of dissection is going on. The catheter is easily felt by the operator through the very thin skin overlying it.

The incision is made parallel with and to one side of the urethra. We have made it a rule of late to incise to one side so as to create a small flap with which to lift the urethra up and out. Of course great care must be taken with this step, as it is the most delicate part of the operation, and the smallest puncture of the urethra means a fistula which may remain permanent. An assistant with a watchful eye and an ever-ready sponge is an absolute necessity. It is important to dissect out a sufficient length of urethra so as not to cause too much tension when the dislocation forward has taken place. About two inches is the average.

For creating the new channel in the glans we have made use of a bistouri which is turned to the right and left to make the opening in the glans sufficiently large. There is always some contraction there later on, and this must be thought of at the time of operation. Four thin silk sutures are run through the anterior opening of the urethra equally distant from one another. The ends are drawn through the new channel in the glans and using the silk threads as a handle, the urethra is pulled forward into its natural position. The sutures are rethreaded on a needle and the urethra is stitched to the circumference of the freshly created meatus. One of the ends may be left long and run through or around the catheter to keep it from sliding either in or out. The wound in the body of the penis is sewed up with fine catgut, a thin strip of sterile gauze placed over it, and the whole encased in an adhesive or collodion dressing.

The patient must be kept on large doses of potassium bromide and a bland diet to prevent erections, which will destroy the fruits of the operation. If nothing interferes with primary union the catheter may be removed after the fifth day and the stitches about the tenth.

I am sorry to say that three cases were failures on account of the unruliness of the patients, but of the last twelve cases of balanic hypospadias all were successfully operated upon.

In the penile type the tension placed upon the urethra has always caused incurvation, if not when lax, then at least when the penis was erect. One case of scrotal hypospadias, I remember, required two operations. The first one the dislocation of the urethra as far forward as possible, and the second the formation of Thiersch flaps. Another case of the scrotal type which had been operated upon came into my office the other day and showed a surprisingly good result. Good in so much that the boy, who is now nine years old, can urinate easily and comfortably, but his penis is extremely small. It is nothing more than a very small piece of pendulous tissue.

The most unpromising case for operation I have ever seen Dr. Carl Beck attempt to remedy was apparently one of hermaphrodism. The boy was five years old and showed but slightly developed genital organs, his scrotum being split into two halves, simulating the labia of a large girl. His penis was but elementary. It looked like a clitoris, especially so when his thighs were brought in contact. When he urinated the urine was sprayed out of a funnel-shaped opening at the base of the penis. It was necessary for him to squat while urinating. The operation brought to light a scanty inch of urethra, and when his scrotum and penis had been repaired his genital organs looked like those of a boy about ten months old. We were surprised at the remarkable result two years after the operation.

For a detailed account of this case see the article by Beck. "On some technical difficulties in the distention method for hypospadias and other urethral affections," in the *New York Medical Journal* for August 14, 1909.

Comparing the results of these different cases—there are more than twenty that I can call to mind—and not only considering the satisfaction of the surgeon, but also bearing in mind the vital cause, the impulse that drives the sufferer to the surgeon for relief, I think it is fair to claim that the dislocation of the urethra is a positive cure in the balanic type, and in some cases of the penile form in which the false opening is not too far removed from the tip of the glans. Not enough time has elapsed to prove whether the urethra will adjust itself as the boys grow older, and the youngsters that I have seen operated upon as babies are still mostly under ten. Many of them drop out of sight completely, and if we see one at times in our clinics long after the operation we may count ourselves fortunate indeed. It is hard to draw up statistics of these cases, when one would like to cover a period of ten or fifteen years.

One thing more. Approximately 80 per cent. of the cases seen have been in children of Jewish faith. I have made it a rule to examine them carefully before operation, laying special stress upon how soon after birth they were circumcised. Within the last year I have seen four cases where the baby was but three or four weeks old. In each case the false opening was found at the border of the foreskin and a small indentation on the face of the glans seemed to point to a once patent normal urethral opening. Are not some of these cases artifacts? Are not, perhaps, many of them? Do not many of these poor babies become tuberculous on account of the ignorance of the circumcising official? This is a delicate subject to bring before the public, but there must be some way of checking this malpractice, or rather the criminal carelessness of the officiating person. Hypospadias in itself is such a terrible affliction; let us not increase the misery of these poor afflicted ones by permitting the continuance of this practice by surgically ignorant and inexperienced persons. Why should not the law compel all male children on whom circumcision is to be performed to be taken to a competent physician or surgeon for the operation?

37 East Thirty-first Street.

REPORT OF A CASE OF CONGENITAL CAVERNOUS ANGIOMA OF THE NECK.

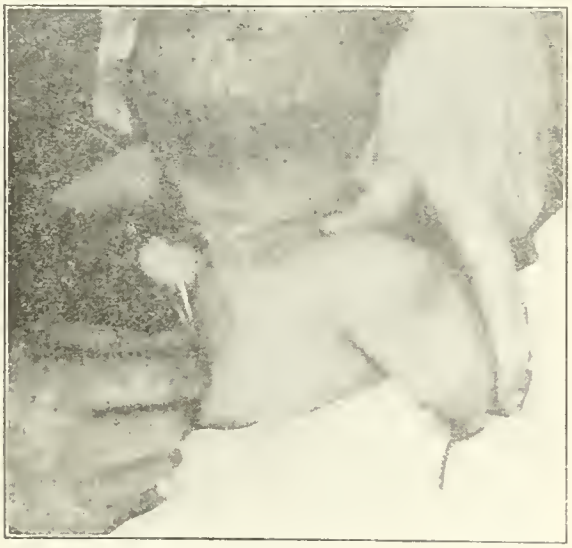
By ANDREW J. GILMOUR, Ph.B., M.D.,

NEW YORK.

The parents are both healthy. The patient is an only child. On December 30, 1909, one day after the birth of this infant, the midwife in attendance brought to the clinic a child well nourished, perfectly healthy, except for a tumor, which she had noticed at birth, on the back of the child's neck. The tumor was described as having at birth the color of the umbilical cord, but of the same size as at present.

Physical examination showed a tumor at the middle of the back of the neck at its junction with the shoulder. This tumor was situated just within the middle of the base line of a triangular area of a light red color representing a birthmark. The base, 3½ inches long, extended straight across the back of the neck just below the tumor. The apex of the triangle was slightly below the vertex, a distance of 3 inches at right angles to the base of this triangle. This light red area when last examined on October 27, 1910, was practically the same as when the patient first came under observation. The tumor itself was 1 inch in diameter, and on superficial examination appeared to be sessile. A more careful examination by raising the tumor showed it to be pedunculated. The pedicle was extremely short with a diameter about one-quarter that of the tumor itself. The color was a pinkish red with a few traces of purple. Pressure caused the disappearance of the contents of the tumor, leaving a thick boggy sac beneath the fingers.

Two days later the purplish color of the tumor was more distinct; at the end of the week the pinkish color had been etirely replaced so that the tumor was a dark purple. The tumor had slightly



increased in size since birth. At the end of three weeks, when last seen, the tumor remained practically the same size. The parents were to have brought the child later for operation, which they did not do.

The patient, having been lost track of, was visited on October 27, 1910, and was found to have had the tumor removed by a private physician when the baby was two and one-half months old. The removal had been complete; a distinct vertical scar remained over its former site. The child was healthy and robust. The mother said the tumor had gradually increased in size up to the time of the operation, but from her description it could have been but a trifle larger than when last seen.

The accompanying photograph was taken three days after birth.

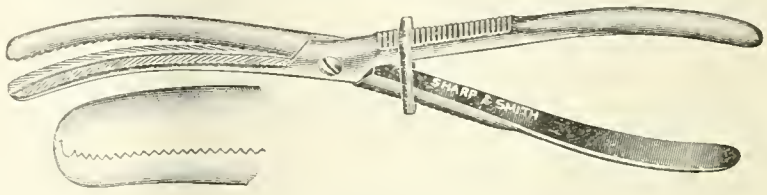
133 East Fifty-seventh Street.

A NEW HYSTERECTOMY CLAMP.

By HOWARD CRUTCHER, M.D.,

ROSWELL, NEW MEXICO.

On February 29, 1896, the Medical Record published an article in which I presented to the profession a new and extremely simple lock, consisting of a steel ring sliding over serrated shanks, which up to that time had been applied only to clamps used in vaginal hysterectomy. Since that time



I have fitted the lock to other appliances, which have been reported from time to time in this journal.

In the present case I desire to illustrate my latest hysterectomy clamp, which differs radically in the blades from the older ones. The new clamp has long, wide, curved blades, one grooved, the other with a tongue to correspond. The screw has been made heavier. The idea of the improved blades was suggested to me by Mr. R. M. Hays, a medical student of Dexter, New Mexico, to whom my warmest thanks are due. In perfecting the blades Mr. Hays followed the general lines of the familiar hemorrhoidal clamp, modifying them to meet the special conditions found in the broad ligaments of the pelvis.

My reason for presenting the present clamp is that I have found the old ones, with short blades, undesirable in most cases, two or more of them being required at times on a single ligament. The ideal method consists in applying a single clamp on each side.

Antityphoid Vaccination by Way of the Intestine.—Jules Courmount and A. Rochaix have been studying for three years the possibility of causing autityphoid vaccination through introduction of typhoid material into the intestines. They give their conclusions from this work as applied to animals and man. Vaccination by introduction of toxins into the intestines is possible, but the material cannot be introduced by the mouth. It must be injected into the large intestine assisted by the use of laudanum in the fluid. These injections are well borne; after a negative phase immunity is established in the goat, rabbit, and guinea pig. Immunity is also antitoxic; the agglutinating, bactericidal, and bacteriolytic properties appear in the serum of the subject vaccinated. Man bears the injections well, with no bad effects. Agglutinating, bacteriolytic, and bactericidal powers are developed in human serum, and immunization like that from the cutaneous method is probable. This method is absolutely harmless and should be tested.—*La Presse Médicale.*

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New York, October 7, 1911.

THE BRAND BATH IN TYPHOID FEVER.

IN the *Zeitschrift für diätetische und physikalische Therapie*, Bd. XV, 1911, Dr. Simon Baruch of New York compares the results of the Brand bath as shown by statistics of W. H. Thomson, W. Gilman Thompson, H. R. Loomis, Osler, and others with the results of milder cold water treatment advocated by Curschmann, who led the German doctors to his milder method and which has gained vogue in this country. In the St. Jakob's Hospital under Curschmann's supervision 1,229 cases of typhoid fever resulted in a mortality of 18 per cent., while the statistics of some American clinicians, also from civil hospitals, show a mortality of about 7 per cent., the number of cases being 1,268. The latter statistics are sustained also by Hare of the Brisbane hospital at Melbourne, whose mortality was 7.05 per cent. Baruch does not content himself with a mere statement of statistical results, but brings forward arguments opposing the views of the great Leipzig clinician, and deplores his influence upon the medical profession in this matter. Quoting from Nothnagel's "Pathologie und Therapie," Curschmann writes: "At first under the imposing influence of Brand and his followers and of the overestimation of the significance of high temperatures, cold baths as low as 6° C. were applied. Consequently it became necessary not rarely to use 10 to 15 baths in 24 hours. Most physicians have therefore returned to milder procedures." Dr. Baruch compares this statement of Brand's views with the latter's published statements. In his monograph "Die Hydrotherapie des Typhus" Brand writes "Not the reduction of temperature, but the stimulating action of water is the principal thing in typhoid fever. . . The chief indication is to meet the combined attack of the poisons upon the brain, the nervous system, the heart, and the abnormal blood conditions by a correspondingly sustaining method. . . Six baths in twenty-four hours is the largest number necessary." Moreover, Baruch says, "Brand never applied a bath of a temperature below 18° C., the usual temperature being 20° C.

Baruch then describes his own method as a gradual introduction to the cold bath, which is adapted to nearly every case of typhoid fever. When the rectal temperature is 102.5° F. or over, without local manifestations to account for it, he invariably has the patient wrapped in a sheet and blanket, placed in a rocking chair, and drawn to the bath room, where a tub filled with water at 90° F. awaits him. The patient is bathed and well rubbed for twelve minutes, dried, and returned to bed. If the rectal temperature is still above 102° in four hours and the patient is awake, a second friction bath for twelve minutes is administered at 85° F. This practice is repeated every four hours under the same conditions, the bath temperature being lowered each time five degrees until 70° F. is reached. If one of these baths reduces the rectal temperature two degrees or more during the first week Dr. Baruch claims that the diagnosis is negative; the more nearly the rectal temperature, taken fifteen minutes after the bath, approaches 102.5° the more probable is the diagnosis of typhoid fever. After the diagnosis is established the bath at 70° for fifteen minutes with active friction is given at the bedside, according to Brand, every four hours, when the patient is not normally asleep. When the reaction is not good or the patient's teeth chatter during or after the bath, the latter should be shortened, but the temperature should not be raised. A good reaction is the essential of every cold water procedure.

MALIGNANT CERVICAL LYMPHOMA.

PERHAPS no familiar clinical affection is so little understood, even by good practitioners, as extensive hyperplasia of the cervical lymphatics. Cornet was doubtless the first to show that the very worst and most characteristic cases of "scrofula" were often, if not commonly, nontuberculous in character. He coined the term "pyogenic scrofula" to characterize these cases, and attributed them to ordinary pyogenic cocci, taken up in the mouth, nose, throat, etc. He even went so far as to state that no abrupt line could be drawn between such cases and malignant lymphoma. There seemed to be no limit to their growth, and they could destroy life by compression or exhaustion, or both conjoined. Schleich was at much pains to discriminate between pyogenic and tuberculous cervical lymphomata. The latter were bound to become caseous, while the former never did, save in mixed infection. Many a child, horribly deformed by enlarged cervical lymphnodes, is going about to-day with the stigma of tuberculosis. It is confidently anticipated that the condition will progress and that the child is doomed to an early death. It often becomes necessary to extirpate these glands because of the pressure symptoms. Scores of these lymphomata, of the most varying dimensions, may be incised without the slighest evidence of caseation, and tubercle bacilli will not be found. There is no evidence of lymphomata in other localities, nor of any essential anemia or cachexia. Nevertheless new ganglia rapidly enlarge and the patient soon becomes worse off than before and is repeatedly operated upon until the case becomes inoperable. But these cases are by no means essentially malignant, for, as Schleich and Cornet state, spontaneous involution is often seen. Older authorities recognized a "scrofula fugax" which was of this type and doubt-

less nontuberculous. Much may also be accomplished by treatment, and in general it may be believed that only a small percentage of such cases end fatally, and that when this occurs we have a right to accuse something more serious than pyogenic scrofula.

As years have elapsed since the efforts of the authors quoted were published, it should be of interest to note what a recent writer has to say on the subject, and Ziegler should be worth quoting, although probably not representative of the clinicians. At a session of the Schlesische Gesellschaft für vaterlandische Kultur (*Deutsche medizinische Wochenschrift*, August 24), he discusses the frankly malignant forms of lymphoma. The chief problem to decide is whether we have to deal with a true neoplasm or an inflammatory granuloma. All evidence favors the latter view, and in this case a specific exciter should be necessary, similar to the cause of lues and tuberculosis. The predilection areas are the neck, axillæ, and mediastinum, which apparently argues for direct extension. Nevertheless he does not allude to pyogenic scrofula. Generalization occurs to other and internal structures, and while often deferred, is probably inevitable. Late complications may be numerous and varied. Bone lesions are mentioned, and this reminds us that Cornet always claimed that much "bone scrofula" was nontuberculous in character.

Ziegler lays much stress on prodromal exanthemas as showing the presence of a deep-seated infectious process. There is, therefore, a family resemblance between malignant lymphoma and mycosis fungoides. He intimates that Mikulicz's disease (tumor of the submaxillary and lacrymal glands) belongs to the same family. In splenomegaly we have another clinical type. As Köbner long ago showed, the primary lymphomata may sometimes be resolved by local injections of arsenic. It is to be regretted that Ziegler did not make some comment on the relations of pyogenic scrofula to malignant lymphoma. He does emphasize the fact that a disease which closely mimics tuberculosis of the lymphnodes has been abundantly shown to possess no element whatever of that affection.

MALINGERING AMONG CRIMINALS.

Not infrequently malingerers gain admission to the public wards of a hospital and become for a time a great source of worry to the internes as well as to the attending physicians. The usual presupposition that a person who has asked and gained admission to the hospital must be a sick man is very strong in the minds of hospital workers, and a malingerer enjoys "bed and board" for a long time, until finally the mind of the staff in regard to the absence of any disease in him is made up. And even when he is finally discharged with the diagnosis of malingering, the house physician experiences a curious uneasiness for a time lest something may have deceived him in the diagnosis, and the person discharged as a malingerer may be brought in seriously ill, following the very next ambulance call.

But malingering assumes no such serious proportions in a general hospital as it does in prisons, according to G. Frank Lydston, whose views on the subject are printed in the September issue of the *Journal of the American Institute of Criminal Law and Criminology*. In prisons the greater number of criminals answering a sick call are malingerers, and for a great many reasons. Some from a desire to escape work; others from a craving for sympathy and change from the deadly prison routine; others still from a liking for drugs, which was stilled by drink or by the regular use of various patent medicines when at liberty; many are really psychopaths and undergo various heroic treatments or even operations for the sake of these procedures only.

To a young prison physician malingering, it is seen, presents a very hard problem. He cannot but consider all applicants for treatment as genuinely sick, and must, therefore, spend a great deal of time in weeding out the "fakers." Chronic malingerers, too, persist in responding to the sick call, even though previous attempts have been punished by nauseating doses or the dark cell. Lydston was much bothered by such persons until he hit upon the simple plea of sounding the sick call at dinner time. The success of this move was astounding: one hundred and eighty men appeared on the sick list the day previous, only twelve were in line on the first day of the experiment! This success was repeated for the rest of Lydston's term of service; as his orderly tersely put it, they, meaning the prisoners, "couldn't stand the smell of the soup."

DROUGHT AND SANITATION.

That there is a correlation between drought and health conditions is a point too obvious to require any argument. In continued hot weather, especially in cities, the death rate goes up generally by leaps and bounds. The chief death toll is taken of young children. Infants in very large cities, when the temperature has been high and the sun scorching for weeks, die like flies, although this simile is not apropos, as flies flourish in hot weather. Heat of sun and air lasting for some time has a depressing effect on human beings of every age. This climatic extreme lowers the vitality of even adults so that it is a matter for no surprise that children suffer seriously. Extreme hot weather then *per se* is injurious to human life. The conditions it brings in its train are, however, more harmful still to health. The air of cities is then filled with dust and carries the germs of disease. Rain is the greatest cleanser of air and when rain is lacking the air of cities becomes foul and noxious. Food of every description is liable to become contaminated and more particularly milk, the food of children. A long drought is a season of trial to children in cities and the younger the children the more seriously are they affected.

The London *Times* of August 15 had a leading article on the subject of drought and health. It must be borne in mind that in England the people are not accustomed to long droughts and great heat. Thus when it is considered that in London a few weeks ago the temperature was 97° F. in the shade,

and in Greenwich more than 100° F. in the shade, it may be easily imagined that the children suffered terribly. There is little doubt that the low rate of mortality of infants in Great Britain is largely due to the more or less constant rainfall which keeps the air comparatively pure. The writer in the *Times* refers to the well-known fact that a hot and dry summer is usually attended or followed by a large infantile mortality, "a mortality presumably dependent partly upon the actually depressing effect of great heat upon children with no inherited tolerance of it and partly upon the accumulation in many places of waste matter ready to pass into active decomposition as soon as it is supplied with moisture." It is pointed out that after a prolonged drought there is often great difficulty in procuring adequate water supplies either for mankind or for animals and in the past there has been only too much experience of the consequences of the first flushing of the country by abundant rainfall. After all water is the main agent by which typhoid fever is spread and it is certain that in the event of sudden and heavy rains after drought an outbreak of typhoid fever is one of the consequences against which it is necessary to be on guard. Therefore sanitary authorities should not only watch carefully over the sources of water supply and over the channels whereby they may be polluted, but by educative measures protect consumers against errors of ignorance. Educative measures with regard to water-borne typhoid fever are surely urgently required in this country, where continued hot weather is of common occurrence and typhoid fever still unduly prevalent.

THE SURGICAL TREATMENT OF ANGIOSCLEROTIC GANGRENE.

Obliterating sclerosis of the leg arteries, depending upon the circulation of some toxic or infectious agent in the blood, leads in many cases to intermittent claudication, in others to progressive gangrene of the extremities. Amputation of the limb has been the final outcome of the many therapeutic measures used when the latter stage of the disease was reached. Several years ago Wieting of Constantinople conceived the bold measure of deflecting the stream of arterial blood from the narrowing arteries into the intact veins, thus obviating the necessity of amputation or at least limiting it in extent. In the *Deutsche Zeitschrift für Chirurgie*, Vol. 110, Nos. 4-6, 1911, Wieting communicates several new cases of the same character in which operation was performed by him or others and reviews the results obtained.

The unfavorable results and the consequently unfavorable comments of most surgeons Wieting explains by the failure of these surgeons to select proper cases for the operation. Not every patient with arteriosclerotic gangrene affords a favorable case, according to Wieting, for of the sixty patients observed by him he operated upon five only. Moreover, his technique is of the simplest, consisting of "intubating" the artery into the vein, or in anastomosing the two by means of lateral sutures, the vein being ligated centrally in either case. This method requires the least possible healing capacity from the artery, leaves any remaining arterial circulation intact, and in his experience has either obviated amputation altogether or limited its extent, or, finally, postponed it to a later and more favorable date.

The loss of a limb for any cause is a fearful calamity for a human being, and Wieting's communication deserves serious attention. We have not heard as yet of any attempts to follow his procedure in America, but the operative technique of American surgeons in the domain of vascular surgery is such that we may expect to see in the near future reports of Wieting's operation performed on this side of the Atlantic.

Bacteriology of Influenza.

It is known that at least three forms of bacteria seem able to cause clinical influenza. These are Pfeiffer's influenza bacillus, the pneumococcus, and certain diplobacilli described by Trumpp. The clinical varieties appear to bear no relation to the etiology. Thus typical epidemics of influenza of the most severe type have been set up by the pneumococcus, while in a mild sporadic case, a mere "cold," we may find Pfeiffer's bacillus. Hence it is extremely likely that other forms of microbes may set up what is clinically influenza; and not a few such have already been accused. In an article on grip in nursing infants (*Berliner klinische Wochenschrift*, September 4), Seligmann describes a germ which he terms the grip streptococcus. In an epidemic among nurslings none of the bacteria commonly accused of causing the disease was in evidence. It was noted, however, that in the so-called septic cases a peculiar streptococcus was discoverable in purulent collections in the living, and in the blood of the dead. This fact in itself might not seem significant, but it became apparent in time that the same germ was equally present in the nonseptic cases. The view first held that the germ in question represented a secondary infection was altered to one that recognized it as the primary and efficient cause. It was readily cultivated and proved highly pathogenic to mice and rabbits, behaving like the ordinary streptococcus. It is believed to exist in infants as a saprophyte, which may become pathogenic.

Photomicrographs in Natural Colors.

The subject of color photography is one which we have been hearing about for years. We read reports as to progress to date, yet despite the evident successful activity indicated, we seldom or never encounter any of the actual results in practical life. During 1910 and 1911 "autochromes" have been published in various periodicals, but chiefly if not solely in nonmedical journals. Doyen recently published such photomicrographs of the blood in the modest little journal entitled, *Je sais tout*. In a letter to the *Deutsche medizinische Wochenschrift* of September 7, Proell states that he has succeeded after great pains and expense in securing autochromic photomicrographs. He does not accompany his letter with samples, he says, because of the very great expense involved. The high cost, the great amount of time required, and the large number of failures in proportion to the number of successful plates secured seem to account for the present commercial insignificance of color photography.

News of the Week.

Health of the Canal Zone.—During the month of July, 1911, the total number of deaths from all causes among employees of the Isthmian Canal Commission was 56, giving an annual average per thousand of 14.06. During previous years the annual death rate for July has been as follows:

1904	6.24
1905	31.54
1906	64.71
1907	35.09
1908	14.68
1909	8.10
1910	11.80

Including both employees and civil population, the annual average death rate per 1,000 in the cities of Panama and Colon an dthe Canal Zone for the month of July of each year has been as follows:

1905	58.14
1906	67.72
1907	41.46
1908	29.11
1909	18.29
1910	22.48
1911	26.53

Computed according to race the death rate per thousand among white employees was 10.37, among colored employees, 10.27. Deaths from the principal diseases were as follows: Nephritis, 5; pneumonia, 10; hemoglobinuric fever, 1; malarial fever, estivoautumnal, 8; tuberculosis, 4; typhoid fever, 2. Thirty-nine cases of diphtheria were reported during the month, 20 from the Canal Zone, 15 from Panama, and 4 from Colon, with four deaths. One case of bubonic plague was taken from the S. S. *Guatemala* at the quarantine station, Culebra Island, on July 24, and the patent recovered. No cases of yellow fever, smallpox, or plague originated on the Isthmus during the month. The work of sanitation throughout the Canal Zone was carried on as usual during the month.

Charitable Gifts.—The Maine Medical School, which is the medical department of Bowdoin College, has received from Mr. and Mrs. Hugh Chisholm of New York the offer of a plot of land in Portland, together with $23,000 with which to erect thereon a dispensary building for the use of the school, provded the sum of $50,000 is raised as an endowment for the work. This will meet a long-felt want, and will greatly increase the facilities of medical education in Portland, and there is no doubt but that the required endowment will be forthcoming. The building will be known as the "Edward Mason Dispensary," in memory of Mrs. Chisholm's father.

The gift of $10,000 from Mr. James Patten toward the purchase of a building for the Frances Juvenile Home of Chicago is announced. The object of the home is the care of children with contagious diseases, and it is intended to supplement the work of the Cook County Hospital. The present capacity is fifteen, but it is hoped that it may soon be possible to increase this to two hundred.

By the will of the late Mrs. Annie T. White of New York, $200 each is left to the Skin and Cancer Hospital, the French Hospital, and St. Mark's Hospital in this city, and to the American Hospital in Paris, France.

Smallpox on Ship.—The Red Star line steamship *Vaderland*, which arrived in New York on September 25 from Antwerp, brought a case of smallpox among her 968 steerage passengers. The patient, a child, was removed to Swinburne Island, and the steamer was thoroughly disinfected before being allowed to land her passengers.

United States Humane Society.—Under this title an association has recently been ncorporated in New York, whose stated purpose is to prevent the loss of life wherever possible, and to prolong life wherever possible by means of inspiration. The organization also purposes to instruct the public in the best methods of rescuing all persons in danger on land or water through accident, neglect, or otherwise, and to furnish appliances for giving first aid to the injured.

Additions to Ray Brook.—The unveiling of two bronze tablets in the two new pavilions of the State Hospital for Incipient Tuberculosis at Ray Brook, N. Y., on September 26, marked the completion of an extension which doubles the capacity of the institution. The tablets commemorate the work of Dr. John H. Pryor of Buffalo and of the late Dr. Willis G. MacDonald of Albany, for whom the new wards are named. The hospital now has accommodations for about six hundred patients a year. The cost of the additions was $200.000 and the entire hospital property is valued at about $500,000, including 516 acres of farm and forest land. There are an administration building and four pavilions or wards, while an employees' building is under construction. The hospital reports cures in 76 to 84 per cent. of all incipient cases.

Public Health Lectures.—Dr. E. H. Porter, New York State Commissioner of Health, has announced the completion of a plan to give public health lectures under the joint auspices of his department and of the county and district medical societies of the State. These will include talks by a representative of the Health Department before the various county medical societies as well as public mass meetings. Lectures will be given on tuberculosis, typhoid fever, diphtheria, smallpox and vaccination, rabies, the value of vital statistics, carriers of disease, preventable diseases, the sanitation of a country home, sewage disposal, water filtration, etc. It is hoped thus to reach every corner of the State and to bring the Health Department and the members of the medical profession into closer relation.

The Chicago Medical Association is also planning a series of neighborhood health lectures to be given during the coming winter. The association expects to obtain permission to use the public schools of the city as lecture halls.

Harvey Society.—The first lecture of the Harvey Society for the present season will be given at the Academy of Medicine, New York, at 8.30 P. M. on Saturday, October 7, by Dr. Simon Flexner of the Rockefeller Institute for Medical Research, the subject of the lecture being "Local Specific Therapy of Infections." The second lecture will be given at the same place and time on October 14 by Prof. Albrecht Kossel of the University of Heidelberg, Germany, on "The Chemical Structure of the Cell."

Jefferson Medical College.—The new institute of anatomy, the gift to the college of Mr. Daniel Baugh, was dedicated on September 26. The institute, which is situated at the corner of Eleventh and Clinton streets, Philadelphia, was remodeled and equipped by Mr. Baugh, and will be known as the Daniel Baugh Institute of Anatomy of the Jefferson Medical College. Dr. Edward A. Spitzka,

professor of anatomy, is also the director of the institute.

Cholera in Italy.—During the week ending September 23, the official bulletin reports, there were in Italy 663 cases of cholera with 223 deaths.

Bubonic Rats.—Of 75,000 rats killed by order of the Department of Health of Seattle, Wash., in the last fifteen months, only one was found to be infected with bubonic plague.

Deaths of Centenarians.—Mrs. Mary McCarty of Stockbridge, Mass., died on September 23 at the age of 112 years, while Mrs. Nancy Coles, the oldest woman in Westchester County, New York, born in slavery in 1810, died on September 26, aged 101 years. Chief Satago, the past great sachem of the Chippewa Nation, died recently in Michigan at the age of 108 years.

Cholera in Tunis.—The outbreak of cholera in the Protectorate is reported, Tunis being particularly affected. About one hundred deaths a day are said to be due to the disease.

Dr. Sidney D. Wilgus has been appointed superintendent of the Eastern Hospital for the Insane at Kankakee, Ill., succeeding Dr. Frank P. Norbury.

Red Cross Seals for 1911.—The National Association for the Study and Prevention of Tuberculosis announces that the sale of the Red Cross Christmas seals will be continued this year as heretofore. A recent ruling of the post office department prohibits the use on mail matter of stamps or seals resembling postage stamps, but the design of the Red Cross seal has received the approval of the department and it does not come within the prohibitions so long as it is placed upon the backs of letters, etc. Fifty million of the seals have already been ordered for distribution.

Dr. Gregorio M. Guiteras of the United States Public Health and Marine-Hospital Service has been appointed official representative of the United States at the Pan-American Sanitary Conference, which is to be held in Santiago, Chile, on November 1 to 11, 1911.

College of Physicians and Surgeons.—The opening exercises of the College of Physicians and Surgeons, the Medical Department of Columbia University, New York, were held on September 28, President Butler of the University presiding. Dr. Edwin B. Cragin, professor of obstetrics and gynecology, delivered an address upon "Specialism in Medicine." The college opened with 329 students on the register, divided among the classes as follows: Fourth year, 87; third year, 96; second year, 64; first year, 81; special, 1.

$1,000 for Blood.—A young woman of Carlyle, Ill., recently received $1,000 as compensation for permitting a transfusion of blood from her arm to the veins of another woman. The recipient died in spite of the transfusion and the donor brought suit against her estate alleging that she had suffered injurious results from the operation and demanding $20,000. A compromise for one-twentieth of the sum sued for was, however, effected.

Removals.—Dr. Arnold Knapp to 10 East 54th street; Dr. Margaret A. Cleaves to 58 West 58th street; Dr. Abr. L. Wolbarst to 113 East 19th street.

Cholera Fugitives.—Nearly 400 steerage passengers on the French liner *La Savoie*, which arrived at Quarantine, New York, on September 30, were transferred to Hoffman Island for observation. It was said that they were all fugitives from the cholera districts along the Mediterranean who, to avoid detention, had skipped from Havre outside of the cholera zone.

Dr. S. S. Thorn of Toledo, Ohio, was the guest of honor recently at a banquet given by members of the Toledo Academy of Medicine to commemorate his eightieth anniversary.

Knox County (Ill.) Medical Society.—At the annual meeting held on September 21 the following officers were elected for the ensuing year: *President,* Dr. C. E. Beecher of Gilson; *Vice-President,* Dr. O. R. C. Bradley of Galesburg; *Secretary-Treasurer,* Dr. G. S. Bower of Galesburg.

Malden (Mass.) Medical Society.—The following officers were elected at a recent meeting: *President,* Dr. W. W. Lougee; *Vice-President,* Dr. W. W. Hartwell; *Secretary,* Dr. W. H. McBain; *Treasurer,* Dr. Louis F. McCarthy.

Colorado State Homeopathic Medical Society.—At the annual meeting in Denver on September 21 the following officers were elected: *President,* Dr. F. B. Swerdfeger, Denver; *Vice-Presidents,* Dr. J. W. Craig, Ault; Dr. Joel W. King, Golden; *Secretary,* Dr. C. M. Worth, Denver; *Treasurer,* Dr. E. B. Brown, Denver.

New York State Homeopathic Medical Society.—The forty-fifth semi-annual meeting of this society will be held in New York City on October 10 to 14, under the presidency of Dr. Orando S. Ritch of Brooklyn.

Council Bluffs (Ia.) Medical Society.—At the annual meeting held on September 18 the following officers were elected: *President,* Dr. H. E. O'Keefe; *Vice-President,* Dr. M. F. Warner; *Secretary,* Dr. D. H. Carson.

Canadian Journal of Medicine and Surgery.—The September number of this journal has, in addition to its usual scientific and medical contents, somewhat of artistic merits. It is embellished, it may be said, profusely embellished, by an excellent selection of half-tone illustrations, some reproduced from celebrated pictures representing epoch-making events in the history of medicine and surgery, others pictorially show beauty spots of the beautiful Canadian land, others exhibit the skill of Canadian engineers in overcoming the obstacles of nature, while yet others give one a good idea of some of the magnificent buildings of Ontario and Quebec devoted to science and education. The number is one of great interest from both a medical and an artistic standpoint.

Obituary Notes.—Dr. Robert E. Doran, superintendent of Long Island State Hospital, died on Saturday, September 23, at his residence, 102 Lincoln road, Flatbush, Brooklyn, N. Y., of septic endocarditis. Dr. Doran was born in Albany, December 26, 1870, and was graduated from the Albany Medical College in 1893. He was appointed to a position upon the staff of the Willard State Hospital for the Insane in 1895, and went through the grades up to and including first assistant physician. He retired from the State hospital to become assistant physician in the Craig Colony for Epileptics in 1901, and later returned to the Willard State Hospital. In 1910, standing first on the eligible list certified by the State Civil Service Commission, after a rigid examination, he was appointed medical inspector under the State Commission in Lunacy. Upon the retirement of the superintendent of the Long Island State Hospital in 1911, Dr. Doran was transferred to that position, in which he died, after a brief illness.

Dr. Henry T. Whiting of Rockford, Ill., a graduate of the Chicago Homeopathic Medical College in 1883, died suddenly at his home on September 13.

Dr. James H. Dickerson of Taylorville, Ill., a graduate of the Missouri Medical College, St. Louis, in 1899, and a member of the American Medical Association and of the Illinois State and Christian County Medical Societies, died at his home on September 15, aged 67 years.

Dr. Almon W. Hill of Concord, N. H., a graduate of the Boston University School of Medicine in 1887, died at the Homeopathic Hospital in Boston on September 17, aged 47 years.

Dr. Richard Hodgson of Stoneham, Mass., a graduate of the New York Homeopathic College and Flower Hospital in 1867, died at his home on September 14, aged 73 years.

Dr. William Alexander Graham of Durham, N. C., a graduate of the University of Pennsylvania Medical Department in the class of 1899, died suddenly at his home on September 19, aged 36 years.

Dr. Charles Edward Denhard of New York, a graduate of the New York University Medical College in 1874, a member of the New York State and County Medical Societies, the New York Academy of Medicine, the Obstetrical Society, and the Society of Medical Jurisprudence, and visiting physician to St. Mark's Hospital, died at his home on September 22, aged 71 years.

Dr. Eugene B. Sanborn, deputy health officer of the Port of New York from 1879 to 1908, a graduate of the College of Physicians and Surgeons, New York, in the class of 1867, died at his home in Machiasport, Me., on September 24, at the age of 79 years.

Dr. Charles E. Stammler of Brooklyn, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1885, and a member of the Physicians' Mutual Aid Association, died at his home on September 27, aged 56 years.

Dr. Sophus A. E. Johnson of St. Louis, Mo., a graduate of the Chicago Homeopathic Medical College in 1893, died at his home on September 17, aged 54 years.

Dr. George William Reynolds of Chicago, Ill., a graduate of the University of Buffalo Medical Department in 1880, a member of the American Medical Association, of the Illinois State Society, and of the Cook County Medical Society, and attending surgeon to St. Joseph's Hospital, died at the hospital on September 19, of pneumonia, aged 58 years.

Dr. Edward Desmond of Spokane, Wash., a graduate of the medical department of Tulane University of New Orleans, Louisiana, in 1906, died at his home of typhoid fever on September 10, aged 41 years.

Dr. Ada Benton Morgan of Chicago, Ill., a graduate of the Hahnemann Medical College of Chicago in 1894, and a member of the American Institute of Homeopathy and the Illinois State and Chicago Homeopathic Medical Societies, died at her home on September 23, following an operation for appendicitis, aged 52 years.

Dr. John J. Cannan of Bradford, Pa., a graduate of the College of Physicians and Surgeons of Baltimore in 1892, and a member of the Pennsylvania State and McKean County Medical Societies, died at his home of pneumonia after a brief illness, on September 23, aged 43 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ST. ANDREWS UNIVERSITY QUINCENTENARY—REFORMS IN THE NAVAL MEDICAL DEPARTMENT—TUBERCULOSIS, POSTING CAMPAIGN, EXHIBITION, ROYAL COMMISSION, ATTACK ON DISPENSARIES—L. G. B. REPORT ON CONDENSED MILK—OBITUARY.

London, Sept. 15, 1911.

In the middle of September it is only natural for many of us to be looking forward to the opening of the medical schools which coincides with that of October. In the meantime, the University of St. Andrews, so closely connected with the profession, is celebrating its quincentenary during four days of this week. Representatives of learning from all countries have gathered in the ancient ecclesiastical capital of Scotland to do honor to the five hundredth anniversay of the university which has continued its academical career and importance through that long period. It is said that every residence within the old walls and for miles around is filled with delegates and guests. A memorial volume, "Votiva Tabella," gives an outline of the history of the university, describes the studies pursued, under the heading "The Inspirations of St. Andrews," and this is followed by a study of *belles lettres* by "ancient hands." The chancellor is Lord Balfour of Burleigh, who, with Lady Balfour, gave a brilliant opening reception on Tuesday to some two thousand delegates and guests in academic robes or uniforms. Sir J. Donaldson, the principal, took part in receiving them. The students gave a torchlight procession, in which they personated various characters and burned their torches at the close to the song of "Auld Lang Syne." On this day an interesting ceremony was the presentation to Mr. Andrew Carnegie of his portrait in oils subscribed for by the senatus and students in appreciation of his great services to this and the other Scottish universities. The portrait shows Mr. Carnegie seated and dressed in his robes as Lord Rector, the office which he said in his reply was the highest in his estimation he had ever held.

On Wednesday the chancellor received in the great celebration hall addresses from delegates of the chief seats of learning in the civilized world, and read a letter from the King regretting that he could not be present at the festival. A procession went to the cathedral, where Principal Stewart preached the sermon. After the service the students proceeded to the pier to welcome the Earl of Roseberry as their new Lord Rector. In the afternoon the chancellor delivered his address, in which he recounted the rise and progress of St. Andrews, the foundation of the university, and its history, its influence on education in many respects. In the evening a series of tableaux were given by some 140 artists, illustrating thirteen episodes in the history of St. Andrews.

Yesterday the Earl of Roseberry was installed with the ancient ceremony and delivered his address as Lord Rector. The felicity of Lord Roseberry's eloquence is proverbial, and can always be reckoned on. On this occasion, I learn from a telegram, that he appeared to surpass himself with an address full of charm and humor, in which he passed in review the five centuries in relation to Scotland and her oldest university, concluding with thanks to the students for electing him Lord Rector,

and appealing to them to continue the record worthily, for a nation which preserved its faith in God could never come to an ignoble end.

The other chief function of the day was the conferring of honorary degrees. Today, besides other excursions, there is to be one to the college at Dundee.

The medical officers of the Royal Navy have long had cause to complain of the indifference of the admiralty to the representations made on their behalf. Year after year the recommendations of the Durnford Commission have remained without effect. The continual postponement of all reform has had at least an effect which the lords of the admiralty no longer dare ignore—that is, the service has lost much of its attractiveness, so that candidates have been getting fewer and fewer until for some time now the medical service has been working below full strength. At last new orders, making a number of changes, have been issued, which it is hoped may prove real reforms as far as they go. In future the rate of pay will be increased at intervals of two instead of four years, which will give a slight aggregate advance during a number of consecutive years. Balancing this are alterations in "charge pay." It is estimated that the several changes will put naval medical officers on a par with their army brethren.

The Naval College at Greenwich is to be extended so as to include a medical department. This will work in connection with the Dreadnought postgraduate school, and that of tropical medicine. Naval surgeons, after four years' service, must before the end of their seventh year present themselves for examinations, having meantime gone through a six months' course at the college. Voluntary courses of three months for senior officers will also be held. At each home station facilities for studying bacteriology, *x*-rays, and other subjects, will also be provided, and reports on officers availing themselves of these facilities will be sent to headquarters, so that the director general will have a knowledge of their acquirements and promotion can only be conferred on his recommendation.

The examinations mentioned above will have more influence than heretofore; a surgeon who gets 75 per cent. of full marks will have a first-class certificate entitling him to a year's seniority, and 85 per cent. will give him eighteen months. A surgeon who fails after two attempts to get 50 per cent. will be retired, and that makes a difference in his gratuity on retirement.

The nursing service of the navy is to have a slight increase of pay, and an addition to its numbers and a reserve is to be established. An attempt is also to be made to provide a reserve of medical officers for service in the navy in a time of war.

The commander-in-chief must in the future refer the reports on officers of the department to one principal medical officer for his independent report. The medical officer of the senior flagship of a fleet is to be a member of the commander-in-chief's staff, and will advise on medical and sanitary matters, make reports to the admiralty and on all occasions have direct access to the commander-in-chief.

There still remain a few minor grievances, but I am informed that the concessions now made are regarded hopefully. Whether they will suffice to increase the popularity of the naval service is rather doubtful.

The unwieldly titles of inspector-general and deputy inspector-general of hospitals and fleets are abolished for the corresponding grades in the army service, viz., surgeon-general and deputy surgeon-general. One officer asks why not put it surgeon-admiral?

The special committee of the National Association for the Prevention of Consumption which appealed for help to carry out a great poster campaign, has now closed its accounts, which are in some respects satisfactory. The total receipts are estimated to be about £15,000. Of this sum £2,791-16-2 were from donations in cash. Coupon books were sold to the value of £132-14-3, and penny stamp collections realized £505-14. Then the gifts of posters and of posting spaces have to be added. A few more small sums may yet come in, and when the expenses incurred have all been defrayed it is intended to devote whatever balance may remain to the educational campaign against consumption.

A tuberculosis exhibition was opened at Reading on Monday and will close September 16. It was arranged by the Association for the Prevention of Consumption to show the great waste of life caused by the disease, how it is caused and spread, and the methods of cure and prevention. An opening address was delivered by Professor Sir Wm. Osler, who told the audience that much had been done in the last fifty years to arrest the ravages of tuberculosis in its manifold forms, the mortality having fallen by 40 per cent. One of the most effective causes of the reduction was improved housing and sanitation, but even yet too many persons were living under conditions inimical to health. Better food was another factor in the fight against disease. Tuberculosis could not be resisted unless the individual was in fighting form. This was specially the case with children. This because milk was so often the carrier of bacilli. He would make tuberculosis compulsorily notifiable and he advocated the establishment of special dispensaries in connection with all our general hospitals as a most effective method of combating consumption.

An appendix to the final report of the Royal Commission on Tuberculosis is issued this week in the form of a Blue-book. It contains an account of the investigations of the virus taken from cases of human tuberculosis, other than lupus, by Dr. Stanley Griffith. He gives the results of the examination of tubercle bacilli from 55 cases, from 54 of which cultures were isolated.

The anti-vivisectionists have been circulating a leaflet with the suggestive title, "Tuberculin Dispensaries: A Danger to Public Health." Of course it contains a hash of some of the misstatements that they have been in the habit of making.

A report of the Local Government Bureau on condensed milk gives the results of an inquiry conducted by Dr. F. J. H. Coutts. He has definitely shown that machine-skimmed milk is condensed to a considerable extent, and such a product is often used for feeding infants. It is obvious that infants fed with it are deprived of the fat necessary for their health and growth. Even when the milk is used with the full amount of cream sugar is added and this is not suitable for infant's food as the relation of the other elements of the sugar is altered. But the use of condensed skimmed milk implies a process of gradual starvation. Moreover, if the condensation process renders the milk bacteriologically pure, the liability to contamination as soon as the tin is opened is a constant danger, especially in warm weather. The result of such feeding is not only greater risk of acute disease, but prob-

ably an increased tendency to rickets. Dr. Coutts advises the labeling of all tins of condensed skimmed milk as unfit for the food of infants.

The death is announced of Dr. J. O'Gorman McDonogh, who served in the South African war as a civil surgeon and obtained the medal and clasp. He had been honorary surgeon to the French volunteer ambulance reserve for Greece in 1897. He took the licentiateship of the two Irish colleges in 1895. He had also been medical officer to the Royal Artillery at Aldershot. Of late years he had practised in London.

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 21, 1911.

Progress and Tendencies in the Practice of Medicine. O. H. Howe.
A Reminiscence of My Professional Life. D. W. Cheever.
Some Comments Upon the Results of Operative Measures for Knee Affections. H. W. Marshall and L. A. O. Goddu.
What Is a Tuberculosis Sanatorium? E. O. Otis.
A New Combination Mouth Gag and Tongue Depressor. R. A. Coffin.

Progress in the Practice of Medicine.—O. H. Howe reviews the progress made in the practice of medicine in the past twenty-five years. The telephone and automobile have improved the material surroundings of the physician by enabling him to cover larger fields of practice. The increased tendency to the employment of trained nurses; the greater enlightenment of the people; the advances in scientific medicine, as displayed by the modern treatment of diphtheria, tuberculosis, appendicitis, malaria, syphilis, and typhoid fever, and the introduction of surgical antisepsis, cocaine, and the *x*-rays are among the striking evidences of medical progress. The use of a greater number of alkaloids has added precision and facilitated administration. Some of the immediate problems and dangers of to-day are the following: Treatment is frequently neglected while the thought is centered in diagnosis. Another danger is lack of thoroughness. The physician should study methods of life and their effect upon health and longevity, so as to suggest proper exercises and diet as means of prophylaxis.

Reminiscences of a Professional Life.—D. W. Cheever comments upon his experiences of fifty years, comparing the practice of former years with that of to-day.

Operations Upon the Knee.—H. W. Marshall and L. A. O. Goddu state that there are some patients who undoubtedly require surgical interference before they can recover normal function of their knees, and these are individuals whose joints have become so injured by traumata or filled up with fat or chronic inflammatory tissues or organized exudates that the joint structures are unable of themselves to overcome the defect. Surgery then becomes an indispensable part of treatment, yet it should be emphasized that it is only one factor, although indispensable, in the cure of the disease. Upon the other hand, recovery is possible from quite severe and chronic lesions without operative interference, so that the matter of crucial importance as far as surgical interference is concerned is ascertaining whether the pathological state which exists does or does not exceed the limit from which restoration of function without opening the joint is possible. The ultimate conclusions regarding operative measures for synovial joint affections seem to be that they are often needed and that they are useful when they retard serious joint destruction, even though actual improvements in existing conditions do not occur, as well as when they restore perfect use of the joints; and, furthermore, results that should be expected most frequently after operations are partial restorations of joint functions rather than complete cures; also that the stage of the pathological process at which operative interference ought to be instituted practically is very difficult to judge and should be determined for each case individually with consideration to the normal physiological factors controlling the health of joints.

Tuberculosis Sanatorium.—By E. O. Otis. (See MEDICAL RECORD, September 30, 1911, page 698.)

Mouth Gag and Tongue Depressor.—R. A. Coffin has devised an instrument that consists of this combination.

New York Medical Journal.

September 23, 1911.

Experimental Poliomyelitis. M. Neustaedter and W. C. Thro.
A Study of Fifty Cases of Syphilis Treated with Salvarsan, with Special Reference to the Clinical Result and the Wassermann-Reaction. A. L. Wolbarst.
Report of Three Cases of Supravaginal Hysterectomy for Fibromyomata Uteri, with Illustration of a New Way of Applying the Tourniquet in Certain Special Cases. I. Collica.
Law, Medicine, and the State; Some Points of Contact. F. K. Hallock.
Railway Sanitation. C. P. Wertenbaker.
A Resumé of One Hundred Wassermann Tests. J. A. Roddy.
Sarcoma Arising from the Thymus Gland in an Adult; an Associatd Endothoracie Goiter. J. Funke.
Nasal Obstruction as Causative Factors in Bronchial Asthma Cases. J. Solow.
An Occipital Atlas and Atloaxis Dislocation. L. L. Thompson.

Poliomyelitis Propagated by Dust.—M. Neustaedter and W. C. Thro collected the dust of rooms wherein cases of poliomyelitis occurred and prepared extracts from these sweepings, which they injected into monkeys subcutaneously, intraspinally, and intracerebrally. The sweepings were obtained from cases of from six months' to three days' duration after the onset of the paralysis. The monkeys inoculated developed the flaccid paralyses typical of poliomyelitis, and at autopsy showed the pathological lesions of this disease.

Salvarsan.—A. L. Wolbarst concludes his report of experiences with the use of this remedy.

Supravaginal Hysterectomy.—I. Collica reports three cases in which supravaginal hysterectomy was performed. In one of these cases he devised a new method of applying the tourniquet for excessive hemorrhage. The tourniquet was applied on the tumor above the cut surface. In the first place this has the advantage that it can be always applied, as it is always possible to find a point on the tumor more or less near the surface of section where it can be set and turned. In the second place it allows the excision of as much of the uterine tissue as is wanted, which fact, in certain cases, is of advantage. In the third place it serves as a valuable means of holding and exercising traction on the tumor, thus greatly helping the operator. Finally, as regards its hemostatic action, though it is true that it does not control all the hemorrhage, as by the other method, still it stops a part, which is often the most severe, so as to allow the surgeon easily to control the rest by the common hemostatic means and quickly and successfully to terminate the operation.

Law, Medicine, and the State.—By F. K. Hallock. (See MEDICAL RECORD, July 22, 1911, page 200.)

Railway Sanitation.—C. P. Wertenbaker notes the fact that mosquitos, flies, and other insects are carried for long distances by trains. One of the most serious dangers is the scattering of excrementitious matter from the toilets of trains along the line of the road. The feather duster and "whisk" broom should be abolished, together with the common drinking cups. As regards the ventilation of cars, overheating and the presence of dust and smoke play a far more important part in the production of disease than does carbon dioxide.

Wassermann Tests.—J. A. Roddy emphasizes the feasibility of quantitative estimation of the Wassermann reaction. He states that by testing a fixed amount of patients' sera with several different amounts of complement, different degrees of complement fixation power can be recognized, the influence of medication can be more

accurately estimated than in any other way, and, in about 5 per cent. of cases, errors which are unavoidable in simple qualitative tests are precluded.

Sarcoma of the Thymus.—J. Funke reports a case of this condition occurring in an adult and associated with an endothoracic goiter.

Asthma and Nasal Obstruction.—J. Solow points out the etiological relationship between nasal obstruction and bronchial asthma.

Occipitoatlas and Atloaxis Dislocations.—L. L. Thompson reports a case of this condition occurring in a young girl who had been killed by hanging. It is stated that this is the sixth case in which similar pathological findings have been reported.

Journal of the American Medical Association.

September 23, 1911.

The Experimental Method: Its Influence on the Teaching of Medicine. R. M. Pearce.
The Relation of the Intoxicating Dose of Horse Serum to the Protective Dose of Atropine in Anaphylaxis in the Guinea-Pig. H. T. Karsner and J. B. Nutt.
A Study of Fever in Tuberculosis with Reference to Its Causation and Treatment. F. M. Pottenger.
Experiments on the Relation of the Thyroid to Diet. R. Hunt.
A Plea for More Direct Methods in Dealing with Gastric Ulcers and Cancer. R. C. Coffey.
Smooth Atropby of the Tongue. L. S. Milne.
A Case of Brain Tumor. O. T. Manley.
Endemic Malta (Mediterranean) Fever in Texas. Further Notes on Its Distribution and Probable Source with Report of Additional Cases. Third Paper. E. R. Gentry and T. L. Ferenbaugh.
A Case of Sporotrichosis. R. C. Henderson.
Reportability of Syphilis and Gonorrhea. F. M. Greene.

The Experimental Method—R. M. Pearce condemns excessive dependence on the lecture system supplemented by extramural quizzes, though he does not believe in abolishing the didactic lecture altogether. Combined with demonstrations and laboratory work it is of great value in the proportion of about one hour of lecture to six or eight hours of actual laboratory or clinical work by the students.

The Protective Action of Atropine Against Anaphylaxis.—H. T. Karsner and J. B. Nutt have found that the minimum fatal dose of horse serum (0.2 c.c.) was insufficient to produce death when preceded by the administration of 0.001 gm. of atropine. In order to protect against 0.4 c.c. and 0.6 c.c. of horse serum, it was necessary to increase the dose of atropine to 0.002 gm. To protect against 0.8 c.c. serum, 0.007 gm. atropine was necessary, and against 1 c.c. serum, 0.02 gm. was needed. No dose sufficiently large to protect against 1.5 c.c. serum was possible, for before such a point was reached the animals succumbed to the dose of atropine. The presence of distinct symptoms of anaphylaxis in all those animals which were saved was sufficient evidence of the fact that they were highly sensitive. It was clear then that there was a quantitative relation between the protective dose of atropine and the intoxicating dose of horse serum.

Fever in Tuberculosis.—By F. M. Pottenger. (See MEDICAL RECORD, July 1, 1911, page 47.)

Relation of the Thyroid to Diet.—R. Hunt reports the results of his experiments which afforded additional support for the view that certain diets have specific effects on the thyroid glands of some of the lower animals. It is probable that analogous relations hold for human beings. Although it is possible that the effects differ in different classes of animals it would be interesting to determine if, in cases of hypothyroidism, the administration of oatmeal and liver, for example, would have a favorable influence, and if the withholding of them from patients with hyperthyroidism would be found advantageous. The most promising class of cases for such observations would be the mild degrees of thyroid derangement, such as those recently described by Kocher in his Nobel lecture.

Surgery of Gastric Ulcer—By R. C. Coffey. (See MEDICAL RECORD, July 1, 1911, page 52.)

Smooth Atrophy of the Tongue.—L. S. Milne presents a series of cases which would seem to show that smooth atrophy of the base of the tongue may occur occasionally in other conditions besides syphilis, as, for instance, in certain tuberculous cases and in association with general wasting states. In tuberculosis, for instance, out of twenty-five cases of smooth atrophy of the base of the tongue in which syphilis could not be definitely determined, seven were tuberculous. Only these seven, however, out of 196 tuberculous cases in the same series of 505 autopsies showed the condition. Of all the disease processes which lead up to the production of smooth atrophy of the base of the tongue syphilis is much the most frequent. In such proportions as in the present series, in which it existed in fourteen out of thirty-six syphilitic cases, the association was significant and at least a guide in clinical diagnosis.

Brain Tumor.—O. T. Manley reports a case of infiltrating glioma of the brain with calcareous deposits and cystic and degenerative changes.

Malta Fever in Texas.—E. R. Gentry and T. L. Ferenbaugh conclude that Malta fever is endemic throughout the older goat-raising sections of Texas. Although typhoid fever is prevalent throughout these sections, the authors believe that careful serum tests will show that a large proportion of the cases diagnosed as atypical typhoid fever will be found to be suffering from infection with the *M. melitensis*. All cases of Malta fever found have occurred in territory devoted to goat-raising and all patients either gave a history of drinking unboiled goat's milk or were actively connected with the goat-raising industry. While the authors have not yet found the *M. melitensis* in the milk of goats, the positive serum test obtained in 43 per cent. of goats examined pointed strongly to this animal as the source of infection.

Sporotrichosis.—R. C. Henderson reports a case of this condition, in which the lesion appeared as a ragged, depressed ulcer 1½ inches in length by 1 inch in breadth. Extending upward from this, along the back of the forearm toward the ulnar side, and passing around the elbow to the inner and under surface of the arm and thence up to the axilla, the lymphatic vessels were purple and distended, and eighteen or twenty nodules were present along their course. The vessels were filled with a dark serous fluid, and tension compelled the author to make some ten or twelve incisions for drainage. Later they discharged considerable pus. At no time was there pain or rise of temperature. The usual surgical treatment was employed, with potassium iodide internally. The patient made a slow but uninterrupted recovery.

Reportability of Venereal Diseases.—F. M. Greene refers to the action taken by the California Board of Health in declaring syphilis and gonorrhea reportable diseases as the most important step in relation to this subject as yet taken in this country. The author reviews the European legislation on the subject and describes the results as remarkable where—as in the Scandinavian countries—the measures have been so strictly enforced as to warrant control of every case. She defines the relation between the physician and society as widely different from that of twenty years ago, and urges that the public should be educated to realize the danger of venereal diseases. Where these diseases are reported both physician and patients are placed in a position of joint responsibility as regards the public health. Quackery in venereal diseases should be considered a criminal offense and laws should be made which should eliminate this social disgrace. The position of the medical profession in this relation should be on the side of the law. The attempted control has now been proved a failure in the principal countries of Europe, and the author believes that this fact should emphasize the advisability of placing venereal diseases among the other infectious diseases.

The Lancet.

September 16, 1911.

Review of the Vital Statistics of Ireland Since 1864. Sir W. J. Thompson.
The Treatment of Constipation. Sir J. Sawyer.
A Case of Acute Poliomyelitis in an Adult. C. M. Hinds Howell and B. T. Parsons-Smith.
Further Observations on the Treatment of Hay Fever by Hypodermic Inoculations of Pollen Vaccine. J. Freeman.
Some Points in Injuries to the Elbow-Joint. R. Lane Joynt.
Traumatic Rupture of Abdominal Viscera. Report of Thirty Cases. A. Rendle Short.
Chronic Obstruction of the Bowel in a Hydrocephalic Imbecile; Results at Post-Mortem Examinations. A. L. E. F. Coleman and H. D. Everington.
The Operative Treatment of Retroversion and Prolapse of the Uterus. A. E. Morison.
Phthisis in Wales. H. R. Jones.
Notes on the Clinical Appearance in Two Cases of Cerebral Disease, One Being Grave Organic Disease and the Other Purely Functional. J. H. Aytoun.

Vital Statistics of Ireland.—Sir W. J. Thompson presents a review of the vital statistcs of Ireland since 1864, and summarizes as follows: Emigration has enormously decreased; the birth-rate, notwithstanding emigration and a decreasing population, has remained almost stationary; the marriage-rate has increased of late years, and the death-rate, after many fluctuations, is decreasing.

Treatment of Constipation.—Sir J. Sawyer states that drugs should not be prescribed for this condition until dietetic and other measures have failed. In costiveness the therapeutic clues arise well from an old definition of it—namely, "in constipation the feces are hard, and may be retained from that cause, from weakness of the muscular coat of the large intestine, or from diseases of the anus, making defecation difficult or painful." Habitual constipation is a penalty of imperfect civilization. It is due to habitual abstinence from emptying the rectum whenever the natural impulse thereunto, the physiological call for defecation, is felt; it is due to habitual attempts at defecation when seated upon the usual seat, 18 inches high; it is due to habitually diminished activity of the psoæ and iliaci, of the respiratory muscles, and of the muscular fibers of the large intestines, and to rectal paresis from rectal distension; it is due to habitual abstinence from fruits and other vegetable foods rich in cellulose. It is due in some women to habitual diminution of beverages, from the design of minimizing urination. It is also due to insufficient mastication of food, especially of meat.

Poliomyelitis in an Adult.—C. M. Hinds Howell and B. T. Parsons-Smith report a fatal case of acute poliomyelitis occurring in a male aged 22 years. Pathological evidence showed that the case was a very severe and widespread one. The clinical evidence during life was not so conclusive, the first diagnosis which was offered tentatively being that of Landry's paralysis, the chief reason for this diagnosis being the ascending nature of the paralysis, the patient's age, and the absence of sphincter involvement. In cases of acute paralysis of this kind there are four possible conditions to consider: acute poliomyelitis, Landry's paralysis, acute toxic polyneuritis, and acute ascending myelitis. The last is probably the easiest to recognize with certainty owing to the fact that there is most pronounced sensory loss which ascends *pari passu* with the paralysis, and that the sphincters are early affected.

Pollen Vaccine in Hay Fever.—J. Freeman refers to Dunbar's ophthalmo-reaction as a diagnostic test for that susceptibility to pollen which constitutes hay fever, and describes Noon's method of immunizing hay fever patients by means of hypodermic inoculations of pollen vaccine. The cases treated in this way showed improvement of several forms: a greater freedom from attack, which, when it occurred, was less severe and of shorter duration than in former years, and which was accompanied by less constitutional disturbance.

Injuries to the Elbow Joint.—R. Lane Joynt states that a great many of these are cases of supracondylar fracture with displacement backward of the bones of the forearm together with the small lower portion of the humerus. Simple dislocation of both bones backward is a very rare injury in children. Fracture of the coronoid process of the ulna is an extremely rare condition. Frequently, in simple dislocation backward of both ulna and radius, bony growths occur in the brachialis anticus muscle. This is a myositis ossificans.

Traumatic Rupture of Abdominal Viscera.—A Rendle Short in a report of thirty cases of this condition makes the following observations: In every case of rupture of any abdominal viscus in which the pulse-rate on admission exceeded 100 the patient died within twenty-four hours. The temperature seems to be of more value. In five out of nine cases it was subnormal. Pallor or anxious expression is often remarked upon. Abdominal pain and rigidity are almost constant. Vomiting is not usual. The report further illustrates the deadly nature of injury to the spleen, on account of the frequency with which it passes unrecognized. Both the cases recorded were, when first seen, apparently little the worse for their hurt, though about six hours later both were in a dying condition. All cases of unexpected or possibly severe blows on the abdomen must be watched for several hours, however good the pulse may be, before they can be regarded as safe. There is an excellent series of recoveries after ruptures of the intestine, and there are several after severe injuries of the kidney, but only one here and there is saved after other abdominal injuries. Those who survive the immediate trouble seem to do well afterwards.

Chronic Obstruction of the Bowel.—A. L. E. F. Coleman and H. D. Everington report the case of a hydrocephalic imbecile in whom intestinal obstruction was caused by fecal impaction of an enormously dilated sigmoid flexure and rectum. The length of this loop of intestine was 45 inches and its greatest circumference 23 inches. It was found to contain nearly three and one-half gallons of feces.

Retroversion and Prolapse of Uterus.—A. E. Morison describes his method of operating for the cure of these conditions. The essential features of this method include, besides a preliminary perineorrhaphy by means of the Lawson-Tait flap-splitting operation, the following: The round ligaments are caught in the forceps, passed through the broad ligaments, and drawn through the latter until their loops meet behind the uterus. A strong silk suture is passed through them, including the back of the uterus, and is tied. In severe cases of prolapse a second suture is inserted in the same way an inch lower down to obtain a broader sling from which the uterus hangs. The position of the uterus is now entirely changed. It is raised high up in the pelvis, anteverted, and lying on the bladder. The broad ligaments are tightened up by the passage of the round ligaments through them; the uterosacral ligaments are also drawn upward, and both anterior and posterior vaginal walls are tightened.

Phthisis in Wales.—H. R. Jones states that coincidently with the fall in the death-rate from phthisis in England and Wales, the age of maximum mortality from phthisis has been postponed both in males and in females. In 1851-60 the maximum male mortality occurred between the ages of 20 and 25 years; in 1861-70, between the ages of 35 and 45 years; and in 1891-1900, between the ages of 45 and 55 years. The maximum mortality among females in 1861-90 was between the ages of 25 and 35 years, and in 1891-1900 between the ages of 35 and 45 years.

Two Cases of Cerebral Disease.—J. H. Aytoun describes two cases, one of cerebral hemorrhage and the other of major hysteria, both of which had an identical onset, with unconsciousness following an attack of retching. In both cases the teeth were tightly clenched and the conjunctival reflex was present. Only the later course of

the disease in the two cases made it possible to form a correct diagnosis. The point is made that a purely functional disease of the brain may bear a strong resemblance to a case of grave organic disease of that organ.

British Medical Journal.

September 16, 1911.

External Polypoid Tumors of the Stomach. J. Sherren.
The Management of Epidemic Summer Diarrhea and Vomiting, Including the Use of Saline Injections. H. K. Waller and G. Walker.
Remarks on a Case of Pleural Tuberculosis with Large Effusion. F. C. Carter.
The Detection of Tubercle Bacilli in Sputum. F. W. Eurich.
The Nutritive Value of Flours. M. Flack and L. Hill.
A Case of Septic Pneumonia Caused by a Hatpin. L. C. V. Hardwicke.

External Polypoid Tumors of the Stomach.—J. Sherren reports a case belonging to this group and states that these growths usually originate from the posterior surface near the greater curvature and grow into and become intimately adherent to the lesser peritoneal sac. These tumors are found more often in women and most frequently between the ages of 35 and 55. While occasionally the presence of an abdominal swelling is the only thing noticed, in other cases there is in addition a certain amount of abdominal discomfort. The tumors are mesoblastic in origin, are usually malignant, but in some cases are myomata and may present no sign of malignancy. All are liable to myxomatous change which may lead to cystic formation. Diagnosis of the exact nature of these tumors is impossible before operation.

Epidemic Summer Diarrhea.—H. K. Waller and G. Walker detail the treatment of this condition as carried out at the East London Hospital as follows: On admission the stomach and rectum are washed out with warm saline. For shock or collapse a mustard bath or pack is used. The child is then given a subcutaneous infusion of normal saline, or of a 5 per cent. solution of glucose in normal saline. The amount usually ordered is 7 oz. and this takes two hours to run in. The method of feeding is of the greatest difficulty. Water, preferably hot, is all that is allowed for twenty-four hours. The subcutaneous infusion is frequently repeated. Whey is valuable as the first food. Still better is a mixture of glucose and lactalbumin. Milk, freely diluted with water and with the addition of sodium citrate, is tried only when the diarrhea has shown signs of subsiding. Of drugs, calomel, castor oil, and opium seem the best.

Pleural Tuberculosis.—E. C. Carter reports a case of this condition in which the amount of fluid withdrawn from one pleural cavity at one tapping was 9½ pints. At autopsy performed six months later the whole of the right pleura, both parietal and visceral, was found to be converted into a stiff membrane of almost cartilaginous consistence.

Detection of Tubercle Bacilli in Sputum.—F. W. Eurich describes Koslow's modification of the "antiformin" method of examining sputum for tubercle bacilli, which modification obviates the use of a centrifuge and of a special fixation of the sediment on a slide.

Nutritive Valve of Flours.—M. Flack and L. Hill present tables which show the striking deficiency of white flour. The authors find that contrary to their previously reported results "standard" flour is better than wholemeal.

Septic Pneumonia Caused by a Hatpin.—L. C. V. Hardwicke reports the case of a man who died from a right sided septic pneumonia caused by the broken end, four inches long, of a hatpin with which he had been stabbed in the left side. The pin had traveled through the intercostal tissues and parietal pleura, just missing the left lung; though the diaphragmatic pleura, the diaphragm, the spleen, the stomach, the Spigelian lobe of the liver and finally the right lobe of the liver, where it was found projecting into the lower lobe of the right lung.

Berliner klinische Wochenschrift.

September 18, 1911.

Antagonism of Disease.—Soegaard, in an article ostensibly devoted to the antagonism which appears to exist between leprosy and cancer, cites other instances of reciprocal immunity, real or alleged. It was once claimed that an antagonism existed between cancer and tuberculosis, but accumulation of data shows that this is not present to the degree formerly assumed. Cancer patients show evidences of past tuberculosis at autopsy in 20 per cent. of cases—about half the incidence in noncancerous cases. Tuberculous cadavers show cancer in over 4 per cent.; nontuberculous cadavers in over 11 per cent. It has been shown with certainty that an antagonism exists between syphilis and cancer. Of the 325 cases of cancerous women, but one was syphilitic. Prostitutes and others who show a high percentage of spyhilis seldom die of cancer. Cancer is very rare in districts where malaria is endemic. The well known antagonism between cancer and erysipelas has been utilized therapeutically in Coley's fluid. It is asserted that erysipelas seldom develops in cancerous patients. What is true of erysipelas in this connection may possibly hold good for sepsis and pyemia. A very large percentage of cancer patients never suffered from the acute infectious diseases of childhood, and in a goodly percentage there was no history of any acute infectious disease at any period of life. Coming to leprosy it is known that no immunity exists to tuberculosis and it has commonly been taught that the former so predisposes to the latter that nearly all leprosy cadavers show recent tuberculosis. The author states that, while 20 per cent. or more die directly from tuberculosis, very many more die with tuberculosis, but not from it. Lepers are often attacked by septic processes, while erysipelas is strikingly prevalent. Cancer, on the other hand, is very rare in lepers. There seems to be a general law in virtue of which tissues which are readily attacked by infectious diseases, both acute and chronic, differ in some way from tissues most prone to neoplastic development, so that an antagonism exists between the two disease groups in the individual organism.

Two Cases of Tumor of the Spermatic Cord.—Schlueter recapitulates our knowledge of these affections to date as follows: Ninety cases were on record up to 1909. This small number stands in marked contrast with the frequent incidence of genital tumors elsewhere. The causes are naturally obscure, but traumatism plays a notable rôle. The tumor most commonly encountered is lipoma. Next in frequency are sarcomata. Mixed tumors, fibroids, and myomata occur to a small extent, while but one case of cancer is on record. During the past year or two three more cases of lipoma have been placed on record, not including the author's cases. The latter were both examples of lipoma.

The Larynx in Paralysis Agitans.—Graeffner has notes of 80 cases of this affection, of which 56 occurred in males. The patients were examined several times each with the laryngoscope with the following results: Forty per cent. showed no tremor of the vocal cords. In 21 cases (26.25 per cent.) there was tremor which was synchronous with the general tremor, while 27 patients exhibited a tremor of the cords which was not synchronous with the latter. These figures do not differ notably from those obtained by others with large material. A synchronous tremor of the cords is not an integral feature of the disease. All phases of action of the cords—adduction, abduction, etc.—were represented.

Münchener medizinische Wochenschrift.

September 12, 1911.

Paroxysmal Tachycardia.—Hering sums up an exhaustive analysis of this condition as follows: In regard

to the seat of irritation this may be atrioventricular or auricular. The former is certainly heterotopic; and probably the latter as well. Heterotopic paroxysmal tachycardia is probably due to a heterotopic original irritation. So-called nervous paroxysmal tachycardia may be of such origin solely. That tachycardia may be purely neurogenic appears to be shown by experiment. The extrasystole seems due to an irritant of heterotopic origin.

Diagnostic Significance of Psychogenous Lability of the Blood-Pressure.—Schrump and Zabel conclude from their investigations that great lability of systolic pressure within a short interval, called forth by psychic processes in the sense of desire or repugnance, speaks for abnormal excitability, *i.e.* nervousness. If with such lability of systolic pressure the diastolic pressure is approximately constant the vascular system is normal. But if the diastolic pressure shows variation to the amount of 15 per cent. of the systolic values, there exists a rigidity of the arteriocapillary system. It is possible therefore to distinguish between arteriosclerosis and psychogenous elevation of blood-pressure.

Normal and Premature Satiety.—Neisser and Bräuning state that a syndrome occurs in which there is premature satiation at meals. Constriction and improper (hasty, irregular) eating may be present as causal factors. This satiation leads to rapid loss of weight, but the prognosis is good. Normal satiety occurs at an intragastral water pressure of 16 to 18 c.cm. water. This pressure is due to peristaltic contractions of the stomach and to the mass of food. Peristaltic contraction of the stomach is due reflexly to the act of swallowing, and when the stomach sound is introduced the sense of satiety is delayed. Constriction of the stomach increases the intragastric pressure and incidentally produces premature satiety. This object has hitherto received but little attention and deserves further investigation.

Deutsche medizinische Wochenschrift.

September 7, 1911.

Von Pirquet's Reaction and Tuberculin Therapy in Surgical Tuberculosis.—Wilms states that in the fungous forms the reaction is negative, this arguing favorably, although in certain abscesses and fistulas it merely signifies that patients have become cachectic. Tuberculosis therapy is not essential for cases showing a strongly positive reaction. With weak or negative reaction it is a strong assistant to natural resources. A combination of tuberculin, *x*-rays, and general hygienic resources is the best treatment for surgical tuberculosis. The author looks forward to the day when conservative measures will supersede active intervention. The idea that foci must be extirpated or destroyed in order to prevent generalization he does not believe to be sound. Conservative measures raise the resistance and thus accomplish the same results; and without these measures surgical intervention cannot guarantee against extension. Extirpation of defensive organs like the lymphnodes can hardly be a sound resource.

Disintoxicating Action of Fresh Serum.—Dold continues his study of the action of fresh serum on toxic organic extracts. Not all fresh sera can paralyze the latter. In most cases the sera must be of homologous source. Kaolin absorbs the toxins of the organic extracts. Fresh serum when passed through porcelain filters no longer acts on the toxic extracts. The disintoxicating action is probably that of an antiferment. Attempts at immunizing by the use of homologous organ toxins have failed. The animals died of progressive intoxication. Toxins may be obtained from organs by simple immersion in saline solution for two hours. The organs need only to be incised.

Salvarsan Controlled by Lumbar Puncture in Metasyphilitic Affections.—Assmann states that in incipient paresis a six weeks' observation period showed no evidence of benefit either in the symptoms, lumbar puncture findings, or Wassermann reaction. In tabes in certain cases only there were both clinical improvement and favorable alterations in the cerebrospinal fluid. The Wassermann reaction was never influenced favorably. In cerebrospinal syphilis, on the other hand, constant uniform improvement was noted in all directions.

Magnesium Superoxide in Diabetes.—Hirose of Tokio has tested the truth of the claim that $Mg(OH)_2$ is able to reduce the amount of sugar in diabetic urine. The assertion was based of course upon a supposed oxidative property, and similar claims have been made for oxidizing agents, including oxygen inhalations. The author finds that any benefit derived must be very slight.

Treatment of Diphtheria.—Hoesch believes in the earliest possible injection of antitoxin. He gives from 1,000 to 2,000 units in mild cases, 3,000 to 4,000 in medium and severe cases. He has given high doses in all forms of the disease, either as a high single dose or by repeating the ordinary initial dose, but has renounced this practice since the size of the dose does not affect the course of the disease, *i.e.* does not make it clinically milder. Results obtained by experiment, in which adrenalin is made to antagonize the tendency to heart failure, are not in evidence at the bedside. In certain cases the patient is doomed in advance, and nothing can arrest the disease. A very large material is tabulated. Before the introduction of antitoxin about 37 per cent. of all cases ended fatally and of operative cases about 57 per cent. Since antitoxin these percentages have been reduced to about 15 and 40 per cent. respectively. The lowest annual antitoxin mortality was 10 per cent. and the highest 22 per cent. The incidence of the disease varies greatly—from 279 to 702 cases annually. Of late years the average number of antitoxin units given per head has been recorded, and it appears that for the past four years considerably more antitoxin was required, or at least was exhibited, as compared with previous years. The percentage of cases requiring operation has been cut in two since antitoxin was introduced.

Rupture of the Uterus in a Cesarean Scar.—Schick, who reports a case in point, sums up this subject as follows: His own case was an example of spontaneous rupture during labor at the site of the cicatrix of a cesarean section. The uterus had become adherent to the peritoneum and the placenta was seated over the cicatrix. Accidents of this sort (adhesions) are not rare—in fact this sequela is more to be dreaded than any other consequence of cesarean section. Statistics show seventy-four cases of peritoneal adhesions after cesarean section, and also that adhesions result in 20 per cent. of all cases of this operation. The actual number of cases of scar rupture is not so very large—probably not over two score.

Sputum Examination on Suspicion of Tuberculosis.—Nemmser and Martos-Lissowska refer to cases in which the ordinary methods give negative results. In 300 specimens of this sort they obtained positive results in twenty-one. They employ four tests: I. Alkaline trypsin digestion. To 5 c.cm. sputum in a test tube add 5 c.cm. 0.4 per cent. soda solution and 0.1 c.cm. trypsin or pancreatin. Add two drops chloroform, shake well, and place in the incubator at 37° C. Agitate now and then during the first four or five hours. In from twelve to twenty-four hours a sediment forms. Decant cautiously. Place sediment on slides, dry, and stain. II. Acid trypsin digestion. To 5 c.cm. sputum add 5 c.cm. 0.4 per cent. HCl and treat in the same manner. III. Acid oxidation method. To 5 c.cm. sputum add from 5 to 10 drops hydrochloric acid. Add water to make 10 c.cm. Proceed as before. IV. Autodigestion. Add nothing to the sputum and proceed as before. Only the first test requires chloroform.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

General Remarks.—It is the plain duty of every one employed by a life insurance company to assist in the conservation of the interests of its policy holders. The idea that a life insurance company is simply an immense money-making corporation run for the benefit of a comparatively few stockholders is fallacious as regards most companies, but is so prevalent that when a company finds it imperative to appeal to a court of justice it is difficult to find an impartial, unprejudiced jury. A life insurance company does exist to save money to a legitimate degree for its policy holders, however, and it would indeed be unreliable and unworthy of the name if its business were not conducted on an economic and conservative basis with that end in view. Among other things, a mortality higher than the normal will cut into dividends to which the policy holders and their beneficiaries are entitled. In order to avoid this contingency there must be a proper selection of lives whose chances of attaining the full limit of longevity are not impaired by present or past disease or injury, or by the results of bad habits.

In securing this personal history the medical examiner is not expected to have the scope of his inquiries limited by the application blank—on the contrary, he is counted upon to get possession of all possible information and to clear up doubtful, ambiguous, or indefinite answers. Each impairment admitted by the applicant should be carefully considered in all its aspects and a searching inquiry should be made as to the cause, symptoms, recurrences, and all possible complications and after-effects. In some cases the cause will be of most interest. For instance, an applicant makes a statement that he had a bilious attack one year ago. Medical directors have learned from experience that a certain proportion of so-called bilious attacks are caused by gallstones or appendicitis. Therefore, the examiner who merely reports the bilious attack and does not indicate that he has made further inquiry and eliminated both conditions in the etiology is sure to have a request from the home office to supply the missing information. In other disorders the important point will be the number and dates of each attack, and possible complications and after-effects, such as rheumatism and gout. In most ailments the examiner will have occasion to use his best judgment and knowledge of diseases in order that he may probe in the right direction for further information and make up a complete and comprehensive report.

The examiner is cautioned against being satisfied with general questions. The applicant, however intelligent and honest, will fail to grasp the underlying meaning of many of the general questions unless they are dissected and explained to him in detail. If he is disposed to conceal facts, general questions afford him an excellent opportunity to evade the issue. Only recently the writer had occasion to interview an applicant who had just been examined and admitted a visit to a health resort in Europe for suspected glycosuria in 1895. He had answered the general question "Have you ever been to a health resort," and it had not occurred to the examiner to inquire more closely. A few additional questions, however, brought out the further admission that he had visited the same resort in 1897 and again in 1899, although even then he tried at first to have it understood that he had not gone for the treatment of any ailment during the last two visits.

The illustration given in the preceding paragraph demonstrates how the medical examiner's relation to the applicant for life insurance is the reverse of that which he occupies in his professional capacity as physician, for, while the patient exposes his infirmities and even intensifies them, the applicant for life insurance may desire to lessen their importance or conceal their existence.

The unwilling applicant, only partially convinced by the agent but persuaded to submit to an examination, is not apt to help the examiner by going into the particulars of his case, and he will occasionally be disagreeable enough to make it a difficult proposition for the examiner to extract satisfactory answers from him. Under such circumstances the examiner will be put on his mettle in getting the desired facts and will not succeed without bringing all his tact and forbearance and, also, his persistence into action. In spite of this attitude on the part of the applicant the report should be made complete, as the agent will usually succeed in placing the policy after he has the examination and other necessary preliminaries out of his way.

The applicant with slight regard for veracity, for the terms of a contract, and for the spirit in which the business of life insurance is conducted is too often encountered. He will glibly tell the examiner, when some admittance has been extorted from him, or when confronted by the fact that he has failed to "give all the truth and nothing but the truth," that he did not suppose it amounted to anything and was not worth mentioning. Or he will remind the examiner that he actually deserves praise for admitting some certain point, as no one would have been the wiser if he had not mentioned it. The examiner should make it emphatically clear to this applicant that the straightforward, honorable way is the only safe one to pursue if he wishes to avoid possible trouble and inconvenience in the future.

The importance of truthful, complete, and correct answers from the applicant in giving his personal history has been dwelt upon for the reason that, aside from the fact that they are necessary before a decision can be given at the home office, the law allows a life insurance company to cancel its policy within a reasonable length of time if it is proved that the applicant was guilty of misrepresentation or false statements in his application. A reputable life insurance company is very much averse to taking such a step, but the interests of the policy holders demand it when palpable fraud is exposed, both for the moral effect produced in deterring others from attempting this evil practice and to relieve the company of a responsibility it could not be expected to assume. There is never the slightest occasion for apprehension in the mind of a policy holder, if he has fully answered the questions truthfully and candidly, that his company will not cheerfully meet every obligation.

In taking up the different subjects under personal history in these columns, emphasis will be laid on the important points to be covered by the questions. An opportunity will be afforded at the same time for explaining the bearing of many of the queries from the home office which seem to the examiner to be irrelevant and uncalled for.

Medical Section, American Life Convention, Annual Meeting Held in Pittsburgh, September 20, 1911. (See page 743.)

Why Should the Results of Examination Not Be Told the Applicant?—Ernst Block says that in Germany the examiner is forbidden to tell results of examination to the applicant or to the agent; yet this injunction is not always followed. Some claim that the examiner is, in the first place, a physician, and should not fail to apprise the applicant, if he finds some disease. However, the mere refusal to accept the applicant for insurance serves as a warning to the applicant, and it is his business to communicate with his family physician in such a case. On the other hand, to tell the applicant that he is acceptable and then have him disappointed, if the insurance company refuses him, is to put his family physician in a bad situation, for he may have been asked to give his opinion of the applicant's health. Therefore, silence as to the results of the examination is the wisest course to pursue. This question had been much debated at the Conventions of German Physicians, in 1894 and 1895, and it was decided that secrecy is the proper course, except that the family physician of an applicant could be apprised in a professional way of any disease discovered by the examiner, which had apparently escaped the former physician's attention.—*Blätter für Vertrauensärzte der Lebensversicherung,* July and August, 1911.

The Qualifications of an Insurance Examiner.—Lissau says that a new science of "insurance medicine" has developed during the last two or three decades; this branch of medicine will surely gain recognition at the universities and some day a chair of insurance medicine may be established. Meanwhile, the insurance examiner must be a self-taught man, so far as his specialty is concerned. He must, however, be well versed in general medicine and especially in the diagnosis of internal diseases. He must be quite a master of percussion and auscultation of the thorax, as he is frequently obliged to decide very weighty questions as to the state of the heart and lungs, without having more than a few minutes for examination. He must have a good grounding in nervous diseases and in dermatology, and also in gynecology. The knowledge of symptomatology of female diseases is of great importance as internal examinations cannot always be made. All this shows that a "general practitioner" and not the specialist is best suited for insurance examiner.—*Blätter für Vertrauensärzte der Lebensversicherung,* July and August, 1911.

Two Unusual Deaths.—A policy holder, 23 years old, gave nothing in his history except nosebleed on one occasion; his physical condition was very good. Three years later he was brought to a hospital in a dying condition with symptoms of cerebral hemorrhage. Autopsy showed this hemorrhage, but no cause for it whatever, so far as internal organs were concerned. No history of accident, excess, or anything that could be brought in connection with the anatomical findings could be learned. Another policyholder died after an unusual accident. Some years ago he choked on a collar button which he held in the mouth; the button finally found its way into the right bronchus and led to almost complete hepatization of the right lung. Several years later the patient had a very severe coughing spell, coughed up the button as far as the larynx, whence it was aspirated into the left bronchus, thus resulting in death from suffocation.—*Blätter für Vertrauensärtze der Lebensversicherung,* July and August 1911.

Orthostatic Albuminuria and Tuberculosis.—Poncet thinks that orthostatic albuminuria is frequently coexistent with pulmonary tuberculosis. He examined one hundred and forty apyretic tuberculous patients, whose urine was free from albumin when they stayed in bed, and found that after one hour's standing albumin appeared in one hundred and two of them. This albuminuria was transitory and appeared more frequently in patients with less advanced disease. Orthostatic albuminuria should be looked for when tuberculosis is suspected; it seems to be an expression of predisposition to the disease.—*Bulletin de la Société Médicale des Hôpitaux,* June 16, 1911.

Insurance Companies and the Fight Against Tuberculosis.—In the year 1909, 29,277 men and 12,995 women were admitted to the sanatoria of insurance companies because of tuberculosis. Many have begun to doubt the wisdom of such wholesale admissions, as improvement was said to be but very temporary, and the results not in proportion to the means and efforts used. The Government insurance office has accordingly attempted to gather statistics bearing on this subject. It showed that of every 100 patients treated between 1897 and 1901 twenty-five men and thirty-two women still showed amelioration; in the period 1904-1908 forty-four men and fifty-one women out of every hundred treated still remained capable of earning a living at the end of the period. Results therefore have improved, and still better things may be expected in the future. Even patients in the third stage of the disease were frequently improved enough to regain some working capacity; others were improved enough to be classified in the second stage of the disease. The costs of the sanatorium treatment amounted from $1.25 to $1.75 per day and patient. The medical value of the treatment seems proved by the above figures. Whether the insurance companies were likewise financially benefited remains to be proved.—*Medizinische Blätter,* No. 47, 1910.

Shipping and Preserving Urine.—Armand Ravold says that many specimens of urine sent by examiners to the home office arrive in bad condition because of improper preservation. Not more or less than an ounce of urine should be sent. The best container is a celluloid bottle made by J. Ellwood Lee Company. Dr. Ravold has experimented with the following chemicals in looking for the best preservative. Acetic acid, chloral hydrate, chloroform, salicylic acid, boric acid, formaldehyde, camphor, sodium bisulphate, thymol, resorcin, sodium benzoate, and toluol. Of these camphor, resorcin, bisulphate of sodium and toluol proved to be valueless for preserving urine containing albumin, sugar, pus or formative elements, which was kept in an incubator for three to five days. Acetic acid, chloroform, chloral hydrate and thymol are only partially efficient. Chloral and chloroform produce a dirty yellow precipitate with Haines' and Fehling's solution, making detection of sugar impossible. Thymol produces a deceptive white precipitate with nitric acid test for albumin. Formaldehyde in solutions of 1-1,000 prevents growth of bacteria in urine and preserves and hardens cellular elements better than any other chemical. Two drops added to an ounce of urine will preserve it for some time. Several drops lead to the formation of a white precipitate of paraformaldehyde when the urine is layered over nitric acid. Small spherical bodies of paraformaldehyde make microscopical examination difficult. Formaldehyde, too, reduces the copper in Haines' and Fehling's solutions. Boric acid tablets found in the market often contains starch or sugar. Pure boric acid inhibits the growth of bacteria, one three-grain tablet being enough for one ounce of urine. Salicylic acid is a good preservative but dissolves very slowly, especially in tablet form. The ideal preservative should be a tablet of low cost; should disintegrate and dissolve quickly in urine; should inhibit growth of bacteria but not interfere with the standard tests for albumin and sugar; it should preserve and harden cellular elements and casts. The speaker said he hoped to report upon such a preservative at the next meeting.—*Proceedings of the Medical Section, American Life Convention, New Orleans,* February, 1911.

Book Reviews.

THOUGHTS OF A CATHOLIC ANATOMIST. By THOMAS DWIGHT, M.D., LL.D., Parkman Professor of Anatomy at Harvard. *"Credidi, propter quod locutus sum."* New York: Longmans, Green & Co., 1911.

"THE acceptance of supernatural religion is something more than the result of an act of deliberate reason. It is an act of faith, which owes its origin to a supernatural gift of God, by which the will accepts what is revealed to the mind." With this the keynote of his theme the late Professor Dwight completed within the pages of this small volume, a labor upon which he had been engaged for many years, namely, the attempt to solve the vital question of the mutual relation of religion and science. He compares religion and science to two planes with a common line of intersection. In discussing the thought of the day so far as this is dominated by the doctrine of evolution he classes Hæckel among the *sans culottes* of science, whose leaders he believes display an unwillingness to tell the whole truth. In the second chapter, the searchlight of criticism is turned on Darwinism, which, apparently retreating before the advance of the mutation theory of De Vries, is said to be fast losing caste among men of science. In the succeeding chapter the author shows that the existence of God can be proved by argument; that design and plan pervade the realm of the living, just as law and order rule the non-living; that the scholastic definition of life is the true one: life is "immanent action," that is action originating within and persisting within, consequently action arising from a non-material force; that the body may be the result of evolution, but the spiritual soul cannot have been evolved; that there is no satisfactory missing link—that many low forms of man, archaic as well as contemporary, are degenerate races, *e.g.* Lombroso's criminal type; that similarity is no proof of relationship; and while there is no clue to the puzzle of variations in their very irregularities they point to law. "Finally, reason by the light of faith tells us that a plan of creation worthy of God must include the supernatural, and be grand beyond human conception." This sentence crowns the thesis whose subtle arguments are garbed in the temperate and elegant diction of the scholar.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Medicine, Nursing, Biology, and kindred branches; with new and elaborate tables. Sixth Revised Edition. By W. A. NEWMAN DORLAND, A.M., M.D. Flexible leather $4.50 net; indexed $5.00 net. Philadelphia and London: W. B. Saunders Company, 1911.

IN this new edition of the American Illustrated Medical Dictionary a new type has been used and the plan of the more modern dictionaries of printing the titles with initial lower case letter has been copied. These modifications have so changed the appearance of the book as to make it unrecognizable to one used to the former edition, and at the same time the beauty of the old page has been marred. The type is so small as to try the eyes in any but a bright light, and the very broad and black face of the title words, in the absence of leading, gives a blotted appearance to the page. Another feature which the editor has borrowed from the modern dictionaries is that of giving biographical information in connection with eponymic terms. There are, however, comparatively few eponymic terms in the dictionary, as the editor prefers the arrangement of subtitles under "disease," "sign," "phenomenon," etc., and with these the biographical data are not given. In other respects the new edition follows the old ones in both their good and their bad features. The figured pronunciation of the French words has not been changed, and the English speaking physician is still bewildered by the statement that the French termination *ment* should be pronounced like the English *maw*.

GONORRHEA IN THE MALE. A Practical Guide to Its Treatment. By ABR. L. WOLBARST, M.D., Consulting Genitourinary Surgeon, Central Islip State Hospital; Visiting Genitourinary Surgeon, People's Hospital, West Side German Dispensary and Beth Israel Hospital Dispensary; Professor of Genitourinary Diseases, New York School of Clinical Medicine; Member American Urological Association, etc., etc. New York: The International Journal of Surgery Company, 1911.

THIS book reviews the well-known principles of modern gonorrheal therapy and reiterates the wholesome advice and sagacious admonitions of other writers. Such writing is of educational value, but it grows wearisome unless garbed in attractive language. As a book intended for the general practitioner, some of its teachings are of questionable safety. For example, " . . . where the clinical symptoms all point to the existence of an abscess, it is justifiable to look for the pus by the introduction of a trocar through the rectum or the perineum." After discussing the prognosis of clinically cured urethral strictures, he adds: "The patient should have a large sized sound passed at least once, preferably two or three times, every year for the rest of his life." In the chapter on proofs of cure, he writes, " . . . and lastly, one can never tell to a certainty whether any particular patient, once attacked by the gonococcus is absolutely free from latent infection." The greater part of the book relates the methods of treatment, technique and results obtained by various experienced urologists.

LATERAL CURVATURE OF THE SPINE AND FLAT-FOOT. And Their Treatment by Exercises. By J. S. KELLETT SMITH, F.R.C.S. (Eng.), Late Demonstrator of Anatomy at University College, Liverpool, etc. Price $2.00. New York: William Wood & Co., 1911.

THIS is an excellent and most useful little manual, presenting clearly and concisely the steps necessary for the treatment of those cases of spinal curvature which are most likely to present themselves in private practice, and also for the treatment of flat-foot. There is an introductory chapter giving a brief historical review of this subject. The causes of spinal curvature are lucidly described; these concern faulty positions in standing, sitting, and lying, and those induced by wryneck, deafness, and errors of vision, and by extraordinary occupations. There is given a careful analysis of the deformity, while the examination of the spine, the classification of cases, the types of patient, and general directions in the treatment are all adequately discussed. The various exercises described are important, and commend themselves to the general practitioner because of their simplicity and availability for the average patient. The creeping and straight work exercises are particularly valuable. The two chapters on weak ankles and flat-foot present similarly available methods of treating these conditions. The concluding chapter discusses accessory therapeutic measures such as the treatment of anemia and the administration of cod liver oil, etc. The book contains a large number of photographic illustrations that clearly bring out the points described in the text.

ZAHNÄRZTLICHE CHIRURGIE. Von Prof. Dr. med. FRITZ WILLIGER, Director der chirurgischen Abteilung des Königlichen zahnärztlichen Universitats-Instituts zu Berlin. Preis Mk. 4. Leipzig: Verlag von Dr. Werner Klinkhardt, 1911.

THIS manual of 120 pages deals with the subject of dental surgery, as the first number of a series of manuals edited by Professor Bockenheimer of Berlin. This series is intended to cover the entire field of medicine, providing the practitioner with the means of keeping in touch with other branches of practice than the one in which he is particularly interested. The impossibility of digesting a large number of textbooks has suggested the feasibility of providing a series of handbooks in which the essentials of the modern practice in the various branches of medical science are presented. The subject of dental surgery as practiced to-day is one which the general practitioner cannot afford to ignore, touching as it does so many different phases of internal medicine. The present volume deals with this subject in a most satisfactory manner, and awakens a keen appetite for the forthcoming numbers of the series.

SCHUTZPOCKENIMPFUNG UND IMPFGESETZ. Unter Benutzung amtlicher Quellung. Bearbeitet von Professor Dr. MARTIN KIRCHNER. Geheimem Obermedizinalrat und vortragendem Rat im Ministerium des Innern, Mitglied der Wissenschaftlichen Deputation für das Medizinalwesen, usw. Preis Mk. 1. Berlin: Verlagsbuchhandlung von Richard Schoetz, 1911.

THE repeated attempts that have been made to repeal the German compulsory vaccination laws which were enacted in 1874, have stimulated the author to write this manual, in which he shows the beneficent influence which these laws have exerted. He discusses the nature and course of smallpox and its distribution and control, the significance of protective inoculation, the German statutes bearing on this subject, the preparation of vaccine, the technique of vaccination, the operation of the German law, the administration of similar laws in other countries, the antivaccinationists, and a fair presentation of their arguments. Free from the bias which is usually associated with the advocacy of a cause, this book is nevertheless an eloquent plea for the conservation of the State's control of vaccination.

Methodik der klinischen Blutuntersuchungen. Von Dr. Ernst Grawitz, Professor an der Universität zu Berlin, Dirigierender Arzt der inneren Abteilung des städtischen Krankenhauses zu Charlottenburg-Westend. Mit 35 Figuren im Text und 6 Tafeln in Farbendruck. Vierte vollständig neu bearbeitete und vermehrte Auflage. Price, 5 marks. Leipzig: Georg Thieme, 1911.

The technique of blood examination is so specialized that its teaching is usually separated from that of other methods of physical diagnosis, and it is extremely convenient to have this technique presented in the compact form in one volume. This little pamphlet of Grawitz has always been a welcome addition to all clinical laboratories, and now in its fourth edition, with many improvements and admirable colored plates, it furnishes a most useful and complete guide to blood examination. The bacteriology of the blood is naturally not given in any detail, as this is part of another specialty, but all of the other procedures of importance are included.

Kursus der normalen Histologie. Ein Leitfaden für den praktichen Unterricht in der Histologie und mikroskopischen Anatomie. Von Rudolph Krause, A.O., Professor der Anatomie an der Universität Berlin. Mit 30 Figuren im Text und 208 mehrfarbigen Abbildungen auf 98 Tafeln nach Originalzeichnungen des Verfassers. Price, 22.50 marks. New York: Rebmann Company. Berlin und Wien: Urban & Schwarzenberg, 1911.

An abundance of textbooks exists on the subject of histology, some of them having been standards for many years, but no more beautifully illustrated volume than this has appeared at so low a price. Atlases, such as Sobotta's and others, are much more expensive, and do not as a rule give the technical details contained in this book. The work comprises a general and a special part. The general is devoted to a description of the optics of the microscope, the general methods of preparation of tissues for section, the technique of staining and the measuring microscopic preparations. The technical side is sufficiently complete for a beginner; usually one perfectly satisfactory method is given and the rest omitted. For instance, in paraffin embedding, chloroform as a solvent is the only substance recommended, whereas many prefer xylol or (what is probably the best of all) carbon disulphide. The discussion of too many procedures, however, might confuse the student. The special part begins with the finer details of cell structure and then passes on to the simpler tissues: bone, epithelium, cartilage, muscle, nerve, etc., with a very good chapter on the blood. The last part gives the histology of the organs. The illustrative material employed is predominantly human. The striking part of the book is the series of ninety-eight colored plates. These have been done in half-tone, and are in every way superior to anything of the kind that the reviewer has previously seen. An immense amount of manual labor must have been required to engrave the plates, and in no case are there any slips noticeable. The registration also is extraordinarily good. On the whole the plates give the impression of the very best German lithographic work. Such a textbook will certainly prove most useful for classes in histology.

Practical Cystoscopy and the Diagnosis of Surgical Diseases of the Kidneys and Urinary Bladder. By Paul M. Pilcher, A.M., M.D.; Consulting Surgeon to the Eastern Long Island Hospital; Late Surgeon to the German, Seney and Samaritan Hospitals of Brooklyn, N. Y.; Associate Surgeon to St. Johns Hospital of Brooklyn; Attending Cystoscopist to the Jewish Hospital of Brooklyn. Price, $5.50. Philadelphia and London: W. B. Saunders Company, 1911.

The author divides his book into eight parts, the technique of cystoscopy, the cystoscopic examination, the diseased bladder, diseases of the prostate, diseases of the ureter, the functional activity of the kidneys, diseases of the kidney, and therapeutic uses of the cystoscope. These parts are subdivided into sections consisting of from two to nine chapters. In the introduction, the indications for the use of the instrument, its aid in surgical work, and a plea for its more general use are presented. Part I describes the types and construction of various instruments, their advantages and disadvantages and their care. The section contains directions for the preparation of the instrument, patient, operator and room, together with explicit instructions in technique. Sources of error and causes of failure are enumerated and suggestions for their elimination are given. The part ends with a section on ureteral catheterization, wherein are described the usual technical instructions and the maneuvers employed in difficult cases. Part II, as above indicated, is devoted to the diseased bladder. The effects of extravesical pressure, cystitis, vesical tuberculosis, tumors and calculi all receive due consideration. The author presents plates and descriptions of three conditions to which his name is appended, edema trigoni membranosum, edema trigoni simplex, and edema trigoni pseudomembranosum. The first is found in the receding stage of a severe cystitis., the second is found most usually in the irritable bladder, not associated with infection and due to extravesical pressure, the last is an aftermath of severe cystitis and is frequently encountered in women as a result of continued pressure on the trigone. Part IV deals with the pathological changes in the ureter, the results of obstruction from external pressure and stone, and ureteral fistulæ. Röntgen-ray diagnosis in conjunction with ureteral catheterization is considered at length. In Part VI the writer discusses hydronephrosis, tuberculosis and tumors of the kidney, suppurative nephritis, renal calculi, hemorrhages and unclassified diseases of the kidney, outlining their etiology and diagnosis and what may be learned through cystoscopy or ureteral catheterization. The closing section on the cystoscope as a therapeutic instrument is too short and condensed for practical purposes, being a narration of the possibilities rather than a guide in treatment. Occasional inaccuracies such as "acute catarrhal pyelitis of the kidney" are noticeable in the text. The copious illustrations and colored plates so necessary in books of this character are in general good, although Miss Fry has overdrawn those depicting intravesical conditions. The book deserves success because of the excellent arrangement of its mass of information and the author's straightforward, pleasing style.

Lehrbuch der Augenheilkunde in der Form klinischer Besprechungen von Dr. Paul Römer, O.O. Professor der Augenheilkunde; Direktor der Universitäts-Augenklinik zu Griefswald, mit 186 Textillustrationen und 13 Farbigen Tafeln. Price 22 marks. Rebman Company, 1123 Broadway, New York; Urban & Schwarzenberg, Berlin and Vienna, 1910.

Römer's work constitutes a volume of 1028 pages, and is in the form of a series of lectures, the gifted and able author having endeavored to present the subject as he is wont to present it to his students. There is a convenient division of the text into paragraphs and chapters. The text is preceded by a full table of contents; a very complete index follows. The subject of ophthalmology is treated systematically and is complete in the one volume. The style is conversational, the student being led from one phase of the subject to another in logical order. Illustrative cases are interpolated wherever they serve to increase the interest or value of the text. Embryology and anatomy are given in a cursory way only, but physiology, physiological and pathological chemistry, and the etiology of disease as concerns the eye are fully discussed. The descriptions of physiological and pathological conditions are clear and evidence a profound knowledge of the subject. The descriptions of operations are not associated in a single chapter, but are embodied in the chapters that are devoted to the particular part of the eye concerned. Anomalies of the muscles and refraction receive proper attention. There is no bibliography. The work is admirably suited for the use of the postgraduate student who is devoting himself to the study of ophthalmology.

Structure and Functions of the Body. Handbook of Anatomy and Physiology for Nurses and others desiring a practical knowledge of the subject. By Annette Fiske, A.M., Graduate of the Waltham Training School for Nurses. Illustrated. Price, $1.25. Philadelphia and London: W. B. Saunders Company, 1911.

This is the latest addition to the books on anatomy and physiology for nurses (and others), and while it is smaller than some of its competitors, it can hardly be said to be better. The chief fault that we have to find with the present work is that it is too condensed; many of the statements require much more detailed explanation than is accorded them here. For example, the description of the physiological processes of vomiting and of micturition are very meagre and unsatisfactory. The short paragraph on the cranial nerves needs much addition and explanation to make it even approximately accurate. Thus, nothing at all is said of the function of the motor oculi, while the patheticus is said to "control the eye," and the abducens is labeled "a motor nerve." The spinal accessory is said to supply "the muscles of the soft palate." We wonder what the "Nurses and others" will make of such a passage as the following: "The brain, which fills almost the entire cavity of the cranium, is supported by the sphenoid and ethmoid bones internally, as it is protected externally by the other cranial bones." Whatever this may mean, it is certainly peculiarly worded.

Society Reports.

MEDICAL SECTION OF THE AMERICAN LIFE CONVENTION.

Stated Meeting, Held at Pittsburgh, Pa., September 20, 1911.

(Special report to the MEDICAL RECORD.)

THE PRESIDENT, DR. ARMAND RAVOLD OF ST. LOUIS IN THE CHAIR.

The Transmission of Tuberculosis During Fetal Life.—Dr. HAROLD A. MILLER of Pittsburgh, Medical Director Pittsburgh Life and Trust Company, called attention to the importance of the more thorough study of tuberculosis when it occurred in connection with pregnancy, as well as to the neglect of the subject in the past; this neglect was due to the difficulties of finding tuberculous lesions in the placenta where only slight tuberculous changes existed. In some instances as many as two thousand sections were made before evidence of tuberculous changes were found. From a clinical point of view it was concluded that a healed tuberculous lesion did not necessarily become active by the occurrence of pregnancy. Laryngeal tuberculosis was fatal from a maternal point of view in fully 80 per cent. of the cases during pregnancy or the puerperal period. Active tuberculous lesions of the chest became progressively worse without regard to the treatment of the patient in a sanatorium or otherwise and caused maternal mortality of about 60 per cent. during pregnancy and the puerperal period. Hemoptysis did not seem to be more frequent than when tuberculous lesions existed in the non-pregnant or in the male. Hyperemesis permitted a rapid progress of the tuberculous lesion. The pathology of the placenta had been studied from the literature of Schorl, Geipel, Bossi, Sitzenfry, and Warthin, the latter's paper being considered the best and his classification the most acceptable one. The possibility that tubercle bacilli might pass through a defect in the syncytium without leaving evidences thereof and that in the placenta the tuberculous process went direct to primary necrosis without epithelioid or giant cell formation was referred to. The effect on the infant semed to be shown in that the chidren were under the average weight. This underweight did not in itself prove a tuberculous infection as few of the infants showed evidences of tuberculous lesions demonstrable by physical examination and v. Pirquet's reaction gave negative results in 98 per cent. of infants born to known tuberculous mothers. Their method of demonstrating tuberculosis of the placenta was by dissolving the placenta in antiformin, and centrifuging and examining the sediment. In this way many cases showed tubercle bacilli where the microscopical sections failed to reveal evidence of the tuberculous lesion in the placenta. Dr. Miller showed microscopical slides of these placentae which appeared to be perfectly normal, while the centrifuged sediment upon examination revealed the presence of the tubercle bacilli.

Dr. VICTOR C. VAUGHAN, Jr. of Detroit, Mich., Associate Medical Director Michigan State Life Insurance Company, stated that up to this time comparatively few cases of congenital tuberculosis had been reported and the reason for this was very apparent. Although the tubercle bacilli might be present in the placenta, they were very difficult to find under the ordinary methods that were employed pathologically and histologically. Because of the size of the lesion, it would very often escape notice; a great many lesions of the placenta had passed unrecognized and for the reason that in the maternal portion of the placenta one did not find the characteristic tubercle formation. Usually the pathologist judged of the presence of tuberculosis by finding the epithelioid and giant cells, but these were not always present in the maternal portion of the placenta; decidual tuberculosis did not go on to the development of epithelioid and giant cells. The giant cells that were developed from connective tissue stroma and the decidual cells were much modified; they seemed to have no resistance against the action of the tubercle bacilli and could not react in the ordinary way in the formation of epithelioid cells. Sarcomatous tissue, when infected with the tubercle bacilli, would not produce epithelioid cells and behaved in the same way as did the decidua. It was only when the tubercle bacilli gained entrance to the fetal portion of the decidua that there appeared the characteristic tubercle formation with the development of the epithelioid and giant cells. There was no doubt but that the pendulum had swung to the extreme regarding the transmission of tuberculosis during fetal life. At first all were inclined to believe that tuberculosis was a hereditary disease and it was not then considened as an infection. To be truly hereditary the disease must be transmitted by the spermatozoa or the ovum, or the two combined, and this was most improbable.

The most interesting part of the paper pertained to the fact that in cases of comparatively early tuberculosis, that was, cases in which lesions were present although diagnostic sounds were not detectable, tubercle bacilli could be found in the blood from the placenta. The question arose, might this not be a means for the early diagnosis of tuberculosis, especially of the pulmonary type. It was very evident that in the early stages of this disease the tubercle bacilli would lodge in the placental blood and in the intravenous spaces; these were large spaces filled with blood and the tubercle bacilli lodged here. This was a theory suggested by Warthin some time ago, one that was substantiated by Dr. Miller in his paper. There was another thing in connection with tuberculosis occurring in infancy and childhood which was hard to explain, namely, the predominence of bone and joint lesions. With regard to the genital transmission of this disease, there seemed to be an added significance. All sorts of bony lesions occurred in children; in hospitals for the care of tuberculous cases a very large proportion had bone and joint lesions, especially in children under fourteen or fifteen years of age. This was easily explained by the congenital transmission of the tubercle bacilli from the mother through the placenta. For a time the tubercle bacilli lay dormant in the tissues of the child and they expected them to be in the substance of the bone; subsequently, when the resistance of the individual became lowered, they gave rise to a local focus of the disease. Only a short time ago it had been claimed that the tubercle bacilli were found uniformly in the blood of an individual afflicted with tuberculosis; this was, in his opinion, a fallacy. It was true, however, that at times when the lesions were actively developing the bacilli might be found in the blood. It was now fairly well established that a tuberculous woman would develop a more active process during pregnancy; abortions were frequently relied upon in women with a progressive tuberculous lesion. It was probably possible to have children predisposed to tuberculosis without being actively tuberculous, although this was a very dangerous doctrine to put forward. There might be products of the tubercle bacilli produced and transmitted to the fetus when the tubercle bacilli themselves did not pass through; it was possible to obtain a tuberculin reaction in children who did not have an active tuberculosis; in other words, the product might pass from the maternal to the fetal parts of the placenta, thereby ogining an entrance to the fetus itself, while the tubercle bacilli could not. In such cases one might get the v. Pirquet and Calmette reactions a short time after the birth of these infants, but this was not necessarily indicative of tuberculous disease. Warthin and other observers had found in the fetus in which the

tubercle bacilli had been demonstrated in the blood vessels, in the liver and various other organs, that they did not find the characteristic tuberculous formation, Dr. Vaughan congratulated Dr. Miller upon the work that he had done and especially upon what he had said regarding the family history in these cases; certainly a great deal depended upon whether the mother or the father was tuberculous. Tuberculosis in the mother was more important than tuberculosis in the father from the point of view of congenital transmission. Much depended upon whether the mother was actively tuberculous at the time of the birth of her child. It was very difficult to determine whether infection of the infant occurred prior to or after birth. There was no doubt but that all must look upon the congenital transmission of tuberculosis as an established fact and this should be taken into consideration especially in connection with life insurance work.

Dr. E. J. Spratling of Atlanta, Ga., Medical Director of the Empire Life Insurance Company, stated if the mother was actively tuberculous the carrying of a child was a point of great interest to those who were in insurance work. Children born of such a parent seemed to "peter out," a point that Dr. Miller in his paper brought out as being of especial interest to those concerned in insurance work.

Dr. J. S. Langford believed that the transmission of tuberculosis from the father had not been sufficiently emphasized; over and over again the transmission from the mother had been emphasized, but not the transmission from the father; the transmission from the father was as important with regard to tuberculosis as was the transmission of features, and so forth, to the infant.

Dr. A. M. Campbell of Grand Rapids, Mich., Preferred Life Insurance Company, believed that often the mother gave immunity to her child; a child of a tuberculous mother was rendered immune. He asked Dr. Miller's opinion regarding this.

Dr. C. M. Rosser of Dallas, Texas, Medical Director Sam Houston Life Insurance Company, said that the paper read was as important to the world at large as it was to those present. When it was an acknowledged fact that a tuberculous mother was probably capable of transmitting tuberculosis to her offspring, added to which was the hazard of transmission to those about her, it should be easy to engage legislation on this subject; immunity should be granted such women from the possibility of childbirth. From a criminal standpoint the sterilization of a tuberculous woman would be as reasonable and rational as vaccination against smallpox. Dr. Rosser said he was very anxious to learn of Dr. Miller's view with regard to what he would do in considering a risk, one with a tuberculous history and yet who had passed through childhood and early youth. What statements he had made were rather problematical. This was a problem that all Medical Directors met every day; an applicant who had reached the age of thirty or thirty-five, born of a tuberculous mother, he considered a better risk if he had passed through the diseases of childhood and certain debilitating diseases such as typhoid, pneumonia, etc., and had been able to successfully resist them.

Dr. N. A. Olive of Waco, Texas, Medical Director Southern Union Life Insurance Company, said that while listening to the paper and the discussion the histories of two interesting cases occurred to him. The first was one of laryngeal tuberculosis in the mother, very active for probably three months prior to the birth of her child. The child was still-born and the mother only lived six weeks after the birth of her child. The second case was one of pulmonary tuberculosis and the mother lived but one week after the birth of her child. There was no doubt but that a mother in the active stage of tuberculosis, when she was carrying her child, suffered much more from typhoid fever, whooping cough, scarlet fever, etc., because of her lessened power of resistance.

Dr. E. J. Wilson of Columbus, Ohio, Midland Mutual Insurance Company, said that Dr. Miller had demonstrated not only that tuberculosis might be transmitted to the fetus but also the manner in which the transmission took place. Heretofore the notion had prevailed that the spermatozoal infection or infection of the ovum probably was the method of infection of the fetus. With regard to this, he thought the pendulum had swung the other way and such a theory should be discarded. Dr. Wilson was always afraid to insure the lives of children of tuberculous parents; they were more or less impaired and had less resistance; he was especially afraid to take them as good risks when they were at the age at which the mother died.

Dr. John F. Hunter of Jackson, Miss., reported the case of a very markedly tuberculous woman who became pregnant. Her husband and two brothers were tuberculous. She had fever every day and was wasting away rapidly. Several consultations were held and abortion was decided upon. She was given forced feeding, fresh air, sunshine and she gained strength and now weighed 197 pounds and was entirely free from tuberculosis so far as he could tell. At the time the abortion was produced she weighed 117 pounds.

Dr. Armand Ravold of St. Louis, Mo., asked what methods of staining were used to demonstrate the tubercle bacilli.

Dr. Miller replied the acid-fast. Animal experimentation was also employed.

Dr. Ravold believed this was very important; there were other microorganisms which took the acid-fast stain exactly as did the tubercle bacilli. More importance should be placed on whether there was a congenital or an acquired tuberculosis; many of them were not congenital at all but acquired. Many experiments had been carried out with tuberculin on animals and they were of great importance to Medical Directors. Baumgarten had found in the placenta active tubercle bacilli.

Dr. Miller, in closing, said that practically there was no such thing as hereditary tuberculosis; there was probably a direct infection during intrauterine life. The tubercle bacilli gained entrance to the child directly and could be found many times in the mesentery. He regretted that he could not report on more cases. One and six-tenths per cent. of all pregnant women had tuberculosis. It was extremely difficult to get autopsies on children of tuberculous parents. Dr. Vaughan had pointed out the frequency of gland and bone tuberculosis in children; this was to be expected when one considered the osseous and gland tissue in children and how susceptible they were to injuries and infections at that time; they had a different character at this time than they had when they had attained full growth. With regard to active tuberculosis in a pregnant woman, it was always bad and the prognosis was always bad. Infants nearly always acquired tuberculosis through the maternal blood stream when the lesion was active; if the lesion was an inactive one, there were no tubercle bacilli in the blood stream; it was only when the lesion was active and the tubercle bacilli were in the blood stream that the child could acquire tuberculosis. With regard to the father, they were not able to learn whether or not the tubercle bacilli gained entrance through the ovum or through the spermatozoa. He was inclined to the belief that the ovum or the spermatozoa might acquire a certain amount of protection against tuberculosis where the father or the mother or both had recovered from a tuberculous lesion. An unknown something was manufactured and this transmitted to the offspring a certain amount of immunity. In cases of active lesions there was a direct infection from the mother to the child; but whether there was a direct infection from the father was something

difficult to prove. He did not believe that any one man, or any group of individuals, had a sufficient number of cases to prove or disprove the germinal transmission of tuberculosis or, in fact, any other disease. The points brought up by Dr. Rosser were very interesting; the public sentiment should be appealed to and antenuptial examinations demanded. Public opinion has not as yet been educated up to this, to say when a girl or man could or could not be married. They probably would never be able to obtain legislation to control marriages. Antenuptial examinations would never, in his opinion, be permitted except for the control of venereal diseases. Dr. Miller thought that it would be better to consider all children born of tuberculous women with an active lesion as tuberculous children. Only after they had passed through some debilitating disease, such as typhoid fever, should they be considered as standard risks. Every child born of a tuberculous mother with an active lesion he would consider tuberculous and not a good risk; if the child, however, had gone through the diseases of childhood and through some debilitating disease, and had reacted with increase in weight, the applicant would be considered a good risk. Mothers with laryngeal lesions gave them but little trouble because they did not live, nor did their offspring. With regard to immunity conferred in cases of healed lesions, a certain amount might be given; such an immunity might be conferred in much the same way that the features of parents, habits, stupidity, etc. were transmitted. Some years ago measles broke out in the Fiji Islands; the mortality then was very low except from the complications. In 1890 measles caused a mortality of 50 per cent. What was to account for the severity of the disease in Fiji Islands? In this country the mortality was comparatively low. There must have developed something which caused a certain amount of immunity in the offspring.

The Healed Tuberculous Lesion from a Life Insurance Standpoint.—Dr. GEORGE W. PARKER, Medical Director Peoria Life Insurance Company, read this paper, in which he said that tuberculosis had been a bugbear to insurance companies ever since their incipiency. The United States Census reports gave tuberculosis as a cause of more than 10 per cent. of the death rate and its occurrence was much more frequent than these figures showed. They had gained their most comprehensive knowledge of tuberculosis from postmortem statistics and a review of the literature on this subject taught that the majority of all applicants applying for insurance had either active or healed or latent tuberculosis, that postmortem findings proved conclusively that tuberculosis could heal, and that the average age of the healed lesions in Adami's and McCrae's one thousand autopsies was 46.2 years and of latent cases 38.7 years, and that the average age of the active cases was less than that of the latent. The forms of tuberculosis that were interesting from a life insurance standpoint were pulmonary, bone and joint, glandular, genitourinary, and skin lesions, and fistulæ. Under pulmonary tuberculosis, pleurisy, bronchitis, hoarseness and hemoptysis claimed attention. The majority of all cases of pleurisy were tuberculous. As proof of this statement the following points might be stated: (1) Postmortem evidence showed that tubercles had been found in acute cases thought to be rheumatic; (2) according to Aschoff, 68 per cent. of animals inoculated from cases of serous pleurisy succumbed to tuberculosis; Le Damany found that from 86 to 96 per cent. thus inoculated succumbed; (3) in pleurisy mononuclear leucocytes predominated; (4) a large percentage of cases of pleurisy gave positive tuberculin reactions; and (5) the subsequent history of these cases showed, according to Bowditch, that of 90 cases followed 30 years, 32 developed tuberculosis, according to Hedges, 130 cases with effusion followed seven years, 40 per cent. became tubercular; according to Cabot, 221 cases followed 5 years, 117 developed or died of tuberculosis and, according to Hamman, of 562 cases, 167 or 29.7 per cent. became tuberculous. In exceptional cases the pleurisy was primary, but it was most frequently an extension from a tuberculous lung or from the peribronchial glands. The large number of pleural adhesions found at autopsy showed that pleurisy healed. In passing on a case of former pleurisy, even though the applicant was well at the time of examination and had been apparently well for a number of years, he should be considered as having had tuberculosis of the lungs or peribronchial glands at the time of the pleurisy, unless it could be definitely proven otherwise. When a history of bronchitis, "cold on the chest," pneumonia, or hoarseness was obtained it should not be forgotten that these might be symptomatic of tuberculosis and suspicion should be aroused by the duration of the attack, its frequency, the family history, weight or other symptoms of tuberculosis. A previous tuberculosis might come in on an examination blank as malaria, neurasthenia, overwork, indigestion, fever, anemia, grief, etc., and in lightweight subjects these terms should arouse suspicion. The symptom of hemoptysis was closely linked with tuberculosis of the lungs and was diagnostic in a large number of cases, as was shown by a study of the statistics. Statistics also showed that hemoptysis could occur without other evidence of the disease and that it was very frequent as an initial symptom. As an early symptom Anders stated that of 2,084 cases, 1,439 or 68 per cent. showed hemoptysis in the first stage and early part of the second, or that of softening and ulceration. The experience of a large old-line company as given to the writer in a personal letter stated that of somewhat less than 500 cases insured between 1897 and 1908 there was mortality of 14 points above the general average of the company on all its business for the same period. Among those having hemoptysis a higher mortality was shown among those in the younger ages. In regard to bone and joint tuberculosis, if there was in these lesions a primary localization to the bones or joints, it would be much easier to handle them from an insurance standpoint, but in a great majority of cases these lesions were secondary. Koenig stated that from his experience in postmortem work 79 per cent. of bone and joint tuberculosis was one of multiple foci. From their point of view it was proper to consider bone and joint tuberculosis as a single manifestation of a multiple infection. Recurrences after clinical healing were of frequent occurrence, especially after trauma. Some authorities claimed that in apparently healed bone lesions there would be recurrence within fifteen years; others, before the age of forty-five Billroth stated that 27 per cent. of all cases of tuberculosis of joints died of tuberculosis Koenig found a mortality in four years of 16 per cent. in 117 cases operated upon. In 1903, 34 companies examined a number of applications where the applicant had died of hip-joint disease, and the mortality was 28 points above the fair average risk. The percentage of actual to expected deaths in the case of hip-joint disease averaged 127.9. The percentage was higher below 42 years of age, being 132.3. Under the head of glandular tuberculosis they had to deal mostly with cervical lymph glands. This was frequently the only lesion in the body and it followed that if the glands were removed early in the course of the disease it was less probable that multiple foci would develop. The statistics showed that those who had passed five years in good health after an operation need have little fear of recurrence. Cases giving a history of radical operation by a competent surgeon, before the infection became localized in other regions, would give better results as to mortality than those that had healed without operation. In discussing tuberculosis of the kidney and testicle, which were nearly always secondary to other foci of infection, there

was a large percentage of relapses which would exclude the apparently healed lesion from the insurance standpoint. In skin tuberculosis systematic infection was liable to occur. In lupus, recurrences after apparent cure were frequent. Besnier stated that 21 per cent. of his lupus cases died of consumption. Fistula in ano was definitely known to be tuberculous in 40 to 50 per cent. of all cases. One of the largest companies stated that in somewhat less than 500 cases operated on for fistula and insured between 1893 and 1908 they had a mortality of 14 points above the general average of the company for all of its business for the same period. The writer thought that if the fistula appeared to be primary and if the fistulous tract was thoroughly excised it should heal permanently in almost all cases. At present there was a lack of statistical material from which to construct clear and definite rules for the acceptance of lives impaired by previous tuberculosis. Some 42 companies were at present engaged in combined statistical report which would include healed tuberculous lesions. In deciding upon the acceptance of an applicant with a past tuberculous history the following points should be considered: 1. The length of time since the lesion was active. This would vary from 5 to 15 years or more. 2. Freedom from all tuberculous symptoms during this time with the usual capacity for work. 3. Best weight—weight at the time the lesion was active and the present weight. 4. Family history and personal association with tuberculosis since that time. 5. Occupation and station in life. 6. Age. 7. Temperature test—evening temperature, temperature after exercise. 8. Pulse rate. 9. Present condition of health as determined by a careful physical examination.

Dr. Calvin H. English of Fort Wayne, Ind., Medical Director Lincoln National Life Insurance Company, said that what he had to say would be only from the point of view of how these risks affected the life insurance business from a medical standpoint and also how these unfortunate people might be affected by life insurance companies. It was a well-known fact that all life insurance companies had more or less hard and fast rules which were laid down for the acceptance or rejection of those who gave a history of a tuberculous lesion and also those who had been exposed more or less directly to the infection. These rules were certainly very arbitrary and admitting the best possible judgment, backed up by all the knowledge that could be obtained on the subject, yet he was convinced that in the disposition of many of these cases they unfortunately caused an injury, not only to the company but to the applicant as well. There were many things to be taken into consideration; there were many things that were not known and could not be known at the time the risk was presented to the company because the applicant's life had not been lived. No one could doubt the influence of financial reverses, the loss of some particular friend or some domestic unhappiness or other misfortune as having a bearing on the advisability of insuring an applicant. There were many other things which would fan into a flame these smoldering embers that had lain quiet for quite a long time, apparently abiding their time. He was inclined to believe that very little attention had been given to this particular feature in the acceptance of most of their risks; after a very diligent search of the literature he said he had found but very little written on this subject. He contended that with their present methods of selecting their examiners, coupled with the latter's incompetency and careless attitude in many cases, it was quite impossible to intelligently segregate and select who should and should not be granted insurance. Was it not the high potential quality of the soul in an individual that was able to take on sufficient nutritional force to keep him near the standard weight, coupled with a happy, cheerful and hopeful disposition, that would successfully carry him through life, to die of old age? Many of the applicants were rejected risks who had been associated with tuberculous people, and who also had evidences of having had tuberculous lesions and who had lived out their expectancy; they should have been granted their insurance at the time they presented themselves. In this way harm and injury was done to the people. But the proportion of these cases was very small; they had to exclude practically all of these in order to be safe. On the other hand they were furnished with very reliable information from many of the European morgues, where very careful and painstaking research was made and where the postmortem was held in every case regardless of the cause of death, that everybody living to the age of thirty had been infected and some demonstrable lesion of tuberculosis existed. Out of this the insurance companies expected them to select their risks; how could they intelligently do it? Hereditary conditions, environment, hygienic and sanitary conditions in the surroundings of the individual played such an important part that it appeared to be impossible to make a reasonable and safe selection. And yet from these carefully selected risks they found tuberculous lesions where the infection had occurred early in life. Dr. English called attention to the large cost to the nation as a result of the deaths from tuberculosis. In the State of Indiana alone during the year of 1910 there were 4,492 deaths from tuberculosis, 1,913 males and 2,579 females. The number of orphans as a result of these deaths from tuberculosis numbered 2,590. The estimated approximate cost to the State in caring for these orphans until they became of age was $2,100 per orphan, or a total cost to the State of $10,000,000 annually. This applied to the State of Indiana alone. What an enormous loss to the entire United States. Would it not be better and wiser to employ this large sum of money in an effort to stamp out this disease? Was it too much to hope for a time when they should not longer hear of deaths from tuberculosis? He thought not. He believed that such a large fund could be handled wisely by a national or state organization, with county and town secretaries of boards of health. The people should be educated; men and women should be employed who would go into every city and village and hamlet, every school house and church, teaching the people the necessity of better hygienic and sanitary living. He said he would like to see this convention go on record as favoring the expenditure of such money by the nation and state. Information regarding pulmonary and laryngeal tuberculosis should be spread broadcast; such patients should be isolated and infection of others prevented. Would it not be wise for insurance companies to put forth what they could to assist national and state organizations, or through other possible channels, the dissemination of this knowledge in the matter of the prevention of tuberculosis; they must conclude that after all the question was one of prophylaxis.

Dr. Victor C. Vaughan, Jr., of Detroit, Mich., Associate Medical Director Michigan State Life Insurance Company, speaking of pulmonary tuberculosis, said that it appeared that an exceptionally optimistic view had been taken recently. If patients were placed under improper conditions the disease would become active; the tubercle bacillus was an obligate parasite and preferred to live in the animal body and in harmony with its host. It had not a chance to kill the individual but to live with it and, for this reason, one probably would find a great deal of difficulty in establishing an immunity in tuberculosis. Undoubtedly this was one of the principal things in the treatment of the disease; it was a recognized fact that it was necessary to build up the general health of the individual, and direct efforts toward increasing the resistance of the patient; this was of more importance than attempting to do much by so-called specific treatment. Every case of

tuberculosis should be treated as an individual case. It was very hard to tell what the outcome was going to be in any case. Tuberculosis in one individual was a disease in that individual, and it depended upon that individual what the outcome was to be. This was true of all chronic diseases. For this reason in pulmonary cases it was undesirable to look upon any case as completely and absolutely cured. They might be cured to all intents and purposes, but when placed under certain conditions they were liable to recurrences. It would be advantageous if the individual could come to an expert in *x*-ray work and subject himself to such examinations. It was important that he should go to an expert in this work, one who could properly interpret his findings.

Dr. Mason M. Lairy of Lafayette, Ind., Medical Director Lafayette Life Insurance Company, said that the patients' statements that they were well after a short time in sanatoria was not to be relied upon; they were not able to interpret their symptoms. Therefore one should be careful in making any expression as to the curability of these risks. Some years ago he had spent a summer with Dr. Trudeau at Saranac Lake who said, "Do not regard these patients as normal individuals, the so-called cases of arrested or cured tuberculosis." He did not believe in the use of this expression, "cured tuberculosis." He regarded them as cases of arrested tuberculosis. Under proper conditions and proper surroundings such patients might live for years.

(To be continued.)

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Twenty-fifth Annual Meeting, Held at New York City, May 31 to June 3, 1911.

The President, Dr. Charles L. Gibson of New York, in the Chair.

Disease of the Verumontanum.—Dr. E. Wood Ruggles of Rochester, N. Y., said the etiology of disease of the verumontanum was generally gonorrheal, although excessive masturbation, coitus, or prolonged sexual stimulation without gratification might cause it. One of the most pronounced symptoms was frequency of urination. Most of the patients complained of an unpleasant sensation of heat or pain in the urethra or the neck of the bladder, or the pain might extend to the lumbar and sacral regions. A particularly characteristic symptom was that of extreme sensitiveness of the posterior urethra to the passage of sounds, and a frequent sequence was the development of impotence. There was frequently severe mental depression, which, unrelieved, tended to end in grave sexual neurasthenia. Nitrate of silver was specific in most cases, but not in low dilutions. A 1 or 2 per cent. solution gave rise to great distress, and accomplished little or nothing, while swabbing with a 10 or 20 per cent. solution of silver nitrate caused very slight discomfort as soon as the urethroscope was withdrawn. Of late, the speaker said, he had used small pencils of lunar caustic in place of the silver nitrate solution. The effect seemed to be superior, if anything, and the reaction following their use was much less severe.

The Complement Fixation Test in Gonorrhea.—Dr. George K. Swinburne of New York regarded this new test of the blood as the most important advance made in years in the study of gonorrhea.

Results Obtained by Treatment of 211 Cases of Gonorrhea and Its Complications by Means of Gonococcic Vaccines and Antigonococcus Serum.—Dr. Orville Horwitz of Philadelphia concluded that, beyond occasionally relieving patients who were suffering acute pain, vaccination was worthless. The serum was of service only occasionally in severe cases of epididymoorchitis and gonorrheal myocarditis. In acute and subacute arthritis it should always be used as a routine treatment. In those rare cases of pure gonorrheal toxemia it was invaluable. A study of his tables showed that, of 211 cases treated, 22, or 10 3/7 per cent., were cured; 9, or 4 2/9 per cent., were improved, leaving 180, or 85 3/10 per cent., uncured. Of the 211 cases, 96 were treated with vaccine and 115 with the serum.

Comparative Value of Some Urethral and Other Germicides.—Dr. J. Bayard Clark of New York showed that the killing power *in vitro* of the various silver salt preparations was weak or *nil* as compared with the action of silver nitrate.

Dr. Swinburne said he had used the newer silver preparations for a number of years, and he was prepared to state that if they were resorted to within twenty-four hours after the onset of the discharge in primary gonorrhea 90 per cent. of the cases could be saved from posterior urethral complications; that if used within forty-eight hours after the onset of the discharge 70 per cent. could be saved from such complications, and that if used within three days after the onset of the discharge at least 50 per cent. could be spared from posterior infection.

Dr. L. Bolton Bangs of New York said he was quite unwilling, with Dr. Swinburne, to give up the use of the newer silver salts. He was not in a position at the moment to state definitely his percentage of cures with these remedies, but he was quite unwilling to give up the experience he had acquired in the use of the silver salts in preventing or aborting or certainly modifying so virulent a disease as gonorrhea.

The Treatment of Urethral Gonorrhea in Women.—Dr. E. Wood Ruggles of Rochester, N. Y., said the ordinary treatment of urethral gonorrhea in women left much to be desired. In the first place, the urethra itself was rarely given any attention whatever, although in the large majority of cases it was the only structure primarily invaded by the gonococcus. Later, of course, if the infection was not eradicated, it was likely to extend to the cervix, tubes, and ovaries. As a rule, the vaginal douche was the only treatment prescribed, and even when gonococcidal remedies such as protargol or argyrol were used, they did not penetrate the urethra. When the patient was discharged, on the disappearance of the vaginal discharge, a chronic urethral gonorrhea frequently persisted, often indefinitely. The treatment of urethral gonorrhea in women, to be at all effective, must be administered at least once daily. The patient was to inject herself with a protargol solution, the strength being, as a rule, 1 per cent., although in a few instances this was too strong and a ½ per cent. solution was substituted. For the purpose of injection an ordinary, blunt, three-dram urethral syringe was used. The success of the treatment depended upon the care employed in the instruction of the patient, and this was preferably to be imparted by the office nurse.

The Report of One Hundred Cases of Syphilis Treated with Salvarsan.—Dr. F. C. Edgerton of New York stated that he had never found any drug which healed the syphilitic lesions so rapidly and so satisfactorily as salvarsan. When one realized that the chancre, the mucous patch, and condylomata lata were in the majority of cases healed over in forty-eight hours, and as these were the active carriers of contagion, one would readily agree that the spread of syphilis would be greatly diminished by the use of this drug. A second injection should be given in practically every case within three weeks after the first, excepting in those cases where there had been some bad effects following the first injection. The speaker preferred the intravenous method of giving the drug, because the disappearance of the symptoms seemed more rapid, there was neither pain nor local irri-

tation at the site of the injection, and the effects of the salvarsan had proved to be more lasting and recurrence less frequent. As to the absolute certainty of the cure, sufficient time had not elapsed to justify the conclusion that one, or even two or three injections of salvarsan would prevent recurrences of the disease, either of the secondary or tertiary lesions. Time alone would tell.

Note on the Final Result in a Case of Hypospadias after Beck's Operation.—Dr. ALFRED C. WOOD of Philadelphia said he had employed Beck's method in four cases, all of the balanic type. In two the immediate results appeared to be satisfactory. In one the urethra retracted partially and a fistula formed at the coronal sulcus, requiring a second operation for its closure. The fourth case resulted in complete failure; the stitches all cut out, and the urethra retracted to its former position.

Two Cases of Vesicointestinal Fistula Due to Diverticulitis of the Sigmoid.—Dr. ARTHUR L. CHUTE of Boston said he had recently had the opportunity to see and study two cases of vesicointestinal fistulas due to diverticulitis of the sigmoid. In a very large proportion of the cases in which pouchings of the sigmoid were found at autopsy there had been during life no symptoms referable to the condition. The actual cause of these diverticula was probably an increased pressure in the bowel, due to constipation or an increased formation of intestinal gas. General atony of the muscular coat of the bowel had been suggested as the predisposing cause, as had also some congenital defect of the bowel wall, but, in the light of the fact that these diverticula were most often found in the epiploic appendages, the most probable predisposing factor seemed to be that suggested by Bland-Sutton, whose view was that there was often a fatty infiltration of the bowel wall just under these appendages which weakened it at this point, thus allowing a hiatus of the mucosa to take place. The symptoms of vesicointestinal fistulæ were the passage of gas by the urethra, feces, and the passage of urine by the rectum. The commonest symptom was pneumaturia, but this was not definitely diagnostic, as were the other two signs, since infection where the urine contained sugar might bring about a gas formation by splitting up the sugar. The passage of bowel contents was definitely diagnostic of a communication between the intestines and the urinary tract.

Bladder Atony and Prostatectomy.—Dr. HORACE BINNEY of Boston reported in detail two cases of prostatic hypertrophy with complete retention and with no evidence of nerve lesions, in which prostatectomy failed to cure the retention. In considering these failures to relieve retention, the question at once arose whether actual atony existed, or whether some other cause was responsible. There were three other possible causes of failure: First, obstruction at the bladder outlet or in the prostatic urethra by a bar, a flap of mucous membrane acting as a valve, or a remnant or lobe of prostatic tissue which was overlooked. Second, a diverticulum of considerable size or a condition of marked sacculation. Third, lesions of the ganglia or nerves controlling the bladder muscle and sphincters. In regard to the two cases reported by the author, the first cause could be excluded by the suprapubic operation in the first case and two cystoscopic examinations in the second case. The second cause, diverticulum, was lacking in any important degree in the first case, the minute opening seen with the cystoscope being invisible at the suprapubic operation, and the second case showed no sign of such a condition. In fact, only slight trabeculation was present. Neither case gave a history of syphilis or showed any signs of tabes or other nerve lesions. The speaker was forced, therefore, to fall back on an atonic condition of the bladder muscles to explain these failures.

A Case of Dilatation of the Ureters.—Dr. J. BAYARD CLARK of New York reported this case, with radiographic illustrations.

Further Observations on High Frequency Cauterization of Bladder Lesions.—Dr. E. L. KEYES, JR., of New York said that, since the publication of a preliminary paper upon the treatment of bladder tumors by the high frequency current a year ago, it had been found that the single pole, or Oudin, current was far more efficacious in the treatment of these lesions than the D'Arsonval current, which he was using at that time. The superior efficacy of the Oudin current was due certainly to the greater convenience of its application in the bladder, and perhaps, also, to a superior electrotherapeutic quality. The apparatus required was a cystoscope with ureter catheterizing connections, an electric machine for the production of the high frequency current, and an insulated wire sufficiently small to pass through the ureter catheter channel. Dr. Keyes then described the technique of the method in detail, and reported ten cases in which he had resorted to it. He stated that the results obtained from this treatment in papilloma of the bladder had been most gratifying. The effect of the current upon infiltrating carcinoma was apparently *nil*. He had tried the treatment after the method suggested by Dr. Edwin Beer upon two cases of prostatic hypertrophy without result. In three cases of bladder ulceration it had also given unsatisfactory results, and he had been rather disappointed in the effect of this method of treating the engorged verumontanum.

Operative Treatment of Carcinoma at the Fundus of the Bladder.—Dr. FRANCIS R. HAGNER of Washington, D. C., reported four cases upon which he had operated during the past sixteen months. All excepting the first were operated on as described by him in the *Annals of Surgery*, November, 1910.

A Case of Cystitis with Multiple Ulcers Cured by Excision of the Ulcers.—Dr. FRANCIS R. HAGNER reported this case.

Malignant Papillary Adenoma of the Kidney.—Dr. J. BENTLEY SQUIER of New York reported this case in detail, and showed the patient and pathological specimen.

A Case of Early Cancer of the Bladder.—Dr. RICHARD F. O'NEIL of Boston reported a case which presented several features of special interest, one being the short time which elapsed between the onset of the symptoms and the performance of the operation, which was five weeks from the first appearance of hematuria and six weeks from any other urinary symptoms. Another point was the slight amount of infiltration present and the fact that carcinoma existed in one or two small areas only. There were not many transperitoneal operations as yet published which had been done for cancer, most of them having been for various other types of bladder tumors, principally papillomata. From the few series of transperitoneal operation which had been found reported the immediate operative results had been good.

Phenolsulphonephthalein as a Test of Renal Function.—Dr. HUGH CABOT and Dr. EDWARD L. YOUNG, Jr., of Boston presented a critical study of 117 cases upon whom 169 tests had been made. The following conclusions were offered: From their study of this test they believed that the claims of Rowntree and Geraghty could be substantiated. They regarded it as simple in technique and more accurate in its results than any of the other tests of renal function. Their observations up to this point left them in doubt as to the accuracy of the test in chronic nephritis, and they thought that further study was necessary. They believed the test to be of great value in cardiorenal disease in indicating the organ principally or most importantly affected.

Report of a Case of Bilateral Nephrotomy for Renal Calculi.—Dr. F. C. EDGERTON of New York reported a case of double nephrotomy which was performed for the removal of renal calculi. The kidney that was considered

to be in the best condition was operated on first, the speaker feeling that, in case the other kidney had to be removed at the time of the second operation, the patient would have one good kidney left. The rapidity with which the chronic pyelitis healed after the removal of the stone, when it had existed for nearly ten years, was shown by the fact that to-day the patient's urine was absolutely clear, containing no pus cells.

Further Facts Regarding the Relation of Tuberculosis of the Kidney to Tuberculosis of the Lungs.—Dr. JOHN H. CUNNINGHAM, Jr., of Boston after reviewing a previous paper on this subject, stated that further experimental work was undertaken to determine whether or not the tubercle bacillus was eliminated from the general circulation without producing tuberculosis of the kidney. In these experiments guinea-pigs were inoculated with urine normal by analysis taken from male patients with advanced tuberculosis of the lungs. In the previous communication there were 25 such inoculations with but a single positive result. That patient was cystoscoped, and the bladder urine and the urine from both kidneys showed no tubercle bacilli by smears or on further inoculation. The patient was still living and his urine had remained normal. This evidence seemed to point to a contamination somewhere in the first experiment. Taking the two series of cases together, there were 66 patients with advanced tuberculosis of the lungs, the urine from whom, when inoculated, showed six positive results. The repetition of the inoculations of the urine collected from these patients by means of the cystoscope and ureteral catheters failed to corroborate the early findings in four of the positive cases. One of the positive results might be attributed to genital tuberculosis, and no definite conclusion could be drawn in regard to the remaining patient, who died without further examination, or an autopsy to confirm the early findings. Even accepting this single questionable case as positive, one had but a single instance of the elimination of tubercle bacilli through the kidneys in a series of 66 male individuals with advanced tuberculosis of the lungs and normal urine by the usual methods of uranalysis.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held February 9, 1911.

DR. WILLIAM SHANNON IN THE CHAIR.

Multiple Abscesses in One Kidney in a Child.—Dr. JOHN DOUGLAS presented a child, 7 years of age, who was admitted to St. Luke's Hospital on November 15, 1910. Her family history was negative. For three months she had complained of pain in the right side on exertion, especially when climbing stairs. She had complained of headaches, lassitude, slight fever, loss of appetite and loss of weight. At times she had pain on urination, but had passed no gravel, stones nor blood. The urine was, however, occasionally cloudy. Two days before admission to the hospital she had been seized with severe abdominal pain and vomiting. She had also had a chill, followed by high fever. The bowels were moved by glycerine suppositories; no blood was found in the stools. At the time of admission her temperature was 103.4° F., and pulse 144, with respirations 40. There was a high total and polymorphonuclear leucocyte count. A tender mass was found on the right side of the abdomen slightly above the umbilicus. Over the mass was a dull tympany and it was thought that she had a retrocecal appendicular abscess although suppurative kidney lesion was considered. At operation a markedly thickened appendix presented itself, and this was rapidly removed. This mass proved to be the right kidney, two or three times the normal size, and studded with necrotic abscesses which varied in size from a pin head to a centimeter in diameter. The pelvis of the kidney was distended and held about 100 cc of cloudy urine. Nephrectomy was performed. The temperature fell rapidly after the operation and there was no subsequent infection of the wound. The child was discharged cured at the end of three weeks. This case was of interest on account of the age of the patient and the possible hematogenous infection of the kidney occurring in a child who had not previously had some acute infection as an etiological factor. The history of the case seemed to indicate that there might have been a displacement of the kidney with perhaps intermittent hydronephrosis, the displaced kidney being in a position where it was subject to traumatism, an etiological factor in acute hematogenous infection of the kidney. On the other hand the microscopical appearance of the specimen, showing numerous hemorrhagic areas studded with miliary abscesses, seemed to indicate a hematogenous infection; the dilated pelvis together with the previous history of cystisis, fever, malaise and lumbar pain would point to the probability of the lesion being the result of one of those cases of pyelitis due to colon bacillus infection which quickly subsided under treatment with urotropin. The pathological examination had not cleared up the point concerning the route of infection, whether ascending or hematogenous.

A Case of Disturbed Function of the Thyroid Gland: Hyperthyroidism and Hypothyroidism in a Girl Ten Years of Age.—Dr. SIDNEY V. HAAS presented this patient, a Russian, whom he had seen at the Vanderbilt Clinic in October, 1909. She had always been backward in her studies and had nocturnal enuresis. Her tonsils and adenoids had been removed three months before. For a period of two or three years she had been under the care of a number of physicians for an indefinite condition, the symptoms of which were pain in the abdomen, vomiting after meals, loss of appetite, constipation, headache, tenderness of the scalp, redness of the conjunctiva, pain in the eyes and sore throat. The physical examination showed a pale, irritable, crying girl, who feared and resisted examination. Slight exophthalmos and congestion of the conjunctiva were present. The right lobe and isthmus of the thyroid were visibly enlarged. The circumference of the neck was 27 cm. The scalp was exceedingly tender. The apex beat was in the fifth interspace, three-quarters of an inch to the right of the sternum. There were no murmurs. The abdominal wall was relaxed and there was no axillary nor pubic hair. A diagnosis of hyperthyroidism was made. Catharsis followed by iron was ordered. Seven months later the girl again appeared at the clinic and reported that she had felt well until a week previously when she began having headache, constipation, vomiting and pain in the abdomen. She was less excitable and the exophthalmos was less marked. She had gained sixteen pounds in seven months. She appeared again about six months after this with the same symptoms as before. A diagnosis of hypothyroidism was now made, and the patient was placed in the Lebanon Hospital for observation. The examination of urine and feces proved negative. The erythrocyte count was 4,900,000; the leucocyte count 11,000, with polymorphonuclears 62 per cent.; lymphocytes 38 per cent. The von Pirquet test was markedly positive. The *x*-ray examination showed enlargement of the heart, but no enlargement of the thymus. At the present time the patient's condition was better than at any time since she had come under observation. She had gained 34½ pounds in fifteen months, and now weighed 106 pounds. Dr. Haas had presented this case because they had here a picture of: I. Hyperthyroidism, or exophthalmic goitre, with the classical symptoms of, (a) exophthalmos, (b) enlargement of the thyroid gland, (c) hyperexcitability, (d) a moderately rapid pulse, (e) loss of weight. 2. Hypo-

thyroidism, myxodema, with the symptoms of (a) mental and physical dulness, (b) rapid increase of adipose tissue in irregular masses, (c) pallor. 3. Stage of balance, a disappearance of the myxedematous characteristics even though the weight was increasing. That other glands beside the thyroid were involved was probably true; there could be but little doubt that the recurrence of gastrointestinal disturbance was a part of the pathological condition. This case illustrated the fact that many minor disturbances of the thyroid gland were probably unrecognized.

A Case of Streptococcus Infection in a Child Two Years Old.—Dr. MAURICE OLIVER MAGID asked for an expression of opinion regarding this case, a boy two years of age, who was suddenly taken ill after eating sausage. He had a temperature of 104° F. and marked rigidity of the right side of the abdomen. He was carefully watched for a day and then sent to the hospital with a diagnosis of possible appendicitis. A normal appendix was found, but the peritoneal cavity was found to be filled with pus and streptococci. The cause of the peritonitis was not known and autopsy was refused

Dr. L. E. LAFETRA said he was much interested in this patient, as he had seen him many times.

Notes from the Children's Service in the Presbyterian Hospital, with Exhibits.—Dr. WILLIAM P. NORTHRUP said that certain things had occurred in his experience at the Presbyterian Hospital which might be worth while presenting. He told of his experience with vulvovaginitis and of the necessity of closing one of his wards. After an attack of measles he very much feared vulvovaginitis developing in these children.

Dr. Northrup described the "baby washer," which was similar to a Turkish bath: The babies were washed on a slab, as he demonstrated on the blackboard. Liquid castile soap was used and the wash-cloth always destroyed. A tank holding 80 gallons of water was in use. The temperature of the water was 103°. It was so arranged that the hot water went down and the cold was forced up and the temperature required was thus produced.

Dr. Northrup also showed an asbestos box with an electric heater attached, and demonstrated what took place in an incubator. It was a simple contrivance, and there was no danger of burning the baby. He also described a so-called "grill" which had been introduced in Paris; it was in reality a wire fence around a ward.

Dr. HENRY KOPLIK said that in choldren's hospital service it was very necessary to watch details; this was requisite for the best interests of the patients. Everyone had his own ideas. Recently he had received a letter from a party in another city in regard to the cribs used; it should be thoroughly understood that the crib should be made so that the child would be comfortable. Dr. Koplik did not think it was necessary to exclude cases of vulvovaginitis from the ward; this disease was rarely spread in spite of what was said to the contrary.

A Collected Study of Sixty Cases of, and Conditions Simulating, Meningitis, with Special Reference to Diagnosis.—Dr. ABRAHAM SOPHIAN read this paper, which was the result of work done in the Research Laboratory of the Health Department under the direction of Dr. Park. During the past six months Dr. Park had undertaken the study and treatment of cases of meningitis in this city, including the preparation and distribution of meningitis serum. During this period sixty cases had been studied clinically and bacteriologically. The clinical diagnosis of the bacteriological cause of various forms of meningitis had often differed from that established by laboratory findings. The difficulty and resulting errors in private practice in establishing a true etiological diagnosis as to the type of meningitis and in differentiating between meningitis and meningism had been forcibly impressed upon the author, and he presented tables showing comparative clinical diagnoses and true bacteriological diagnoses and indicated a number of the more important clinical data which he had found of considerable value in establishing a clinical diagnosis before lumbar puncture was done. From a study of the first table it was evident that of the true inflammations of the meninges, tuberculous meningitis was most frequently met with and was also most frequently confused with other forms, especially with epidemic cerebrospinal meningitis. Of conditions simulating meningitis he found bronchopneumonia in children, especially those forms with apical lesions, most often mistaken for meningitis. Other conditions were gastroenteritis, acute infections such as typhoid, and affections of the central nervous system such as cerebrospinal lues and anterior poliomyelitis. In the majority of cases tuberculous meningitis could be diagnosed clinically. The patients were usually under two years of age, though the disease occurred not infrequently later in life. A family history of tuberculosis could frequently be obtained. The onset was an insidious one of two weeks or longer of apathy, crying restlessness, occasional vomiting and fever; in younger children there might be convulsions. The condition of apathy, stupor and impaired mentality was a very striking one. During the greater part of their illness the children lay stupid, expressionless and respond slowly and indifferently to external stimulation. The same condition existed in adults. There were also signs of internal hydrocephalus, with the resulting Macewen in older children, or marked fontanelle bulging in younger ones. Local palsies were more common in tuberculous meningitis than in the other forms. The transitory nature of the palsies was especially striking. Vasomotor changes and marked tache were quite common. There was considerable irregularity of the pulse. Rigidity of the neck and Kernig were only moderate as a rule. The reflexes were irregular and at the onset of the disease usually exaggerated. Later in the course of the disease they were diminished or absent. In the early stages of the attack the temperature was only moderate, but later it ranged up to 104° or 105° F., and might show the marked intermittency of the cerebrospinal form. Tuberculous meningitis usually ran a short course, terminating in death in from two to four weeks after definite symptoms appeared. Epidemic cerebrospinal meningitis also had a definite and distinct symptom complex. The children averaged older; the onset was more acute, with rigors, high temperature, prostration and severe projectile vomiting. The patient was apt to be hypersensitive, irritable and constantly crying. Mentality, while usually flighty and disturbed by periods of delirium, was often, except in the last stages, entirely unimpaired for hours. Retraction of the head, tenderness in the back of the neck and Kernig's sign were marked. Reflexes were irregular and palsies were often entirely absent. Bulging fontanelle or Macewen were usually marked, but often to a lesser degree than in the tuberculous form. The pulse and respiration changes were not as marked, except in cases with marked hydrocephalus. Petechiæ and herpes were frequently seen. Cerebral temperatures of 106 or over were not unusual in this form of meningitis. These two forms of meningitis, while frequently easy to differentiate, sometimes so closely resembled one another as to make it impossible to make a clinical differential diagnosis. The other acute forms of meningitis, as streptococcus pyogenes, streptococcus mucosus capsulates, pneumococcus and influenza, presented almost the same symptom complex as epidemic meningitis. The history of previous disease, as otitis media, might be of some help, but the diagnosis could only be definitely established by lumbar puncture and examination of the cerebrospinal fluid. It was important to note that in pneumococcus meningitis

the cerebrospinal fluid might be sterile, due to a localized cortical meningitis. Meningitis complicating other acute infections while sometimes difficult to differentiate from epidemic meningitis could, as a rule, be diagnosed. One had first to establish the presence of the primary infection. The mental symptoms of restlessness and irritability were not accompanied by the anxiety, constant crying and complaining that accompanied the usual epidemic meningitis. Unless delirium was present the patient was usually bright and intelligent. Rigidity of the neck was only moderate and could often be relaxed. Kernig's and Macewen's signs were present to a lesser degree or might be absent. With the subsidence of the temperature and the disappearance of the original infection, the meningeal symptoms disappeared. Poliomyelitis often resembled tuberculous meningitis clinically, but the local palsies were extensive and permanent. Convulsions were frequent. The diagnosis might be suspected during the acute stage, but could only be absolutely established by lumbar puncture. The blood count was of some aid in diagnosis. The pricipal features were the high leucocytosis of 20,000 or more in the cerebrospinal form with the high relative polynucleosis, up to 99 per cent. In tuberculous meningitis there was moderate leucocytosis, up to 18,000, with a moderate relative polynucleosis up to 80 per cent. Poliomyelitis and polioencephalitis in the febrile stage showed a slight leucocytosis. The von Pirquet test was not done in this series of cases; however, it seemed to be of value at least in the negative result. Once a clinical diagnosis was made, whatever the form, lumbar puncture should be performed. Dr. Sophian presented another table showing the character of cerebrospinal fluids in the different types of infection. As a rule the study of the cerebrospinal fluid would, in the case of acute suppurating meningitis, enable one at the first examination to find the infecting organism. The unusual exceptions were rarely in the very onset of epidemic cerebrospinal meningitis, before the organism was free in the cerebrospinal fluid, or in localized meningitis, as the localized pneumococcus meningitis. It was important where a positive culture was desired to subinoculate the sediment on suitable culture media as soon as possible after withdrawal from the canal. The usual media used for this purpose were 2 per cent. glucose serum agar, blood agar and 2 per cent. glucose serum bouillon. In tuberculous meningitis the bacilli could usually be found in the cerebrospinal fluid, but it sometimes took a search of several hours. Cytological examination was exceedingly important. The increase in the number of cells was constant; in the suppurative forms the preponderance of polynuclear leucocytes was striking; in the late stages of cerebrospinal meningitis a relative leucocytosis was present. In the tuberculous form the excess of lymphocytes (up to 100 per cent.) was marked. An attempt to classify any particular type of meningitis merely on the number of cells, without the demonstration of the infecting organism, would apparently be an uncertain thing to do. The author spoke of the gross fibrin content of the fluid after standing as a fairly constant guide and referred to several other gross methods. He spoke briefly of the treatment that had been carried on along the lines laid down by Flexner. In the administration of the serum he urged the importance of a careful study of the condition of the patient as an indication for the use of serum and for varying the dose and for the purpose of recognizing early any complications such as basic meningitis with closure of the foramen.

Dr. Sophian also read a communication from Dr. Park stating that the Rockefeller Institute for Medical Research had turned over two horses which produced antimeningitis serum to the Department of Health, and that this serum would be supplied to physicians and when possible would be administered at their request. It was desirable that fluid from the spinal canal be obtained from all cases for bacteriological examination. The Department would gladly examine these specimens and would not refuse serum to those who found it impossible to obtain specimens of the fluid. At present there would be no charge in Greater New York for either the serum or the examinations.

Dr. William H. Park said that he wished to call attention to one aspect of the paper. All were trying to find the exciting factor in these cases of meningitis. Very favorable findings were coming from the laboratories; Dr. Hemenway had found in forty consecutive cases that the majority of them were due to the meningococcus and not to the tubercle bacillus. This was very interesting, and he hoped that the information that was so earnestly sought would soon be collected. The Health Department was working to bring about the best results.

Dr. Henry Koplik brought out a few clinical points of value in making a diagnosis of meningitis from other conditions. During an epidemic of poliomyelitis it was a simple matter for an experienced man to recognize the disease; but when there was no epidemic he did not know of any disease more difficult to diagnose. In the cases referred to it was a mistake to make such hopeless prognoses; many of these patients were perfectly well in four or five weeks. In making a diagnosis one should inquire very carefully into the mode of onset. If one could get an absolutely reliable history of an acute onset, tuberculous meningitis could be excluded. This point could not be sufficiently emphasized. The clinical signs should be carefully looked into and the case thoroughly studied before a positive diagnosis was made. The point regarding cytology as giving diagnostic evidence he did not think was well taken. If one found microorganisms of the disease, all right. He thought that Dr. Sophian and Dr. Hemenway had done very painstaking work, and hoped that they might soon give them a method by which the finding of the tubercle bacilli could be made more easy.

Dr. William P. Northrup said that the American Pediatric Society had offered a prize to the person who would give it four of the best diagnostic symptoms of the disease under discussion; nothing came of it. Tuberculosis of the choroid had been described; he had been looking for such a condition for twelve years and had not been able to demonstrate it post mortem.

Dr. Henry Heiman said that a diagnosis should be made by exclusion. The parents should be informed of the value of lumbar puncture. With regard to the cytology; if they found 100 per cent. of lymphocytes there then was a possibility that they were dealing with tuberculous meningitis. In the pyogenic form of meningitis the time should be taken into consideration; if the patient had been ill but a week or ten days a diagnosis of pyogenic meningitis should be made; if the patient had been ill beyond this time a diagnosis of cerebrospinal meningitis should be made.

Dr. Charles E. Nammack recalled Dr. Hemenway's report at a recent meeting in which the tubercle bacillus was recognized 135 times in a series of 138 cases of meningitis; this showed very good laboratory work.

Dr. Sidney V. Haas referred to a case of acute intestinal intoxication which gave rise to the classical symptoms of acute meningitis, a condition which was more common than was generally supposed. At the Lebanon Hospital four cases had recently been sent in with the diagnosis of cerebrospinal meningitis which were found to be cases of intestinal intoxication. Examination should be made for acetone and diacetic acid in the urine. Many years ago he had had a case of tuberculosis of the choroid demonstrated to him.

Dr. Abraham Sophian said, in closing the discussion, that in many cases lumbar puncture was a necessity.

The Subsequent Health of Children Who Drank Milk Containing Tubercle Bacilli.—Dr. Alfred Fabian Hess said that three years ago he made a report on the examination of the milk of the City of New York as regards the frequency with which it contained tubercle bacilli. He found that of 107 specimens examined 17 contained virulent bacilli; that was to say, 16 per cent. He found, however, that the children who drank this milk were at that time in no definite way affected. He now reported upon the further health of these children, having very carefully observed them for this period. These children, 18 in number, it should be noted, drank milk in which tubercle bacilli were found, and may have drunk it at different times, but certainly were not exposed to this infection subsequent to this time, as the mothers were warned to boil the milk after this danger was passed. Dr. Hess said of these 18 children one had developed tuberculosis of the cervical glands from which he cultivated a bacillus which proved to be of the bovine type as tested by its virulence for rabbits and its cultural growth. The other 17 children were of about average health and did not show any bad effects from their exposure. At the time they drank the milk almost all of them were below two years of age. Dr. Hess brought out another interesting point as the result of experiments on guinea-pigs; this was the frequency of infection as well as the dose of bacilli. He showed that, although these animals could not be affected by taking two milligrams of tubercle bacilli in milk by mouth, when the material was given in one dose, they could be infected with less than this amount if it was divided into 10, 20 or 30 doses given upon as many days. He reasoned by analogy that it made a difference whether children took a small amount of tubercle bacilli in one dose or on successive days. Another point Dr. Hess brought out was the necessity of providing a safe butter. It was striking that they were afraid to give children milk containing tubercle bacilli, but that they were not afraid to give children, between the ages of one and two years, butter containing large numbers of these organisms. There should be a means for providing a safe butter just as there was now a way of obtaining a safe milk. It would seem practical if through the efforts of the certified milk commissions they were enabled to purchase a certified or a Pasteurized butter; at any rate this was a timely subject for consideration by those commissions who had effected such excellent results as regards the milk supply.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Pennsylvania State Board of Medical Examiners.

June, 1911.

ANATOMY.

1. Describe the shoulder joint.
2. Describe the appendix vermiformis and give its relations.
3. Describe the prostate gland and give its relations.
4. Name the structures within the female pelvis and give their relations.
5. Describe the "anatomy" involved in an operation for the radical cure of oblique inguinal hernia.
6. Describe the tibia and give in detail its articulations.
7. Describe the fascia lata and give its regional anatomy.
8. Describe the female perineum and the relations of its muscles and fasciæ.
9. Describe the gross anatomy of the stomach and give its relations.
10. Describe the distribution of the peritoneum.

PHYSIOLOGY.

1. Describe three functions of adipose tissue.
2. Describe the functions of the Haversian canals.
3. What changes take place in the circulation after the ligation of an artery?
4. Describe the mechanism of vision.
5. State the functions respectively of the renal glomerular and tubular epithelium.

PATHOLOGY.

1. Describe the physical changes characterizing lesions of the cardiac valves and the effects of such changes upon the "sounds of the heart."
2. Define: Hyperemia, hypertrophy, hyperplasia and hypoplasia.
3. Give a brief outline of the pathologic changes that occur in the various types of peritonitis.
4. Name the immediate and remote pathologic conditions that may result from gonococcus infection.
5. Describe the renal changes occurring in cirrhotic kidney.

PRACTICE AND THERAPEUTICS.

1. What are the symptoms and signs of acute dilatation of the heart?
2. Describe the symptoms of intestinal perforation in typhoid fever.
3. What are the symptoms and characteristic course of a case of erysipelas?
4. How would you treat a case of suppression of urine due to acute Bright's disease?
5. What are the symptoms and treatment of poisoning by chloral hydrate?
6. Outline the dietetic, medicinal, and hygienic management of a case of typhoid fever.
7. Describe the prophylactic and curative treatment of a case of ophthalmia neonatorum.
8. How would you treat a case of ivy (rhus toxicodendron) poisoning?
9. Outline symptoms and course of a case of tabes dorsalis (locomotor ataxia).
10. What are the characteristic features of a case of psoriasis?

SURGERY.

1. Give the symptoms of and describe an operation for the correction of movable kidney.
2. Describe the indications and the technic for paracentesis of the membrana tympani.
3. Describe in detail two methods for the reduction of a dislocation of the shoulder joint.
4. Describe three methods for the radical cure of hemorroids with reasons for the employment of each method.
5. Give the more common symptoms of chronic appendicitis and state the symptoms that indicate extreme urgency for operation.
6. Outline the surgical treatment of gunshot wounds of the abdomen.
7. Describe in detail the application of two methods of the non-operative treatment of epithelioma of the skin.
8. Describe the surgical treatment of the various types of stricture in the male urethra.
9. Give the symptoms requiring curetage of the uterus and describe in detail the technic of the operation.
10. Name the complication that may arise from undescended testes and describe an operation for its correction.

OBSTETRICS.

1. Describe methods to determine the position of the fetus previous to labor.
2. State the normal pelvic measurements and describe the methods of determining the same.
3. State the dangers to the cord in the various stages of labor and describe the methods of overcoming these dangers.
4. For what conditions and at what period of time should cesarean section be performed?
5. Describe the proper attention to a newly born babe.
6. Describe the proper preparation of the lying-in room and bed.
7. Name four causes of dystocia, with the treatment of any one form.
8. Describe the delivery in a case of breech presentation requiring the application of forceps.
9. Define involution. State causes of delayed involution and subinvolution.
10. Give management of a case with occiput in the hollow of the sacrum.

CHEMISTRY.

1. Describe a test for the detection of free hydrochloric acid in the gastric contents.
2. Describe a chemical test respectively for chlorids, urates, earthly phosphates.
3. How can the presence of sewage in water be chemically detected?
4. When testing for glycosuria with a copper solution,

how do you determine whether the reaction is that of "sugar" or of some other reducing agent?

5. Give a chemical test for the presence of indican in the urine.

MATERIA MEDICA.

1. (*a*) Give the official title of digitalis. (*b*) Give the names and doses of its preparations.

2. What are the doses of the following drugs? (*a*) Codeinæ sulphas. (*b*) Atropiæ sulphas. (*c*) Hyoscin hydrobromidum. (*d*) Cocain hydrochloricum.

3. Name the preparations of ergot. Give the dose of each.

4. Give an example of an official preparation belonging to the following classes: (*a*) Tonics. (*b*) Stimulants. (*c*) Emetics. (*d*) Astringents.

5. Name two alkaloids obtained from each of the following drugs: (*a*) Nux vomica. (*b*) Cinchona. (*c*) Opium.

DIAGNOSIS.

1. Differentiate infantile scurvy and infantile rheumatism.

2. Differentiate apoplexy from conditions that simulate it.

3. Differentiate duodenal ulcer from conditions that simulate it.

4. Differentiate appendicitis, cholecystitis, salpingitis, and intestinal obstruction.

5. Diagnosticate iritis.

HYGIENE.

1. Give dietetic and hygienic treatment of "scarlet fever."

2. Outline dietetic and hygienic care in acute nephritis.

3. Name two of the most infectious and contagious diseases contracted in schools, and state how you would endeavor to prevent them.

4. What are the most frequent defects of vision in school children? What care and treatment should they receive?

5. Outline hygienic and dietetic care of pulmonary tuberculosis.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

PENNSYLVANIA STATE BOARD OF MEDICAL EXAMINERS.

June, 1911.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 276; or Gray's "Anatomy" (1910), page 301.

2. See Cunningham's "Anatomy" (1909), page 1079; or Gray's "Anatomy" (1910), page 1299.

3. See Cunningham's "Anatomy" (1909), page 1173; or Gray's "Anatomy" (1910), page 1393.

RELATIONS OF PROSTATE. *Anteriorly:* Symphysis pubis, anterior ligaments of bladder, branches of dorsal vein of penis. *Posteriorly:* Rectum. *Laterally:* Levator ani. *Base:* Surrounds neck of bladder, seminal vesicles, and vasa deferentia. The *apex* rests on triangular ligament.

4. Ureters, bladder, part of the small intestine, rectum, uterus, ovaries, Fallopian tubes, vagina.

5. See Rose and Carless' "Surgery" (1908), page 1073; or Da Costa's "Surgery" (1908), pages 909 and 978.

6. See Cunningham's "Anatomy" (1909), pages 231, 297, 304, and 306; or Gray's "Anatomy" (1910), pages 231, 331, 360, and 342.

7. See Cunningham's "Anatomy" (1909), page 353; or Gray's "Anatomy" (1910), page 507.

8. See Gray's "Anatomy" (1910), page 445.

9. STOMACH is conical, with base to left side; the upper border is concave, and is called the *lesser* curvature; the lower border is convex, and is named the *greater* curvature. The left extremity is known as the *fundus;* above and to the right of which is the *cardiac* orifice, and the right or small end is termed the *pyloric* extremity. It occupies left hypochondriac and epigastric regions. Its *orifices are cardiac*, above, communicating with the esophagus; *pyloric*, at the right extremity, passing into the duodenum. It is 10 to 12 inches long, 4 to 5 inches in diameter at widest part. Its *left* or *cardiac end* is fixed by esophagus and gastrophrenic ligament to diaphragm, lying beneath the seventh left costal cartilage, 1 inch from sternum; it is connected with the spleen by the gastrosplenic omentum. The *right* or *pyloric end* reaches the gall-bladder, touching under part of quadrate lobe of liver; is very movable; when stomach is empty is in midline 4 inches below tip of gladiolus. *Anterior surface*, which also looks upward, is in contact with, from left to right, diaphragm, abdominal parietes (epigastric region), under surface of liver. *Posterior surface* is separated from pancreas, crura of diaphragm, aorta, vena cava inferior, and solar plexus, by lesser sac of peritoneum. *Superior border* is attached to liver by small omentum. *Inferior border* gives attachment to great omentum. *Coronary* and *pyloric* arteries run along lesser curvature; *right* and *left gastroepiploic*, along inferior or greater curvature; *vasa brevia*, from the splenic to fundus. *Right pneumogastric* nerve supplies to posterior surface; *left pneumogastric*, the anterior surface; *sympathetic*, from the solar plexus, both surfaces.—(*Aids to Anatomy.*)

10. See Cunningham's "Anatomy" (1909), page 1048; or Gray's "Anatomy" (1910), page 1244.

PHYSIOLOGY.

1. *Three functions of adipose tissue:* (1) It is a reserve store of food; (2) protection of delicate structures; (3) it preserves the heat of the body.

2. *The Haversian canals* serve to conduct arteries, veins, lymphatics, and nerves to and from the bone substance.

3. After ligation of an artery the inner and middle coats curl up and retract, a small thrombus forms, which later on is replaced by fibrous tissue. The vessel is thus obliterated and a new or collateral circulation is established. The ligature of a large artery is followed by a rise in the general blood-pressure, which decreases as the collateral circulation is established.

4.

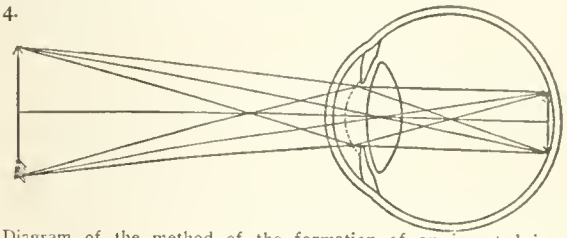

Diagram of the method of the formation of an inverted image exactly focused upon the Retina. The dotted line is the ideal surface of curvature.

5. The *glomerular epithelium* of the kidney is responsible for the fluid and inorganic salts of the urine; the *tubular epithelium* for the urea, uric acid, and principal solids.

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), pages 584, 586, 594, 598, 603, etc.; or Osler's "Practice of Medicine" (1909), pages 792, 793, 797, 802, 808, etc.

2. *Hyperemia* is a condition characterized by excess of blood in a part. *Hypertrophy* is "an increase in the size, weight, and functional activity of a part beyond the limit of health, due to an orderly enlargement or multiplication of all its normal constituents."

Hyperplasia is a numerical hypertrophy; that is, an hypertrophy in which there is a numerical increase in the cells of the part.

Hypoplasia is a condition in which there is atrophy of a part due to the destruction of some of its cells.

3. See French's "Practice of Medicine" (1910), pages 882 and 887; or Osler's "Practice of Medicine" (1909), pages 581, 584, and 586.

4. See French's "Practice of Medicine" (1910), pages 215 and 216; or Osler's "Practice of Medicine" (1909), page 282.

5. See French's "Practice of Medicine" (1910), page 925; or Osler's "Practice of Medicine" (1909), page 695.

PRACTICE AND THERAPEUTICS.

1. See French's "Practice of Medicine" (1910), page 617; or Osler's "Practice of Medicine" (1909), page 820.

2. See French's "Practice of Medicine" (1910), page 87; or Osler's "Practice of Medicine" (1909), page 82.

3. See French's "Practice of Medicine" (1910), page 219; or Osler's "Practice of Medicine" (1909), page 211.

4. See French's "Practice of Medicine" (1910), pages 897 and 915; or Osler's "Practice of Medicine" (1909), pages 669 and 690.

5. POISONING BY CHLORAL HYDRATE. *Symptoms:* Deep sleep, with the vessels of the head and neck greatly congested, accelerated pulse, widely dilated pupils, and deep though irregular respiration. Later the face becomes blanched and livid, the pupils contracted, the circulation and respiration fail, and the temperature falls. In some cases death occurs in from one-quarter to one hour in a condition of collapse. The usual fatal period is 8 to 10 hours.

Treatment: Stomach tube. Artificial respiration, flagellation, faradism. No chemical antidote is known. (Witthaus' *Essentials of Chemistry.*)

6. See French's "Practice of Medicine" (1910), pages 107, etc.; or Osler's "Practice of Medicine" (1909), pages 96, etc.

7. Ophthalmia neonatorm. *Propyhlaxis:* Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 per cent. solution of nitrate of silver, immediately after birth. *Treatment:* Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burned.

8. *Treatment of ivy poisoning:* "Sedative lotions are most efficacious in subduing the inflammation. One of the most soothing is a saturated aqueous solution of boric acid containing ten minims of glycerin to the ounce. Sodium hyposulphite solution (5i to the ounce), dilute fluid extract of grindelia robusta (5i to 4 ounces of water), and lotio nigra and lime-water are also very beneficial. The itching may be relieved by the addition of carbolic acid (10 minims to the ounce) and glycerin (10 minims) to any of the preparations. The great danger lies in overtreating, in an effort to allay the itching and burning." (Hughes' *Practice of Medicine.*)

9. See French's "Practice of Medicine" (1910), page 1082; or Osler's "Practice of Medicine" (1909), page 889.

10. "*Psoriasis* begins as small, reddish spots of the size of a pin's head, which immediately become covered with scanty or abundant whitish or grayish imbricated scales. The spots gradually increase in diameter by peripheral extension, forming patches of various sizes and shapes. If an attempt be made to detach one of the scales by means of the finger-nail, it will be found to adhere quite firmly to the skin, and to be about the thickness of a cardboard. If the reddish patch thus made bare be pinched up between the finger and thumb, and compared with a similar pinch of the healthy skin, its inflammatory thickening will be discerned. A punctate hemorrhage often follows removal of the scales by scratching. *There is no watery discharge at any time.* The skin between the patches is perfectly healthy. Any portion of the body is liable to be attacked with psoriasis, but the elbows, knees, and scalp are involved with greatest frequency. The only discomfort the patient suffers is from the itching, which at times is very severe and distressing. The disease is essentially chronic. Few cases become permanently cured, but the affection shows spontaneous improvement in the summer months in many cases. The eruption may partially or completely disappear with or without treatment, but recurrence is to be expected." (Hughes' *Practice of Medicine.*)

SURGERY.

1. See Rose and Carless' "Surgery" (1908), pages 1160 and 1161; or Da Costa's "Surgery" (1908), pages 1103 and 1105.

2. *Indications* for paracentesis of the membrana tympani: In some cases of otitis media, for drainage, to deplete the parts, or for exploratory purposes. And see Roseand Carless' "Surgery" (1908), page 882.

3. See Rose and Carless' "Surgery" (1908), page 622; or Da Costa's "Surgery" (1908), page 590.

4. See Rose and Carless' "Surgery" (1908), page 1152; or Da Costa's "Surgery" (1908), page 1015.

5. See Rose and Carless' "Surgery" (1908), pages 1041, 1044, and 1049; or Da Costa's "Surgery" (1908), pages 853 and 863.

6. See Rose and Carless' "Surgery" (1908), page 244; or Da Costa's "Surgery" (1908), page 821.

7. See Rose and Carless' "Surgery" (1908), page 217.

8. See Rose and Carless' "Surgery" (1908), page 1241; or Da Costa's "Surgery" (1908), page 1172.

9. *Curettage is indicated:* (1) For removal of placental débris (2) in hemorrhagic endometritis, (3) in some forms of dysmenorrhea (membranous), (4) for diagnostic purposes, (5) in some cases of puerperal sepsis, (6) sometimes to check hemorrhage, due to fibroids. *Contraindications:* (1) The least suspicion of even the possibility of pregnancy; (2) menstruation; (3) acute endometritis; (4) malignant disease of the uterus or vagina; (4) acute pelvic inflammation.

Technique: All antiseptic and aseptic precautions are necessary, the patient should be in the dorsal position, the vagina is to be disinfected, and the cervical canal dilated; a speculum is introduced into the vagina and the cervix is drawn down with volsella; the uterine cavity is irrigated with creolin or lysol; a curette is inserted to the fundus and moved down to the internal os; the operator should begin at one cornu and go in the same direction all around till he reaches the starting point, and if necessary repeat till no more spongy or hyperplastic tissue appears; the fundus should be scraped separately by moving the curette along it from side to side; in going toward the fundus no scraping should be done, and care must be taken not to perforate the uterus; should this happen no fluid must be injected; otherwise the uterus and vagina are again irritated, and one or more strips of iodoform gauze are inserted into the cavity to act either as a hemostatic plug or as a drain, which is diminished with two days' interval and withdrawn on the sixth day. A hemostatic tampon should be placed in the vagina and withdrawn the following day. If any fever arises, the tampon is at once removed and the vagina douched with antiseptic fluid every three hours. If not, the vagina is only swabbed with the same every day, and packed loosely with iodoform gauze. After the final removal of the gauze the antiseptic douche is given twice a day until there is no more discharge. The patient should remain in bed for a week.

10. See Rose and Carless' "Surgery" (1908), pages 1253 and 1254; or Da Costa's "Surgery" (1908), page 1198.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), page 211; or Hirst's "Obstetrics" (1909), pages 389 and 390.

2. See Williams' "Obstetrics" (1909), pages 4 and 683; or Hirst's "Obstetrics" (1909), pages 22 and 448.

3. See Williams' "Obstetrics" (1909), pages 319, 289, 598, 597, 397, and 586; or Hirst's "Obstetrics" (1909), pages 141, 138, 625, 627, and 570.

4. See Williams' "Obstetrics" (1909), page 443; or Hirst's "Obstetrics" (1909), page 857.

5. See Williams' "Obstetrics" (1909), page 347; or Hirst's "Obstetrics" (1909), page 928.

6. See Williams' "Obstetrics" (1909), pages 303 and 312; or Hirst's "Obstetrics" (1909), page 329.

7. *Four causes of dystocia:* Deformed pelvis; tumors of the pelvis or of the genital canal; rigidity of os uteri; and hydrocephalus. For treatment of hydrocephalus, see Williams' "Obstetrics" (1909), pages 795 and 465; or Hirst's "Obstetrics" (1909), page 561.

8. See Williams' "Obstetrics" (1909), pages 419, 429, and 432; or Hirst's "Obstetrics" (1909), page 826.

9. See Williams' "Obstetrics" (1909), pages 332 and 904; or Hirst's "Obstetrics" (1909), pages 348, 367 and 645.

10. See Williams' "Obstetrics" (1909), page 268; or Hirst's "Obstetrics" (1909), pages 407 and 821.

CHEMISTRY.

1. *Test for free hydrochloric acid in gastric contents:* Gunzburg's reagent (phloroglucin 2 grams; vanillin, 1 gram; dissolved in 100 cc. of alchohol) freshly prepared, and a few drops of filtered gastric contents (equal parts of each) are mixed in a porcelain dish, and then evaporated in a water bath; in the presence of free mineral acids a bright scarlet is produced, beginning at the upper border.

2. *Test for chlorides:* Addition of silver nitrate gives a white flocculent precipitate which is insoluble in nitric acid, but soluble in ammonium hydroxide.

Test for urates: Addition of dilute nitric acid followed by evaporation to dryness leaves a yellowish-red residue. Then add a little ammonia, and the residue turns to violet.

Test for earthy phosphates: Addition of ammonia causes a white precipitate, which becomes more apparent on standing.

3. The presence of sewage in water can be chemically detected by adding a solution of permanganate of potassium; in the presence of sewage rapid decoloration occurs.

4. By making a confirmatory test by the fermentation method; this latter is only positive with "sugar."

5. *Test for indican in the urine:* The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3:1000 of ferric chloride, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess.

MATERIA MEDICA.

1. Digitalis. *Official title:* Digitalis. *Preparations and Doses:* Fluidextract, ♏j; extract, gr. 1-5; infusion, 5ij; tincture, ♏xv.

2. Dose of codeine sulphate, gr. ½; of atropine sulphate, gr. 1-160; of hyoscyin hydrobromide, gr. 1-128; of cocaine hydrochloride, gr. ½.

3. The official preparations of ergot and their doses are: Ergot, thirty grains; extract of ergot, seven and a half grains; fluidextract of ergot, thirty minims; wine of ergot, two drams.

4. *Tonic:* Tincture of ferric chloride. *Stimulant:* Ammonia water. *Emetic:* Apomorphine hydrochloride. *Astringent:* Alum.

5. Two alkaloids, *of Nux Vomica:* Strychnine and brucine; of *Cinchona:* Quinine and cinchonine; of *Opium:* Morphine and codeine.

DIAGNOSIS.

1. Infantile rheumatism is extremely rare; pain and tenderness of the legs only should in an infant invariably suggest scurvy rather than rheumatism. In scurvy the extreme soreness of the legs, spongy swollen gums, swelling near the large joints, a tendency to hemorrhages, and a usual history of the prolonged use of some proprietary infant food or sterilized or condensed milk will be present. If any doubt exists this will be removed by the prompt improvement and generally rapid cure following an antiscorbutic diet. (From Holt's *Diseases of Infancy and Children.*)

2. The following table (from Sisendrath's *Surgical Diagnosis*) gives the diagnosis:

ACUTE IRITIS.	ACUTE CONJUNCTIVITIS.	ACUTE GLAUCOMA.
1. Pupil: small, sluggish, irregular after atropine.	Normal.	Dilated, oval, fixed.
2. Iris: swollen, dirty, lymph on surface.	Clean and bright.	Swollen and discolored.
3. Anterior chamber: normal (or deeper, with turbid contents).	Normal.	Shallow.
4. Cornea: clear (or with deposits on back).	Clear.	Steamy; *anesthetic.*
5. Ciliary region: injected.	Not injected.	Injected.
6. Conjunctiva: usually some injection.	Red, opaque, perhaps swollen.	Great congestion, perhaps chemosis.

COMA FROM INTRACRANIAL INJURY.	APOPLECTIC COMA.	UREMIC COMA.	ALCOHOLIC COMA.	OPIUM POISONING.
Deep coma; may have history of onset after fall or injury. Evidence of fracture of vertex or base.	Deep coma; sudden onset. If any injury, only a scalp wound.	Deep coma. Slow onset unless convulsions have preceded the coma.	Can be aroused by supraorbital pressure unless very profound.	Can be aroused unless very deep.
Pupil dilated on side of lesion. Choked disc.	Pupils unequal or dilated. Contracted in hemorrhage into the pons.	Albuminuric retinitis.	Pupils normal or somewhat dilated.	Pupils contracted to pinpoint size.
Pulse very slow.	Pulse full and slow, often arteriosclerotic high-tension pulse.	Pulse rapid.	Pulse more rapid than normal and full.	Pulse rapid, may be irregular.
Respiration slow and stertorous.	Respiration slow and irregular.	Respiration frequent and irregular.	Regular respiration.	Respiration very slow—may be 6 to 8 per minute.
Temperature higher—101°.	Temperature higher on paralyzed side, but lower in rectum.		May be low or normal.	
Urine normal or contains trace of albumin.	Urine contains trace of albumin, but may be same as in uremia.	Urine shows albumin, casts, and low urea percentage.	Normal.	Normal.
Hemiplegia on opposite side to that of injury. If contusion of brain is also present, may have generalized convulsions.	Hemiplegia with convulsions on one side.			

3. See French's "Practice of Medicine" (1910), page 767; or "Osler's "Practice of Medicine" (1909), page 476.

4. See French's "Practice of Medicine" (1910), page 813; or Osler's "Practice of Medicine" (1909), page 517.

ACUTE APPENDICITIS.	ACUTE SALPINGITIS.
1. Muscular rigidity marked.	1. But little rigidity.
2. Pain begins at umbilicus and becomes localized over McBurney's point unless appendix points to pelvis.	2. Pain lower down in abdomen just above Poupart's ligament.
3. Tenderness over right iliac fossa.	3. Tenderness low down over pelvis.
4. Pain followed in a few hours by nausea and vomiting.	4. Nausea and vomiting infrequent.
5. Bimanual examination negative unless appendix in pelvis, then tenderness lateral to uterus.	5. Bimanual examination shows tender mass lateral to or behind uterus.
6. No history of gonorrheal infection	6. Usually history of infection to be obtained.

When acute appendicitis occurs during the course of an acute inflammation of the female pelvic organs a differentiation is impossible, except that the pain is most intense over McBurney's point.—(Eisendrath.)

5.

ACUTE IRITIS.	ACUTE CONJUNCTIVITIS.	ACUTE GLAUCOMA.
7. Discharge: tears only.	Mucopus.	Tears only.
8. Palpation: tension normal (occasionally + 1); tender in ciliary region.	Tension normal, not tender.	Tension + 2 to 3, very tender.
9. Pain: over forehead and nose, worse at night.	Sand or grit in eyes.	Intense neuralgia in and about eyes, nausea, vomiting.
10. Vision: clouded.	Scarcely affected.	Rapidly lost; field extremely limited; "rainbow rings" seen.
11. Disc: if seen, normal.	Normal.	If seen, cupped, and arterial pulsation.

HYGIENE.

1. See French's "Practice of Medicine" (1910), page 324; or Osler's "Practice of Medicine" (1909), page 138.

2. See French's "Practice of Medicine" (1910), page 915; or Osler's "Practice of Medicine" (1909), page 690.

3. Scarlet fever and measles. See French's "Practice of Medicine" (1910), pages 324 and 330; or Osler's "Practice of Medicine" (1909), pages 138 and 144.

The principal means of preventing the spread of contagious diseases in schools are: Regular and efficient inspection by physicians; prompt exclusion and isolation of anyone suffering from a contagious disease, or coming from a house where such disease is; compulsory notification of all infectious and contagious disease; individual towels, drinking vessels, and other implements; children who have had a contagious or infectious disease or who have come from a house where such disease prevailed should not be readmitted to school until sufficient time has elapsed since the occurrence of the last case to insure safety.

4. Myopia, hypermetropia, and astigmatism are the most frequent defects of vision in school children. The school authorities should provide books with proper paper and print, suitable illumination, desks of proper height; proper positions in reading and writing should be enforced; the children should not use their eyes when tired; excessive study should be forbidden. The child's eyes should be examined and glasses provided by a competent physician.

5. See French's "Practice of Medicine" (1910), page 399; or Osler's "Practice of Medicine" (1909), pages 353 and 356.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery	Montgomery	Jan. 9
Arizona*	Ancil Martin, Phoenix	Phoenix	Jan. 2
Arkansas	F. T. Murphy, Brinkley	Little Rock	Nov. 14
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	Los Angeles	Dec. 5
Colorado	David A. Strickler, Empire Building, Denver	Denver	Jan. 2
Connecticut*	Chas. A Tuttle, New Haven	New Haven	Nov. 14
Delaware	J. H. Wilson, Dover	Dover	Dec. 12
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	Oct. 12
Florida*	I. D. Fernandez, Jacksonville	Jacksonville	Nov. 7
Georgia	C. T. Nolan, Marietta	Atlanta	Oct. 10
Idaho*	O. J. Allen, Bellevue	Wallace	April 2
Illinois	J. A. Egan, Springfield	Chicago	Oct. 26
Indiana	W. T. Gott, Crawfordsville	Indianapolis	Jan. 9
Iowa	G. H. Sumner, Des Moines	Des Moines	Sept. 19
Kansas	H. A. Dykes, Lebanon	Topeka	Oct. 10
Kentucky	J. N. McCormack, Bowling Green	Louisville	Dec. 19
Louisiana	A. B. Brown, Cusach's Bldg., New Orleans	New Orleans	Oct. 19
Maine	F. W. Searle, Portland	Portland	Nov. 14
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec. 12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Sept. 12
Michigan	B. D Harison, 205 Whitney Building, Detroit	Lansing	Oct. 10
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	Jan. 2
Mississippi	S. H. McLean, Jackson	Jackson	Oct. 10
Missouri	Frank B. Hiller, Jefferson City	Kansas City	Sept. 25
Montana*	Wm. C. Riddell, Helena	Helena	Oct. 9
Nebraska	E. A. Carr, Lincoln	Lincoln	Nov. 8
Nevada	S. L. Lee, Carson City	Carson City	Nov. 6
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	Jan. 9
New Jersey	H. G. Norton, Trenton	Trenton	Oct. 17
New Mexico	J. A. Massie, Santa Fe	Santa Fe	Oct. 9
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	Jan. 30
N. Carolina	B. K. Hays, Oxford	Hendersonville	June 11
N. Dakota	G. M. Williamson, Grand Forks	Grand Forks	Jan. 2
Ohio	Geo. H. Matson, Columbus	Columbus	Dec. 5
Oklahoma*	J. W. Duke, Guthrie	Muskogee	Oct. 10
Oregon	B. E. Miller, Portland	Portland	
Pennsylvania*	A. R. Aleen, Carlisle	Philadelphia, Pittsburgh	Dec. 12
Rhode Island	G. T. Swarts, Providence	Providence	Jan. 4
S. Carolina	H. E. Boozer, Columbia	Columbia	June 11
S. Dakota	F. W. Freyberg, Mitchell	Huron	Jan. 10
Tennessee	C. A. Abernathy, Pulaski	Memphis, Nashville, Knoxville	
Texas	J. D. Mitchell, Fort Worth	Fort Worth	Nov. 14
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	April 1
Vermont	W. Scott Nay, Underhill	Montpelier	Jan. 9
Virginia	R. S. Martin, Stuart	Lynchburg	Dec. 21
Washington*	F. P. Witter, Snokane	Tacoma	Jan. 2
W. Virginia	H. A. Barbee, Point Pleasant	Clarksburg	Nov. 13
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	Jan. 9
Wyoming	A. B. Tonkin, Riverton	Riverton	Jan. 9

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Case of Trophic Ulceration over a Large Formation of Scar Tissue.—M. Corner reports the case of a patient who broke his patella for the first time twenty-four years ago, subsequently breaking it again twice. It was wired in 1896, but suppurated, necessitating removal of the patella, incision and irrigation. Without any ascertainable cause nine months ago the scar began to ulcerate in its center and was slow to respond to treatment.—*Proceedings of the Royal Society of Medicine.*

Medicolegal Notes.

Expert Evidence Admissible to Show That Homicide Could Not Have Been Suicidal.—In a prosecution for murder the throat of the deceased was found to have been slashed in front with some sharp instrument which passed through almost to the spinal column, completely severing the gullet and jugular vein. It was undisputed that the deceased was left-handed, and to rebut any possible inference that the homicide was suicidal the medical examiners who conducted the autopsy and a physician who viewed the body and heard their testimony of the details, and whose qualifications were unquestioned, were called by the government and permitted to testify that, from the character, depth, and direction of the wounds, they could not have been self inflicted. This was objected to by the defense as opinion evidence, but the objection was not sustained. While the value of such evidence must differ in degree according to the nature of the inquiry, yet in the department of medicine and surgery such testimony often is of much importance, and a wide range of inquiry is usually permitted. The medical experts from their attainments in anatomy, united with the experimental knowledge acquired from study and observation of the effect of blows or wounds upon the human body, were peculiarly well fitted to express an opinion whether the left hand and arm of the deceased could have been so moved as to have been sufficient in scope and power to have produced a blow causing a wound of the severity and dimensions found on the deceased.—Commonwealth v. Spiropoulos, Massachusetts Supreme Court, 94 N. E. 451.

Chiropractic "Adjustment" Is Treatment.—On a trial for practising medicine without a license by a mode of treatment of the sick known as chiropractic the defendant testified that instead of using "treatments" she used "adjustments," and hence was not guilty of any violation of the statute. It was held that the methods used by the defendant fell as well within the definition of "treatment" as they did of "adjustment." She had the patient remove her street clothing and put on a kimono; she diagnosed her ailments with the aid of a vibrator; she manually manipulated the supposedly diseased parts; she described a dietary for the patient; she collected a fee, and advised the patient to return for further manipulation. The fact that the act regulating the practice of medicine contains provisions affecting a variety of practitioners having different methods of treating the sick was held not to render it subject to the objection that it contains more than one subject. Although called chiropractic, if the practice had any beneficial purpose at all its purpose was to heal the sick and afflicted, and to regulate the practice of healing the sick and afflicted is unquestionably within the acknowledged powers of the State.—State v. Grecnei, Washington Supreme Court, 114 Pac. 897.

Chiropractic Must Be Licensed.—Iowa Code, Section 2579, 2580, defining those practising as physicians as those publicly professing to be physicians and assuming the duties, or as those making a practice of prescribing medicine for the sick, or as those who publicly profess to heal or cure, and imposing a penalty on any one who, without a license, by his conduct brings himself within any of the enumerated classes, enumerates several acts disjunctively which may constitute the offense of practising medicine without a license, and the different acts constituting the offense are not necessarily inconsistent with each other. An indictment charging the accused as within all the classes therefore charges only one offense. An indictment charging the accused with wilfully assuming the duties of a physician and making a practice of treating persons afflicted with disease, and wilfully professing to cure persons afflicted with disease by a system of treatment called chiropractic, without having obtained a license, is, in substance, in the language of the statute, and sufficient. It was held that one advertising himself as a chiropractic and undertaking to heal persons according to that system by manipulating the spine of the patient practises as a physician within Code § 2579. The State has power to determine what acts constitute practice as a physician and may impose conditions on the exercise of that privilege. A statute providing that one practising as a physician shall possess some knowledge of the nature of disease, its origin, anatomical and physiological features, and its causative relation, and of the preparation and action of drugs is not unreasonable.—State v. Corwin, Iowa Supreme Court, 131 N. W. 659.

Standard of Degree of Care in Childbirth Case.—In an action for compensation for medical services rendered in the delivery of the defendant's wife, the defendant counterclaimed for damages for malpractice. The jury

found for the plaintiff and on appeal the evidence was held to sustain this verdict. The dependant's testimony was to the effect that the plaintiff used defective instruments, forceps tied together after they were adjusted on the head of the infant with a string, say, a piece of silk, with the result that the fastening broke and allowed the forceps to pull loose, causing a rupture of the parts, when if the forceps had been of the proper kind or properly fastened such result would not have followed. The evidence tended to show that the plaintiff used an amount of force and violence in attempting to extricate the infant from its mother's womb which was unnecessary and improper, resulting in unnecessary injuries to the patient, including rupture of the perineum and sphincter muscle, and also improper method of treatment after the rupture.

It was no defense for the plaintiff that he had knowledge and skill sufficient to practise his profession and erred merely in judgment in using instruments at the time and in the method of using these. If he was careless or did not use the judgment which a competent physician would ordinarily use under the circumstances of the case, then he was liable to damages. If he used such reasonable skill and diligence as were used by physicians in localities similar to that in which he practised, the Iowa court held that he was not liable for the outcome of the treatment. The plaintiff practised in a small country town in which the standard of medical practice appeared to be no higher than that of similar localities. Therefore an instruction that negligence was the doing of some act which under the circumstances would not be done by other average physicians of the vicinity in which the physician was practising, while erroneous in failing to measure his skill by that of those in similar localities, was not prejudicial to him.—Kline v. Nicholson, Iowa Supreme Court, 130 N. W. 722.

Statutory Meaning of Vaccination.—In an action by a parent to have it declared that he had a right to have his infant daughter attend public school the case turned upon the meaning of the term "vaccination" as used in the Pennsylvania act of June 18, 1895 (P. L. 207, § 12), prohibiting the attendance of a child at school without a certificate of successful vaccination, or of its having had the smallpox. It was held that the ordinary and usual meaning of "vaccination" and the sense in which it must be supposed to have been used by the Legislature is inoculation with the virus of cowpox, for the purpose of communicating that disease as a prophylactic against smallpox. It indicates an operation by inserting the virus under the skin, and the test of its success is the appearance of the symptoms of the disease, including those manifesting themselves on the skin. Administering the virus through the mouth, though producing practically the same symptoms on the body, except exterior and local inflammation, is insufficient.

It was also held that the act of April 27, 1905 (V. L. 315 § 10), giving the state health department authority to fix forms of certificates of vaccination required by the 1895 act, is not objectionable as a delegation of legislative power, but the department merely regulates the form of the certificate so as to require the certifying physician to use words in the sense in which they are used in the act of 1895.—Lee v. Marsh, Pennsylvania Supreme Court, 79 Atl. 564.

Action of Debt for Penalty for Practising Without a License Not a Prosecution.—Section of the Illinois act to regulate the practice of medicine within the State (Laws 1899, p. 273) provides that a person practising medicine without a license shall forfeit $100 for the first offense and $200 for each subsequent offense. Section 33 of article 6 of the State Constitution provides that all prosecutions shall be carried on "in the name and by the authority of the people of the State of Illinois," and concludes "against the peace and dignity of the same." In an action of debt for the penalty begun in a municipal court this provision of the constitution was not complied with in the statement of plaintiff's claim. Counsel for defendant contended that the suit was a prosecution, and that judgment for the plaintiff should be reversed for failure to obey the constitutional mandate. The Attorney-General contended that the question could not be raised on appeal because it was not raised in the trial court. It was held that the action was not a prosecution within the meaning of the constitutional requirement, and therefore need not conclude against the peace and dignity of the State; a "prosecution" being the institution and continuance of a criminal proceeding, as by indictment and information, in which sense the word is used in the Constitution.—People v. Gartenstein, Illinois Supreme Court, 94 N. E. 128.

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

One Hundred Surgical Problems. By James G. Mumford, M.D. 354 pages; illustrated; cloth; price $3.00. W. M. Leonard, Boston, Publisher.

Manual of Surgery. By Francis T. Stewart, M.D. 682 pages; illustrated; cloth, price $4.00 net. Second Edition P. Blakiston's Son & Co., Publishers, Philadelphia.

Laboratory Studies in Tropical Medicine. By C. W. Daniels, M.B. Camb., M.R.C.P. Lond. 535 pages; illustrated; leather; price $4.00 net. Third Edition. P. Blakiston's Son & Co.

The Bellevue Hospital Nomenclature of Diseases and Conditions. By Robert J. Carlisle, M.D., Warren Coleman, M.D., Thomas A. Smith, M.D., and Edmund L. Dow, M.D. Revised and made to conform to the International Classification, 1911. 328 pages; leather.

Transactions of the Florida Medical Association for the Year 1911. Held at Tallahassee, Florida, May 10, 11, 12, 1911. 177 pages; paper; illustrated.

Klinik für Psychische und Nervöse Krankheiten. By Robert Sommer, M.D. 204 pages; paper; price 3 M. Carl Marhold, Halle a. S., Publisher.

Manual of Psychiatry. By J. Rogues de Fursac, M.D., and A. J. Rosanoff, M.D. Third Edition. Revised and Enlarged. 484 pages; cloth. John Wiley & Sons, Publishers, New York.

Howard Taylor Ricketts y sus Trabajos Sobre el Tabardillo. Mexico Tip. De La Vda. De F. Diaz De Leon, Sucs. Avenida del Cinco de Mayo y Motolinia. 133 pages; paper.

Hieronymus Fracastor's Syphilis, from the Original Latin. 57 pages; cloth; price $2.00. The Philmar Co., Publishers, St. Louis.

Lecciones Populares Sobre Tuberculosis. By Dr. J. A. Lopez Del Valle. Publicadas A Expensas de la Secretaria De Sanidad Y Beneficencia, Habana, Cuba. 62 pages; illustrated; paper.

Diät und Küche. By Dr. Wilhelm Sternberg. 188 pages; paper; price 5 M. Curt Kabitzsch, Würzburg, Publisher.

A Manual of Pathology and Morbid Anatomy. By T. Henry Green, M.D., F.R.C.P. Eleventh Edition. Revised and Enlarged by W. Cecil Bosanquet, M.A., M.D. 642 pages with 352 illustrations; cloth. Lea & Febiger, New York, Publishers.

Immune Sera. By Dr. Charles Frederick Bolduan. Fourth Edition. Rewritten and Enlarged. 226 pages; cloth; price $1.50 . John Wiley & Sons, New York, Publishers.

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The Modern Criminal Science Series.

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THEORY AND PRACTICE OF THYROID THERAPY. By Herbert Ewan Waller, M.R.C.S. England, L.R.C.P. London. 154 pages; cloth; price $2.00 net. William Wood & Company, Publishers, New York.

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SÉMIOLOGIE RÉELLE DES SECTIONS TOTALES DES NERES MIXTES PERIPHERIQUES. By Prof. Henri Claude and Stephen Chauvet. 95 pages; cloth; illustrated. A. Maloine, Paris, Publisher.

TUBERCULOSIS HOSPITAL AND SANATORIUM CONSTRUCTION. By Thomas Spees Carrington, M.D. 164 pages, illustrated; cloth. The National Association for the Study and Prevention of Tuberculosis, Publishers.

CONTRIBUTION À L'ETUDE DE L'OPOTHÉRAPIE MAMMAIRE DANS LES HÉMORRAGIES ET DANS LE FIBROME DE L'UTERUS. By Dr. Jacques Luncz. 136 pages; Vigot Frères, Paris, Publishers.

DIE PALPABLEN GEBILDE DES NORMALEN MENSCHLICHEN KORPERS UND DEREN METHODISCHE PALPATION. By Dr. Tory Cohn. 585 pages; illustrated; paper. S. Karger, Publisher, Berlin.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBERN LUFTWEGE. By Dr. L. Katz. 123 pages; illustrated; paper; price 9.00 M. Curt Kabitzsch, Publisher, Würzburg.

REPORTS FROM THE LABORATORY OF THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH. By Sir John Batty Tuke, M.D., and James Ritchie, M.D. Vol. X. Oliver & Boyd, Publishers, Edinburgh.

THOUGHTS OF A CATHOLIC ANATOMIST. By Thomas Dwight, M.D., LL.D. 243 pages; cloth; price $1.00 net. Longmans, Green & Co., New York, Publishers.

THE PRACTICAL MEDICINE SERIES. Vol. IV. GYNECOLOGY. By Emilius C. Dudley, A.M., M.D., and C. von Bachelle, M.S., M.D. 232 pages; illustrated; cloth; price $1.25. The Year Book Publishers, Chicago, Publishers.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended September 30, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	464	167
Diphtheria	145	11
Measles	71	4
Scarlet Fever	75	5
Smallpox	—	—
Varicella	14	—
Typhoid Fever	122	17
Whooping Cough	49	8
Cerebrospinal Meningitis	6	4
Malarial Fever	—	
Totals	956	216

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended September 29, 1911:

Places	Date	Cases	Deaths
CHOLERA			
China: Manchuria—Dalny	Aug. 15–Sept. 4	23	..
Kinchow	Aug. 15–Sept. 4	10	..
India: Calcutta	July 30–Aug. 5	..	7
Madras	Aug. 13–19	1	1
Italy		..	..
Total for Italy, Sept 3–9: Cases, 1,279; deaths, 496.		Continental	
Italy: Cases, 1,089; deaths, 422.			
Provinces—Naples	Sept. 3–9	49	12
Naples	Sept. 3–9	17	1
Sicily		..	..
Total outside of Palermo Province: Cases, 73; deaths, 30.			
Palermo	Aug. 13–19	23	15
Palermo	Aug. 13–19	28	16
Japan: Kobe	Aug. 30	2	..
Osaka	Aug. 30	3	..
Java: Batavia	Aug. 6–12	10	5
Philippine Islands: Manila	July 23–29	1	1
Provinces—Rizal	July 23–29	1	..
Union	July 23–Aug. 5	4	3
Russia		..	..
Total for Russia, Sept. 17–23: Cases, 112; deaths, 80.			
Province—Moscow	Aug. 13–19	1	..
Straits Settlements: Singapore	July 23–Aug. 5	11	13
Turkey: Medua	Aug. 12–23	18	12
Monastir	July 30–31	..	†3
†*Bulletin Sanitarie de l'Algérie* No. 134.			
Valona	Aug. 16–26	15	13
Turkey in Asia: Beirut	Aug 20–26	7	4
Among pilgrims.			
Smyrna	Aug. 21–27	117	63
YELLOW FEVER			
Brazil: Ceara	July 1–31	..	1
Manaos	Aug. 20–26	..	2
Pernambuco	July 16–31	..	3
Present Sept. 4.			
Ecuador: Guayaquil	Aug. 16–31	3	1
Venezuela: Caracas	Aug. 6–19	8	..
PLAGUE			
Brazil: Pernambuco	July 16–21	..	2
Present Sept. 4.			
Chile: Iquique	Aug. 20–26	3	3
China: Hongkong	Aug. 6–12	10	8
Shanghai	Aug. 12–18	24	18
Including cases from Chapei.			
Ecuador: Guayaquil	Aug. 16–31	9	6
India: Calcutta	July 30–Aug. 5	..	16
Straits Settlements: Singapore	July 23–Aug. 5	3	3
Turkey in Asia: Adalia‡	Aug. 30	1	..
‡*Bulletin Quarantenaire d'Egypte*, August 31, 1911.			
Beirut	Aug. 19	..	..
Present. Among pilgrims.			
Lebanon district	Aug. 20–26	2	..
Present Among pilgrims.			
Venezuela. Caracas	Aug. 6–19	4	..
SMALLPOX			
Canada: Quebec	Sept. 9–16	1	..
Vancouver	Aug 1–31	2	..
Ceylon. Colombo	Aug. 6–12	4	..
China: Hongkong	Aug. 6–12	3	3
Egypt: Cairo	Aug. 13–19	..	1
Port Said	Aug. 13–19	..	1
India. Bombay	Aug. 13–19	3	2
Madras	Aug. 13–19	4	3
Italy: Naples	Aug. 27–Sept. 2	5	..
Java: Batavia	Aug. 6–12	2	2
Mexico: Mexico	Aug. 13–26	22	11
Portugal: Lisbon	Aug 27–Sept. 2	1	..
Russia: Moscow	Aug. 12–26	5	4
Riga	Aug. 6–12	1	..
St. Petersburg	Aug. 13–26	6	3
Spain: Seville	Aug. 1–31	..	2
Valencia	Aug. 27–Sept. 2	4	1
Straits Settlements: Singapore	July 23–Aug 5	9	1
Turkey in Asia: Beirut	Aug. 20–26	6	2

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THE PRACTICAL APPLICATION OF BACTERIAL VACCINES.*

By MARTIN J. SYNNOTT, A.M., M.D.,

MONTCLAIR, N. J.

It is a well-known fact that when an individual recovers from an infectious disease he is ordinarily in no danger of contracting it afresh, and that this non-liability continues for a longer or shorter period. There is no plausible explanation of this phenomenon other than that the infected system develops a resistance to the action of the invading pathogenic microbes which it did not originally possess, and that complete recovery is due to this resistance becoming strong enough to overcome and destroy these organisms. The problems involved in the development of such resisting powers have usually been studied under the term "Immunity," under which we include not only the non-susceptibility of an individual to a given disease and the power to resist infection, but also the mechanism by which a cure is effected.

According to the hypothesis of Sir Almroth E. Wright, when a patient recovers spontaneously from a bacterial infection, his cure is the result of immunizing responses evoked by the setting free of bacteria or their products from the focus of infection into the body, to which process Wright gives the name of "autoinoculation." Wright has demonstrated that it is possible to produce artificially in the human organism such immunizing responses by the hypodermic inoculation of bacterial vaccines which are derived from (autogenous) or correspond to (exogenous) the infecting microbes. This process he calls therapeutic immunization.

The essentials of success in the administration of vaccines are the knowledge and experience necessary so to determine the dosage and intervals between inoculations as to elicit the required immunizing responses and to bring the resulting antibacterial substances which circulate in the blood (opsonins) into the focus of infection.

In generalized infections bacterial products are almost constantly set free in the organism and we have a succession of autoinoculations. Immunizing responses follow in the cases which terminate favorably, because antibacterial elements are elaborated in the tissues and sent into the blood as a result of this stimulation. When a patient fails to recover this may be due either (1) to an inadequate or tardy immunizing response, or (2) to a severe or prolonged "negative phase" from excessive autoinoculations, which retard the body's immunizing responses, thus making possible the involvement of tissues previously uninvolved and the starting up of new foci of infection, or (3) to some interference with the free circulation of the blood containing the antibacterial agents through or about the focus of infection.

Vaccines aid in producing immunization only in subjects having the necessary power to react to this stimulus. If the immunizing mechanism of the body has been overwhelmed by excessive autoinoculations, as may easily be the case in general febrile infections and in septicemias where the infective bacteria are in the blood stream, further inoculations with vaccines may do serious and even fatal harm by inducing a permanent negative phase. The most we may hope for from vaccines in such conditions is to raise the patient's resistance by cautious *minimal* doses. In the strictly localized infections, on the other hand, where no autoinoculations are taking place, vaccine inoculations evoke prompt immunizing responses and the results from their proper use are preeminently satisfactory and brilliant.

In the generalized infections the use of vaccines should be left to the experienced immunizator. In this class determinations of the opsonic index as well as the careful and correct interpretation of the clinical symptoms are of great importance as a guide to their safe use. In the localized infections, however, no serious obstacles are ordinarily encountered and there is a clear field for vaccine therapy.

The dose should ordinarily be of such size as to produce a mild "negative phase" lasting not over 24 hours, followed in turn by a "positive phase" extending over two or more days. By the "negative phase" we mean a temporary reduction in the antibacterial power of the blood, characterized by malaise and slight increase in the local symptoms of the disease. During the "positive phase" there is an increase in the antibacterial power of the blood (opsonins) with clinical evidence of improvement in the patient's condition. He feels unmistakably better and very often will gleefully tell you so.

In generalized infections the dose should be reduced to the minimum because a negative phase of even a few hours' duration may lead to disastrous activity on the part of the infecting microorganism. A moderate negative phase in strictly localized infections can do no harm, because the opsonic content of the by-circulating blood does not immediately affect the disease focus. On the contrary the local reactive inflammation of this phase may do good by flushing the lesion with blood and an increased outflow of lymph, whereby a greater quantity of the blood's protective substances is carried into the infected area, and thus healing tends to result.

In our attempts at immunization we must not forget that if the focus of infection is sheltered from the blood stream by hyperplastic or scar

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tissue, or is located in a joint where the opsonins in the blood do not have free access, we cannot expect the most favorable results. In such cases fomentations, poultices, massage, or Bier's apparatus may be resorted to with advantage in order to increase the local blood supply. Lymphogogues are indicated. Sinuses should be flushed with a hypertonic solution consisting of 4 per cent. sodium chloride and 1 per cent. sodium citrate in sterilized water. The use of this solution stimulates increased osmosis through the sinus walls, with a more copious flow of lymph, while the citrate in addition prevents coagulation. Infected cavities, such as the peritoneum or pleura, must be drained. Where we have sloughs, sequestra, or accumulations of pus, surgical removal is necessary, before any clinical effect can be expected from the immunizing responses following inoculations. On the other hand, where the microbes are fully exposed to the antibacterial substances in the blood a single inoculation may, under favorable circumstances, effect a complete cure.

The inoculations may be repeated every two to ten days, according to the size of the dose and the nature of the response elicited. The smaller doses are employed at the shorter intervals. The appropriate time for reinoculation is when the beneficial effects of the previous treatment are beginning to pass off. As recovery progresses the intervals between inoculations are gradually lengthened, and the size of the dose is increased. It is well to begin treatment with small doses. Ordinarily the inoculations are given twice a week.

Up to the present time, as might be expected, vaccines have been found most useful in diseases of bacterial origin causing local suppurative conditions where little or no general infection has occurred. In some of these diseases, notably pustular acne, the furunculosis group, sinuses, chronic cystitis or ureteritis—due to either the *B. coli communis*, gonococcus, staphylococcus, or tubercle—cellulitis, post-operative wound infections, subacute puerperal infections, chronic gonorrheal or tuberculous joint or other local lesions, chronic osteomyelitis, periostitis, otitis media, erysipelas, and many others, the results, when vaccines have been appropriately applied by *skilled hands*, have been almost uniformly brilliant and satisfactory; and the proof is now absolutely conclusive that many if not most of these disease processes are curable by bacterial inoculations.

In many of the diseases enumerated above clinical experience has been such that a fair degree of unanimity of opinion exists among immunizators and more or less definite rules as to dosage and frequency of inoculations have been laid down. It is in this class that estimations of the opsonic index may for the most part be dispensed with, and hence vaccines may be used more generally and by men whose inexperience would otherwise deter from availing themselves of the advantages of this valuable system of therapeutics.

Staphylococcal Infections.—Extensive staphylococcal infections producing carbuncles, boils, or abscesses, the so-called furunculosis group, were the first class of cases in which successful results were obtained with regularity and certainty at St. Mary's Hospital, London, by Wright and his associates, and treatment by vaccines in this group has been systematically applied. Cases of every degree of severity have been thus treated with almost uniformly complete cures.

Deep and widely extended carbuncles, no matter how stubborn, rapidly dry up and disappear soon after the treatment is commenced, showing that the system responds quickly and vigorously to the stimulus of the inoculation. Boils may be aborted after an early dose, or brought rapidly to a head, thus saving time and scarring. Furuncles seem almost to melt away after an inoculation, while in carbuncles the slough is rapidly thrown off. In fact in the whole furunculosis group of staphylococcal infections we obtain such good results and the efficacy of this treatment has been so repeatedly verified, that a cure may be promised in nearly every case.

The dose of a staphylococcus vaccine varies from 50 to 750 millions. In furunculosis a conservative initial dose might be 50 to 100 million cocci, and this dose may be repeated or doubled in four days; thereafter gradually increasing doses may be given every 4 to 10 days with the idea of producing permanent immunity and preventing a recurrence, until a maximum of 400 or 500 millions be reached. If, however, we wish to hasten the ripening of a furuncle or subcutaneous abscess or the resolution of a carbuncle the initial dose may be 250 to 500 millions, the idea being to produce a prolonged and marked negative phase by giving a maximum injection. The patient is benefited in this case because suppuration in the mass is thus hastened, with prompt breaking down and perhaps spontaneous evacuation of the pus. This is the one exception to the rule governing dosage and the negative phase. A smaller dose, say 100 millions, may be given at the end of a week, and thereafter inoculations may be repeated at first weekly, and later at longer intervals, increasing each dose by 50 or 100 millions until the maximum dose of 400 or 500 millions is reached.

Streptococci may be added if the patient does not get well, or if the trouble recurs. In such cases it is a safe guess that the difficulty is due to some other organism than the staphylococcus and if a culture is made from a pustule and examined streptococci are usually found.

Cystitis, ureteritis, sycosis barbæ, some forms of eczema, ciliary blepharitis, otitis media, sinuses left from abscesses and operations, felons, styes, suppurating acne, and septic wounds when caused by the staphylococcus have all yielded good results to inoculation treatment.

Streptococcal Infections.—Streptococcal infections constitute a large and very important group, in which excellent results have been obtained from inoculation treatment, particularly in the strictly localized forms such as abscesses, wound infections, local cellulitis, and lymphangitis, as a complicating infection in secondary tuberculous diseases, and in lupus vulgaris. Erysipelas will be referred to in detail in a later paragraph. The importance of this microorganism may be realized when we consider that infections due to its presence occur in most varied forms and are probably the true cause of many of the sequelæ and complications that follow grave infectious diseases, such as smallpox, scarlet fever, and diphtheria. These consequences may well be due, not to the direct action of the specific microbe that causes the disease but to its indirect action. The disease primarily enfeebles the system and lowers its resistance to pathogenic microbes like the streptococcus, which are practically ubiquitous but which, if present in the human body, are ordinarily kept under by the phagocytic power

of the blood. When this normal resisting power is greatly reduced by any disease, these microbes effect an entrance and attack important organs, such as the kidneys or the heart, thus causing the sequelæ which often do more injury to the patient than the original disease. To prevent these sequelæ the microbes that directly cause them must be fought against specificially, and therapeutic inoculation promises to furnish the mode of attack.

Pyorrhea alveolaris, otitis media, post-operative and subacute puerperal infections, chronic sinuses, pyemia, and osteomyelitis are among the many infections which may be due to this bacillus, and they all offer a promising field for vaccine therapy. In short the streptococcus in one or another of its strains is responsible for a very large proportion of our acute, chronic, and subacute infections.

Acute general infections such as septic endocarditis and puerperal septicemia must be left to the expert immunizator, who will determine the indications for or against vaccine inoculation and the dosage, by recourse to the opsonic index. In these infections very small doses only should be used, although it may be proper to repeat them frequently, in some cases daily, if they are used intelligently and in conjunction with the opsonic index. Improper inoculations in such diseases may hasten the patient's death.

In secondary streptococcal infections large doses are borne. A slight negative phase in such cases does no harm, because, as already pointed out, the local reaction of this phase flushes the lesion with blood and increased exudation of lymph, which help to effect a cure.

In many tuberculous conditions, a complicating streptococcal infection is often mistaken for an exacerbation of the original process.

The minimum effective dose of a streptococcus vaccine is 2 millions; medium doses range from 5 to 15 millions. Larger doses are dangerous and should not be used.

Parodontal Streptococcus Vaccine (Mixed).—Recently a stock "parodontal streptococcus mixed vaccine" has been prepared by Wright at St. Mary's, London, from cultures of streptococcus isolated from cases of pyorrhea alveolaris, dental abscess, and other infections of the teeth and gums. This vaccine has given good results in dental therapeutics. The dose is from 6 to 15 millions.

Erysipelas.—Vaccine treatment in this disease is a positive specific, and it may be administered safely without opsonic investigations. Dr. George W. Ross, of Toronto, who has had a very extensive experience in the treatment of erysipelas with streptococcus vaccine, recommends a vaccine prepared and administered with the following variations from the ordinary technique: (1) Sterilization of this vaccine is accomplished by the addition of enough carbolic to the original suspension to make it up to 1 in 200. Several days is usually enough to kill the cocci. Proof of sterilization is obtained by culture and the final vaccine is made so as to contain carbolic acid to the strength of 1 in 400. (2) The dose of this special vaccine is just one-half that of the ordinary stock vaccine, which is sterilized by heating to 60° C. for one hour.

The rules for dosage advised by Dr. Ross are as follows: Five million streptococci, devitalized by the above process, are given to a severe case in the first inoculation and ten million if the case is less severe. On the second day the severe case is given five million more if there be signs of improvement. The most important of these latter, according to Ross, is a clearing of the intellect, and less tenderness and pain in the local condition. There may be a moderate fall in the temperature on the morning following the injection. A drop of two or three degrees would be a valuable indication for a second inoculation. If the severe case shows no improvement the second inoculation should consist of only two and a half million. In less severe cases improvement is almost always manifest after twenty-four hours, and the patient receives half the first dose, or five million. Thereafter two and a half, five, or ten million are given every second day until a week after the temperature has reached normal, and the erythema has subsided. The severity of the infection must be our guide to dosage. "The more severe the case and the less satisfactory the clinical response the smaller the dose." The site of inoculation should be away from the area involved.

Acne.—Very brilliant results are obtained from vaccines in the treatment of acne. Even the most stubborn and deep-rooted cases yield so readily that a cure may be promised in nearly every case. A mixed vaccine containing twenty million acne or Sabouraud's bacillus and five hundred million staphylococci to each C. C. is ordinarily used at St. Mary's. Inoculations may be given every four to ten days, without recourse to the opsonic index, and even in the most desperate cases good results are very quickly apparent. A suitable initial dose for an average case is one hundred and twenty-five millions of staphylococci with five millions of acne bacilli, and this dose may later on be doubled. A negative phase from an overdose will aggravate the patient's condition and is to be avoided if possible. Treatment must be continued, at longer intervals, after the patient is to all appearances cured in order to prevent a recurrence. Relapses may be due to insufficient or too frequent doses.

In all non-pustular cases of acne, where comedones form the principal feature, the indications are to use a plain acne vaccine, but in all pustular cases, particularly where the lesions assume a subfuruncular form, the best results are obtained from the mixed vaccine of acne and staphylococcus.

Sabouraud's acne bacillus requires special technique to isolate and differentiate, and as the subject is so important and the results are so brilliant the following data obtained at St. Mary's are given somewhat in detail.

This bacillus has certain peculiar and characteristic individualities: (1) A temperature of 60° C. does not kill it. (2) It grows best on a fatty medium composed of ordinary agar with 1 per cent. oleic acid, neutralized with hydrochloric acid. The growth comes up slowly in five to seven days. It stains to the Gram stain. It dies quickly. (3) A culture may be secured in one of three ways; (a) from a pure laboratory culture; or (b) by giving our patient an overdose of acne vaccine, inducing a heavy negative phase, in this way producing a crop of pustules, and enabling us to thus obtain a culture from a pustule; or (c) bearing in mind that the usual contamination or mixed infection in acne is staphylococcus we may obtain a specimen of pus from a pustule, heat it for one hour at 60° C., which temperature kills everything except the acne bacillus. We then grow the culture, which will show only the acne bacillus.

It is important to daub the pus on the medium,

and not to smear it on, otherwise no culture will be secured. To obtain the pus specimen sterilize the skin with pure lysol, and then with alcohol. Pick or squeeze out the pustule, and set the pus specimen in a mass first at the bottom of the culture tube, then if enough remain, on four or five additional spots.

In this country the staphylococcus vaccine has been used somewhat in the treatment of acne, and while the results in pustular cases have been encouraging, treatment except with the mixed acne and staphylococcus vaccine or the acne bacillus vaccine is on the whole disappointing.

Local treatment and constitutional treatment should be given in conjunction with the inoculations. The writer has found the following local application of value:

Precipitated sulphur, dr. 4; powdered camphor, gr. 20; powdered tragacanth, gr. 30; lime water, oz. 2; rose water to make oz. 4. M. et Sig. Lotion. Rub in twice daily.

Even after a cure has been effected prophylactic inoculations should be insisted upon occasionally for several months, to prevent a recurrence, because relapses do sometimes occur.

Gonococcal Infections.—The best results obtained from vaccines in gonorrheal infections have been in arthritic cases and in chronic gonococcal urethritis. Chronic gonorrheal swellings, spondylitis, painful and persistent affections of the joints, yield readily to inoculations. Increased pain and stiffness in joint cases, or an increased discharge in urethritis, with general malaise, are the negative phase symptoms of an overdose. A stock vaccine must of course be used in joint cases, but these are not always of the same immunizing power, and the dose therefore will vary according to the virulence of the strain used in preparing the vaccine. This can be determined only by watching the opsonic index and the clinical symptoms of the negative phase.

Acute gonorrheal urethritis has been treated with vaccines, but care must be taken to avoid a severe or prolonged negative phase from an overdose, which would aggravate the symptoms. While for some unexplained reason the results have not been uniformly satisfactory in acute gonorrhea, successful cases are on record. An autogenous vaccine should be used, and early administration is important. Chronic or recurrent urethritis and gleet respond to autogenous vaccines, along with local treatment. In obstinate cases in this class we must be alive to the possibility of a straphyloccus or other complicating infection.

The minimum effective dose of a gonococcus vaccine is from one to two millions; medium doses are from five to twenty-five millions; the doses may be repeated every three to fourteen days—the smaller doses to be given at the shorter intervals. The stock gonococcus vaccine in use at St. Mary's is prepared from cultures of proved immunizing power, in two concentrations, viz., five millions and fifty millions of cocci per C. C.

Pneumococcal Infections.—The pneumococcus vaccine has been used by some immunizators with good results in croupous pneumonia, in protracted cases of pneumonia with delayed defervescence, in the less serious pneumococcic infections, such as "bronchial colds," and in cases of chronic bronchitis, providing of course that the pneumococcus is the predominant infection. The dose varies from ten to thirty millions.

In acute lobar pneumonia, because of the presence of autoinoculation, vaccine treatment should be left to the experienced immunizator, preferably one able to employ the opsonic index. Early administration is important, the initial dose being twenty millions. Where this dose brings down the temperature it may with advantage be repeated in two or three days, the curve of the opsonic index, or in default of this, the curve of the temperature, being here taken as a guide. A drop in the patient's temperature indicates improvement in the opsonic content of the blood. If the initial dose of twenty millions leaves the patient's condition unaltered, a further dose of thirty millions may be administered next day. Attempts at inoculation treatment in pneumonia by the amateur may prove disastrous and even fatal.

In the average case of pneumococcus catarrh, and in chronic pneumococcal bronchitis, an initial dose of fifteen to twenty millions is recommended. Where the pneumococcus causes infections outside of the lungs, as in otitis media, empyemata, sinuses, or cystitis, favorable results have followed inoculations.

Bacillus Coli Infections.—Bacillus coli infections of the urinary tract, producing nephritis, pyelitis, and cystitis, and infections in other parts, such as postoperative abscesses following appendectomy and herniotomy, are all suitable cases for inoculation treatment. Autogenous vaccines are necessary, as experience with stock vaccines of this microorganism has shown them to be very unsatisfactory.

Cases of acute bacillus coli pyelitis, cystitis, ureteritis and nephritis, with fever and other evidences of systemic infection, should, however, be left to the experienced immunizator, because they require opsonic estimations as a guide to safe dosage. Correct application of bacillus coli vaccine by skillful hands in cases of this kind have produced results varying from a complete cure to considerable amelioration of the symptoms of micturition, local discomfort, pyrexia, anaemia, and los of weight.

The dose of the bacillus coli vaccine is five to twenty millions every five to seven days.

Bacillus Typhosus Infections.—At St. Mary's a stock typhoid vaccine is prepared from a culture that has been frequently tested as to its immunizing power—in two concentrations—viz., one thousand millions and two thousand millions of bacilli per cubic centimetre. This vaccine is of undoubted value in treating local infections and suppurating foci caused by the bacillus typhosus, and as a prophylactic immunizing agent. The stock typhoid vaccine deteriorates with age, and should be used within three months from the date of its preparation.

In the vaccine treatment of typhoid fever experience has been too limited as yet to draw definite conclusions; therefore, the field should be restricted to expert immunizators. The investigations of Dr. W. H. Watters of Boston, Dr. J. G. Callison of New York, and others, encourage the belief that properly administered inoculations are of undoubted value in the treatemnt of this disease. Therapeutic doses seem to be without injurious effect, and a comparison of hospital cases so treated with a series of cases treated in the usual way indicates that in the inoculated cases the duration of the fever is shortened and relapses, sequelae and complications are less frequent. The mental effect upon the patient is very good, and compared with the non-inoculated cases the general appearance of the patients treated

with vaccines is happier and more comfortable. The more severe the case, the smaller should be the dose, and the inoculations are to be repeated at varying intervals, the small amounts being administered more frequently, sometimes at daily intervals. The dose varies from one to one thousand millions. Dr. Callison recommends an initial dose of three hundred millions as soon as the diagnosis is made, repeating the inoculation every third or fourth day, but increasing the amount at each inoculation one hundred millions, until one thousand millions are given. Dr. Watters prefers much smaller doses, his initial dose being not more than thirty to fifty millions. In one very critical case which, however, terminated favorably, the dose was only one million, but this was repeated daily.

Prophylactic Inoculation.—The inoculation of bacterial vaccines to produce immunity against various diseases opens up another very large field for investigation and experiment. The result of Wright's researches has positively demonstrated that in certain cases absolute protection may be obtained in this way. The most notable success has been with typhoid, against which disease it is possible to give substantial immunity to an individual without requiring him to undergo an actual attack of typhoid fever with all its attendant risks to himself and others. The introduction of dead typhoid microbes into the body has been found to be sufficient of itself to bring about immunizing responses which prevent the living microbe from making good its footing there. The wisdom of such a precautionary measure has been fully demonstrated and the protective value of typhoid vaccine has been as perfectly demonstrated as any fact in medicine, by most conclusive proofs. The importance of this discovery is very great both in averting threatening danger during an active epidemic, by inoculating the members of an infected locality who have escaped the attack, and in protecting travelers who are compelled to visit countries where typhoid fever is endemic. In this latter class are included the armies of occupation or conquest sent out to foreign lands.

Inoculations against typhoid have been successfully given for several years in the British army. The medical department of our own army has also recognized the great importance of this discovery, and experiments were begun in March, 1909, to test the effectiveness of prophylactic typhoid immunization. Since that date there have been over 45,000 inoculations of which complete record cards have been kept. Not a single bad result has been reported after the administration of the vaccine. Over 95 per cent. of the men had little or no reaction or discomfort aside from a somewhat tender spot on the arm, which was rarely troublesome, and disappeared in twenty-four to forty-eight hours, and in the last series of 27,000 the reaction remained absent or mild in 99 per cent. In the 45,000, only eleven cases of typhoid with no deaths have been reported, and in at least four of these the diagnosis was not confirmed and there remains some doubt as to its correctness. The procedure has now been regularly adopted in the U. S. Army as a routine measure, and all recruits upon being sworn in are vaccinated against both smallpox and typhoid fever.

Major F. F. Russell, M. D., U. S. A., to whom the writer is indebted for the foregoing data, further informs me that for a long time frequent estimates of the agglutins, opsonins, and bacteriolysins, and in a few cases of the complement fixation-power of the serum of the immunized patient were made. The results were uniform in showing the production of a high degree of immunity, but at the present time only occasional determinations are made.

In the U. S. Navy the writer is informed by Dr. W. C. Braisted, acting chief of the Bureau of Medicine and Surgery, that prophylactic inoculations against typhoid fever have been administered to about 3500 of the personnel of the Navy. No serious results have followed these inoculations, which appear to have effectively prevented the spread of typhoid fever among the 2200 marines encamped at Guantanamo, Cuba, and also to have controlled an epidemic at the Training Station, Norfolk, Va. At the present time the exact figures are not available, but as far as known there has been no case of death from typhoid fever among those having had three doses of the vaccine.

The immunity against typhoid fever obtained by prophylactic inoculations has been shown to last several years. In this connection it is important to remember that the Widal reaction as a means of diagnosis among persons who have been vaccinated is worthless, since the reaction appears immediately after immunization and persists for a variable length of time. In some cases now under obervation it is still present after a year and a half. Among such patients the only rational way of confirming a clinical diagnosis by laboratory methods is by resorting to blood cutures.

The dosage has been definitely determined. In England one thousand million devitalized typhoid bacilli are administered to an ordinary healthy adult and the patient is advised to rest in bed until the next afternoon. A slight and varying amount of malaise, headache, and possibly joint pains, will occur, but they usually pass off in twenty-four hours. Not less than ten days subsequent to the initial injection a dose of two thousand millions is given, and a similar sequence of symptoms may follow, but is usually less marked than after the primary inoculation. Only two inoculations are deemed necessary to give complete immunity, and estimation of the opsonic index in connection with prophylactic immunization against typhoid is not determined. In the U. S. Army the dosage is five hundred millions for the first and one thousand millions for the second and third doses, and the patient is advised not to use alcoholic drinks or to take active exercise. He is encouraged to attend to his ordinary business, and as a rule is able to do so. Three doses are administered. The patient is never advised to remain in bed after the inoculation, this being considered unnecessary.

In prophylactic inoculation against the gonococcus doses up to two hundred millions have been given to normal men without marked symptoms. A safe commencing immunizing dose to a healthy individual would be about one hundred millions. This inoculation should be repeated in a week with a larger dose, about two hundred millions, if the first dose did not produce any marked symptoms. The immunity produced in this way should last for several weeks. Prophylactic immunization against gonorrhea is important where marriage is contemplated between individuals one of whom has had the disease, for the protection of the uninfected party to the contract. This applies equally to cases where the disease is contracted innocently or otherwise by a married man or woman, and we wish to prevent the infection of the healthy partner.

With regard to prophylactic inoculation against influenza very little has been done. Captain S. R.

Douglas, Sir A. E. Wright's associate at St. Mary's Hospital, London, informs the writer that he once gave himself a dose of fifty millions of the influenza bacillus vaccine when it was first made without any more discomfort than a slight local reaction. He suggests giving repeated doses, and increasing them as long as they do not produce any marked clinical symptoms. How much immunity is produced or how long it lasts is not known, but Captain Douglas believes one might measure the agglutinins after the second inoculation.

The evidence in favor of prophylactic inoculations is accumulating in a growing mass, so that we may hopefully look forward to the time in the near future when if danger threatens us we can by these means so stimulate the latent capabilities of the immunizing mechanism of the body that when disease attacks the bodily defenses will be prepared to repel the assault.

Tuberculous Infections.—The methods of therapeutic inoculation have been used most largely and with the greatest prospect of doing good by Wright and others in tuberculosis, more particularly the chronic, strictly localized and apyrexial infections, *i.e.,* tuberculous glands, cystitis, ulcers, sinuses and deposits in the joints and bones.

The number of patients suffering from such troubles is very great, and the number of invalids and cripples caused by tuberculosis is increasing every year. Tuberculous infections may be found in any part of the human system, and when we consider this fact and realize how large a proportion of the human race suffer from this infection the value and importance of a specific treatment that can reach it wherever it may be located becomes very evident.

It has been found that under proper inoculation treatment in the class of cases enumerated above, the symptoms gradually improve, the deposits shrink and disappear, and in the majority of instances a successful outcome may be safely predicted as a normal consequence of the treatment, although of course success cannot be expected in every case, or until after a prolonged course of treatment. The results at St. Mary's have been most brilliant, and leave no reasonable doubt that the recoveries have been due directly to the effect of the inoculations.

Tuberculous glands under tuberculin inoculation treatment are a triumph for this system of therapeutics. Such cases rarely fail. When inoculations are given as post-operative treatment in tuberculous lymphnoditis we find that less radical surgery is required, recurrence is prevented, and it is not so essential to excise all the infected tissue. Where the inoculations have been resorted to prior to operative treatment, liquefaction and pus formation result more quickly, and removal may be accomplished through a small puncture or a large aspirating needle, care being observed to avoid secondary infection. Continued inoculation treatment results in a cure, without recourse to packing or drainage tubes, and the resulting scar is very slight.

Tuberculous iritis, cystitis, dermatitis, nephritis, epididymitis, orchitis, peritonitis, and bone or joint lesions, have all yielded to inoculation treatment in the hands of experienced immunizators. Immediate results should not be looked for from inoculation treatment in suitable tuberculous infections as six to nine months is usually the shortest period required for a cure. The prognosis is better if treatment is begun early.

We must bear in mind in treating bladder cases that even after a cure has been effected the frequent micturition often continues, because scar tissue has formed, and when this is put on the stretch by the presence of urine in the bladder, there is a desire to urinate. This applies equally to all severe cases of cystitis after a cure has resulted, whatever the infecting microorganism may have been. It is well to forewarn the patient of the possibility that this symptom may continue even after the disease has been cured.

Pulmonary phthisis is a theme by itself. Inoculations with tubercle vaccine should not be resorted to while active symptoms are present, but the cough and fever should first be allayed and the patient kept quiet and at rest. Such cases should be treated only by an expert immunizator and opsonist, otherwise, as previously pointed out, serious if not fatal harm may be done to the patient. Here the opsonic index is most important.

In treating phthisis, where the sputum shows a great many pneumococci with a few tubercle bacilli the indication would be, of course, to try a pneumococcus vaccine, made from an autogenous organism, and at the same time endeavor to raise the resistance to the tubercle as well, warning the patient that such an attempt will naturally take time, and that six months will be the shortest period in which we may hope to accomplish anything. This applies equally to any other complicating infection such as the streptococcus.

In inoculating for phthisis the dose should be very small because there is a certain amount of spontaneous antoinoculation taking place from the diseased areas in the lungs, hence a dose suitable one day might be excessive the next, a fact which emphasizes the importance of the opsonic index as a guide to the dosage in such cases. A negative phase of only a few hours' duration might give rise to disastrous activity on the part of the tubercle bacillus.

Bacterial vaccines are standardized in such a manner as to contain in each c.c. a specified number of microbes, except in the case of tubercle vaccine where each c.c. contains a specified weight of the powder obtained by the comminution of tubercle cultures. The tubercle vaccine thus prepared at St. Mary's from tubercle bacillary emulsion (B. E.) is put up in three strengths, viz., 1/2000th, 1/5000th and 1/25,000th milligramme of dried comminuted tubercle bacilli per cubic centimeter. By simple calculations doses from the minimum to the maximum may readily be determined. The dose varies from 1/100,000th to 1/3000th milligramme, at four to ten-day intervals. The increase should be cautious and gradual, with the exercise of extreme care to avoid any clinical symptoms of a negative phase. In generalized tuberculosis, such as phthisis and tuberculous peritonitis, larger doses than 1/50,000th of a milligramme are to be given with the greatest caution, and in advanced cases such a dose even may be excessive. In strictly localized infections in adults the doses may range from 1/15,000th to 1/10,000th of a milligramme. The larger doses are to be given only to the mildest afebrile cases, where the infection is slight, and there is no lung involvement.

The dosage may be summarized thus: The minimum effective doses vary from 1/100,000th to 1/50,000th milligramme, in extensive infections; and from 1/15,000th to 1/10,000th in slight infections; maximum doses vary from 1/6000th to 1/3000th milligramme, these latter to be used only

in afebrile, mild and localized infections. The doses would be much smaller for children.

It is always very important to determine whether or not there is any lung involvement, before beginning our inoculations for any localized trouble such as a tuberculous lymphatic gland, in which case the size of the dose should be reduced to 1/50,000th or less. If the lung involvement is considerable, inoculations should not be resorted to, except in conjunction with estimations of the opsonic index.

Influenza Infections.—A vaccine may be prepared from cultures of the Pfeiffer influenza bacillus isolated from cases of acute influenza or chronic bronchitis caused by this bacillus. This vaccine is applicable to every case of "grip" or complicating infection where the influenza bacillus has been identified. The dose varies from five to fifteen millions. A stock vaccine is prepared at St. Mary's Hospital, London.

The Neoformans Vaccine.—The *"Micrococcus neoformans"* of Doyen, which is a microbe of the staphylococcus family, is found in most malignant tumors, and in almost every carcinoma. Wright's theory concerning this microorganism is that it is a secondary infective agent which invades the tumor and that it is not the primary causal agent of the cancer; it is responsible for the suppurative and inflammatory changes and much of the pain commonly associated with malignant growths, besides having much to do with the development of the cachexia. The neoformans vaccine has been demonstrated to be a valuable therapeutic agent in relieving pain, controlling local inflammation, and indirectly prolongs life by diminishing the cachexia. It is a valuable aid to differential diagnosis between cancer and syphilis in connection with the opsonic index. The initial dose is fifteen millions, cautiously increased to thirty millions. An overdose may greatly aggravate the pain. The site of the inoculation should be away from the tumor.

Diseases of the Accessory Nasal Sinuses.—In infections of this class, such as empyema of the frontal sinus, autogenous vaccines may be readily prepared. The initial dose should be much smaller than ordinary on account of the limited space for the reactive inflammation accompanying a severe negative phase, should the dose be large. The dosage should be increased as rapidly as possible. The length of interval between inoculations will depend on the amount of reaction following the injection, but as a rule one should give the smaller doses two or three times a week and finally get to a point where a single large dose will keep the immunity up for several days.

Concluding Remarks.—Bacterial vaccines probably retain their efficacy for an indefinite period. The one notable exception to this dictum is the typhoid vaccine, which should be used within three months from the date of its preparation, as experience seems to indicate that it becomes inert after this period. All vaccines should be kept in a cool, dark place.

When it is possible to have an autogenous vaccine prepared by a competent bacteriologist, this procedure is ordinarily to be preferred to inoculations with a stock vaccine. It is always proper, however, to use a reliable stock vaccine while we are waiting for an autogenous one to be prepared. Two of our large manufacturing biological companies early sent physicians to St. Mary's to learn Wright's technique and these men are now in charge of the manufacture of vaccines for their respective concerns.

The stock staphylococcus vaccine is used at St. Mary's for practically all staphylococcal lesions, and only very rarely has it been necessary to make a special autogenous vaccine. The stock streptococcus vaccine is used initially in acute cases, but as soon as the infecting streptococcus is isolated an autogenous vaccine is prepared, this having been found to be much more specific. The stock streptococcus vaccine gives very satisfactory results in the treatment of erysipelas.

In colon bacillus infections an autogenous vaccine is always prepared, because a stock vaccine has been found to be of very little use. In gonorrheal infections, outside of the urethra, stock vaccines must be relied upon, because of the difficulties in the preparation of autogenous ones. The stock acne vaccine, the stock influenza, neoformans, tubercle and typhoid vaccines have all proven very satisfactory. If a stock vaccine is giving satisfactory results it is always proper to continue its use, otherwise a special vaccine should be prepared and used before abandoning the treatment, particularly if the case is one where a vaccine is clearly indicated. If no benefit results from our vaccine inoculations in a suitable case, the possibility of the existence of a mixed infection must not be overlooked.

The opsonic index, when estimated by a careful and well-trained laboratory worker, although perhaps not mathematically exact, is a valuable guide to dosage and the proper interval between inoculations. The opsonic technique, however, is difficult to acquire. Special and expensive laboratory apparatus is necessary, and considerable experience and skill are essential if reliable results are sought. It also consumes time, each estimation requiring at least one half hour. Many successful immunizators are learning to dispense with it except as an occasional confirmatory control. Some vaccine therapists have become so expert that they have discarded blood examinations altogether and rely entirely upon the careful study of the clinical signs as a more valuable indicator for dosage.

Prominent among the inoculators who are discarding the opsonic index as a guide to dosage is Dr. W. D'Este Emery, a very well-known English immunizator and author. His plan is to watch the clinical symptoms carefully and to use gradually increasing doses until large amounts are given. He believes his results have been better since he adopted this procedure than when he depended upon the opsonic index as a guide. In a recent letter to the author of this paper he writes: "I think we have now reached a stage in vaccine therapy similar to that to which we have passed in the use of tuberculin. No one who has used both the opsonic method and the method of gradually increasing the dose until large amounts are given, is likely to stick to the former."

On the other hand the enthusiastic opsonist will tell us that where estimations of the opsonic index are determined the progress of the patient is more satisfactory, because the inoculations may be safely increased, if the indications are to do so, whereas without the index to guide us, conservative therapeutics might suggest such small doses that the progress of the disease would not be arrested, and the cure of the patient needlessly delayed. By means of the index also, we are able to determine what nature is doing in the way of autoinoculations, and with it as a guide, the expert opsonist

may safely inoculate in certain acute febrile infections, where otherwise the use of bacterial vaccines might be contraindicated.

In the matter of dosage, it is the experience of most conservative immunizators nowadays that smaller doses are to be preferred, at least in beginning treatment, to the very large doses reported, sometimes disastrously, in connection with the earlier experiments with inoculation therapy. Generally speaking, the more severe the infection, and the more pronounced the clinical symptoms, the smaller should be the dose of vaccine employed. Ordinarily the inoculations are repeated twice a week, but where very small doses are used, they may be given more often, in some cases daily minute doses being advantageously employed. *Vice versa,* when the size of each dose is increased to a large amount, the intervals between inoculations should be lengthened.

Finally, we must not regard vaccines as a "panacea" or cure all. Considerable patient study and preparation are necessary to understand their limitations and contraindications, and special knowledge and skill is required if one is to employ them successfully or at all times safely. Their improper application, particularly in acute general febrile infections, may do serious harm, and on account of this danger they should be used only by the duly and properly qualified.

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MOVABLE CECUM AND TYPHLOTOMY.

BY OTTO LERCH, A.M., M.D., PH.D.,

NEW ORLEANS.

PROFESSOR OF MEDICAL DIAGNOSIS, NEW ORLEANS POLYCLINIC.

PAIN in the region of the appendix is not rarely found and, as it is one of the most important diagnostic signs of appendicitis, is regarded with apprehension by patient and physician. Appendicitis is always a very serious disease and has to be watched with the greatest care. Though the beginning of the trouble may be light and promise speedy recovery, complications may arise at any moment necessitating an immediate operation. Pain over McBurney's point, tumor, fever, constipation, rigidity of the recti, high pulse frequency, leucocytosis, and a characteristic tongue are symptoms that exclude any other affection. The disease and its complications is so much dreaded that up to the present it has been considered correct practice to remove the appendix when slight symptoms point to that region and many an appendix has been removed in which even the operating surgeon was not able to discover a lesion of any consequence. Frequently the troubles persist after the appendectomy. This view is gradually inducing a change towards a more conservative practice. In Fischel's article on this subject, published in the June number of the *Müenchner medizinische Wochenschrift*, he quotes Hausmann and others who have studied and described a condition characterized by (1) pain in the cecal region, spontaneous and colicky, or felt only on palpation and intermittent; (2) gurgling in the ileocecal region and a tumor felt like an air cushion, very painful, on deep palpation; (3) intestinal disturbances; either severe constipation or alternating diarrhea and constipation.

The author calls attention to the absence of the other symptoms of appendicitis—rigidity of recti, leucocytosis, the characteristic tongue, and fever, though he admits having seen cases of cecum mobile with light fever. Skiagraphic views have shown widening and excessive mobility of the cecum, retention, and slow motion of the chyme in the cecum and ascending colon in this condition.

These investigations prove beyond all doubt the local character of the trouble, and the views regarding the clinical picture of the disease are unanimous, though the explanation as to their etiology differs. A typhlitis stercoralis and constipation with torsion of the cecum are considered to cause its mobility and descent with accompanying pains and tumor.

Klose adds that anomalies of development may be at the base of this condition, though a movable cecum does not necessarily cause pain. Some claim to have cured the trouble by fixation of the cecum, others by cutting adhesions and mobilizing it still more.

Fischel denies the mobility of the cecum and constipation to be the cause of the trouble, because in some a mobility of the cecum is not found and because in others the trouble has been cured by increasing its mobility. He denies the constipation to be the etiological factor, because many of these patients suffer from diarrhea. This observer claims chronic catarrhal typhlitis to be the cause of the trouble, producing motor insufficiency and atony with consequent slow movements, retention of chyme, fermentation, pain, constipation, diarrhea, and gaseous tumor, favored occasionally by a movable cecum. He insists that this condition offering a well-characterized clinical picture ought to be named "typhlatonia," and not "*Cæcum mobile,*" and warns against too frequent surgical interference. The report of cures obtained by diametrically opposite procedures, fixation and mobilization of the cecum, leave doubt as to their efficiency, especially as the rest and dietetic treatment following every laparotomy must favorably influence the disease, and as remission of many years' duration is known in its course. The changing condition of the catarrh explains the changing severity of pain and the remissions, though torsion and pulling of the distended cecum and the mesenteries may explain some of the painful attacks.

I have met with this condition characterized by pain in the region of the cecum, by a tumor gurgling and painful on palpation, and by intestinal disturbances—constipation or diarrhea or both, changing from one to the other. I have observed patients, not fully and quickly relieved by medical treat-

ment, insisting upon an operation, where the appendix was found practically in a normal condition, the pain persisting after the appendectomy, which in each case was performed.

I have studied this condition for a number of years in patients suffering from an enteroptosis, have a number of cases in my records, and used to call it pseudoappendicitis. I never have found it without enteroptosis as the underlying condition, and always have been under the impression that it was a symptom complex of this underlying trouble. This is easily recognized when well developed, but difficult to diagnose in fat patients in whom palpation of a movable kidney is often impossible, and the descent of the stomach is difficult to demonstrate.

In a paper on "Percussion, and Percussion of the Kidney" (MEDICAL RECORD, February 4, 1911), I have shown how at least some of the difficulty may be overcome. The drop kidney and its mobility may be readily demonstrated by percussion, no matter how fat the patient. I have called attention to the fact that one examination is in many instances not sufficient, as the kidneys will slip in place and resume the normal position when the patient lies horizontally, face downward, and it is frequently necessary to have this patient roll himself over to displace the kidney again.

In an article on "Displacement of the Abdominal Organs" (MEDICAL RECORD, December 9, 1905), I state that pains simulating appendicitis are a frequent symptom and, as to be expected, the intestinal functions are always disturbed, flatulency and constipation being common, though diarrhea may be found alternating with constipation. Large flakes of mucus are often passed, though their passage does not cause pain in every instance. One patient of mine passed for weeks at a time masses of jelly-like mucus without the slightest pain, and there was no pain on pressure along the colon, though the appearance of the mucus in the stools greatly affected and worried her. A dislocation of the intestines, which always may be found in these cases, coupled with the disturbance of the nervous system causing hypersecretion of mucus, explains these peculiar symptoms.

As stated, I have for many years recognized this condition—pain in the appendix region, gurgling tumor and intestinal disturbances, constipation and diarrhea, occurring as a symptom complex accompanying enteroptosis. Instead of the gaseous tumor in the ileocecal region, I have frequently found a contracted colon, feeling like a smooth, hard cylindrical tumor, sometimes alone, sometimes coupled with a contracted transverse colon or flexure, rarely more than one or two sections of the colon being contracted at the same time. This condition accompanied by the same symptoms—pain, paroxysmal and colicky—or on palpation in the appendix region, with intervals free of all pain, and constipation or diarrhea or both alternating.

Not denying that this well-characterized clinical picture as described by Fischel and others may occur without enteroptosis, I wish again to call the attention to the difficulty of diagnosing it in fat people. We find two main types of enteroptotics: one with an *abnormally straight spine, the other with the lumbar curve greatly exaggerated.* Those of the former type are usually very thin and emaciated, those of the latter type well nourished or obese, and it is in this type that the affection is difficult to recognize. However the nervous and gastrointestinal symptoms, the history, the chronicity and progress of the trouble, etc., call at once attention to the affection and we may find on a second examination proof overlooked on the first. As mentioned before, the kidney can be readily percussed, but will often slip in place when the patient is in position for percussion. Absence of kidney dullness, kidney dullness displaced downward or changing but slightly on change of position, with absence of symptoms of nephritis make the diagnosis. I agree with Fischel that the catarrh is in most cases, if not in all, the direct cause of the trouble. The constipation which is most frequently present calls for purgatives to empty the bowels and the constant use of these is alone sufficient to cause catarrh; once this is well established, diarrhea will alternate with constipation and if the condition is not relieved will finally end in continuous diarrhea. A frequent spastic contraction of the colon preventing the contents of the colon from moving normally, may also be the cause of Fischel's typhlatony.

Fever is occasionally found, sometimes prolonged and serious due to autointoxication, and a busy practitioner, even if not taking it for appendicitis, will occasionally mistake it for ptomaine poisoning.

Though I have found this syndrome only with enteroptosis, it is a well-characterized clinical picture simulating appendicitis and to be differentiated only by the absence of other prominent symptoms of this disease. Neither does it matter whether we name it movable cecum, with Hausmann and others, or call it with Fischel, typhlatony, so long as it will lead to a more conservative surgery and save people from having the belly cut open for an appendicitis that does not exist, and the appendix removed because found too long, too short, or bound down by adhesions. However, if there is any doubt as to the diagnosis we have to remember that appendicitis is a serious disease, and it is wise to watch the course with a surgeon.

I report a few cases to illustrate the subject:

CASE I.—Mrs. W. R., thirty-five years of age, no children, wife of a physician. Her family history is negative, except that she states her mother to be of a very nervous temperament. She passed through diphtheria, scarlet fever, and the other diseases of childhood and later had several attacks of malaria and ptomaine poison. Came to me three years ago complaining of gastrointestinal troubles, diarrhea and constipation alternating, severe paroxysmal pains in the region of the appendix, and a history of constipation for many years previous to the attacks of pain in the appendix region and diarrhea. The patient is very nervous, complains of nervous chills and various other hysterical and neurasthenic symptoms. Height, 5 ft. 5½ inches; weight, 93 pounds. Organs normal. The lower curvature of the stomach is a hand's width below the navel; the right kidney is palpable, both kidneys are displaced downward (percussion); the uterus is prolapsed and a gaseous tumor is felt in the cecal region, very painful and gurgling on palpation. The patient had an exceptionally light attack last winter lasting only a few days, following mental strain and indiscretion in diet, whereas previous attacks diagnosed as ptomaine poisoning had lasted weeks at a time. With this exception she has been free of all troubles during the last two years. Her present weight is 118 pounds.

CASE II.—Mrs. H. F. P., forty-four years of age, wife of a farmer; three children, one living,

two dead, soon after childbirth. People on mother's side very nervous, otherwise her hereditary history is negative. Passed through diseases of childhood and various attacks of malaria and grippe. The patient is very nervous, compains of sour stomach, severe constipation since last child was born, seventeen years ago; cutting and tearing pains in the region of the appendix from time to time, though for weeks and months she may be free of these pains. With this she presents a number of nervous symptoms; chills which she calls nervous, trembling, exaggerated knee reflex, absence of uvula and cornea reflex, pressure points of pain, choking sensations, etc. Height, 5 feet 5 inches; weight, 95 pounds, when first seen on June 29. Organs found normal. Stomach stands out like a bladder below the navel. Both kidneys are prolapsed and palpable. Uterus prolapsed, flexure contracted, gaseous gurgling tumor felt in cecal region, painful on pressure. The patient rapidly improved under treatment.

Case III.—Miss A., twenty-two years of age; family history negative. Passed through diseases of childhood and was once treated for appendicitis. Seen first March, 1908. Complains of severe pain in the region of the appendix and constipation for many years. Depends on daily dose of purgatives to empty bowels. Organs normal. The right kidney is palpable; the lower curvature of the stomach is below the navel; the appendix feels like a pencil. Improved under treatment. I then lost sight of her for some time and heard that two years later laparotomy was performed, appendix was found practically normal but was removed. Since then she has had several attacks of pain in the appendix region and has just returned for treatment.

Case IV.—H. B., twenty-four years of age, clerk. Hereditary history negative. Former diseases, measles and scarlet fever. Patient nervous, constantly worrying about himself. First seen in January, 1908. Complained of constipation for years and severe paroxysmal pains, starting around the navel and settling in the appendix region. Organs normal. Right kidney displaced downward, lower curvature of stomach at navel, transverse colon contracted. Patient improved and was free of all troubles for several years. A new attack occurred after an indiscretion in diet and laparotomy was advised by the attending physician, and appendix found bound down by adhesions.

These histories are but few of many of patients presenting pain in appendix region, gastrointestinal disturbances, constipation, and constipation alternating with diarrhea, a gaseous painful gurgling tumor in cecal region, and spastic contraction of some section of the colon. The laporotomies performed did not disclose appendicitis and relief after appendectomy was not obtained. I treat these patients with rest, if necessary in bed for some time, if there is fever, otherwise intermittent rest, specially after the main meal at noon, and early bedtime to relieve the circulation. I find that many of these patients sleep on their stomach, a position allowing the kidney to float in position and that they sleep without a pillow. I therefore advise them to place bricks under the foot of the bed to facilitate the replacement of the abdominal organs, empty them, and increase the flow of blood to head and chest. This with the intermittent rest saves heart and vessels, the face and chest fill out even before the gain in weight is at all considerable. These patients with pendulous flabby abdomen look pale and anemic, although the blood is found in perfect condition; this is due to its distribution, too much in the abdomen, not enough in the other organs and the periphery, which expains also the cold and clammy hands, the nervous chills, the contracted arteries, and the nervous symptoms. A careful selection of diet, indicated by climate, season, state of nutrition of the patient and condition of stomach and intestines. Hot moist applications or Prissnitz bandages, later the cold sitzbath and douches, with some general tonic, and hydrotherapeutic measures at night if sleeplessness is complained of. Atropine or belladonna combined with sodiums, sulphocarbolate or some other intestinal antiseptic to counteract pain, fever, and excessive diarrhea, and other drugs that may be indicated to influence the gastric and nervous symptoms, the anacidity or excessive acidity of the stomach contents, etc. Intestinal antiseptics are made light of and discarded by many; it seems to be the idea that they are useless because they are insufficient to sterilize the intestines. Sterilization of the intestines cannot of course be reached, neither can it be the aim of the treatment. Just as in fever which has long been recognized to be beneficial when it runs a certain course and presents a certain temperature curve, we give antipyretics only to reduce hyperpyrexia, so in intestinal diseases it can only be the object of treatment to reduce an excessive fermentation and that can be readily done with our therapeutic means and will be always found of benefit and will influence the course of the disease favorably. Massage lightly given along the course of the colon and later when the acute condition has passed more thoroughly and given with the object of relieving constipation and strengthen muscles, combined with suitable exercises, is always of value in the treatment of this disease.

A well-supporting bandage is indicated in almost every case. Most of the bandages on the market are cumbersome and do not support, they fit to the abdomen like a glove and not at all in thin persons. I have designed a bandage that meets the indications and have described it in a previous publication. It consists of a piece of elastic, which is fitted above the pubes in front and held by legstraps and three elastic straps buckled to a second shield across the spine. These straps secure a backward and upward pressure and are easily regulated by the patient so as to be comfortable. The bandage is not cumbersome and gives full support. With a treatment carried on along these lines and with the final object of strengthening the abdominal muscles and promoting better blood distribution, the patients usually do well.

1628 Upperline Street.

QUININE AND UREA HYDROCHLORIDE: ITS PREPARATION, AND ITS USE AS A LOCAL ANESTHETIC, WITH A REPORT OF TEN CASES.

By WILLIAM A. BOYD, B.S., M.D.,

WESTPORT, CONN.

No argument in favor of the use of this form of local anesthesia has ever been more forcibly presented than when Dr. L. J. Hirschman said, "the use of any agent which will prevent operative pain while not interfering with the consciousness of the patient or endangering life by interference with respiration, circulation, or elimination, is cer-

tainly a great step in advance in surgery." It is the purpose of this paper to review some of the literature which has been published on the subject of the use of quinine and urea hydrochloride as a local anesthetic, referring to its preparation and its introduction, reporting several of my own cases as a supplement. At the conclusion is given a list of the articles published on the subject which I have been able to find in periodical literature.

This preparation is also known as chininum bihydrochloricum carbamidum, urea quinine, and quininæ carbamidum. It is a double salt of quinine and urea, and is prepared by dissolving 400 parts of quinine hydrochloride in 300 parts of hydrochloric acid, adding to the solution 60 to 61 parts of pure urea, warming the mixture until dissolved, filtering it through glass wool and allowing it to crystallize. Urea hydrochlorate and urea hydrochloride are synonymous.

Properties.—It is soluble in its own weight of water or in alcohol. It is also soluble in 800 parts of chloroform. It occurs in colorless crystals, which form as four-sided prisms, or as a white powder. Aqueous solutions are acid. It is non-irritating when injected hypodermically, and produces local anesthesia. It contains 70 per cent. of alkaloidal quinine and about 17 per cent. of urea hydrochloride.

For the production of local anesthesia injections of a solution of from ¼ to 1 per cent. strength are used. The ¼ per cent. solution is said to be free from the risk of producing fibrous indurations, which sometimes occurs with the stronger solution. For minor operations I believe the 1 per cent. solution is the strength of choice. A 1 per cent. solution may be made by dissolving 5 grains in 1 ounce of sterilized water. This is not exactly 1 per cent., but near enough for ordinary purposes. It is also prepared in ½-grain hypodermic tablets. One tablet dissolved in 50 minims of sterilized water yields a 1 per cent. solution.

Method.—The solution is administered in precisely the same way as cocaine. The amount used in an operation varies from 2 to 15 c.c. The fluid should be injected slowly and under light pressure into the area to be anesthetized.

To Dr. Henry Thibault of Scotts, Ark., must be given the credit of first calling the attention of the medical profession to the use of this anesthetic. On September 15, 1907, he read a paper on this subject before the Medical Society of Arkansas. In this he stated that the anesthetic properties of quinine had long been recognized, and that it had power to inhibit nervous action by contact with terminal nerves. Its use as an anesthetic was suggested to him by its hypodermic use in the treatment of malaria. He found that there was no evidence of pain on a second injection in the same area after an interval of 5 minutes. All soluble salts of quinine could be used, but the bichloride was most convenient on account of its greater solubility. Up to the time when he presented his report he had used it in 65 minor operations. He recommended a 1 per cent. solution for local injection, although in his first operations he used a 1½ per cent. and a 2 per cent. strength. For local application to mucous surfaces solutions, varying in strength from 10 per cent. to 20 per cent., were suggested. He obtained a perfect anesthesia which lasted from 4 to 5 hours. His conclusions were: (1) It is efficient in 1 to 2 per cent. solutions. (2) Healing is as rapid as with any other local anesthetic. (3) It is safer than any other local anesthetic of anything like equal efficiency. (4) Solutions can be kept in stock and boiled repeatedly without deteriorating. (5) It is much less expensive than any of the more dangerous drugs used for local anesthesia. (6) It is neither patented nor proprietary. (7) It can be obtained almost anywhere. (8) It is efficient when applied in 15 to 20 per cent. solutions to raw surfaces on cotton pledgets. (9) The anesthesia lasts from 1 to 6 hours.

Following the report of Dr. Thibault, its use for tonsillectomies was recommended by Dr. E. J. Brown.

The most complete report to date, however, was made in October, 1909, by Drs. Hertzler, Brewster, and Rogers. They reported that a ½ per cent. and a 1 per cent. solution produced a perfect anesthesia which lasted from 4 to 5 days; after use of the ½ per cent. strength sensation was not restored to any extent for 10 days, and with the 1 per cent. solution sensation was not completely restored after 2 weeks, and at no time was there the least pain. In some cases they found the edge of the wound indurated and thickened. The thickening appeared to be due to cellular infiltration. By experiment it was found that the exudate began to appear in a few minutes and its was determined that the amount of exudate depended on the strength of the solution. A ½ per cent. strength showed less exudate than a 1 per cent., and in a ¼ per cent. only traces could be discovered. They stated that by adding physiological salt solution the induration was little or not at all marked, but the duration of the anesthesia was much lessened. They recommended ¼ per cent. to be the strength most desirable for anesthesia in the class of work where speedy primary union of the skin is desirable, and where duration of the anesthesia beyond several hours is not required. Their conclusions were: (1) It is absolutely safe; (2) Duration; the after-pain in certain wounds is avoided; (3) It has a superior hemostatic effect.

Hertzler and co-workers observed that the weaker the solution the less the induration noted on palpation. In the use of the ¼ and 1/6 per cent. solution scarcely any was noted. The stronger solution is desirable because of the hemostatic effect exercised by the fibrinous exudate. In regions where primary union is not necessary, they found the stronger solutions to be most satisfactory. Hertzler desires particularly to emphasize the value of this anesthetic in two operations: (1) In operations around the anus (fistulas and hemorrhoids), and (2) in tonsillectomies.

Hirschman used this anesthetic quite extensively in anorectal surgery. For hemorrhoids he injected 1 ounce of a 1 per cent. solution and waited 10 minutes. He says the advantages over any of the other anesthetic drugs may be summed up as follows: (1) It is soluble in water. (2 It can be sterilized. (3) It is equal to cocaine in anesthetic power. (4) It is absolutely non-toxic. (5) It has a pronounced hemostatic action. (6) Post-operative anesthesia lasts from 4 hours to several days. (7) It is inexpensive and almost always available.

Graham, who has used it quite extensively, advises a 1 per cent. solution, and says that it should never be used intravenously. He used a larger quantity of it than of cocaine. He boiled the solution before using, and gave hypodermics of 50, of 55, and of 80 minims.

Nicholson used it in 30 cases. All were satisfactory except one. He mentions the following advantages: (1) Its solubility; (2) it admits of sterilization; (3) it has superior anesthetic properties; (4) it has pronounced hemostatic action; (5) duration of post-operative anesthesia; (6) it is non-toxic; (7) it is inexpensive.

The only report from Europe which I have been able to find is the one of Dr. Gaudier of Paris. He performed with this method numerous operations on the nose, superficial tumors, and other lesions in mucous membranes. It was his experience that this method of anesthesia did not prevent local hemorrhage, and that the oozing recommenced at the slightest excuse, when the dressings were changed. He stated that the anesthesia induced was more slightly localized than with cocaine, and lasted longer. He was able to renew the compressing dressings 5 hours afterwards without pain. The reduction of sensibility persisted on an average fully 3 days. This property he added, may commend this method particularly for treatment of fractures. Cicatrization, however, seemed to him to be a little retarded, the wound not healing quite as quickly as with cocaine. The anesthesia induced did not develop as rapidly as cocaine anesthesia, and was not quite so profound, but it lasted much longer.

Case I—*Removal of Lipoma.*—A. L., age forty-one. A 1 per cent. solution was used. Anesthesia was complete in 7 minutes. No pain and very slight hemorrhage. Redressings were continued at intervals for 14 days, at the end of which time the wound was entirely healed, and no pain was felt at any time during the redressings. A slight induration was noted on the day following the operation. This had entirely disappeared at the end of 3 months.

Case II—*Removal of Fibroma.*—A. P., male, age thirty-six. A 1 per cent. solution was used. There was much pain and profuse hemorrhage. The pain could be accounted for by the fact that the operation was commenced at the end of 2 minutes, before the part was completely anesthetized. Not all the tumor was removed because of the hemorrhage, and because of the restlessness and resistance of the patient, as well as the difficulty experienced in separating the fibrous tissue. Some pain was noted when succeeding dressings were done, and there was some induration. The dressing was removed by the patient, and the wound became infected and did not heal for 3 weeks. When examined 3 months later a slight depression was noticed where the tumor was removed, and there was still some thickening about the site of the operation, but some of this may be accounted for by the fact that a small part of the tumor had not been removed.

Case III—*Removal of Lipoma.*—A. J., male, age thirty-four. A 1 per cent. solution was used: The anesthesia was complete in 7 minutes. No pain; very slight hemorrhage; no pain on subsequent dressings. Wound healed in 14 days. There was a slight induration following the operation, but at the end of 3 months this had entirely disappeared.

Case IV—*Circumcision for advanced phymosis.*—A. B. C., age twenty-seven. A 1 per cent. solution was used. Some pain. The anesthetic did not prove very effective in this case, probably because the incision was made before the part was thoroughly anesthetized. The latter part of the operation, however, did not seem to give the patient much pain and on the whole, he bore the operation well. The parts seemed to be thoroughly anesthetized 6 minutes after injection. There was very little hemorrhage, although the dorsal vein and its branches were quite large. The wound was dressed the following day and the patient claimed to feel no pain whatever. The dressings were reapplied on alternate days for about 16 days, and at the end of this period the wound was entirely healed, the patient feeling no pain at any time during the dressings. There was a slight induration at the frenum, but this gradually disappeared.

Case V—*Removal of two Lipomas.*—J. R., age forty-four, male. A 1 per cent. solution was used. Complete anesthesia in 6 minutes. There was only a slight hemorrhage, and no pain. At the end of 16 days both incisions were entirely healed, and the redressings at intervals during this period caused no pain. No induration remained after the healing of the wounds.

Case VI—*Removal of Lipoma.*—J. G., age thirty-four, male. A 1 per cent. solution was used. Complete anesthesia at the end of 8 minutes. No pain. Very slight hemorrhage. Wound completely healed on twelfth day after operation. No pain when redressings were applied. A slight induration was present 3 months after operation. I did not have an opportunity to see this patient after that time.

Case VI.—*Circumcision.*—P. F., age thirty-eight. A 1 per cent. solution was used. Moderate hemorrhage and slight pain. Operation was commenced 8 minutes after solution was injected. The day after the operation the patient removed the dressing and the wound became infected, and it was 15 days before it entirely healed, but during the redressings there was no pain. There was some induration following the operation, but this had entirely disappeared at the end of 3 months.

Case VIII—*Circumcision.*—J. W., age twenty-nine. A 1 per cent. solution was used. Complete anesthesia in 8 minutes. No pain. Very slight hemorrhage. Wound entirely healed at the end of 9 days. No pain during the several redressings. Two months after the operation there was a slight induration, but this disappeared later.

Case IX—*Removal of Lipoma.*—G. L. age forty, male. A 1 per cent. solution was used. At the end of 6 minutes the part was completely anesthetized. No pain, hemorrhage slight. Redressings were applied at intervals until the end of 14 days, when the wound was entirely healed. There was no pain during the redressings. One month after the operation there was a very slight induration present.

Case X—*Incision of Boil*—A. E. G., age twenty-two, male. A 1 per cent. solution was used. After a wait of 8 minutes the incision was made. There was a very slight hemorrhage and slight pain. Pressure from dressings caused some pain, particularly on the fourth day after the operation.

In order that I may not be misunderstood in my statement in regard to there being no pain when redressings were applied, a few words about my method of surgical dressings are necessary. Immediately after the operation wet bichloride dressings were applied, and the same on the second day; after which I used aristol as a dry dressing. If necessary the bichloride dressings were continued for a longer period.

Conclusions.—(1) In a few of my first cases I commenced my operation before the part was completely anesthetized. I would suggest that an interval elapse of at least 10 to 20 minutes. (2) Post-operative anesthesia lasted on an average 3 days. (3) No dermatitis followed its use. (4) It is less expensive than cocaine. (5) It is soluble in both alcohol and water. (6) It has a very decided hemostatic effect. (7) There has been some induration in the majority of my cases. At the end of 3 months this had disappeared in nearly all of them. (8) Some cases have been reported in which it was successfully used in major operations. Thus far I have used it only in minor operations. (9) Any operation usually done with cocaine can be done with this anesthetic. The technique is precisely the same.

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PSYCHIC INDIGESTION: A STUDY.

By GEO. M. NILES, M.D.

ATLANTA, GA.

The various disturbances of digestion and nutrition due to psychic disquietude are just beginning to receive the attention they merit. Too often have the manifestations of an upset stomach, of faulty secretion of the digestive glands, of inefficient intestinal peristalsis, or of inadequate elimination been combated in a hammer-and-tongs fashion, with never a thought for the nearly intangible, but no less real, underlying psychic cause.

"Nutritional neurasthenia," "Americanitis," "Morbus strenuosus" and other catchy phrases might lead one to surmise that this were a modern disease, an outcropping of twentieth century civilization, and one of which we should be mournfully proud. Psychic indigestion is by no means a recent discovery, but belongs to that category which the man of wisdom had in mind when he remarked "There is no new thing under the sun." Further than that he recognized specifically the influence of the emotions on the nutritional processes of the human body, for in Ecclesiastes we find that "A merry heart doeth good like medicine," and also "Better a dinner of herbs where love is than a stalled ox and hatred therewith." I might also mention a familiar example in Semitic history—Job, with his cell-exhaustion from mental strain, his autoinfection, and consequent malassimilation.

The mechanical functions of the stomach and intestines, as well as the chemical properties of the various digestive juices, are fairly well understood; and, though many of the intermediate steps in the metabolism of different food elements are unexplained, we can at least calculate their potential value in Nature's constructive housekeeping.

Up to the last few years little weight was accorded the factors responsible for the excitation or inhibition of these juices, apart from the chemical and mechanical. It seems that the well-considered words of old Solomon were unheeded, and for many centuries, in the discussion of physiological digestion as well as of pathological indigestion, the influence of the emotions received scant notice.

Briefly stated, when food is taken the secretion first started is due to the *sensations* of eating and of taste—that is, it is a psychic secretion. The afferent stimuli, whose duty it is to transmit messages of gastronomic interest, originate in the mouth and nostrils; while the efferent path, containing the secretory fibers, is through the vagus nerve. This reflex, like a notice sent to the housewife that "company is coming for dinner," insures the beginning at least of gastric digestion, though its effect is supplemented by further action arising in the stomach itself.

Certain foods contain substances called *secretagogues,* which are capable of causing a flow of gastric juice when taken into the stomach—for instance, meat extractives, meat juices, soups, etc. Other foods, such as bread and white of eggs, are lacking in these ready-formed secretagogues and have practically to depend on the psychic secretions. Experiments have shown that such bland articles, when introduced into the stomach of a dog while his attention is diverted elsewhere, or while he is sleeping, produce no flow of gastric juice and are not digested.

In addition, there are substances generated in the intestinal and pancreatic secretions, designated

by Starling *hormones*, from a Greek word meaning to arouse or excite. These hormones are influenced by the food ingested, varying from a slight to a potent effect, as required.

I might say, without going further into the physiology of digestion, that each of the digestive juices is to a great extent regulated in this manner, both the amount and specific quality being furnished according to the chemical and mechanical needs, these needs being previously interpreted by the psychic sensation evolved. This being understood, it is easy to see how the mental state of an individual may exert a marked effect on both secretion and motility of the digestive organs; how a placid and cheerful frame of mind may aid those organs concerned in the upkeep of the body, or how an unhappy or perturbed mentality may set in motion a long train of stomach and intestinal ills.

The cases of true psychic indigestion are almost invariably found in the middle years of life, among those who think for themselves and others. The nerve centers of young children are less impressionable to emotional excitants; and when the stage of the "lean and slippered pantaloon" has been reached, the waning digestive powers, in their halting efforts to produce needed bodily energy, have no time to play fantastic pranks on the "commissary department." Digestive troubles in these two extremes of life are generally due to dietetic errors, while in old people organic and malignant maladies play an important part.

Seldom do we find psychic indigestion among those who earn their bread by manual toil, except in brief explosions due to some violent mental irritants. The strenuous spirits of both sexes, those on whose metaphorical shoulders and hearts rest the burdens of home or municipality; who keep turning the wheels of religion, state, or commerce—these are the sufferers from this indefinite, but no less actual, disorder. In practically all will be found a strain of neurasthenia, possibly an inherited lack of equilibrium, fostered by an over-busy or unhygienic mode of life. Nor must we forget that a *bona fide* digestive neurosis may be set in motion by some gross error or stress of circumstances, and that this neurosis may persist long after the original cause has disappeared. Then, too, there is that vague group of symptoms, secretory, sensory, and motor combined, which, in the absence of a more exact term, receives that much abused cognomen "nervous dyspepsia"—the bane of both physician and patient. Parenthetically, I might observe that "nervous dyspepsia" is perhaps the most overworked single phrase in medical nomenclature, with the possible exception of "uric acid diathesis."

Instances of psychic indigestion are easy to find both in present and past literature. In Burton's "Anatomy of Melancholy," published in 1621, this occurrence is cited: "A gentlewoman of the same city saw a fat hog cut up, when the entrails were opened, and a noisome savour offended her nose, she much disliked, and would not longer abide; a physician in presence told her, as that hog, so was she, full of filthy excrements, and aggravated the matter by some other loathsome instances, insomuch this nice gentlewoman apprehended it so deeply that she fell forthwith a-vomiting, and was so mightily distempered in mind and body, that with all his art and persuasion, for some months after, he could not restore her to herself again, nor could she forget nor remove the object out of her sight."

In discussing nervous anorexia some months ago, I reported the case of a lady who could not order supplies from the butcher over the 'phone, on account of the mental images produced. When she attempted it she would at once conjure up vivid pictures of gory meat, of raw head and bloody bones, while all the loathsome scenes connected with the shambles would so crowd her seething imagination that she would be at once seized with nausea and vomiting.

To encompass in a few pages the almost bewildering subject of gastrointestinal psychoses is an impossible task. These protean ills tax both the patience and acumen of the most careful physicians, and cannot be dealt with by any "rule of thumb." As Bassler recently said, "When we deal with perverted states in the minds of others, we deal with effects from conception and perception, mental habits, inheritance, and early training, physical and mental environments, and education, hopes, fears, ambitions, disappointments, grief, suspense, and anxiety."

To realize how all of these may affect the body in general and the alimentary tract in particular, one needs only to analyze moments in his own past life, or incidents in the lives of others under his close observation, and, coupled with the enlightening researches of Cannon and Pawlow, he will more nearly appreciate the intimate relationship of the emotions with the digestive processes. I am confident that every one reading this article can recall in his experience some pronounced symptoms of cessation of digestion, as spasms of the cardia or pylorus, manifested by anorexia, nausea, or vomiting, brought on by purely emotional reasons.

The first mental perversion may disturb the stomach, and the perversion of the stomach, in turn, may arouse in the mind greater disturbance; and thus between them, the influence may continue to and fro like a pendulum, until digestion is seriously impaired and functional derangements may merge into organic changes.

Permit a few random illustrations: Hornborg observed a little boy who was exceedingly hungry, but, after waiting until he became so impatient that he cried, when food was offered him no salivary secretion appeared, and he could not swallow except by an effort. Muller reported the case of a young woman whose lover had broken the engagement of marriage. She wept in bitter sorrow for several days, and during that time vomited whatever food she partook.

A number of years ago, when in general practice, I attended a primipara whose husband was a hearty and robust man. He ate a good breakfast, but soon after, on being grieved by her pains and lamentations, vomited the whole meal, nor could he eat again until she was safely delivered. Recently there came under my care for chronic indigestion a married lady, who, up to the death of her only infant, which occurred over a year ago, "never knew she had a stomach," to quote her own words. Treatment proved entirely unsatisfactory, until the prospects of another offspring changed the tenor of her melancholy thoughts, after which she had no further trouble.

That the narration of some disgusting anecdote or the discussion of an unsavory subject during a meal may inhibit the appetite or set up vomiting is of common knowledge, while the salutary effects of pleasant surroundings and the amenities of the table have been written of by myself and others.

A digestive neurosis is a thing of infinite variations. It may change its symptoms from week to week, almost from day to day. It may exhibit a complex group, or may present in some one particular an inexplicable annoying condition. It is well, therefore, before "standing pat" on a diagnosis of psychic indigestion to exhaust every intelligent method of investigation, and by the process of careful exclusion eliminate as far as possible underlying organic lesions. I say *as far as possible*, for in some instances organic disturbances are present either *propter hoc* or *post hoc,* and must be taken into account in the management of a case.

As to the treatment of this series of gastrointestinal psychoses, I can say that it must embrace more hygiene than dietetics, more suggestion than drugs. It is among these patients that the personal equation of the medical attendant counts for much; for the cheery optimist who can instill confidence and hope in doubting and despondent hearts is the one who gets results.

Therapeutic cognizance must be taken of tangible bodily ailments, and appropriate medication has its important place here, as in other more material troubles. He, however, who attempts to reach these shifting and evanescent psychoses by a hidebound system of dietetics, stomachics, digestants, tonics, or any other adventitious aids to digestion will be foredoomed to failure. Along the line of uplifting suggestion the isms and cults have won some of their spectacular victories, and the medical profession has been far too slow to gather from these erratic creeds the few real jewels contained therein.

Another therapeutic measure which often proves of benefit is a radical change of occupation or environment. To send the tired city dweller into the country; to transport the lonely dyspeptic from the farm to the busy turmoil of the city; to take the "indoor man" from his books or counter and put him "on the road"; or to give the worn traveler a quiet occupation, will in many instances change the diseased current of digestive thought, banishing the subjective symptoms, the introspection, the self-analysis, the self-pity. When the minds of these sorrowful invalids are taken from their stomachs; when their daily thought are lifted out from introspective ruts; when their ill-nourished bodies are furnished sufficient food, and their desiccated tissues are laved with an abundance of water —then can the vicious circle be broken and the psychic aids to digestion resume their normal place in the bodily economy.

920-921 Candler Building.

CAN INEBRIATES BE CURED BY PHYSICAL MEANS IN HOSPITALS?

By T. D. CROTHERS, M.D.,

HARTFORD, CONN.

SUPERINTENDENT WALNUT LODGE HOSPITAL.

An eminent medical man, in a letter to me, asked this question, and expressed a doubt of the wisdom of the effort to establish a hospital in New York for the physical treatment of inebriates. Evidently he is not convinced of the disease of inebriety, but considers it a moral disorder, which the Church and State are best able to treat. This doubt is entertained by many persons, even in the profession, and unfortunately it will be an obstruction in the efforts to build up an institution, provided for by an act of the Legislature and the appropriation of a large sum of money. The history of the inebriate hospital movement is exceedingly interesting from a medical and psychological point of view.

Notwithstanding over half a century of study and criticism, many of the central facts underlying the disease of inebriety and its treatment are unknown. Inebriates in a general way may be divided into two classes: those who drink at intervals to great excess, and have long or short periods of sobriety; others who drink continuously, taking small quantities at the beginning and later increasing the amount. There comes a time in the history of all these cases when the term "chronicity" can be applied to them, meaning an extreme stage of degeneration, both physical and mental. The particular class which this New York State inebriate hospital is intended to take care of is the chronic cases; men and women who have drunk for years and become incapacitated, non-supporting, and dependent on others. Obviously the State treatment by fines and short terms of imprisonment increases the drink disease and incapacitates the victims to live normally.

This new hospital is intended to gather these incurables on a large farm in the country and concentrate every known means for building up and restoring the diseased conditions of such persons. The question is asked in some circles "What is this hospital going to do? What restoration and cure can be expected?" Whatever the early causes may have been in producing the drink craze, there can be no doubt that the effect of alcohol has been that of continuous toxemia and anesthesia.

States of intoxication produce chemical paralysis of the nerve centers, with derangement of metabolism to the extent of profound collapse and disturbance of the normal functions. Each intoxication has been and is a traumatism from drugs, with suspension, derangement, and change of both functional and organic activities. Absolute recovery from this condition is practically impossible, no matter what the appearances may be. Repeated intoxicants covering a period of years must of necessity be followed by physcological changes and diseased conditions. Some curious studies have been made of the number of intoxications the system will tolerate before final collapse. The results of these studies show great variations, from ten to several hundred before death occurred. Unlike any other poisoning, each drink paroxysm predisposes and favors the return of another one. Like attacks of epilepsy, the desire for drink to the point of intoxication is fostered and increased, notwithstanding the efforts to combat it.

In the second class of inebriates who drink continuously there is profound cumulative depression. The anesthesia of alcohol affects the sensory centers, extending up to the motor centers, and influences the entire organism. This may be slight at first, but the effect of alcohol is continuous and depressing. The fatigue and pain centers are permanently disabled. An organic change of the body is produced. The continuous drinker is profoundly paralyzed, although he does not know it. His conceptions and appreciation of the relations of his own body to the surroundings are altered. He is poisoned, and there are anemia, congestion, and defective nutrition and elimination. Unlike the first class of periodic drinkers, who are convulsive, delirious, and maniacal, those of the second class are melancholic, suicidal, and degenerate.

There are distinct diseases and degenerations in both of these classes, some markedly local. In all there are uniform symptoms of physical and mental defects.

Insanity, criminality, pauperism are all combined. They are amenable to treament, in fact, the more they are diseased the more they are subject to conditions which are controllable by surroundings and scientific means and measures. A workhouse hospital in the country, conducted on a military plan of exact duties and responsibilities with alternate restraint and liberty, with full control over the every-day habits of eating, sleeping, and exercising, is the first requisite. The active cause, spirits, is removed and the deranged metabolism of the body corrected by hydropathic and other means found useful. This, with exercise and nerve rest in stimulating surroundings, constitutes a treatment full of promise. It is practically removing the cause and forcing the patient to live a hygienic, normal life. There must be a recognition of his physical condition and the application of exact means and appliances to correct this. This is the scientific principle of all practical medicine and is not a theory, but a fact which is supported by a very large amount of evidence, which has been accumulating for over half a century.

A large number of private hospitals have demonstrated the curability of many of this class by the simplest means and appliances combined with the best surroundings and mental measures. The quacks, with their secret remedies and boasted claims, add farther evidence. The breaking up of the drink craze and producing a disgust for spirits is a comparatively simple thing, but to build up a degree of vigor and strength that will repel all desire for relief from spirits in the future is a practical promise of a final cure.

Confinement in jails and hospitals where spirits cannot be procured is simply removing certain causes which may be only active or predisposing. If to the jail and hospital can be added sanatorium influences with physical culture, growth, and mental training, a larger field of causes may be removed.

The frequent sneers of medical men that private hospitals are without value because their inmates relapse after treatment are unjust. The hospital may not have recognized that the real condition was not alcohol but some other causes, which could not be reached by their treatment. To expect successful treatment in a few weeks of a disease that has been going on for years is unreasonable; to expect that the subsidence of the drink craze is the cure of the disease is also unreasonable. The private hospitals have proven that the causes of inebriety are very complex and come down from the past generation, and the desire for the anesthesia of spirits is both a symptom and a cause of conditions existing long before.

Appeals to the mind and will power are delusive, because they do not reach far enough back to the real causes. An inebriate clergyman, whose drinking life and efforts to recover were the subject of intense anxiety and concern, was found at his death to have been suffering from the pressure of a fragment of a bullet on the brain received during his war experience. This was the exciting cause of his inebriety. Thus blows on the head, injuries, diseases, and a great variety of distinct physical causes have brought on inebriety, which has disappeared when these causes were recognized and treated.

All hospitals where inebriates are treated with precision have records of similar cases with cures. Innumerable instances occur in which change of surroundings and conditions, with and without medical advice, have resulted in permanent restoration and recovery.

It is a well recognized fact that the distinct craze for spirits is a symptom which often dies out from causes unknown, evidently due to some physiological change in the brain and nervous system. This accounts for the number of persons who suddenly, and from very trifling causes, lose all desire for spirits and remain temperate for the rest of life. A number of persons ascribe their cure to certain drugs or combinations of remedies that have no particular value. These drugs, when used in other persons, fail and the causes of failure are explained at great length. A physician finding a certain combination of well known drugs to produce a disgust for spirits reasons that this is a specific, yet practical experience in similar conditions fails to confirm this. Statistics of cures covering a year or two of persons who have used these specific drugs are presented as evidence, but this is delusive. A little further examination shows that the percentage of cures is very small. The same active causes when started again will produce the same results. The farce of supposing that chemical means and chemical restraints, in three days or three weeks, will produce a permanent change in the organism and restore the diseased condition is constantly seen in the numerous papers praising this and that method of treatment. Public sentiment gives great credit to the statement of inebriates whose very egotism and dogmatic assertions are suspicious. All this belongs to the empirical stage of the study of this subject. The evidence is unmistakable that inebriety in all stages is curable in the same sense as other diseases. The permanency of the cure is a question to be determined in the coming years.

Almost every private hospital can point out instances of restoration extending over many years, with every promise of permanency. The best statistics from careful authorities show that one in every three persons who are scientifically treated and are not in the extreme chronic stages recover. Every student of the subject realizes the possibilities of more exact care and treatment in better and more perfect surroundings. Frequently persons in extreme chronic conditions come under treatment and make a startling recovery; that is, become restored and remain temperate for life. This approximates a cure and gives clear indications of the possible restoration from larger and better means and methods.

A State hospital, managed on broad scientific lines, combining everything known to be useful in restoring diseased brain and tissue, and forcing the patient to live in conditions of normal health with the best environment, both mental and physical, will do a great work in practically restoring to usefulness a large number of persons who are now burdens to their friends and the community. Such a hospital will combine moral and mental remedies with psychical appliances in the best conditions for permanent impressions and changes. This has been done on a small scale in a great many ways and will be no experiment. Exercise and employment have their value as well as drugs. Environment and stimulating mental atmosphere are as useful as hydropathic measures. All such persons must be treated according to the conditions, and this requires separate study of each patient.

Large palatial buildings are not required to furnish these conditions. Small well-appointed buildings with ample room and methods of separation and segregation are required. Above all, the management must be scientific without theories or preconceived notions. The patients must be treated according to their conditions, and these must be studied and known. The managers of these new hospitals have an opportunity to do original work of greater magnitude and of equal importance to that of the best endowed laboratory in the world. They have an open field, which only a few pioneers have occupied, but never along lines of such magnitude and with such complete appliances.

The first hospital at Binghamton, N. Y., was the great pioneer effort of the world, and its founder, Dr. Turner, was discredited, and yet he was the greatest authority and realized more thoroughly the magnitude and the capacity of the work than anyone up to this time.

A number of very enthusiastic men in Europe are struggling with this problem. Twenty-two state institutions under government control of a medical inspector are working in England. The reports of the inspector give some idea of the difficulties, but are full of the most hopeful promises, but none of them have hardly touched the subject yet.

As New York State originated the first institution in the world, it has now an opportunity, in the second effort, to build a pioneer hospital to do pioneer work that shall be the model for the world and revolutionize the present shameful methods of destroying the inebriate in an effort to cure him.

An answer to the question "Are inebriates curable?" can be found in the evidence which has been accumulating for a period of fifty years and in the transactions and journal of The American Society for the Study of Alcohol and Other Narcotics, which society has been in existence over thirty years.

Still further evidence can be found in the dozen volumes on "The Disease of Inebriety" published in this country and England, and the reports of over fifty different hospitals in all parts of the world where inebriety has been made a study.

The medical man who doubts the practical nature of this new hospital and its efficacy to restore the inebriate is belated in his knowledge of the subject. This great hospital which is now projected will be an assured success dependent entirely upon the wisdom of its managers, and with the data at their command, if studied, there can be no question of its future.

FOREIGN BODIES IN THE LUNG SIMULATING PLEURAL EFFUSION.

By JOHN W. BOYCE, M.D.,

PITTSBURG, PA.

Scattered through periodical literature are a number of reports of cases of supposed consumption, in which later an unsuspected foreign body worked its way out through the side or was coughed up with resulting cure. In several instances since the discovery of the *x*-ray the condition has been diagnosed in time to permit of surgical intervention with the happiest results. Such reports will doubtless multiply as the internist comes to appreciate the fact that the ray is an indispensable adjunct in the diagnosis of chest disease.

In the older books on physical diagnosis there is considerable discussion of the physical signs of foreign bodies in the lung or bronchus. The statements made, however, seem to have been mere theoretical assumption and are not borne out by such cases as I have had the opportunity of observing. In most cases I have found only the physical signs of a consecutive, diffuse, purulent bronchitis, and the physical signs have been of rather less value in diagnosis than the presence of purulent, blood-stained sputum, free from tubercle bacilli. In the four cases herewith reported the physical signs were peculiar and the *x*-ray picture was made with no anticipation of what it was going to reveal.

Case I.—Several years ago Dr. Ingals of Chicago diagnosed a foreign body in the lung in a patient who had previously been tapped for pleural effusion. The physical signs, as reported, justified not only tapping but in my opinion actual exploratory incision. It needed the authority of Ingals to convince me that the diagnosis was correct. A year or two later, however, through the courtesy of Dr. Hubbard of Toledo, I had the opportunity of examining a case where an upholsterer's tack had been imbedded in the left bronchus just below the upper lobe branch for several years. The physical signs were here identical with those reported in Ingals' case. Over the lower two-thirds of that side of the chest the percussion note was dull or flat, voice and breath sounds absent. Over the upper lobe of the lung there was impaired resonance, the note being high pitched and approaching tympanitic quality, breath sounds harsh, voice conduction and vocal fremitus slightly increased.

The next two cases I saw with Dr. Chevalier Jackson, who removed the foreign bodies through the bronchoscope.

Case II.—J. A., aged 23, "swallowed" a brass-headed tack seven years ago, and spent a week in a hospital, where she was assured that the foreign body would pass harmlessly. From this I infer that she had no respiratory symptoms at that time. For over five years she enjoyed fair health, though on questioning she admits that she had frequent colds. In fact, she had a cough every winter. About a year and a half ago she began to cough, with foul smelling, mucopurulent expectoration. At times she was worse, with irregular temperature and rapid loss of weight. The cough and expectoration were constant. Needless to say she was treated by several different physicians for tuberculosis. In the spring of this year she entered Jefferson Hospital, Philadelphia, on the service of Dr. J. Solis-Cohen. He found both apices free from disease. The only physical signs were some impairment of resonance at the right base with diminished voice and breath sounds. These signs were not sufficiently marked to justify the diagnosis of pleural effusion, but in the hands of a less alert observer would doubtless have gone for an ordinary case of thickened pleura. A stereoscopic plate by Dr. Manges showed plainly the long-forgotten brass tack below and behind the right bronchial trunk. Removal of this body through the bronchoscope will doubtless be reported in detail by Dr. Jackson, as the technique was interesting and marked a distinct advance in bronchoscopy, but the simulation of the signs of a pleural condition is all that concerns us for the present.

Case III.—B. C., aged 19; has suffered impaired health for two years. Nine years ago an operation was performed for drainage of an empyema.

Since that time has been treated by residence in Arizona and other favorable climates, but has continually been in poor health. Is under weight, pigeon-breasted, has marked dextrocardia; suffered continually from cough, usually with purulent sputum, frequently pink stained, and occasionally foul smelling. Frequently has a low, irregular temperature very suggestive of tubercle, but the sputum examinations are always negative in this respect. Apices free from disease. The physical signs are confined to the base of the right lung and have been attributed to the former empyema. The case recently came under the observation of Dr. James F. Edgerton of New York, who considered this an insufficient explanation and accordingly had an *x*-ray examination made by Dr. Louis G. Cole. The plates showed the dextrocardia due to fibrous contraction at the right base and also a small lead collar button which Dr. Cole located, by triangulation, midway between the angle of the scapula and the spine, 2½ inches from the posterior wall of the chest. At this point I could find no abnormal signs, but below it extending to the edge of the lung both breath and voice sounds were increased with a suggestion of amphoric breathing and whispered pectoriloquy. No change in percussion note. I was unable to demonstrate either tympany, cracked-pot note, or Wintrich's change of tone when the mouth was open. Bronchoscopy by Dr. Jackson showed a cavity extending well down to the base of the lung at the back. The foreign body was dug from a mass of exuberant granulations, at the point of communication between the bronchus and the cavity.

On reviewing the case it occurred to me that the supposed empyema of nine years was diagnosed on the strength of just such physical signs as I have noted in the preceding cases. On inquiry I found that at the time of the operation only a very small amount of pus was obtained and that the cavity never drained well. It seems to me not an unwarranted assumption that the signs were given by a pulmonary abscess formed behind a plugged bronchial tube and the pus obtained at operation came from the substance of the lung. This theory was confirmed as a possibility by Dr. Singleton Belt, the family physician, who had been present at the operation.

My own theory as to the production of these signs is that the foreign body and the resultant mucosal swelling completely plug the bronchial tubes and the secretion fills not only the tubules but also the alveoli, giving the lung the physical characteristics of a sac full of fluid. Whether this explanation will be confirmed or not, it seems important to record the fact that symptoms of consumption and physical signs suggesting pleural effusion or thickening may be due to a forgotten foreign body.

716 Empire Building.

NORMAL PREGNANCY FOLLOWING TWO ECTOPICS.

By FORBES R. McCREERY, M.D.,

NEW YORK.

Mrs. H., æt. 31, II-para, seen July 14, 1902. She was said to have had a miscarriage one month ago. Two weeks ago sudden severe abdominal pains appeared, and since then she has had some pain and tenderness with slight fever. Examination showed the uterus forward and to the right, moderately enlarged. There was a mass in the cul-de-sac reaching almost to the umbilicus.

On July 15 the uterus was curetted and shreds resembling the decidua were removed. Posterior vaginal section was performed and about one quart of blood clots and fluid blood was evacuated. Gauze drainage was instituted. Convalescence was satisfactory.

On July 12, 1905, the patient reported that her last menses was on May 15 to 18. She had had pain in the left side at intervals and a slight flow since June 30; an abundant flow occurred from July 5 to 11. Examination at this time showed a boggy tumor the size of a lemon behind the uterus.

On July 13 the abdomen was opened through the left rectus sheath. A little free blood was found among the coils of intestines. The right tube and ovary were normal. The left tube was enlarged and bound down by old adhesion in the cul-de-sac. I removed the left tube and ovary. The tube was dilated to the size of a small lemon and contained an unruptured gestation sac through which the fetus could be plainly seen. Convalescence was normal.

On December 13, 1910, the woman was delivered of a healthy male child.

123 East Fortieth Street.

Diagnosis of Abortive Types of Whooping Cough.—H. Delcourt finds that these cases, which are quite common, may be diagnosed with the aid of the Bordet-Gengou reaction. The recognition in these cases of the Bordet-Gengou bacillus is not available in a general practice.—*Archives de Médecine des Enfants.*

Osteitis Deformans.—E. Corner reports a case which illustrates the influence of previous fractures of the patella *before* the onset of osteitis deformans. The patellae were enormously enlarged. The patient was a man aged 38, whose left patella was broken and wired fourteen years ago. The right patella was broken seven years ago and wired. The present trouble (the osteitis) started "months ago," but was not sufficiently bad to make the man take heed of it until six to eight months ago. The osteitis has caused great enlargement of the previously fractured patellae.—*Proceedings of the Royal Society of Medicine.*

Gastric Syphilis.—Albert Mathieu says that cases of gastric syphilis are not rare when they are carefully looked for, and in every obscure case of gastric trouble we should think of the possibility of its being of syphilitic origin, and should search for a previous syphilitic history. The lesions may be those of severe chronic gastritis, tumors simulating cancer of the stomach, pyloric stenosis, ulcerations and deformations of the stomach of the nature of biloculation. The author gives the histories of cases of all of these different kinds of lesions produced by syphilis and cured by antisyphilitic treatment. These lesions are characterized by gummatous infiltration with a tendency to sclerotic organization and formation of fibrous tissue at the edges of the gummata. When the gummata have disappeared the fibrous tissue remains as a permanent lesion, rebellious to all treatment. While the gummatous formation remains antisyphilitic treatment causes amelioration of the symptoms, which is remarkable in the rapidity with which it takes place. In forms simulating cancer it is to be noted that cachexia is absent in syphilitic lesions. The reaction of Wassermann is a valuable diagnostic aid in these cases. The author uses the soluble salts of mercury by intramuscular injection. In cases of cancer and ulcer that are not syphilitic iodide of potassium increases the symptoms, while in syphilitic cases its effect is excellent.—*Gazette des Hôpitaux.*

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THE EPIDEMIOLOGY AND TREATMENT OF CEREBROSPINAL MENINGITIS.

THE recrudescence during the spring of 1909 of an unusually severe epidemic of meningococcus meningitis in different parts of France, particularly in Paris and its environs, furnished ample opportunity for the study of its mode of spreading, of its occurrence in young infants, of the efficacy of the serum treatment, and of the various accidents associated with this form of therapy. These were the main lines of an investigation conducted by R. Debré, who records his results and observations in an important monograph.* The relation of the "carrier" to the transmission of this disease is brought out with particular emphasis. Nearly one-fourth of all individuals who had lived with meningitis patients harbored the meningococcus in the nasopharynx. The same proportion of "carriers" was found among the pupils in schools that had been attended by the patients. On the other hand, among the attendants in hospitals in which these patients were treated the bacteria carriers were extremely rare. The diffusion of germs was most marked in the families living under bad hygienic conditions. Thee was a notable uniformity in the distribution of the microorganisms in the disease carriers. While the germs were rarely found in the anterior parts of the nasal fossæ, and in the region of the tonsils, they were quite abundant in the posterior portion of the nasal chambers and in the rhinopharynx. Virulent organisms were isolated from healthy subjects, and even the saliva was found contaminated with the meningococcus. Occasionally the bacteria carriers were perfectly healthy, but sometimes they presented the signs of a nasopharyngitis, or symptoms of a mild general meningococcic infection. The bacteria carriers are usually such only for a short time, but occasionally chronic carriers are found who are apparently instrumental in propagating the organism during the periods intervening between epidemics. These observations are in accord with those already known. The important fact is emphasized that there are lacking efficient means of causing the disappearance of the meningococcus from the nasopharynx of the "carriers." This is a problem in hygiene that craves solution.

*"Recherches épidémiologiques, cliniques, et thérapeutiques sur la méningite cérébrospinale." Paris: Félia Alcan, 1911.

The second part of Debré's study deals with the occurrence of cerebrospinal meningitis in young infants, which occurrence, notwithstanding general belief, is relatively common. In these little patients the disease is particularly severe and presents unusual difficulties in diagnosis. The invasion of the disease is very insidious, in sharp contrast to the violent onset in older children and in adults. Generally sopor rather than irritability is the dominant symptom. The associated marked digestive disturbances are a frequent cause of the errors in diagnosis. This initial period is followed by one in which the meningitic symptoms are more clearly defined, but nevertheless they may escape attention. These symptoms are irregularities in the pulse and respiration, increased tension of the anterior fontanelle, and a spinal rigidity. The period of invasion lasts usually more than a week, with remissions and exacerbations, and is followed by the evolution of the characteristic symptoms of the meningitis. Of the different types of the affection studied by the author in young infants, the most interesting was the protracted form associated with cachexia and hydrocephalus.

The serum treatment of meningoccic meningitis has abundantly demonstrated its efficacy. Debré investigated a special phase of the subject, namely, the accidents associated with this method of treatment. These accidents are described as follows: First, there are the well-known phenomena of anaphylaxis that follow the subarachnoid injection of horse-serum, which phenomena are identical with those succeeding the subcutaneous injection of this and other forms of horse-serum. Secondly, there are in addition specific manifestations of injections of the serum into the subarachnoid space, which manifestations assume the character of an exacerbation of the meningitis, from which they can hardly be differentiated. These phenomena are attributed to a localized toxic edema of the meninges at the site of injection. Thirdly, there are observed during the course of the injection of the serum or immediately afterward pronounced signs of collapse which may terminate in death.

These accidents, which fortunately are extremely rare, are attributed not to sudden mechanical changes in the cerebrospinal pressure, nor to the very rapid destruction of a large number of meningococci with the setting free of an excess of endotoxins, but rather to the injection of a heterologous serum. This occurrence is quite rare after subcutaneous injection of a foreign serum, but is more so following the subarachnoid injections. The diffusion of serum from the subarachnoid space into the general circulation is a rapid one. On the other hand if the serum is injected subcutaneously none of it reaches the subarachnoid space. This observation confirms what has already been known as to the futility of employing the antimeningitis serum hypodermically.

The investigations of Debré furnish a valuable contribution to our knowledge of epidemic meningitis and its treatment, and particularly emphasize the dangers lurking in the innocent carriers of the infection.

ANTITYPHOID INOCULATIONS.

The officers and men alike of the entire army of the United States, 76,000 in all, are being inoculated against typhoid fever—that is, all under forty-five years of age. The Secretary of War has submitted himself to vaccination, setting the example. Heretofore it has been optional for an army officer or private whether he would thus be protected; and on that basis 17,000 were inoculated. But now all must submit, by order of Major-General Leonard Wood. Major Russel of the Army Medical School in Washington has prepared the "typhoid prophylactic," which is being distributed to the various forts, posts, and other military communities throughout the United States and its possessions. In something like a few weeks the whole army is expected to be inoculated, and will certainly, within a fortnight thereafter, be immune to typhoid fever. Very little if any inconvenience has been felt; the vaccination is done precisely as against smallpox, in the left forearm, for all the soldiers. In civil life the left-handed man would be inoculated in the right forearm. The experience has been that the soldier loses not a single day's duty, and does not go to bed. He is watched carefully for twenty days and is then declared a typhoid immune. Of course, those who have unmistakably had the disease are not vaccinated. Whatever discomfort there is never lasts beyond forty-eight hours, and it is in general less than that occasioned by vaccinations against smallpox. Our army is by these measures being rid of typhoid fever, up to recent times a far greater destroyer of soldiers than the enemy's sword and missles. For example, during the Spanish war two divisions of the Seventh Army Corps encamped at the time in Florida were submitted to an experiment; the one numbered 10,759 men, the other 12,801. The camp conditions as to sanitation were exactly alike for these two divisions, and the water for both was obtained from artesian wells. None of the officers or men in the smaller division had been inoculated with the typhoid vaccine; it had 2,693 cases and 248 deaths from this disease. In the larger division a majority were inoculated, and it had but a single case of typhoid fever and no death. Except as just stated, little was done in our Spanish war, so that our troops then developed 20,738 typhoid cases, while above four-fifths of our mortality among officers and men was by reason of this disease. During the Boer war the British had 31,000 cases of typhoid fever. The typhoid fever rate in the German army was cut down one-half by vaccinating a portion of the troops in Southwestern Africa in the campaigns against the Hereros in 1904 and 1907. In India in 1908, among 12,000 English troops, one-half were vaccinated; the remaining 6,000, under like conditions, remained unvaccinated; seven times as many among the latter contracted typhoid, and eleven times as many died of it.

Lieut.-Col. J. R. Kean of the Army Medical Corps observed, anent the recent application of this typhoid prophylaxis to our 16,000 troops in Texas, that although this force had been for more than three months exposed to heat, dust, mud flies, and all the other vicissitudes of camp life, only one case of typhoid fever developed up to June last. "The medical authorities of the army," he said, "are much elated at this great feat of preventive medicine, which they hope will bring into common use a procedure of as great sanitary importance to the American people as was the discovery of the method of preventing yellow fever."

Since such immunity against typhoid is obtainable in military camps it ought to be, as Col. Kean suggests in the sentence above quoted, quite as capable of achievement in civil life—especially in large communities. Every urban typhoid epidemic has been succeeded by a secondary epidemic, evolved naturally from it. The secondary phenomena might easily be prevented by prompt inoculation of all those living in and about the affected region. The private practitioner should have at his disposal antityphoid vaccine, quite as he now has this prophylactic means against smallpox; and he should have his patients submit to the use of the former quite as is done now, as a matter of course, in regard to smallpox. If the inoculations are made in the late afternoon it is very likely that any untoward manifestations will have disappeared by the following noon. These inoculations should especially be submitted to by traveling business men who may in the most subtle and inscrutable ways be subjected to this ingestion infection. Typhoid fever is peculiarly a disease of youth and early manhood and womanhood; and it might not be inadvisable for these young men and women who go to college and boarding school to submit to this preventive measure before leaving home. Tourists, vacationists, may not only themselves contract the disease, but, even of more importance from the communal viewpoint, they may become typhoid carriers, introducing the bacillus into regions hitherto exempt. All such should be inoculated. Physicians themselves, nurses, orderlies and hospital helpers should all submit as a matter of course. It is considered that the protection is effective for two years, and that the one inoculation will afford much, though not complete, protection for many years more, perhaps through the remainder of the individual's life.

THE VARIABILITY OF TYPHUS FEVER.

Much interest was aroused last summer by the discussion between Dr. Brill, who described a "disease of unknown origin" which he differentiated from typhoid fever, while declining to admit that it is typhus, and a Russian physician, Dr. Friedmann, whose experience in Russian epidemics led him to declare that "Brill's disease" is nothing less than the exanthematic typhus of Europe modified by American living conditions. One good result of this discussion has been the awakening of American medical men to the fact that typhus may not be such an unknown and impossible disease so far as America is concerned; indeed, that certain eruptive fevers in Central and Southern America are probably very closely related to typhus of Europe, showing only the modifications, such as "Manchuria typhus" shows when compared with typhus in Russia.

The latter country is, perhaps, the best land in which to study typhus fever, for the disease is ever present there. Russian medical literature can thus throw much light on the subject-matter of the New York controversy, especially as this controversy is quite unknown to the Russian physicians, whose statements, therefore, are unbiased. An article by Dr. Verekundoff in *Ruśskii Vrach* for August 6, 1911, is of interest in this relation. He observed an epidemic occurring in 1908 in which sixty cases were treated in the hospital and about as many outside, many of which, though surely typhus fever, differed greatly from the usual type of the disease. These patients complained of headache, especially frontal, severe pains in the legs and arms, dizziness, weakness, and in some cases vomiting. The temperature was quite unlike that of the classical typhus fever; it often showed a gradual step-ladder ascent, such as is frequently seen in typhoid fever; it fell by more or less quick lysis, instead of by the rapid crisis of typhus; it lasted from nine to twenty-one days. The pulse was always somewhat frequent, usually 110 to 120 per minute, and often dicrotic at the end of the disease. The most important irregularity was noted in the rashes accompanying the fever: in twelve cases no rash whatever was noted; in about as many a roseolar or a roseolopetechial rash appeared, not in great abundance, and faded in two or three days; frequently a roseolar rash appeared fairly late in the disease, about the eighth or ninth day and became petechial two or three days later. The spleen was enlarged in all cases. Hyperemia of the conjunctivæ and of the nasopharynx was frequent; tracheitis, laryngitis, and dry bronchitis were also much in evidence. The mortality was 8.33 per cent., and numerous cases of infection from the patients were observed.

It is seen that the epidemic here described has much in common with the disease described by Brill, though in many points, such as mortality, infectiousness, petechial rashes, etc., it answers pretty well the old ideas of typhus fever, the disease of "poverty, hunger, and dirt." Of course, it neither proves nor disproves any theory regarding Brill's disease; what it shows, however, is important, namely, the variability of typhus fever under certain conditions even in the land where the classical type of the disease has always been present. How much change such a disease may undergo by being transplanted to New York is a matter of conjecture.

THE INCREASE OF INSANITY.

In the belief of perhaps the majority of medical men of the present day insanity is steadily increasing. Some hold the view that mental affections are increasing at an exceedingly rapid rate, and that the world is becoming mad; others contend that the situation has been grossly exaggerated and that as a matter of fact the increase is more apparent than real, due to some extent to the more accurate tabulation of the insane which now takes place. The truth, as usual, probably lies between the two extremes. Insanity has increased, but not so largely as the pessimists assert. In any event, it is instructive to consider the opinions of those who have had experience of the question. J. T. Searcy, superintendent of the Alabama Insane Hospital, read before the Medical Association of the State of Alabama at Montgomery in April, 1911, a paper on the subject (*Dietetic and Hygienic Gazette*, September, 1911, in which he showed from statistics that the increase of admissions into the insane hospitals of Alabama during the past ten years was over 45 per cent., while the population of the State increased only 16 per cent. Similar figures from all the States of the Union point to a like increase, and other civilized countries exhibit a somewhat analogous state of affairs. Searcy thinks that there is no alternative to an admission that there is a large gradual increase of persons so mentally deficient and defective that they come within the jurisdiction of State care. Moreover, the writer draws attention to the fact that not only has insanity increased, but the psychoses are more prevalent.

Of course, heredity counts for much in that increase. As a nation becomes more civilized, so it becomes the object to preserve all human life. In the old days, the principle of the survival of the fittest held sway, and the weakly ones were for the most part eliminated. In these days civilization is more tender by far, and lives are now saved to propagate their kind which in former times would have perished in consonance with the stern laws of nature. When all is said that can be said concerning this phase of the matter, however, it must be allowed that heredity does not account for all.

In the opinion of Searcy the abuse of drugs is an important factor in the increase of insanity and psychoses. It is difficult always to distinguish between cause and effect. It may be that the drug taker is invariably a neurasthenic in the first instance, but it is most assuredly true that drug taking increases the neurasthenic tendencies and may lead to more serious mental derangement. The offspring of drug habitués, be the drug alcohol, morphine, or cocaine, come into the world with an unstable nervous temperament and are unduly susceptible to the effects of narcotics.

Artificial Ulcers.

The occurrence of sores self-inflicted for the securing of certain ends and the relationship of such lesions to multiple gangrene of the skin are matters of great interest. Sores have been produced by beggars in connection with their business of imposture, by conscripts and soldiers to evade military service, by hospital patients to secure free board and lodging, by hysterical subjects to obtain sympathy, etc. These lesions are produced by mechanical and especially by chemical means. The peculiar affection known as multiple gangrene of the skin was long regarded by many dermatologists as a matter of artefacts. The point most suggestive of self-infliction is the occurrence of lesions solely upon areas readily accessible to the fingers, and stopping abruptly just at the limits of such access. But it is not always possible to find a motive for such disfigurement, as shown by a case elaborately reported by Goldbach before the Society of Physicians of Charity Hospital, Berlin, (*Berliner klinische Wochenschrift*, August 7). The patient was finally suspected of causing his lesions with sul-

phuric acid, which produced superficial gangrenous areas. He denied the accusation, but admitted it when erysipelas attacked him, only to deny it again after recovery. He had a comfortable home and a hospital sojourn would have been no inducement to him. From the absence of motive the man was held to be insane, although other evidences of mental disorder were seemingly lacking.

Surgical Psychoses.

In a paper read before the Quarterly Conference of the Chief Executive Officers of State Institutions with the Board of Control at Des Moines, Ia., in March, 1911, A. P. Stoner of Des Moines reported two cases of psychoses following surgical operations. The cases occurred in two women, one of whom was operated on for gall-bladder disease and the other for malignant growth affecting the left breast. Both women, after the operation, exhibited symptoms of insanity, but both recovered in a comparatively brief period. Of course, such instances are by no means very uncommon, and Stoner merely calls attention to them in order to arouse fresh interest in an important and instructive class of cases that, in his opinion, have been hitherto much neglected so far as study and clinical reports are concerned.

News of the Week.

Low Death Rate.—The first nine months of 1911 have made a record low death rate for New York City, the rate per thousand being 15.56 and the total number of deaths 58,144, as against 16.27 and 58,631 for the same period of 1910. This rate of 15.56 per thousand is the lowest for the corresponding period since the formation of the greater city in 1898, the nearest approach to it being in 1909, when the rate was 16.06. The average number of deaths in these nine months for the preceding thirteen years was 55,644, giving an average rate of 18.77 per thousand, so that the rate this year is 3.21 below the average. The mortality among infants also showed a decided decrease during this period, the total number of deaths being 11,733, a rate of 124.6 per thousand of infants living under one year of age, while for the same time in 1910 the total number of deaths was 12,920 and the rate 142.3. This practically means a saving of the lives of 142.3 infants, and this is largely due to the decrease in deaths from diarrheal diseases among infants, the rate falling from 44.2 in 1910 to 34.3 in 1911 with an actual decrease of 784 deaths during the nine months. The decrease in the death rate for all ages, gratifying as it is, is not so great, however, as these figures would imply. The population of the city is estimated, for statistical purposes, on the assumption of a regular rate of increase since the last census, but during the recent period of business depression there has been a large exodus of foreign born laborers with a falling off in immigration, so that the actual population is temporarily considerably below the estimate.

Education in Obstetrics.—Dr. Barton Cooke Hirst, professor of obstetrics in the Medical Department of the University of Pennsylvania, has recently addressed a circular letter to the secretaries of the State Examining Boards calling their attention to the inadequacy of the present system of education in obstetrics, and asking that they submit to their boards the question whether evidence of practical training in obstetrics should not be demanded from an applicant for a license to practise medicine. A committee of the American Gynecological Society last year recommended that at least six cases of labor be attended under supervision by each undergraduate student.

Harvey Society.—The second lecture of the Harvey Society will be delivered at the New York Academy of Medicine on Saturday evening, October 14, by Prof. Albrecht Kossel of the University of Heidelberg on the subject, "The Chemical Structure of the Cell."

Blind Students at Cornell.—There are at present in Cornell University, New York, three blind students who are taking the regular courses, one in the agricultural and two in the arts departments. Of the latter one has just entered his senior year with high standing.

The Budget Exhibit.—At the City Budget Exhibit now being held in New York the head of each department is allotted a day on which to explain the needs of his branch of the city's work, and Commissioner Lederle took advantage of Health Day recently to show how he wishes to spend the $4,387,679.25 for which he has asked for 1912. Four fields were enumerated as particularly worthy of extension: Milk depots, child hygiene, and food and milk inspection. For the first, the department asks for $308,890, an increase of $268,890, with which to establish seventy-three milk stations throughout the city. For the division of child hygiene, the amount asked for is $540,558; for food inspection, $297,270, and for milk inspection, $226,345. The total amount asked for is $1,564,178.75 more than was appropriated for 1911. The portion of the Budget Exhibit furnished by the Department of Health has created so much interest that the question of making it permanent is being discussed, and it is possible that the exhibit will be housed in the quarter of the department where it will be shown throughout the year.

National Board of Health.—In addressing the meeting of the National Civic Federation in New York on October 2, Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, again advocated the establishment of a national board of health, with the head of the department in the President's cabinet.

Green Cross Replaces Red.—Pittsburgh physicians are the first to adopt, as a body, the green cross as an emblem of mercy in time of peace, in distinction from the red cross, whose use it is planned to confine to military organizations and to the International Red Cross Society. The green cross flag is to be unfurled at a benefit to be given for the benefit of the Sewickley Valley Hospital, Pittsburgh, on October 14.

Cholera Spreading.—Although the war with Turkey has taken first place in news from Italy, it is reported that the cholera continues in that country apparently unabated, and that it is spreading through Russia and Austria-Hungary as well as in both European and Asiatic Turkey. The quarantine precautions here have been continued without relaxation, but no case has been reported to the Public Health and Marine-Hospital Service on any vessel arriving at a United States port since August 18.

Fines for Impure Food.—In the Court of Special Sessions of New York recently five dealers were fined for selling impure milk and fish and meat unfit for food. The fines ranged from $10 to $100.

Dr. Wiley.—The Michigan Association of Retail Druggists recently adopted resolutions indorsing Dr. H. W. Wiley and pledging its cooperation in the enforcement of the pure food and drugs law. By an official order of Secretary Wilson issued recently the authority of the Pure Food and Drug Board of the Department of Agriculture has been greatly extended, and Dr. R. E. Doolittle of New York has been appointed to serve upon it in place of Solicitor McCabe. The board is given the right to decide, subject to the approval of the secretary, what cases shall be prosecuted, the power of the solicitor being limited to the preparation of such cases for trial.

Street Accidents in New York.—The National Highways Protective Society reports that during the month of September 43 persons were killed and 234 seriously injured in New York City streets as the result of accidents due to vehicular traffic. Of those killed 20 were children under sixteen years of age. Accidents on New York State highways outside of New York City caused 16 deaths and 164 injuries. The record of railroad grade crossings throughout the State for the month shows 7 accidents, in which 3 were killed and 12 injured.

Prof. Silvio Tonnini of the University of Bologna, Italy, arrived in New York on October 5.

Philadelphia Medical Club.—A reception was held on October 6 in honor of the following new incumbents of chairs in the medical department of the University of Pennsylvania: Dr. Edward Marin, surgery; Dr. Alfred Stengel, medicine; Dr. John B. Deaver, practical surgery; Dr. Gwillym G. Davis, orthopedic surgery; Dr. M. B. Hartzell, dermatology; Dr. M. Howard Fussell, applied therapeutics; Dr. Alonzo Englebert Taylor, physiological chemistry; Dr. Richard M. Pearce, research medicine; Dr. A. H. Richards, pharmacology. Addresses were made by the president of the club, Dr. Wm. L. Rodman; by Dr. James W. Holland, dean of Jefferson Medical College, and by the guests of honor.

The French Congress on Surgery.—At the twenty-fourth annual meeting of the French Surgical Society, held in Paris last week, papers were read by Drs. Ernest Laplace of Philadelphia and C. L. Gibson and W. B. Coley of New York.

The Alvarenga Prize of the College of Physicians of Philadelphia has been awarded to Dr. Francis D. Patterson for an essay entitled "The Parathyroid Glandules."

Bequests to Charities.—By the will of the late Mrs. Sarah P. Sears of Waltham, Mass., a bequest of $10,000 is made to the Waltham Hospital.

The Memorial Hospital of New London, Conn., has received from the estate of the late Catherine A. D. Bramble, a sum of money to be known as the Henrietta Dudley Fund, the income of which is to be used for the relief of patients suffering from tuberculosis.

Dr. Andrew H. Woods, assistant neurologist to the Philadelphia General Hospital, and lecturer on neurology at the University of Pennsylvania, has accepted an appointment as vice-president of the Canton Christian College in China, and will shortly leave the country to engage in his new work.

Death of the Original Sherlock Holmes.—Dr. Joseph Bell of Edinburgh, whose death occurred on October 4, was said to have been the original from whom Conan Doyle drew his famous character of Sherlock Holmes. Dr. Bell was born in 1837 and was a professor in Edinburgh when Doyle was a medical student there. He was a man of wonderful observation and would often diagnose a patient's disease before questioning him regarding his previous history. He was also an enthusiast in the study of mysterious crimes and always had a solution of the mystery which seemed to fit the case perfectly.

Dr. Bulkley's Lectures on Skin Diseases.—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give a thirteenth series of Clinical Lectures on Diseases of the Skin in the out-patient hall of the hospital on Wednesday afternoons, from November 1 to December 20, 1911, at 4.15 o'clock. The course will, as usual, be free to the medical profession.

New York and New England Association of Railway Surgeons.—The twenty-first annual session of this association will be held at the Hotel Astor, New York City, on Thursday, November 16, 1911. A very interesting and attractive program has been arranged. Railway surgeons, attorneys, and officials and all members of the medical profession are cordially invited to attend. The president of the association is Dr. F. A. Goodwin, Binghamton, N. Y.; the corresponding secretary, Dr. George Chaffee, 338 Forty-seventh street, Brooklyn, N. Y.

Obituary Notes.—Dr. Moses Craft Latirop of Dover, N. H., a graduate of the Worcester Medical College in 1852, a surgeon in the United States Army during the Civil War, president of the Dover Medical Society, and vice-president of the New Hampshire State Medical Society, and a member of the American Medical Association, and of the Stafford County Medical Society, died at his home after a short illness on September 28, aged 81 years.

Dr. Frank Byron Flanders of Lawrence, Mass., a graduate of the Harvard University Medical School in 1878, a member of the Massachusetts State and Essex County Medical Societies and of the Lawrence Medical Club, and formerly attending surgeon to the Lawrence General Hospital, died at his home on September 28, aged 61 years.

Dr. Clarence L. Nichols of Portland, Ore., a graduate of the Hahnemann Medical College and Hospital of Philadelphia in 1885, died at his home on September 26, aged 50 years.

Dr. Alfred C. Sherwood of Union City, Pa., a graduate of the Department of the University of Pennsylvania in 1873, died suddenly on September 26, aged 72 years.

Dr. John A. Vieregge of St. Paul, Minn., a graduate of the Hamline University College of Medicine, Minneapolis, in 1888, and a member of the Minnesota State and Ramsey County Medical Societies, died at his home of diabetes on September 17, aged 50 years.

Dr. Alfred J. Inloes of Binghamton, N. Y., a graduate of the Washington University School of Medicine in 1869, died at his home on October 5.

Dr. Charles W. Spayd of Wilkesbarre, Pa., a graduate of the Medical Department of the University of Pennsylvania in 1866, and a former surgeon in the United States Army, died at his home on September 29, aged 70 years.

Dr. Isaac L. Kip of New York, a graduate of the Medical Department of New York University in 1854, and a member of the New York State and County Medical Societies, died at his home on October 6, aged 81 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

PTOMAINE POISONING—STATE INSURANCE BILL, OPPOSING CRITICISMS—TUBERCULOSIS EXHIBITION—ITEMS—OBITUARY.

London, September 22, 1911.

Some recent deaths having been attributed to ptomaine poisoning have given rise to alarm, which has been added to by the newspapers. At present it is tinned foods; "canned," I think you call them, especially salmon, which are under suspicion. The grocers, who are holding an exhibition, are naturally concerned, as any rumor of danger in an article of food stops the sale. Their federation has made a statement that every alleged case of ptomaine poisoning shall be investigated by them, and they have engaged eminent scientists for the purpose. This is certainly better than a mere protest. It is the consumers who must be considered, and the fears expressed have been so many that the Local Government Board has issued a memorandum on the subject. That impresses on the public the importance of securing any remaining portions of food which is supposed to have set up symptoms, as well as samples of similar origin—perishable articles to be preserved in ice pending examination. It is added that cans of canned goods with labels intact should be kept. When circumstances suggest a nonbacterial origin, the Board says samples should be sent forthwith to the public analyst for the district, for it is by no means certain that ptomaines in the sense of alkaloidal substances are present in foods which have caused symptoms, though chemical analysis may be valuable in various respects.

I may remark that alleged food poisoning has sometimes been before the courts. The law holds that the seller is responsible for injury if he supply goods not reasonably fit for their purpose, and, of course, the purpose of purchasing food is to eat. In 1909 a man obtained damages for the loss of his wife through eating bad food, and in 1905 a similar verdict was given in a case of typhoid traced to contaminated milk. For prevention more inspection may be urged. So, too, the public may well be cautioned against keeping canned food after opening, as it takes some days for bacteria to develop.

The National Insurance Bill continues to excite attention in various directions. The Friendly Societies are expressing discontent with a number of its provisions, and some of them are in revolt against the medical arrangements. A conference was held last week of some eighty societies said to represent 300,000 members, at which some speakers indulged in very objectionable remarks. They protested vigorously that the right of appointing their own medical officers was a vital one and that the Health Committees should have no voice as to capitation grants or medical fees. On closely examining the expressions used it appears that the claim to choose the doctor is intended by some of the societies to mean that the appointments should continue to be made on the old plan; that is, by each society as such, which amounts to by its committee. If this were permitted, the control of contract practice would remain as obnoxious as ever.

Now, one of the most important votes of the House of Commons in committee on the bill gave a majority of 387 to 15, placing the administration of medical benefits under the local Health Committees. Further, the free choice of the doctor by the patient was passed *nem. con.* This has been until lately universally understood that each member of a society was to exercise this "free choice" as an individual, and this is what the profession accepted. Efforts are being made to get this decision rescinded, and some societies are trying to induce their medical officers to declare themselves satisfied with present conditions. It is hoped that they will refuse to sign any such specious statements and remain faithful to the mass of the profession which has fought their battle. It is scarcely likely that they can be deceived as to the meaning of the proposals being made to them.

The B. M. A. is sending out a circular to counter the proceedings of the societies which oppose this view, as it would perpetuate and extend "the worst abuses of contract practice."

Mr. Lloyd-George seems to have lost his temper over the question and again resorted to characteristic language. Coupling "Tory and Socialist candidates," he wrote, according to this morning's papers, that they are "deliberately setting themselves by deception to rob the workmen of this country of £17,000,000 to provide for the dark days of sickness." This was part of a letter in support of a candidate and, of course, intended for electioneering purposes. On his return to town it is understood he will see representatives of doctors and the societies jointly. He might do well to invite administrators of the hospitals to an interview, for they are seriously perturbed as to the probable effect of his bill on these institutions. In fact, I learn that most of them continue to receive intimations from their subscribers that if the bill passes they must discontinue their subscriptions.

The greater Friendly Societies are opposed to several other provisions, but as they do not so much concern the profession I need not particularize them.

The tuberculosis exhibition seems to have been successful, for it attracted over 15,000 visitors, and the daily lectures, I am told, were listened to with evident interest by large audiences. Sanatoria were spoken of a good deal and lantern lectures freely employed to demonstrate the treatment. Dr. Paterson, who directs the Frimley Sanatorium, insisted that the social and industrial problem is more important than the medical, for it is the workers who suffer most from the disease on account of unemployment, unwholesome dwellings, semi-starvation, and injurious conditions of labor of certain kinds.

Contradictory statements about cholera in Rome have been freely circulated to the disturbance of intending visitors this season. The official records show that in the week August 28 to September 3 there were 22 cases and 10 deaths. In the whole of Italy there have been, between June 22 and September 3, a total of 10,634 cases, 4,086 being fatal. The total in Rome in that period has been 85 cases.

The Australian Medical Congress was formally opened on Monday. It was expected that 600 Australasian members would attend.

A Dental School is to be established at the London Hospital. The first of the Schorstein lectures will begin there on the 3d prox.

Sir Ronald Ross is to succeed the late Sir R. Boyce on the Advisory Medical and Sanitary Committee for Tropical Africa.

Dr. F. W. Pavy, F.R.S., died on the 19th inst., in his 83d year, and the interment is fixed for today. His name will be familiar to you as one who has held a great position among the physicians of

London for many years, during which he was attached to Guy's Hospital, of which he was, of course, consulting physician. He was a long time lecturer on medicine there. He took his M.D., London, as long ago as 1853. At the Royal College of Physicians he became a Fellow in 1860, was the Harveian orator in 1886, having previously been Goulstonian lecturer (1862-3), and given the Croonian lectures in 1878. A second time he occupied the last named office in 1894. He had become Senior Censor of the College (1891-2). Among other offices filled during his long career were President of the Royal Medical Chirurgical Society and of the Pathological Society, and he was correspondent of several American and European Medical Societies. Of his works the volume on diabetes takes precedence, and this subject occupied him all through his life, and its various aspects are considered in many other books and papers, as his treatise on digestion, that on food and diet, that on the carbohydrates and on assimilation. As a clinical teacher he will be gratefully remembered by generations of students now in practice throughout the world. As a consultant he was valued by many others.

Dr. Alexander Gray of Bradford was watching an operation in the Royal Infirmary when he was taken suddenly ill and died in a short time. He had reached an advanced age, but was still active and had paid a number of visits during the day. He took M.B. and C.M., Glasgow, in 1878.

The death has occurred of Dr. Walter Akins Grogono at the age of 62. He was a well-known old London Hospital student, who qualified in 1872, and had been practising in Stratford ever since. He was for many years district medical officer and public vaccinator. Besides the London College of Surgeons, he took both the Edinburgh colleges. For some time he was surgeon and then senior of the West Ham Hospital.

Dr. H. R. Dew, consulting surgeon to Bristol Eye Hospital, and surgeon to other institutions in Bristol, died on September 7, aged 78. He was formerly in the army, and served through the Crimean War, where he was staff surgeon to Lord Raglan. On retiring from the army he settled at Bristol. He qualified in 1855.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

SOCIETY FOR THE PREVENTION OF SEXUAL DISEASES—SEXUAL ABSTINENCE AND ITS EFFECT UPON HEALTH—STATUTORY PROHIBITION OF PROPHYLACTIC MEASURES—ANTITUBERCULOSIS COMMITTEE—PROTECTION OF THE YOUNG FROM TUBERCULOSIS.

BERLIN, September 15, 1911.

AMONG the various congresses whose sessions have been held during the past summer may be mentioned the eighth annual meeting of the German Society for the Prevention of Sexual Diseases, and the fifteenth annual meeting of the German Central Antituberculosis Committee. A short report of these two meetings may be of interest.

Sexual abstinence and its effect upon health was the chief topic of discussion at the first of the above congresses held in Dresden. Professor Eulenburg emphasized the point that in former discussions on this subject too much consideration has been given to the male aspect of the problem. Like in all other medical questions, the fundamental factors have concerned individuality. These factors are sex, age, character, education, and environment. These are factors of importance. Particularly to the female is the question of sexual abstinence of considerable moment. In the healthy youth of both sexes, until about the middle of the twenties, total abstinence from sexual gratification, at any rate amid the climatic, racial, hygienic, and social conditions prevailing among us, is compatible with the maintenance of perfect health. According to the speaker's investigations, 5 per cent. of the students are abstinent. In fully developed adult life sexual abstinence causes a certain degree of abnormality, which appears earlier in women than in men. The psychic development becomes onesided, and there appear anxiety neuroses, sexual neurasthenias, hysterias, and even pronounced psychoses. Organic disorders, such as myomata, endometritis, and carcinoma, can not be regarded as consequences of sexual abstinence. A transient sexual abstinence is harmless to a normal constitution, but persistent or lifelong abstinence, particularly in women, is quite harmful. The succeeding speaker, Professor Touton of Wiesbaden, mentioned among the consequences of sexual abstinence the following: orchitis, epididymitis, hydrocele, varicocele, prostatic hypertrophy and testicular atrophy. The sequelae of abstinence appear only in neuropathic individuals, particularly if the abstinence follows a period of excessive sexual indulgence or of onanism. Impotence does not ensue, while weakening of the libido and of the sexual power is only transitory. Healthy individuals engaged in active mental and bodily work can practice abstinence even until late in life without impairment of health. For this reason abstinence is to be strongly recommended to the young. The succeeding discussion brought out support and opposition to these views. Professor Blaschko of Berlin concluded that abstinence presented the ideal of education, but that this ideal was rarely attained by students. The latter were to be made acquainted with the various prophylactic measures. The second topic for discussion was the statutory and judical prohibition of the use of these preventive measures against venereal contagion. Marcuse of Partenkirchen complained that the law and judicial procedure were getting more and more arrayed against those who recommended the use of these measures. Inasmuch as the revised statutes contemplated severer penalties for this supposed offense, there was presented and adopted a resolution as follows: "Punishment should be inflicted only for the furnishing of knowledge that grossly offends decency, or that recommends unnatural practices."

At the annual meeting of the Central Antituberculosis Committee the general secretary, Nietner, presented a report stating that the membership of this committee was 1500; and that in Germany there were in operation 99 public sanatoria with about 1200 beds, and 34 private sanatoria with 2000 beds. For tuberculosis children there were 22 institutions with 1000 beds, and for scrofulous children and those suspected of having tuberculosis 86 institutions with over 8000 beds. In addition there were 99 forest camps which were partly kept open at night.

The protection of the young from tuberculosis was the subject of a symposium, opened by v. Pirquet, who stated that children should be shielded from the form of inhalation infection. This could be achieved by removing the tuberculous individuals from the family. The notification of cases, and the provision of nurses and sanatoria took care

of the tuberculous adults. If these means were not sufficient to free the household of tuberculosis, then the endangered children should be taken away and placed in healthy families or in institutions. The question was still to be decided whether among children of school age the infection was to be avoided or was to be welcomed as a mode of immunization. The solution of this problem could be accomplished through the coöperation of the members of the committee. By the careful observation of children in orphan asylums, and even of adults, with the aid of the cutaneous tuberculin test, and by segregation of the suspicious cases, there could be gathered in certain places for observation a number of individuals who would be free from tuberculosis. After many years of observation these individuals would furnish material for the solution of many important problems in tuberculosis research. Krautwig of Cologne remarked that the need was being more and more recognized by the members that greater attention than hitherto should be paid to the subject of tuberculosis in children, since these did not come within the operation of the sick benefit societies and insurance companies. Particular attention should be paid to the years preceding the school age, during which years the child did not get the right supervision. Kirchner of Berlin pointed out the importance of this subject when he stated that the children have not shared in the general reduction of mortality from tuberculosis. In the years between ten and fifteen the mortality has even increased.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

THE PUBLIC HEALTH SECTION OF THE CANADIAN NATIONAL EXHIBITION HELD IN TORONTO—REPORT OF SPECIAL COMMISSION ON MEDICAL INSPECTION OF SCHOOLS IN CANADA—DEATH OF KING COOK, OF THE MEDICAL DEPARTMENT OF M'GILL UNIVERSITY, MONTREAL—THE CONFERENCE OF CANADIAN CHARITIES AND CORRECTIONS HOSPITAL IN TORONTO—CENSUS STATISTICS—RABIES IN ONTARIO AGAIN—REGULATION OF ONTARIO PROVINCIAL BOARD OF HEALTH TO PREVENT THE POLLUTION OF WATER.

MONTREAL, October 3, 1911.

THE Canadian National Exhibition, which is held yearly in Toronto, and which incidentally is the best annual exhibition of the world, has had for some years many exhibits of great sanitary interest. For example, its milk exhibits have shown year by year the progress made in safeguarding milk from the farm to the consumer. This year, however, for the first time the Toronto Exhibition had a public health section. The initiation of this new departure was due to the Ontario Board of Health, and mainly, of course, to its chief officer, Dr. J. W. S. McCullogh. The interest manifested in this exhibit by the visitors to the exhibition was quite remarkable, and was a significant sign of the times. The ordinary citizen is becoming aware of the value of preventive medicine and is beginning to take an intelligent interest in the subject. Sanitary or public health matters in Canada, as elsewhere, have within the past few years made great strides, but educative measures are needed to cause the people at large to apprehend and appreciate the various preventive measures which are being put forth nowadays. The public health exhibit at Toronto was inaugurated with this end in view. The exhibit is a further development of the traveling tuberculosis exhibit instituted by the board during the past few years. This year for the first time it embraced a large variety of subjects relating to public health, and it is the intention of the board to continue this educational feature upon a larger scale. The space allotted to the exhibit was very limited, but even under these unfortunate conditions the display was striking. The Provincial Board of Health showed a very fine collection of handsomely mounted photographs of sanatoria in Great Britain, Germany, Scandinavia, United States and Canada with plans of others—models of tents, sanatoria and shacks for the care of consumptives. The Toronto Health Department had a good exhibit. However, there were three exhibits which stood out prominently—the charts of the American Association for the Conservation of Vision; the exhibit of the American Association for the Prevention of Infant Mortality, and the various charts, banners and the mechanical models lent by the Department of Health, Chicago. The latter exhibit was in charge of Dr. C. St. Clair Drake, the designer of the models. The first illustrated infant mortality. Three thousand five hundred dolls affixed to the walls represented the babies who died from preventable diseases in Chicago during last year. In front of this was a revolving cylinder operated by clockwork, in which a number of larger dolls were continually appearing, the head of every fourth one of which was chopped off by the Angel of Death who stood above. Another model illustrated ventilation. Two rooms of the same size were represented in which were dolls in tiny beds. At the ordinary breathing rate by means of an ingenious contrivance vapor was seen to issue from the nose of the dolls. In one room which had its doors and windows open the atmosphere remained clear. In the other room, without ventilation, the air was soon quite murky. These models excited great interest and proved the truth of the argument that out-of-the-way methods are necessary to attract the attention of the public. On the whole the public health section at the Toronto exhibit was a great success, and reflected much credit on Dr. McCullogh, who was mainly responsible for its direction and arrangement. The report of the Special Committee on Medical Inspection of Schools in Canada, 1910-1911, has been issued recently. The recommendations of the committee are as follows: A. Organization: Three things are necessary and desirable—1. Governmental recognition. Organization under an official medical expert directly responsible to the provincial government. 2. Coördination of the department with the provincial board of health. 3. Professional control. No one but a physician of high professional standing and culture and able to avail himself to the utmost of all other agencies and organizations can do this work. B. Extension. It is recommended by the committee to extend the work throughout Canada so that deficient children or afflicted children shall be taught, whenever possible, to earn their own living in order that they will not be a burden on the community. The public school at present in Canada gives no help at all to a child who is partially blind or partially deaf. As for the victims of poliomyelitis, now epidemic or threatening to be in certain parts of Canada, and the sufferers from joint tuberculosis steps should be taken to relieve them and assist them to become, at any rate, to some extent self-supporting. The man who had been janitor of the

Medical Department of McGill University for thirty-six years died recently. King Cook, the name by which he was known, was a character and an institution. During the long tenure of his post he had seen several generations of medical students pass, and was by way of being a philosopher and something of a wag. He will be missed more than many with great reputations. The Conference of Canadian Charities and Corrections took place in Hamilton, Ontario, on Sept. 25, Mr. J. Rose Robertson of Toronto, proprietor of the *Evening Telegram*, being in the chair. In the discussion that followed the reading of a paper by Dr. Parry of Hamilton on the care of children, Mr. Robertson gave some of his own experience in this kind of work. He said that it would surprise many people if they knew the true conditions of some of the dairies in Ontario. He also outlined the steps which had been taken in Toronto in order to obtain pure milk. Hospital building and extension proceeds apace. There was a time, and not long ago, when Toronto was almost a byword among the great cities of this continent on account of her inadequacy of hospital accommodations. Now that cause for reproach is being rapidly removed and she bids fair in the not far distant future to be a model for other cities as regards hospital accommodation. The work on the new general hospital is making rapid progress, and the various buildings of the group will soon be ready for the interior work which will be carried on through the winter. The pathological building is expected to be completed during the winter. The surgical wing and medical out-patients' building have been roofed, and the administration building will soon be in a like condition. The buildings for the department of obstetrics and for private wards have not been commenced yet. A feature of the hospital will be four roof gardens on the roof of the main building for the benefit of convalescents.

The census statistics for the whole of Canada will soon be announced. The returns are being awaited from the Yukon and northwest districts. The returns show that Montreal, Toronto, Winnipeg and Ottawa have made remarkable gains. In Ontario the rural population has fallen off, notably in Western Ontario, but this has been partly offset by a tremendous increase of population in Northern Ontario.

Rabies has again exhibited itself among the dogs of Toronto, and the Health Board is likely to take action to prevent its spread. Stringent and comprehensive regulations have been passed by the Ontario Provincial Board of Health for the prevention of the contamination of water. After laying down the regulations for preserving from pollution lakes, rivers, streams or other inland waters, it is enacted that hotels, restaurants, railway trains and depots, boats and other public places which provide a supply of drinking water for the use of the public must safeguard its purity.

Extensive Lupus Erythematosus Associated with Symmetrical Gangrene.—G. W. Dawson reports the case of a man, aged 49, in whom the disease began nearly one year ago, and now there were characteristic patches of the erythematous type on the face, ears, scalp, and back of hands and fingers. For some considerable time he had complained of his fingers going dead and white; actual necrosis had taken place at the end of the right little finger and the lower part of the helix of the right ear; besides these there were several small eschars on the back of the fingers and a few on the nose, leaving slight scarring to mark their site.—*Proceedings of the Royal Society of Medicine.*

Progress of Medical Science.

Boston Medical and Surgical Journal.

September 28, 1911.

Consideration of the Mechanism of Pressure in the Production of Vertigo and Report of Cases. C. J. Blake.
The Value of Lumbar Puncture in the Treatment of Aural Vertigo. J. J. Putnam.
Cancer of the Colon. H. Gage.
Surgical Treatment of Pyloric Stenosis with Report of Cases. S. W. Goddard.
A Reminiscence of My Professional Life. D. W. Cheever.
Bad Reichenhall. A Health Resort of Southern Germany. H. Packard.

Pressure in the Production of Vertigo.—C. J. Blake states that in cases of recurrent vertiginous attack with inadequate evidence of an intralabyrinthine or of an accessible extrinsic pressure factor it seemed desirable to test the effect, upon the line instituted by Babinski, of decrease of intracranial and, correspondingly, of intralabyrinthine pressure by some means which would leave the auditory apparatus intact, an additional incentive to such a series of investigations being previous experiences in disturbances of intralabyrinthine pressure, incident to investigations in regard to the removal of the stapes. Under these considerations, in conjunction with J. J. Putnam, in a series of adult cases in which the extrinsic pressure factor was at a minimum, or absent, lumbar puncture was practised with results thus far sufficiently favorable to warrant a continuation of the investigation. Nine cases are reported in which this procedure was followed. In no instance were there more unfavorable consequences than severe headache of several days' duration in three instances; in all of the cases in which this decompression method of treatment was employed there was a temporary amelioration of the condition, and, in the majority, entire relief from the vertiginous attacks during a period of from a few months to three years, the latter being the major limit of observation.

Lumbar Puncture in the Treatment of Aural Vertigo.—J. J. Putnam states that nine years ago Babinski first called attention to the therapeutic value of the withdrawal of 10 to 20 ccm. of cerebrospinal fluid as a means of treating aural vertigo. The best cases for treatment by lumbar puncture are those in which various tests show that the labyrinthine apparatus is still in a fairly normal state. When the neural degeneration is far advanced the effects of withdrawal of cerebrospinal fluid are less marked at the outset and repetitions of the operation, which in the better cases work well, produce less and less marked results and are eventually of no benefit. The most favorable cases of all are those of pure labyrinthine origin and of relatively short duration. In such cases no great disturbance of hearing is present and especially no serious middle-ear disease.

Cancer of the Colon.—H. Gage notes that the chief anatomical feature of cases of cancer of the colon is the gradual narrowing of the lumen of the gut, and the obvious effect of such a narrowing is an increased constipation. Such a condition, occurring in an individual of suitable age, whose bowels have been in the habit of moving freely and naturally, ought in itself to arouse one's suspicions. If, in addition, it is associated with colicky pain, frequent, small, and unsatisfactory stools, and especially with occasional attacks of diarrhea, the possibility of a malignant stricture should be seriously considered and the importance of an early exploratory incision recognized. Radical removal of the growth should be done early. One is now in a position to follow the lymphatics, which drain the different portions of the gut, into the depths of the mesentery and to remove them, in favorable cases, well beyond the limits of the cancerous invasion. In the carefully selected cases of cancer of the colon operated upon in the Mayos' clinic the mortality was 13 per cent.

Pyloric Stenosis.—S. W. Goddard reports eight cases of pyloric stenosis successfully treated by the performance of a posterior gastroenterostomy.

Reminiscences of Professional Life.—D. W. Cheever continues his article discriptive of medical life during the past fifty years.

Bad Reichenhall.—H. Packard states that the chief therapeutic claims of the little Bavarian village are in the treatment of nontuberculous respiratory difficulties, chronic bronchitis, asthma, etc., although a very high degree of efficiency is demonstrated in cases of neurasthenia and functional heart difficulties.

New York Medical Journal.

September 30, 1911.

Apollyons. W. B. Konkle.
A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. G. T. Stevens.
Report of the Psychotherapeutic Clinic at the Cornell Dispensary. H. W. Frink.
Twilight Talks with the Doctor.—VI. G. F. Butler.
Headache. W. Taylor.
Music as a Therapeutic Agent. J. Knott.
Proctoclysis; a New Apparatus for Its Administration. A. E. Isaacs.
An Address to Nurses. J. M. Ferrer.

Apollyons.—W. B. Konkle uses this Greek term in referring to the influences that tend toward the wrecking of the human race. These influences are ease and luxury, overstress of work and of pleasure, dissoluteness and vice, modern war, the tyrannies of fashion as to dress, forms, and usages, and the production of abortion.

Nervous Affections and Adjustments of the Eyes.—G. T. Stevens concludes his series of papers on this subject and states that the heterophoria upon which many nervous manifestations depend may be corrected by the operation for declination, which operation he has called "extendocontraction," of a tendon, and which involves little of the risk attending a tenotomy and involves a minimum of discomfort to the patient.

Psychotherapy.—H. W. Frink reports the results of the work done at the Psychotherapeutic Clinic of the Cornell Dispensary from November, 1909, to July, 1911. Good results were obtained in psychasthenia, hysteria, hypochondriasis, neurotic headache and alcoholism. In sexual neurasthenia, the anxiety neurosis, typical *tic convulsif*, stammering, and in incorrigible children psychic treatment was ineffectual. Formal suggestion was ineffectual in all cases in which only the first stage of hypnosis could be induced. In the three cases in which a complete psychoanalysis was made a cure resulted.

Twilight Talks.—G. F. Butler states that nervous prostration is the disease of rapid civilization. People eat too much and too great a variety of food. They also worry too much—introspection, selfishness, despondency, and hopelessness should be overcome at all hazards.

Headache.—W. Taylor discusses headaches under the following groups, according to the origin of the headaches: Anemic, congestive, toxic, nervous, sympathetic, and organic or structural.

Music in Therapeutics.—J. Knott believes that, in spite of the materialistic tendency of modern science, music still has a place in the art of medicine. The phenomena of perfectly healthy animal existence are guided by rhythmic laws of repetition. The value of music as a power in the social and political life of nations and communities, as well as in the esthetic and temperamental condition and feelings of the individual, has been more or less highly estimated and applied in all parts of the world. The power of music in awakening the emotions is exemplified in the effect of martial strains.

Proctoclysis.—A. E. Isaacs describes a new apparatus for the performance of this procedure.

Address to Nurses.—J. M. Ferrer presents a few parting words of advice to a class of graduating nurses, reminding them of the duties and opportunities of their calling.

Journal of the American Medical Association.

September 30, 1911.

The Relationship Between Diseases of the Ear and Those of the Eye. D. Roy.
The Leucocytology of Typhoidal Diseases, as a Group-Phenomenon Within the Typhoid-Colon Family of Bacilli (Typhaceæ). J. F. Hultgen.
Remedies for Animal Parasites. A Study of the Relative Efficiency and Danger of Thymol as Compared with Certain Other Remedies Proposed for Hookworm Disease. W. H. Schultz.
Hookworm Infection in the Deep Gold Mines of California. E. E. Endicott.
Hookworm Disease in California, Its Importation, Dissemination, and Prevention. H. Gunn.
Brain Surgery. C. C. Rogers.
Anesthesia from Nitrous Oxide-Oxygen, Plus Carbon Dioxide, with Special Reference to Combating Shock. E. G. Martin.
Myotonia Atrophica with a Report of Two Cases. F. Kennedy and C. P. Oberndorf.
The Importance of the Quantitative Regulation of the Diet. H. D. Arnold and R. C. Larrabee.
The Thyroid, with Special Reference to Hyperthyroidism and a New Method of Treatment. M. F. Porter.
Accessory or Aberrant Pancreas, with Report of a Case. B. B. Finkelstone.
A Plaster Support for Gastroptosis. S. D. Dice.
A Table for Eye, Ear, Nose, and Throat Work. L. W. Dean.
Mitral Stenosis of Traumatic Origin. D. Riesman.
Malta Fever in Texas: The Serum Reaction of One Hundred and Twenty-eight Goats in Edwards County. Fourth Paper. E. R. Gentry and T. L. Ferenbaugh.
Controlling Hydrophobia in the Human Subject. A. M. Stimson.
A Case of Angiokeratoma. E. H. Trowbridge.
"Singer's Nodule" (Chorditis Nodosa) Removed by Vocal Treatment. F. V. Laurent.
A New Tonsil Scissors. W. S. Windle.

Relationship of Eye and Ear Diseases.—D. Roy believes that every opthalmologist should be competent to make a complete diagnosis of ear diseases. Within the last two or three years the use of nystagmus as an aid to diagnosis in labyrinthine disease has been gaining recognition. A study of the anatomical relations readily explains the possibility of eye diseases arising from ear affections, and frequently ocular paralysis of otitic origin is due to direct transmission of infection from the ear.

Leucocytology of Typhoidal Diseases.—By J. F. Hultgen. (See MEDICAL RECORD, July 1, 1911, page 48.)

Remedies for Animal Parasites.—W. H. Schultz compares the various hookworm remedies as regards their safety and efficiency and finds that thymol, when given under the supervision of a physician, is the best.

Hookworm Disease in California Gold Mines.—E. E. Endicott reports his experiences with this disease in the deep gold mines of California. He believes that this disease is a contributing cause, if not the direct cause, of death in many cases reported as "miner's consumption." As a prophylactic measure the author insists on the provision of proper toilet conveniences in the mines.

Hookworm Disease in California.—H. Gunn notes that of the large number of Porto Ricans that have taken up residence in California one-half are hookworm carriers. Many cases are imported from Hawaii or are brought in by laborers from the Alaska fisheries. In one mine 75 per cent. of the men examined have been found infected.

Brain Surgery.—C. C. Rogers concludes that suspected tumor cases should not be subjected to long-continued antisyphilitic treatment, but a Wassermann test should always be made and, if positive and the gumma is non-vascular, one may conclude that it will not yield to specific treatment until pressure is relieved. The patient should have the benefit of early operation. Intracranial hemorrhage should be evacuated in all cases in which the patient lives long enough to obtain skilled surgical treatment, so as to relieve pressure and prevent infection and adhesions or abscess formation and their consequences. Intracranial pressure should be relieved by decompression to prevent headache, cerebral vomiting, and visual impairment. Three to six weeks is long enough to test the utility of antisyphiltic remedies, and they should be discontinued if not doing good.

Anesthesia from Nitrous Oxide-Oxygen Plus Carbon Dioxide.—E. G. Martin quotes various authorities as to the advantages of nitrous oxide-oxygen anesthesia in cases in which the anesthetic may make the difference between life and death. The newest and best method of

using this form of anesthesia is by rebreathing. The author has been using this method for nearly a year and has observed the rapid pulse become slower with an increase of tension and the respiration also became slower and deeper.

Myotonia Atrophica.—F. Kennedy and C. P. Oberndorf report two cases of this disorder, characterized by weakness and wasting of certain muscles of the face and of the lower limbs with myotonic phenomena in the arm and fingers and depression of deep reflexes.

Quantitative Regulation of the Diet.—By H. D. Arnold and R. C. Larrabee. (See MEDICAL RECORD, July 8, 1911, page 94.)

Hyperthyroidism.—M. F. Porter states that a simple, safe, and effective operation for hyperthyroidism is much to be desired. He believes that the injection of boiling water into the gland would meet the need. His experience with the method up to date has not been sufficient to put it on a firm basis, but he thinks it enough to warrant this belief. Altogether, he has injected boiling water into hyperactive goiters twenty-nine times in four patients. From 40 to 150 minims were injected at each point and from one to three points were injected at each sitting. No untoward results followed the injections in any case but marked improvement always resulted. The treatment is specially adapted to the very mild and very severe cases. The injections should be made within the capsule, avoiding the neighborhood of the parathyroids and recurrent laryngeal nerves and with the same precautions governing the boiling water treatment of angiomata.

Accessory Pancreas.—B. B. Finkelstone reports a case of this condition in which the accessory organ was entirely separate from the normal gland.

Plaster Support for Gastroptosis.—S. D. Dice recommends the use of an abdominal supporter of zinc oxide adhesive plaster on moleskin.

Operator's Table.—L. W. Dean describes a table that he has designed, one that would serve equally well for cataract operations, brain surgery, mastoid operations, throat work, laryngotomy, or bronchoscopy.

Traumatic Mitral Stenosis.—D. Riesman reports a case of mitral stenosis which he believes was the direct result of violent strain. The primary lesion was either a rupture of one of the more important chordæ tendineæ or more likely a hemorrhage into the valvular tissues with later organization and contraction.

Malta Fever in Texas.—E. R. Gentry and T. L. Ferenbaugh state that in 25 of 128 goats examined 19.4 per cent. gave a positive agglutination test for *M. melitensis*. All human cases reported gave a history of association with the goat-raising business and six were drinkers of goat's milk. The factor of dust infection must also be considered.

Hydrophobia.—A. M. Stimson describes the measures that are necessary for the prevention and control of this disease in the human subject.

Angiokeratoma.—E. H. Trowbridge reports a case of this condition affecting the scrotum.

Singer's Nodule.—F. V. Laurent emphasizes the fact that the main treatment of chorditis nodosa is teaching the patient to use the voice and respiratory apparatus properly. This appears to be a much more satisfactory method than operative measures, as, in the latter case, the node will probably reappear in time, while if the patient has learned to use the voice properly, the cause is removed and there is no danger of recurrence.

Tonsil Scissors.—W. S. Windle has devised a new instrument with the following features: 1. The cutting edge of one blade is serrated and the other smooth; this facilitates the cutting of soft, slippery tissue. 2. The outer edge of each blade is wave-like in outline and beveled to a dull knife edge; this serves as a dissector.

The Lancet.

September 23, 1911.

Two Cases of Extensive Excision of the Colon and Ileum for Tuberculous Disease, with Some Details of Technique. A. E. Barker.
The Operative Treatment of Malignant Disease of the Pelvic Organs. A. Don.
Three Cases of Congenital Heart Disease. With Notes of the Family History Relating to Them. Sir Dyce Duckworth.
The Variability of Agglutination of *B. typhosus* and *M. melitensis*, by Normal Sera and Its Importance in Laboratory Diagnosis. E. C. R. Fox.
Mediterranean Fever; Its Influence on the Fetus in Utero. R. Samut.
Accidents Which Have Occurred Through Color Blindness. F. W. Edridge-Green.
Notes on Bilharziosis and Ankylostomiasis in Egypt. G. W. G. Hughes.
X-Ray Treatment of Sarcoma; A Case of Round-celled Sarcoma of the Right Angle of the Lower Jaw in which Colossal Doses of X-Rays Proved Effective. J. Delpratt Harris.
Note on a Case of Acute Plastic Iritis, Markedly Benefited with Antistreptococcus Serum. A. A. Bradburne.
A Case of Syphilitic Necrosis of the Cervical Vertebræ. F. X. J. Callaghan.
Portal Pyemia and Hemorrhoids. D. A. Alexander.
The Prevalence of Pulmonary Tuberculosis in the Merchant Service. M. MacKinnon.
A New Thermotherapeutic Method in Gynecological Cases. S. Flatau.
A Case of Myeloid Leucemia with Chylous Ascites. H. S. Furness and G. F. Stebbing.

Extensive Excision of Colon and Ileum.—A. E. Barker states that the removal of long tracts of the large intestine for malignant and other diseases such as tubercle and actinomycosis is now a common operation and one giving excellent results, immediate and remote. With the improved means of diagnosis which are almost daily being devised the procedure is certain to become more frequent and beneficial. But such operations are only justifiable when undertaken by those who fully realize their difficulties and dangers and who have studied their technique in every detail.

Malignant Disease of the Pelvic Organs.—A. Don notes that malignant disease of the pelvic organs is so common and its operative treatment is yet so varied and on the whole so unsatisfactory that it is highly probable that no finality of method of dealing with the disease has yet been reached. The crux of the whole problem seems to be the disposal of the ureters and the eradication of malignant metastases in the walls of the pelvis.

Congenital Heart Disease.—Sir Dyce Duckworth reports three cases of this condition occurring in one family of marked gouty heredity. While paying little attention to the idea of strong maternal impressions, one may yet suspend judgment respecting the influence sometimes of lesions due to rheumatic, gouty, and syphilitic toxins on the fetal endocardium. The latter are certainly most rarely met with. One should remember that the placenta is permeable by microorganisms and toxins, and further studies in this direction are very desirable.

Variability of Agglutination of Bacillus Typhosus and Micrococcus Melitensis by Normal Sera.—E. C. R. Fox concludes from his investigations that all strains of organisms used for the agglutination reaction should be tested quantitatively as regards agglutinability. The laboratory strain used should be tested against the sera of as large numbers as possible of healthy individuals. The laboratory strain should be tested against the sera of a large numbers of persons known to be suffering from the disease caused by the specific organism, and also of persons suffering from diseases caused by allied organisms, before differentiation between the diseases can be attempted by means of the agglutination test.

Influence of Malta Fever on the Fetus.—R. Samut reports a case in which the fetus had been exposed *in utero* for 21 days to the influence of those abnormal conditions of the maternal blood consequent upon a severe attack of Mediterranean fever. The child's blood and cerebrospinal fluid yielded a positive reaction to *Micrococcus melitensis* in large dilution. This organism could not be recovered from the internal organs of the fetus. Acute infectious diseases are known to be transmitted by the maternal blood to the fetus *in utero*, endangering or in-

terrupting pregnancy. Thus cases of intrauterine variola are by no means rare, while intermittent fever has been known not only to attack the fetus, but in some instances the attacks have continued after birth, and in all the child had at birth an enlarged spleen. There seems to be no reason, therefore, why Mediterranean fever should not be transmitted from mother to child during gestation. The presence of agglutinins alone in the reported case raises the important question whether, in the absence of the *Micrococcus melitensis* in the fetal organs, they could have been elaborated by the fetal blood, or whether they were transmitted directly from the maternal to the fetal circulation.

Accidents Arising from Color-Blindness.—F. W. Edridge-Green states that a large number of such accidents arising from color blindness in pilots and railway engineers have been reported.

Bilharziosis and Ankylostomiasis in Egypt.—G. W. G. Hughes states that of the recruits to the Egyptian army who are sent to Cairo for medical examination 7.5 per cent. have bilharzia ova in their urine. One of the most striking results of ankylostomiasis in the young is the stunting of growth. The extent of the ravages of ankylostomiasis among the male population of Egypt is indicated by the large number of stunted individuals.

X-Ray Treatment of Sarcoma.—J. Delpratt Harris reports beneficial results following the use of massive doses of the *x*-rays in the treatment of a round-celled sarcoma of the lower jaw in a boy four years of age.

Acute Plastic Iritis.—A. A. Bradburne reports a case of this condition in which marked improvement followed the use of antistreptococcus serum. The patient had given evidence of general infection, supposedly rheumatic, but blood examination had revealed the presence of the streptococcus. It is supposed that certain antitoxic sera, even if they do not possess specific action, have marked therapeutic properties of liquefying and aiding absorption of the exuded lymphs.

Syphilitic Necrosis of the Cervical Vertebræ.—F. X. J. Callaghan, in reporting a case of this condition, states that syphilitic necrosis may give rise to all the clinical features of tuberculous caries, but the onset in the former is more sudden and the progress more rapid. In most cases valuable information is obtained from the history of the patient, the presence of other evidences of syphilis, and by noting the effect of antisyphilitic treatment.

Portal Pyemia and Hemorrhoids.—D. A. Alexander reports a case in which portal pyemia occurred as an extension from a thrombosis of the hemorrhoidal veins.

Pulmonary Tuberculosis Among Sailors.—By M. MacKinnon. (See page 791.)

A New Thermotherapeutic Method in Gynecology.—By S. Flatau. (See Medical Record, October 7, page 715.)

Myeloid Leucemia with Chylous Ascites.—H. S. Furness and G. F. Stebbing report a case of this condition occurring in a male aged 40 years. The interest of the case lay in the presence of large numbers of myelocytes in the ascitic fluid and urine, the chylous nature of the ascites, and the extensive general enlargement of the lymphatic glands.

British Medical Journal.

September 23, 1911.

Some points in the Treatment of Severe Talipes. R. P. Rowlands.
A Case of Wry-Neck Following Infantile Paralysis: Treatment: Result. F. Hernaman-Johnson.
A Record of Four Hundred Cases of General Anesthesia Preceded by Scopolamine. F. Rood.
The Brighton United Twins. J. A. Rooth.
The Treatment of Syphilis by Salvarsan. C. H. Browning and I. McKenzie.
Salvarsan in Leprosy. F. A. and F. L. de Verteuil.

Treatment of Severe Talipes.—R. P. Rowlands believes that the operations for talipes in common use are not radical enough. Too much is expected from tenotomies and similar tinkering measures ,and too much is left to the after-treatment, especially with hospital patients. It should be one's endeavor to anticipate the well-known tendency to recurrence, and to design one's operations accordingly, making the patient as independent as possible of prolonged after-treatment by instruments.

Torticollis Following Infantile Paralysis.—F. Hernaman-Johnson urges that every case of acute infantile palsy should be kept under observatioi for some time with a view to the possibilty of a supervening wry-neck. If the lesions in the cranial nerves concerned have been but slight, the deformity may not manifest itself for many months. The sooner the condition is diagnosed and treated the better are the prospects of cure. In the early stages faradization alone may suffice to check the deflection of the head. It must also be remembered that the tendency of the facial hemiatrophy is to increase from year to year, just as a paralyzed limb fails to keep pace with its fellow in rapidity of growth. Faradic stimulation, if begun sufficiently early, does much to lessen these inequalities of development; the interrupted current should, therefore, always be given a careful and persistent trial.

General Anesthesia Preceded by Scopolamine.—F. Rood precedes general anesthesia with the administration of 1-100 grain of scopolamine, 1-120 grain of atropine sulphate, and 1-6 grain of morphine tartrate. From the point of view of the patient this preliminary treatment either blots out or robs of its terrors the preliminaries of an operation, which in some cases, as, for instance, exopthalmic goiter, is a very real advantage. It also diminishes the discomforts of after-pain, etc, by lengthening the period of unconsciousness; postanesthetic vomiting also is lessened. The freedom from sepsis and salivation obtained by the administration of ether by the open method, in combination with atropine, greatly reduces the tendency to pneumonia. From the point of view of the operator the quiet respiration and relaxation which are usually obtained are of great assistance. Finally, there is the undoubted advantage of being able to substitute with equally good results a safe drug, such as ether, for a dangerous one, such as chloroform.

The Brighton United Twins.—J. A. Rooth describes this case of pygopagi. The twins are girls and are now two and one-half years old. They are joined back to back by a fleshy and cartilaginous union in the sacral region, and have a common anus. Each has a separate vulva and vagina. Either twin may be affected with bronchitis, diarrhea, or constipation, although the other twin may not be at the time similarly affected.

Salvarsan.—C. H. Browning and I. McKenzie recommend as the best possible means of producing a complete sterilization in syphilis a combined therapy. Where there is the suggestion of a primary syphilitic lesion, even if spirochetes cannot be found and the serum reaction is negative, treatment should be begun without delay. An intravenous injection of an alkaline solution of salvarsan should be given (0.4 to 0.5 gram in the case of a man), and this should be repeated in three weeks. After each injection a course of mercurial inunctions should be given.

Salvarsan in Leprosy.—F. A. and F. L. de Verteuil report their results in the treatment of leprosy by means of salvarsan. Though there was little change to be noticed in the outward manifestations of the disease, there were some noteworthy differences in the appearance of microscopic slides taken before and after injection. The preparations were made from scrapings taken beneath the dermis over leprotic nodules. In all the tubercular cases the bacilli were still plentiful; in the anesthetic case, however, there was a noticeable reduction in their number. The chief change, present more or less in all the cases, was in the appearance of the bacilli. They had become gran-

ular, with coccothrix-like distribution, many being clumped together in granular-like masses. In other cases granules in large numbers were to be seen scattered all over the field.

Berliner klinische Wochenschrift.

September 25, 1911.

Laceration of the Intervertebral Joint Capsule of the Cervical Vertebræ as a Typical Obstetrical Trauma.—Stoltzenberg in the course of 75 autopsies on newly born infants found this injury present in 9 cases. He considers that this incidence of 12 per cent. warrants him in calling the accident a frequent one. The exact lesions encountered are as follows: laceration of the capsule of the lateral articulation, laceration of the neighboring portion of the intercrural ligament, laceration of the vertebra in one of its cartilaginous strata. The injury becomes dangerous through the resulting hemorrhage into the membranes and intra-membranous canal. It is produced through the operation of deviation from the longitudinal traction upon the spine. This may occur in the after-coming head when this is drawn sidewise as a result of fixation by the trunk or arm and in shoulder presentations.

Causes of Acetonuria in Pregnancy.—Porges and Novak believe they have shown that acetonuria in pregnancy is due to defect of carbohydrates in the diet and that it differs from acetonuria in the nongravid only in the fact that carbohydrate intolerance is reduced to a lower level. If we recall other anomalies of metabolism in pregnancy we perceive a key to a solution of the problem of the relation between lack of carbohydrates in the diet and carbohydrate intolerance. To these metabolic disturbances belong the lowering of the limits of assimilation in the gravid as well as the increase of oxyproteinic acids and polypeptides in the urine of the same. These disturbances are due probably to a depression of the hepatic functions which is revealed by demonstrable changes in the circulation, lack of glycogen, and fatty infiltration. In the author's material an insufficient metabolism of fat no doubt existed. The acetone bodies represent an intermediate stage in the transformation of fat to carbohydrates. Acetonuria in the gravid is therefore one more evidence of a depressed hepatic function.

Treatment of Pneumonia.—Schiele believes that skill in treating pneumonia is founded on the intelligent use of a few simple and time-honored remedies and procedures. We should know when, where, and how to employ these. We should distinguish between the mechanical death and the toxic death. During the 24 hours following the crisis cardiac stimulants should be used continuously. If post-critical delirium sets in morphine and camphor should be used. Opiates are not contraindicated if painful respiration is present, for by relieving pain they enable the patient to breathe more deeply. The physician should favor the patient's mental state by psychical methods and by securing him sleep and having him made comfortable in every way. A good easily potable white wine also assists the mental state and aids nutrition. If the patient is pulseless digitalis is indicated. Venesection may avert fatal edema of the lungs.

Münchener medizinische Wochenschrift.

September 19, 1911.

Laparothoracoscopy.—Jacobaeus gives an account of his new diagnostic resource, which is not wholly original with him since Kelling has described a similar method of "celoscopy." The author has used a Nitze's cystoscope, No. 12, on 115 subjects. He performed laparoscopy 80 times on 45 patients, chiefly with hepatic diseases, tuberculous peritonitis, and abdominal cancer. Thoracoscopy was done 35 times on 27 subjects for the various affections of the pleural cavity. Thoracoscopy seems to give the greater promise. The patients receive local anesthesia and the cystoscope—a small affair—is introduced directly into the pleural or peritoneal cavity through a sufficient opening. The technique does not accompany the present article.

Biological Treatment of Peritonitis.—Kuhn claims that the rational treatment of peritonitis consists in the direct irrigation with solutions of sugar. The latter, as shown by studies in culture media, tends to antagonize the formation of proteolytic enzymes and toxins and to assist in the genesis of antibodies. It also antagonizes the formation of fibrin. This treatment has been tested with good results in experimental pathology. Glucose is used in 5 to 10 per cent. solution after operations, and in conjunction with saline irrigation.

Heredity in Tuberculosis.—Reiche cites many statistics, of which the following is an example: Of nearly 8,000 cases of the disease, 85 per cent. showed no inheritance while in 15 per cent. the latter was in evidence. A larger percentage of women were affected by heredity. Paternal transmission was considerably more in evidence than was maternal transmission, while crossed or double inheritance was present in about 10 per cent. of all hereditary cases. The course of phthisis does not appear to be modified by inheritance. The application of the so-called numerical method shows that this plays but a subordinate rôle.

Retention of Placenta from Premature Use of Ergot.—Schmid relates a case of this sort and cites a few others from literature. Such experiences are exceptional, for ergotin has been injected in hundreds of cases with impunity. The tetanoid contraction of the uterus after expulsion of the fetus and following the use of ergot shows plainly that the drug is at fault. Pituitrin will no doubt soon displace ergot in obstetrics, for its action is much more constant and less violent. It is efficient in postpartum hemorrhage, yet could hardly cause retention of placenta.

Deutsche medizinische Wochenschrift.

September 21, 1911.

Excess of Male Births.—Jendrassik sums up a consideration of this subject as follows: The sex of a child is determined by heredity. From four to five generations have an influence on the individual. Following Mendel's law a like number of boys and girls are born, but over and above these are 4 per cent. of nominal males who, however, possess feminine qualities. This explains the excess of male births. From another point of view boys die in greater numbers up to the fourth month from congenital weakness. Individual qualities of descendants come from their progenitors. Only those qualities derived from five generations are stable in pure propagation; besides it is not possible to influence much the quality of the child, for improvement and decline succeed each other alternately.

Genealogy and Inheritance from the Psychiatric Standpoint.—Sommer divides the material into four groups: 1. Inheritance of normal qualities, morphological, physiological, and psychological. 2. Inheritance of pathological qualities—corporeal, spiritual—and congenital, late appearing, and periodical. 3. Inheritance of qualities injurious to society—corporeal, spiritual. 4. Origin of the qualities which form genius through certain crossings.

Quinine in Urticaria.—Wolff relates a severe case of urticaria in which he obtained good results from quinine. He recalls that the same drug has given similar results in pemphigus. This action of quinine, especially in children, is so striking that it must possess great significance, yet the number of cases is too small to enable us to explain it. Most cases of urticaria are now accounted for by anaphylaxis; and it has been recently shown that *in vitro* quinine is able to disintoxicate anaphylatoxins. This of course suggests a much more extensive use of quinine, for example in serum disease.

Insurance Medicine.

Association of Life Insurance Medical Directors.—At the twenty-second annual meeting of this association, held in New York City on October 4 and 5, the following officers were elected: *President*, Dr. Brandreth Symonds of New York; *First Vice-President*, Dr. Harry Toulmin of Philadelphia; *Second Vice-President*, Dr. Edward K. Root of Hartford, Conn.; *Secretary*, Dr. William Evelyn Porter of New York; *Treasurer*, Dr. A. S. Knight of Rochester, N. Y. *Executive Committee*, Drs. F. C. Wells, E. W. Dwight, and Robert L. Burrage.

Alcohol and Life Insurance.—Whitfield Harral says that the question of the use of alcohol is a most important one in considering an application for insurance. When used daily alcohol handicaps the individual in the performance of his duties and renders him an easier victim to disease. Its prolonged use results in fatty degeneration or in fibrosis. Catarrhal conditions of the respiratory tract are produced by the alcohol eliminated through the lungs. It attacks the stomach, the liver, and the kidneys, and interferes with metabolism. Until recently insurance companies regarded "Ansties' limit" as the maximum amount of alcohol that could be taken without harm, namely, a daily allowance of one and one-half ounces of absolute alcohol, or three ounces of ardent spirits, two wineglassfuls of sherry, or other strong wine, three tumblerfuls of strong ale or porter, five tumblerfuls of light ale or beer. This amount has proved to be too great, and the limit now considered physiologically permissible is from two-thirds to three-quarters of an ounce of absolute alcohol, or its equivalent, in one-half pint of champagne, one and one-half ounces of whiskey, or two to three glasses of beer. Individuals who have taken the Keeley cure should be refused insurance in most cases. More favorable applicants should be issued endowment policies terminating at the age of fifty, and then only provided it has been five years since the cure was taken, and the applicant has been a total abstainer in the meantime.

Nelson's table shows the influence of alcohol upon life expectancy at various ages:

Age.	Intemperate.	General.
20	15.5	44.2
30	13.8	36.5
40	11.6	28.8
50	10.8	21.2
60	8.9	14.3

—*Proceedings of the Medical Section, American Life Convention, New Orleans*, February, 1911.

Suicide.—The great majority of suicides are not persons physically ill, but individuals in good health and capable of "making a living." The reasons for suicide have been much discussed. Economists have decided that suicides in most cases depend not upon the individual wills, but upon certain external factors, such as the season of the year, the economic status, and the age of the individual. Psychiaters have been led to consider all suicides as insane persons. The latter view has lately found much opposition. Von Oettingen sees in suicide a degeneration of the will, making an individual a slave of some temporary circumstances or of his own passions. He thinks that not more than one-third of suicides are insane individuals. Masaryk shows that many individuals who intended suicide and were prevented from carrying it out have proved to be mentally normal in later life. Brasch thinks that most suicides are persons afflicted with mental or physical disease of some nature; he quotes many autopsies in proof of this. Gaupp and Stelzner have lately carefully examined all individuals sent to their clinics after unsuccessful attempts at suicide. In two hundred females Stelzner found sixty-five cases of melancholia, thirty-two cases of psychopathic constitution, thirty-one cases without any manifest psychic disturbances, twenty-four cases of acute paranoia, and eleven cases of epilepsy. These figures show that normal individuals are rare among attempted suicides, and Gaupp's work confirms this conclusion. The great majority of suicides, however, are not frankly insane but persons of psychopathic constitution. Hübner has found that illegitimate pregnancies, suicides, and crimes against persons rise gradually in frequency in the spring and diminish toward the end of summer. The highest incidence occurs in the months of June and July. Both suicides and depressive insanities increase in incidence with increase in age. They also show a rise in incidence at puberty and the first years of sexual maturity.—*Blätter für Vertrauensärzteder Lebensversicherung*, May and June, 1911.

Selection of Risks from the Actuarial Standpoint.—Arthur Hunter points out that little has been written on the selection of risks from the actuarial standpoint, nor on the manner in which the actuary may assist the medical director in the medical selection. It is likewise pointed out that the need for such information is great at the present time, in view of the large number of young actuaries who have become connected with recently organized companies in which the medical directors have had little or no experience in the selection of risks. The medical directors are usually physicians who have been examiners in life insurance companies and whose work has been largely confined to giving a description of the physical condition of the applicant and not to determining whether he should be accepted for insurance. The young actuary has seldom had practical experience in the phase of the work on which the medical director calls the actuary into conference and the object of this paper is to assist these young men on a point on which little reliable information has been published. The medical director nowadays should have a knowledge of mortality statistics and the actuary should learn the views of the medical director in order to properly compile statistics bearing on the selection of risks. The actuarial society and the medical directors' association have combined to carry on a mortality investigation, but before this combined action in many individual offices the medical and actuarial departments had been working in harmony for several years.

With the exception of a very few companies which accept under-average lives the usual custom of treating applicants for insurance is (1) to accept standard risks, (2) to reject substandard risks, and (3) to grant endowment policies or other high priced plans to borderline cases. Because there must be in the minds of the medical directors a standard by which the cases are judged, the word "standard" is used by Hunter to denote cases accepted on the plan applied for. Of the total business received by the companies probably four-fifths comes within this standard. Another class of cases exists in which there is some slight defect but in which there are so many favorable features that comparatively little expert knowledge is required to handle these cases properly. Between these types and the kind which should undoubtedly be declined, are the slightly unfavorable, the border line and the somewhat doubtful cases, regarding which there is considerable difficulty and great diversity of practice among the companies. It is with regard to the debatable cases that the actuary is frequently invited to cooperate with the medical director and considerable difficulty arises in companies which have no available statistics. In dealing with such types the actuary should bear in mind that the disposition is to consider each case as one of a group; whereas the medical director having been trained as a physician, is disposed to treat each case as an individual. As a matter of fact the actuary should learn to look upon each case as one of a type, but modified to the extent to which it departs from the average. The judgment of

the medical director is displayed in making the application of the variations within the type to the individual risk.

The sources of information regarding mortality at the disposal of the medical director in determining the value of each risk are several; perhaps the most of these are statistics covering the groups of lives. In this relation the actuary should be of especial assistance to the medical department, and should have a knowledge of all statistics bearing on mortality among insured lives and also a knowledge of the various factors which enter into the determination of the value of risks. However, in the selection of risks the great difficulty arises with the borderline cases and with the best of those that come within the unfavorable group. It is in the treatment of the borderline cases that the numerical system is of great assistance in determining the value of the risk because it is in cases of this type that the judgment of the medical director is apt to vary.

As the actuary is frequently brought into consultation in the handling of borderline and unfavorable cases, it is a matter for consideration what the function of the actuary should be. His first duty is to prepare for the guidance of the medical department tables showing the mortalities to be expected under the various favorable and unfavorable factors. The main source of such information is the specialized investigation, soon to be superseded by the medico-actuarial investigation. Unless a company has prepared its own mortality tables by classes other sources of information regarding the gravity of the various physical impairments are few. There are several interesting papers in the "Transactions of the Medical Directors' Association." As to statistics on occupation, there is a good source of information in addition to the specialized variety in Dr. Tatham's Report to the Registrar-General of England, published in 1907. Having prepared a table of the unfavorable features the question arises of making allowance for the favorable features existing in given cases alongside of the unfavorable. No rules can be laid down for the guidance of a young actuary in such matters, as the policy of the management must largely determine the course to be pursued. The question of moral hazard is dealt with at length and throughout the paper excellent tables illustrating points are given, but which can only be referred to here. In conclusion the writer regrets that he has been able to give but little information regarding the mathematical basis for determining the value of risks, but that cannot be remedied as published data are not available. With the publication of the results of the medico-actuarial investigations a large collection of reliable statistics will be in the hands of the actuaries for application to the methods discussed in the paper.—*The Transactions of the Actuarial Society of America,* May 18 and 19, 1911.

The Prevalence of Pulmonary Tuberculosis Among Sailors.—M. MacKinnon states that not only is tuberculosis a very prevalent disease among sailors, but also cardiovascular diseases and their effects are extremely common. The latter, however, are rightly attributed more to hard work, alcohol, and syphilis—a trio still closely connected with the sailor—than to inefficient accommodation and ventilation. It might be expected that the sailor who presumably commenced his seafaring life in good health would maintain perfect health, and of all people would be the least liable to contract tuberculosis. In the merchant service such is not the case. The prevalence of the disease is marked and the suffering produced enormous. No better proof could be required of the infectious nature of pulmonary tuberculosis than that supplied by the frequency of that disease among sailors, the vast majority of whom have no hereditary tendencies to that disease, but, on the contrary, are physically of such build and good development as to preclude any suspicion of that taint. When, however, a single member of a crew suffers from tuberculosis he becomes a grave danger to all the others. Firemen, engineers, greasers, cooks, and stewards pass most of their time below deck in stuffy atmospheres, in ill-ventilated, dark, and dusty rooms, with the too frequent result that in the course of time anemia is produced, health deteriorates, and they become a ready prey to the tubercle bacillus. Additional factors, such as the abuse of alcohol, venereal diseases, irregularities in diet and sleep, are all causes that increase the susceptibility to pulmonary tuberculosis. The author presents the statistics of the Dreadnought Hospital which show that the percentage death-rate from phthisis in this institution varied from 31.2 in 1890 to 27.2 in 1900. In comparing the cases of tuberculosis admitted to the hospital during the past twenty years, it is noted that the greatest number of admissions occur among the able-bodied seamen, among whom are included for convenience quartermasters, boatswains, ship's carpenters, and others who work on deck but are not classified under any of the other headings. The high admission-rate among the "able-bodied" may partly be accounted for by the fact that there are more sailors included in this than under any other heading, and it frequently happens that seamen of foreign nationality, unable to talk English, are admitted as sailors under this category. Next come the firemen, and although the admissions among them are much less than in the preceding class, there is a very much greater incidence of phthisis among them than in any of the other succeeding classes—about equal, indeed, to the total of all the other sections put together. Stewards supply a greater percentage than cooks. Under the officer class are included first, second, and third mates and the captains. The rate among them is very small. Tuberculosis is more frequent among those who spend most of their time below deck than among those who work for the most part on deck. In the navy tuberculosis has decreased during the past ten years. This is no doubt due to the fact that the conditions under which the sailor lives as regards sanitation and accommodation have vastly improved, and when cases of tuberculosis occur they are immediately invalided out of the service. In the merchant service there is still much room for improvement. Not only is there need of this in accommodation and ventilation, but the elementary principles of hygiene should, as far as possible, be instilled into the sailor and the danger of indiscriminate spitting brought before his notice by printed forms or otherwise. More stringent precautions also should be taken in that all subjects of tuberculosis should be discharged from the service, and no man who, on medical examination, shows signs of tuberculosis or gives a history of having suffered from it should be engaged for service on board ship.—*Lancet,* September 23, 1911.

May Syphilis Be Considered an Industrial Accident?—The *Journal of the American Medical Association* states that the Paris courts have been called on to decide whether syphilis contracted in the exercise of his profession by a mechanician-dentist constitutes an industrial accident. A mechanician-dentist working for a surgeon-dentist was wounded in the little finger; the patient being syphilitic, the mechanician contracted syphilis. On the ground that his infirmity was permanent and that he had experienced a reduction of 80 per cent. in his professional practice, the mechanician-dentist demanded from his employer an annual income of 2,912 francs. The courts did not accept his point of view on the ground that the profession of dentist was a liberal profession and that the dentist employer was not subject to the law with regard to industrial accidents. In the liberal professions, syphilis cannot, therefore, constitute an industrial accident.

Improved Risks.—The death rates recorded by the leading insurance companies during 1910 were extremely low as compared with the "expected" death rates embodied in the standard mortality tables. The *Spectator* publishes a list of fifty companies which "show an average saving on mortality of over 25 per cent., while fifteen exceeded 30 per cent. and, of these, four showed savings of over 40 per cent."

Book Reviews.

Notes on Dental Metallurgy. For the Use of Dental Students and Practitioners. By W. Bruce Hepburn, L.D.S. (Glasgow); Lecturer on Dental Metallurgy and Visiting Dental Surgeon in the Glasgow (Incorporated) Dental Hospital and School. Price $2.00. New York: William Wood & Co., 1911.

This is an excellent little manual presenting in condensed form the essentials of metallurgy, and meeting in this respect the requirements of various schools and colleges of dentistry. Modern processes of extraction of metals, and modern theories regarding the composition and behavior of amalgams are described. There are chapters on pyrometry, casting of metals, testing of amalgams for their physical properties, and there is one chapter dealing with the behavior of metals in the mouth, a subject of eminent importance in applied metallurgy. The dental practitioner will find many useful tables in the appendix of this book: tables of alloys, of physical constants of the more important metals, tables of thermal and electrical conductivity, of thermometric scales, etc. The book may be recommended to the dental student as a clear and succinct presentation of a most practical subject, bearing the seal of the author's mature experience.

Alcohol, A Dangerous and Unnecessary Medicine. How and Why. What Medical Writers Say. By Mrs. Martha M. Allen, Superintendent of the Department of Medical Temperance for the National Woman's Christian Temperance Union. Marcellus, New York: Department of Medical Temperance of the National Women's Christian Temperance Union, 1911.

It is true that nowadays alcohol is not being used as freely medicinally as it has been in the past, and that many well-known authorities in the profession actually condemn its use, both in health and disease. It is unlikely that physicians looking for new light on this subject will be willing to find guidance in Mrs. Allen's book. It is written from the viewpoint of the partisan, and for this reason its scientific value is *nil*. A sample of its logic appears in the preface: "The use of antitoxin in diphtheria has driven out whiskey treatment in that disease with markedly favorable results. Under the whiskey treatment death rates ran up to 55 and 60 per cent.; now the diphtheria death rate is very low." It is unnecessary to add further comment.

Spirochætes. By W. Cecil Bosanquet, M.D., Fellow of the Royal College of Physicians, London. Price, $2.50 net. Philadelphia and London: W. B. Saunders Company, 1911.

This volume appears at a time when the general interest in spirochætes is rapidly growing, and it contains practically all the information which the average man desires or needs. In the first part the author has compared the statements of different writers on the morphology and behavior of these organisms and has endeavored to establish their characteristic features. As a result of this study and of his own work he is inclined to place them nearer to the bacteria than to the protozoa. The second part consists in brief descriptions of some fifty or more species and of the methods employed for examining them. For the investigator who wishes to pursue the subject further there is appended a bibliography including all the more important papers on the subject. Throughout the book the description is supplemented by drawings. The book is artistically bound.

Public Hygiene. By Thomas S. Blair, M.D., Neurologist, Harrisburg, Pa., Hospital; Author of "A Practitioner's Handbook of Materia Medica," "A Practitioner's Handbook of Modern Medical Treatment," etc. Assisted by Numerous Contributors. In Two Volumes. With 158 Illustrations. Price $10.00. Boston: Richard G. Badger, The Gorham Press, 1911.

This work is unique both in its scope and in the method of handling the subject matter. It treats of hygiene not so much from the viewpoint of the individual, but, as its title indicates, from the viewpoint of the public. Necessarily, the welfare of the individual is at once a prerequisite to, and a result of, the welfare of the community as a whole. Many of the subjects included in these volumes have not yet found their way into the treatises on hygiene. A list of the chapter headings will indicate the comprehensive nature of the plan of this work and the newness of many of the topics treated. Volume 1 consists of chapters on the following: The family versus the community; hotels, lodging houses, and public buildings; school inspection and college sanitation; penal institutions and hospitals for the insane; maternities; places of amusement and of dissipation; slums and town nuisances; special rural hygiene and sanitation; State Departments and Boards of Health; a proposed Federal Bureau of Health; local Boards of Health and sanitary officers; army and navy sanitation, or hygiene of camps; the coroner and the physician; quarantine, and infectious diseases. Volume 2 comprises chapters on the following: Immunity; epidemics; disinfection; tuberculosis sanatoria and dispensaries; home hygiene and interior sanitary installations; pure drugs and foods; public works and corporations; public carriers and sanitation; laboratory methods in sanitation; medical societies and sanitation, and an appendix on infectious diseases of animals, sanitary construction and hygiene of the mails. The author has availed himself of the assistance of numerous contributors and collaborators, and has drawn freely from many recent official reports, volumes, and periodical publications, in the preparation of this work. The project that he has attempted is one that would require for its complete presentation a work of encyclopedic magnitude. For this reason these two volumes, with their total of 644 pages, cannot give more than a fragment of the vast material available. This work, therefore, cannot be regarded as a scientific treatise; it is besides somewhat discursive and disconnected. Nevertheless it is very readable and interesting, and in some of its chapters it is highly illuminating. One of these is the chapter dealing with the State Departments and Boards of Health, and giving an outline of their legal status and activities in all of the States and Territories of the Union. The chapters on school inspection and college sanitation, on penal institutions, and hospitals for the insane, on places of amusement, and slums, are replete with valuable information and, with other equally important portions of the work, indicate that the writers are alive to the most modern developments in sanitation. The detailed exposition of the pure food and drug laws, the elaborate description of the sanitary aspects of public works and corporations, and of public carriers, combine with the features already mentioned to make this work one that the sanitarian must add to his reference library. The general practitioner and even the lay reader will find in its pages a great deal of interesting and instructive material. There are numerous excellent plates, and the paper, typography, and binding are considerably superior to those found in the average medical textbook.

What to Eat and Why. By G. Carroll Smith, M.D. Price $2.50. Philadelphia and London: W. B. Saunders Company, 1911.

The author does not attempt to cover the whole subject of dietetics in this book. Very little is said about the chemistry of foods, and the dietary treatment of only the most important diseases has been discussed. In considering the individual diseases, Dr. Smith gives reasons for the necessary changes in diet, rightly assuming that if these principles are once thoroughly grasped, dietetic therapy becomes simplified and the physician will be able to intelligently prescribe a diet for any disease. A few diet lists have been given, comprehensive and varied enough to cover the different phases of the same disease and to modify the monotony of the diet. The book will certainly be appreciated by the profession.

A Manual of the Diseases of Infants and Children. By John Ruhräh, M.D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Illustrated. Third Edition, thoroughly revised. Price $2.50. Philadelphia and London: W. B. Saunders Company, 1911.

Within the limits of a manual the author has succeeded in crowding a great deal more than is included in many textbooks of larger size. Brevity is the crowning feature that permits the inclusion of descriptions of rare conditions as well as of the common ones. Among the former one notes adolescent rachitis, chronic family jaundice, speech defects, multiple exostoses, etc. The chapter on infant feeding is particularly thorough in its presentation of the numerous methods and working formulæ, while that on therapeutics, with its detailed description of the best modes of administering drugs to children, and that on the medical inspection of school children, are particularly deserving of mention. Errors are inevitable in a book of this kind; cleidocranial "dystosis" should be dysostosis; achondroplasia is not fetal rickets, nor is it fetal myxedema. These, however, are of minor importance. The numerous illustrations and the footnote references to the literature are valuable features of this uncommonly useful little book.

MENINGITIS, SINUS THROMBOSIS, AND ABSCESS OF THE BRAIN. With Appendices on Lumbar Puncture and Its Uses and Diseases of the Nasal Accessory Sinuses. By JOHN WYLLIE, M.D., author of "Tumors of the Cerebellum." Price $3.00. New York: Paul Hoeber, 1911.

THIS is a small volume of 258 pages, devoted to a consideration of diseases which in their earlier stages are frequently difficult to differentiate from one another. The general practitioners, no less than the aural and the general surgeon, will find in this book a careful discussion of the diagnostic difficulties which frequently present themselves. On some topics the author treads on unfirm ground, as when he says, in giving the treatment of forms of acute suppurative or idiopathic meningitis other than those secondary to otitis: "The most scientific treatment would be the withdrawal of 15 to 20 c.c. of cerebrospinal fluid, from which a serum should be prepared and reinjected into the spinal subarachnoid space with as little delay as possible. Does the author mean that a vaccine should be prepared? If not, he can hardly expect that a specific serum can be prepared, at any rate, at the present stage of progress in serum therapy. In spite of this vagueness the book is a most interesting and suggestive one.

FIRST AID IN NURSERY AILMENTS. By EMELYN LINCOLN COOLIDGE, M.D., author of "The Mothers' Manual," and Editor of the Babies' Department of the Ladies' Home Journal; Physician in Charge of the Babies' Class of the Society of the Lying-In Hospital of New York City. Price 50 cents. New York: Sturgis & Watson Company, 1911.

THERE is a constant demand for books of this nature by young and inexperienced matrons, who find it impossible or inconvenient to consult their physician in the little but nevertheless important emergencies that arise in the nursery. This book is a safe guide; it makes no attempt to take the place of the physician, and by its mention of simple and in some instances popular remedies it is adopted for use by mothers who are traveling or who live at a great distance from medical aid.

KLINIK FÜR PSYCHISCHE UND NERVÖSE KRANKHEITEN. Herausgegeben von ROBERT SOMMER, Dr. MED. ET PHIL., o. Professor an der Universität Giessen. VI Band. 1. Heft. Preis, M. 2.00 Halle a S.: Carl Marhold, 1911.

THIS number of the Clinic of Psychic and Nervous Diseases contains the following articles: I. The distinguishing between epileptic and catatonic states; particularly by means of associations; by G. Klepper. II. The investigation of associations in maniacs; by K. Kilian. III. The more exact investigation of the most diverse motor phenomena, particularly voluntary movements, by means of graphic methods; by F. Pfahl.

THE PRACTICAL MEDICINE SERIES, Volume III. THE EYE, EAR, NOSE AND THROAT. Edited by CASEY A. WOOD, C.M., M.D., D.C.L. ALBERT H. ANDREWS, M.D., and GUSTAVUS P. HEAD, M.D. Series 1911. Price $1.50. Chicago: The Year Book, Publishers, 180 N. Dearborn Street.

THE diseases of the eye, ear, nose and throat receive about equal consideration in this volume. The literature of the past year has been thoroughly reviewed and abstracts from the most important articles have been included. In several cases the value of these excerpts is enhanced by the editorial comment which accompanies them. It is sufficient to say that the book maintains the usual standard.

THE NERVOUS LIFE. By G. E. PARTRIDGE, Ph.D., formerly Lecturer in Clark University. Author of "An Outline of Individual Study." Price $1.00 net. New York: Sturgis & Walton Company, 1911.

VOLUMINOUS as is the material on hygiene in all its branches in recent years, nevertheless so practical a book as "The Nervous Life" must claim a niche heretofore unfilled. Here are considered the causes of nervous disorders and the wisest means of controlling them. The author is definitely opposed to "narrow health fads, hobbies, or systems" as a remedy for the shortcomings of modern existence. In the term nervous life he includes two conditions: "First, the nervous social and industrial life, best typified by the stress and strife of our great cities; second, the nervous life as expressed in the temperament of the nervous individual." The range of subjects is wide, embracing self-knowledge, some biological laws, principles of control, the optimum life, food, the skin, exercise, sleep and rest, work, recreation, and suggestion and mental healing. The object of the work is not the discussion of nervous disorders, for the writer addresses himself rather to the well than to the sick. But "the principles of living are not different for well and ill." The book is full of helpful suggestions for the routine of daily living, and is built upon a firm foundation of common sense.

BURDETT'S HOSPITALS AND CHARITIES, 1911. Being the Year Book of Philanthropy and the Hospital Annual. Containing a Review of the Position and Requirements, and Chapters on the Management, Revenue, and cost of the Charities. An Exhaustive Record of Hospital Work for the Year. It Will Also Be Found to Be the Most Useful and Reliable Guide to British, American, and Colonial Hospitals and Asylums, Medical Schools and Colleges, Nursing and Convalescent Institutions, Consumption Sanatoria, Religious and Benevolent Institutions, and Dispensaries. By Sir HENRY BURDETT, K.C.B., K.C.V.O., Author of "Hospitals and Asylums of the World," "Hospitals and the State," "Pay Hospitals of the World," "Cottage Hospitals: General, Fever, and Convalescent," "Burdett's Official Nursing Directory," "The Nursing Profession," "Helps in Sickness and to Health," "The Relative Mortality of Large and Small Hospitals," and Editor of "The Hospital." Price 10s. 6d. London: The Scientific Press, Limited.

IN the issue of this invaluable handbook for 1911 the features which have made the previous issues so acceptable have been retained and some new ones added. The names of the architects of all hospitals, where known, are given, and in the index the popular names often given to public or private hospitals as well as the official names are inserted, thus greatly facilitating reference in case the full title of the institution is not remembered. Much of the text, treating of conditions in the United Kingdom, is not applicable to this country, but the chapters on the volume of charity and on nursing will prove interesting to readers everywhere.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, United States Army. Authors and subjects. Second Series. Vol. XV. Skin-grafting. Washington: Government Printing Office, 1910.

IN this volume there are 8,804 authors; titles embracing 4,688 volumes and 7,460 pamphlets; and 3,616 book titles and 28,328 titles of journal articles. The value of the work to libraries and to students of medical literature cannot be calculated. In the note of transmissal to the Surgeon-General the editor, Lieutenant-Colonel W. D. McGraw, states that there now are in the Library of the Surgeon-General's office 172,270 bound volumes and 304,708 pamphlets.

MANUEL DE CULTURE PHYSIQUE. Par C. C. PAGÉS, Docteur en médecine, Docteur ès sciences, Vétérinaire délégué de Paris et de la Seine. "Ne cesse pas de modeler ta statue." Eighty-six figures dans le texte. Price 3 fr. 50. Paris: Vigot Frères, 1911.

THE present concise little volume bears the stamp of originality shown in the previous work of this author, who considers physical culture the chief of the arts. The greater part of the text is specially devoted to the needs of men. Two chapters, however, consider physical culture for women. The writer favors exercise in the home rather than in the gymnasium. Health is his chief consideration, and the principal aim of the exercises recommended is the strengthening of the viscera. Simplicity and gentleness of effort are the keynotes of the work described. Consequently the apparatus preferred is arranged with elastic parts so that effort may be graded. A variety of exercises for different times and places are clearly described and illustrated. Exercise out of doors, exercise in the room, exercise adapted for different purposes, and for the different systems of the body, and exercise adapted to different ages. The volume contains 86 illustrations, and will prove a very useful handbook for individuals of all classes.

DIE PRAKTISCHE BEDEUNTUNG DES SALVARSAN (DIHYDRODIAMIDOARSENOBENZOL FÜR DIE SYPHILISTHERAPIE. Von Dr. S. JESSNER, Sanitätsrat. Price 1.80 M. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

THIS brochure of 73 pages presents the subject of the practical significance of salvarsan in the therapy of syphilis from the viewpoint of the experienced dermatologist. The various phases of the subject are discussed: mode of preparation, administration, indications, etc. The author strikes the keynote of chemotherapy when he states that Ehrlich's investigation shows that future studies may enable one to mask or eliminate the toxic properties of a drug and at the same time increase its curative property.

Society Reports.

THE AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-Sixth Annual Meeting, Held at Atlantic City, N. J., May 23, 24, and 25, 1911.

THE PRESIDENT, DR. REUBEN PETERSON, ANN ARBOR, MICH., IN THE CHAIR.

AN address of welcome was delivered by Dr. WALT P. CONWAY of Atlantic City, which was responded to by Dr. PHILANDER A. HARRIS.

The Treatment of Placenta Previa at the Sloane Hospital for Women.—Dr. EDWIN B. CRAGIN of New York said that cases of placenta previa occurring in 25,000 consecutive deliveries were presented for discussion of treatment and were divided into two groups, namely: Series A, those occurring in the first 20,000 deliveries; and Series B, those occurring in the last 5,000 deliveries. In Series A the cases of placenta previa were treated by different methods: by Braxton-Hicks' version and using the half breech as a uterine tampon, or by tamponade of the cervical canal and vagina, or by dilatation of the cervical canal by the Voorhees bags. In Series B the methods of treatment in cases needing any treatment save that of a normal delivery could well be summarized as follows: 1. Dilatation of the cervix and control of the hemorrhage with the largest Voorhees bag which could be introduced, *i.e.* No. 3 or 4. 2. After the largest bag had passed the cervix and good dilatation was obtained, either a version was done and the child delivered by the breech, or if the placenta previa was lateral, or in some cases even marginal, with slight hemorrhage, and the vertex was presenting, the membranes were ruptured and the head was allowed to come down and exert pressure on the lower uterine segment and the edge of the placenta, the delivery being expedited by the forceps if necessary. This use of the elastic bag was extraovular, the membranes being kept intact until the bag passed the cervix and good dilatation was obtained. The first question of importance in any method of treatment was the maternal mortality. In Series B, treated by the present methods, there were forty-nine cases of placenta previa, fourteen of the complete and thirty-five of the incomplete variety. There were two deaths among those of the complete variety, or 14.2 per cent., and two deaths in the thirty-five in the incomplete variety, or 5.7 per cent. In Series A, treated by different methods, there were thirty-nine cases of complete placenta previa with nine deaths, or 23 per cent., and 135 cases of incomplete placenta previa with eleven deaths, or 8.1 per cent. As regards fetal mortality, in Series B, treated by present methods, the total fetal mortality was 51 per cent., while in Series A it was 60.3 per cent. In Series B 63.1 per cent. of the children viable on the admission of the mother left the hospital alive. Regarding the question of placenta previa being an indication for cesarean section, he could only state that he had never met with a case in which he had considered it indicated. He believed that the indication occasionally arose. He had recently performed it in a case of accidental hemorrhage with long, rigid cervix, with profuse hemorrhage, and believed that similar conditions in a placenta previa might well indicate the same operation. That cesarean section was often indicated in placenta previa he did not believe.

Placenta Previa.—Dr. EDWARD P. DAVIS of Philadelphia for clinical purposes divided placenta previa into partial and complete. Under the latter he included those cases in which the placenta, originally low, had entirely covered the internal os by an additional lobe connected with the greater placental mass by a membranous interval. In partial placenta previa hemorrhage might be controlled by evacuating a portion of the amniotic liquid, stimulating the uterus to contraction, and forcing the fetus down against the placenta. Such treatment was not difficult of execution, provided no essential disproportion existed between mother and child. Where delay in dilatation occurred the introduction of a good-sized bag through the ruptured membranes, disturbing the placenta as little as possible, would greatly expedite delivery and control hemorrhage. The Braxton Hicks' method was available in such cases, and if the operator avoided the mistake of proceeding to immediate delivery it would give good results for the mother at the expense of the child. Of late attention had been drawn to the value of intraovular pressure in placenta previa by inserting, with suitable forceps, a good-sized bag through the membranes or placental substance, and by dilating this bag fully, thus controlling hemorrhage through pressure and hastening delivery. In partial placenta previa treated with or without intraovular pressure by a dilating bag the maternal mortality was not high. From rupturing the membranes in partial placenta previa, Novak collected 163 cases, with no maternal mortality, and a fetal mortality of 15.3 per cent. If the operator proceeded to immediate version and extraction, in 878 cases the maternal mortality rose to 8.8 per cent.; the fetal mortality to 71.8 per cent. In Novak's collection of 2,081 cases, reported by different authors, by the various methods of treatment exclusive of cesarean section, the maternal mortality averaged 8.65 per cent.; the fetal mortality 56.72 per cent. In central placenta previa attention had recently been called to the disadvantage of former treatment by the use of the tampon. In spite of antiseptic precautions, infection was not uncommon in these cases, and as this treatment was often employed in private houses, with deficient aseptic technique, infection must be frequent. The tampon did not perfectly control hemorrhage and was but a temporary expedient to prepare the way for some method of delivery. The high fetal mortality of placenta previa, treated by vaginal methods, and the considerable maternal mortality suggested the possibility of delivery by abdominal section. The advocates of suprasymphyseal section urged its adaptability in these cases, and Pankow reported eight successful cases. Sellheim by extraperitoneal section in eight cases secured the recovery of both mothers and children. Vaginal cesarean section in Doderlein's clinic was performed ten times for placenta previa, with the recovery of all the mothers and the greater part of the children. The author had in three cases of central placenta previa operated as soon as the diagnosis could be made out. The mothers recovered without incident; one normal child at term did well; the second child was a monstrosity; the third child, which was premature, did not long survive. He believed there was a close analogy between ectopic gestation and central placenta previa. In both the cardinal dangers were those of hemorrhage and infection; in both palliative measures were insecure and unsatisfactory; in both operative treatment was the only reliable resource. In the present stage of knowledge no method of treatment compared with abdominal cesarean section in central placenta previa, if the lives of both mother and child were to be considered. The mortality of abdominal cesarean section in uninfected cases was now less than 2 per cent. in a large number of cases, and the fetal mortality in a considerable number was often nothing. It was his belief that a considerable amount of bright vaginal hemorrhage in a pregnant patient was always a dangerous symptom; and that during the latter months of pregnancy, mother and child being previously in good condition, such hemorrhage should be considered as indicating a condition fully as critical as ectopic gestation. Such cases should be immediately seen by a competent obstetrician and a very careful examination made. Under favorable conditions delivery by abdominal cesarean section should greatly improve the chances of both mother and child.

A Brief Analysis of Forty Consecutive Cases of Placenta Previa.—Dr. J. Clifton Edgar of New York said the general line of treatment in these forty cases consisted (1) in controlling the hemorrhage and securing cervical dilatation by means of cervical and vaginal packings; (2) completing the dilatation by means of bimanual cervical dilatation, the Pomeroy hydrostatic bag, or the modified de Ribes bag; (3) completing delivery by version and breech extraction, the forceps, simple breech extraction, or spontaneously; (4) the postpartum packing of the uterus to prevent further bleeding and the use of hypodermoclysis, rectal and venous infusion, or other shock treatment; (5) the induction of labor. Of the forty cases of placenta previa, ten were central, nine partial, twenty-one marginal. Seventeen cases were ambulance or emergency ones. Seventeen cases were first seen at the onset of the bleeding; in twenty-three the hemorrhage had lasted from a few hours to several days. Twenty-three cases only were exclusively treated in the hospital; the remaining seventeen had received various treatments before entering this hospital service. In twenty-nine cases the cervical dilatation was two fingers, or less when first seen. Treatment embraced (1) cervical and vaginal gauze packing in thirty-two cases; (2) de Ribes bags in three cases; Pomeroy bag in seven cases; bimanual dilatation as a primary measure in two; gauze packing in ten cases; and induction of labor in nine cases. The methods of delivery were: (1) Version and breech extraction in twenty cases; (2) forceps in six cases; (3) simple breech extraction in five cases; (4) spontaneous delivery in eight cases, making, with one case undelivered, forty cases; postpartum uterine tamponade in forty cases. The maternal mortality was 7.5 per cent.; the infant mortality was 32.25 per cent. He reached the following conclusions: 1. Cervical and vaginal gauze packing was an efficient means for controlling hemorrhage and securing dilatation in placenta previa. 2. The maternal mortality of 7.5 per cent. and infant mortality of 32.25 per cent. were satisfactory, taking into account the fact that about half of the cases were ambulance or emergency cases. 3. Version and breech extraction had a higher infant mortality than delivery by the forceps, simple breech extraction, and spontaneous expulsion.

The Best and the Worst Methods of Treating Placenta Previa.—Dr. Henry D. Fry of Washington, D. C., said the best and safest method to deliver a woman suffering from placenta previa was purely an obstetric problem and its decision should rest with the obstetrician. Men who had handled these cases according to modern obstetric methods; who were familiar with the dangers incurred; who had learned to overcome the difficulties and dangers and knew the limitations of their art; they, and only they, should decide what method of procedure was best for each individual case. Experience clearly demonstrated that maternal interests were guarded best by evacuation of the uterus as soon as the diagnosis of placenta previa was made. In the methods of treatment suggested by the council for present consideration that classified as "c" was by rapid dilatation, version, and extraction. It was implied, but not stated definitely, that the procedure was accomplished at one sitting and that the dilatation was not only rapid but was carried to a degree to permit podalic version, while extraction of the infant was done by active measures. Rapid dilatation of the cervix had no place in the treatment of placenta previa, whether performed manually, by the Bossi dilator, or by vaginal cesarean section. Version by the podalic method was never advisable unless uterine action had softened and dilated the cervix sufficiently to insert the hand. Slow delivery of the infant should be substituted for extraction. Rapid dilatation was accompanied by severe hemorrhage from placental detachment and from uterine laceration during and after manipulation. After dilatation had been obtained in sufficient degree to allow the insertion of two fingers further continuation of the process was likely to endanger the integrity of the soft parts. In other words, the artificial dilatation sufficient to perform bipolar version was comparatively safe, while that necessary for the insertion of the hand and podalic version was dangerous. After version had been accomplished, the leg, breech, and body of the infant successfully plugged the cervical opening and by pressure against the area of uteroplacental detachment prevented the further loss of blood. Bleeding being absolutely under control, every effort should be made by slow delivery to secure dilatation and thereby prevent laceration of the lower uterine segment. His rule was to discontinue anesthesia after having performed version and to hasten uterine action by directing an assistant to rub the fundus of the uterus, and by encouraging the patient to make use of her auxiliary muscles to supplement the uterine force. In multiparae the average duration of labor under these circumstances was one or one hour and a half. Furthermore, it must be recognized that the danger was not over with the successful termination of labor. The mother had yet to run the gauntlet of postpartum hemorrhage and sepsis. The proper application of the intrauterine tampon of sterile gauze was a most valuable agent in safeguarding the patient from the disastrous consequences of further loss of blood. No substitute could be employed safely to control postpartum bleeding in these cases. The cause of death (the thirty-sixth case) in his own series of thirty-eight cases was due to the imperfect manner of application of the gauze by the hospital intern. Laceration of the lower segment of the uterus was a frequent cause of fatality in placenta previa. The complication favored both hemorrhage and sepsis, and next to hemorrhage as a cause of death in placenta previa was sepsis. The area of placental detachment left a raw absorbing surface low down in the uterine cavity instead of at the normal site near the fundal end. Proximity to the vagina favored infection, while laceration of the parts opened the portal for entrance of pathogenic germs. In placenta previa the precinct immediately adjacent to the internal os must be regarded as sacred ground with the sign *noli me tangere;* therefore the invasion of this part with the gauze tampon or with the rubber bag dilator was dangerous. The least dangerous obstetric interference was that necessary to perform bipolar version. The fingers did not come in contact with the danger zone, but were passed through the internal os and directly within the ovular sac. The leg of the infant was brought down, the pressure was exerted from within the ovular sac outward; the uterus was excited to contract; hemorrhage was controlled, and if delivery was left to uterine action the dilatation was natural. Contrast also the duration of time involved in the employment of bipolar version and in the use of the rubber bag dilator. It was a question of minutes in the former and of hours in the latter. Regarding the indications for abdominal cesarean section in placenta previa, he repeated the conclusions of his previous paper. It was advisable in central placenta previa complicated by an undilated cervical canal. Not only must the cervix be undilated, but the tissue must be hard and unprepared for artificial dilatation. This condition existed only in about 5 per cent. of all cases of placenta previa, and was almost never met with in multiparæ. Contraindications for abdominal cesarean section were, first, excessive loss of blood before the opportunity arose for performing the operation; second, a soft and dilatable cervix; and, third, a partial or marginal placenta previa. Previous attempts to dilate and deliver the case by the natural passages; the use of gauze tampons and rubber bags to control hemorrhage, placed such cases on the undesirable list, and if subjected to surgical skill a Porro operation should be substituted for cesarean section.

The Treatment of Placenta Previa.—Dr. F. S. Newell of Boston said that the statistics of the treatment of complete placenta previa showed in general practice a maternal mortality of approximately 40 per cent. In clinics under the care of expert obstetricians the mortality had been reduced to between 3 and 5 per cent. in the same type of cases. This variation could only mean one thing, that the condition was recognized and treated efficiently by the expert where it was palliated by the general practitioner. The important thing in treatment, therefore, was the early recognition of the condition and the prompt termination of the pregnancy. The method of operative procedure must be chosen to suit the individual case; no rule to suit all cases could be laid down. He believed that in a patient at or near term, when mother and child were both in good condition and if the soft parts did not offer undue resistance to dilatation, the best method of treatment was complete dilatation of he cervix followed by immediate extraction of the child, believing that a slight risk to the mother was warranted for the sake of giving the child a reasonable chance for life. When the mother had bled sufficiently to be in anything but first-rate condition the chances for the child were comparatively poor under any circumstances, particularly if it was markedly premature; therefore the treatment to be adopted should be that which would give the least shock to the mother. This was, in his opinion, a partial dilatation of the cervix, bipolar version followed by slow extraction of the child. This method of treatment of necessity sacrifices the child in the majority of cases, but risks the maternal life less than any other method which could be employed. Cesarean section in the treatment of complete placenta previa should, in his opinion, be reserved for those cases in which the cervix was rigid, as would be seen occasionally in primiparæ or in multiparæ with cicatricial stenosis of the cervix, or cases in whom there was a marked degree of pelvic contraction present. If cesarean section was to be adopted as a routine treatment, he believed that the maternal mortality would be markedly increased over what it was at present in cases under expert care.

Dr. Richard C. Norris of Philadelphia said that there were cases of placenta previa which were best treated by abdominal cesarean section, but he believed also that combined experience taught that the number of cases in which indications might arise to require this operation would always be limited, probably about 5 per cent. of all cases of primiparæ. The ideal conditions for cesarean section were a rigid cervix, a viable child, a mother who was a good surgical risk, and the diagnosis made at an early period.

Dr. J. Whitridge Williams of Baltimore said that in cases requiring nothing more than rupture of the membranes he had used exclusively the Champetier de Ribes balloon, and during this entire period he had no maternal deaths, so he considered the results extremely satisfactory. A dangerous method of treating placenta previa in his experience was by rapid dilatation, either with the fingers or with some intrument. As to abdominal cesarean section, the indications for it were so extremely infrequent that one could do without it, and he had not been able to see the justice of the mode of reasoning of the Germans who had been extremely enthusiastic over it.

Dr. Walter P. Manton of Detroit, Mich., had used all of the methods that had been advocated except cesarean section, and he did not recall having seen a case where he thought this operation would be applicable. In the last 1,989 cases of confinement at the Women's Hospital in Detroit they had nineteen cases of placenta previa, and in only one was the placenta centrally implanted. In his own experience he had never lost a mother with the methods that had been advocated. The infant mortality had been between 50 and 60 per cent., although he had not the exact figures. He had not had great success with the Braxton Hicks' method of bipolar version, but by the use of the de Ribes bag and Voorhees bag his patients had come through safely, although the infant mortality had been high.

Dr. Philander A. Harris of Paterson, N. J., had done practically no obstetrics in the last few years. Occasionally he saw a case, so that he had not advanced much in the treatment of cases of placenta previa, and he had been forced to stop with a maternal mortality of 1 per cent. in less than 60 cases of placenta previa of all kinds. He had invented a metallic instrument for dilating the cervix, but as it was unsatisfactory he returned to the method of dilating the cervix with the hand, and when one of the speakers referred to the disadvantages of manual dilatation he wondered whether he was not really wrong as to definition. A hand which was dilating a cervix of certain size could easily tear it, and he wondered whether the gentleman who objected to these methods, which in his hands had been satisfactory, had not torn the uterus over and over again, instead of taking the matter in deliberate fashion and dilating the cervix. He said this in behalf of a method which he thought had been dangerously used. The knife was a useful thing, but he had seen it do harm.

Dr. William S. Stone of New York mentionel a case of accidental hemmorhage in which he decided to do the vaginal operation after the patient was on the table, as the conditions were such that it was the easiest and quickest way to remove the contents of the uterus, and it proved to be such. He had never done vaginal cesarean section for true placenta previa.

Dr. J. M. Munro Kerr of Glasgow, Scotland, said that in the treatment of placenta previa we must distinguish between domestic and hospital practice, and he was perfectly convinced that in domestic practice we could do no better than follow the advice of Dr. Fry, namely, to do version by the Braxton Hicks' method. That was the problem for the general practitioner. In the Glasgow Maternity Hospital they had tried chiefly two treatments: bipolar version and the treatment by bags, and so far their results had differed very little by the use of the two methods. They had, if anything, a little lower fetal mortality, and, if anything, a slightly lower maternal mortality, but it had been very slight indeed, and consequently he could understand very clearly the attitude of those who supported the use of the bag and bipolar version. But the real point of importance at the present time was the position of cesarean section. This operation in domestic practice had a place in skilled hands, but he was rather inclined to believe that they had given it rather half-hearted support. There were certain cases in which cesarean section was called for. Dr. Norris had defined the indications for it. They were: (1) A child must have reached nearly full term; (2) the child must be viable and in good condition; (3) that there must be probably a defect in delivery, either in regard to the pelvis, slightly small, or as regards rigidity of the soft parts; (4) it should be employed in women late in life who must possibly have another chance to bear a child; (5) the operation should be employed only where there had been danger of infection. He thought if one gave it out as decidedly the opinion that in cases of that sort cesarean section was indicated one would put the position of this operation on a proper basis, and in the future we might possibly be able to extend it or make its application less limited.

An Investigation of the Use of Iodine in Skin Sterilization for Surgical Purposes.—Dr. J. Wesley Bovee of Washington, D. C., summarized his observations and experiments as follows: 1. So far as could be ascertained by culturing epidermic scrapings, weak dilutions of iodine, even to 5 per cent. of the official tincture, thoroughly sterilized the surface of the skin for a period of time lasting from two minutes after its application to fifteen min-

utes after. While this inhibitive action of absolute alcohol was quite potent, this property was greatly enhanced by the addition of iodine to an equivalent of 5 per cent. of the U. S. P. tincture. 2. Pubic hair placed in iodine dilutions of 5, 10, 20, 30, and 40 per cent. strength (of official tincture), respectively, for two, three, five, eight, ten, twelve, and fifteen minutes, respectively, all showed growths after three days' incubation, while using 50 per cent. dilutions under the same conditions practically always prevented growths. 3. Control scrapings of skin taken from the abdomen above the umbilicus over periods of time varying from two minutes to two hours, when 40 per cent. dilutions were used, always showed negative results as to colonies. 4. Cultures from hair and skin that had been subjected to 50 per cent. dilution of tincture of iodine never produced growths. 5. Tincture of iodine diluted with an equal amount of absolute alcohol might be considered reliable as a local application in preparation of the skin or mucosa in any part of the body. Dilutions of less strength were unreliable if hairs or large hair follicles were in the field of operation. 6. The 50 per cent. dilution of tincture of iodine, if not carelessly applied, was not liable to injure the skin.

Dr. Edwin B. Cragin of New York said he was a strong advocate of iodine after the other methods of sterilization had been employed. He did not think that one ought to rely on it entirely, as some men were inclined to do, but should use it as an additional safeguard. He had used it for a year past and had been very favorably impressed with it.

Dr. I. S. Stone of Washington, D. C., said there could be no two opinions in Washington with reference to the use of iodine for sterilizing the skin. He knew of nothing which had been so satisfactory as an antiseptic to the skin. He had reduced the strength to 25 per cent. If he could sterilize catgut better with iodine than with any other sterilizing agent, short of heat, surely its penetrating qualities should be an indication for its use on the skin. He had never seen a case in which iodine had been used where the wound had broken down. There had been some cases where there was superficial separation of the wound. This might have been from subsequent contamination; it might have been from the catgut, but he had never known a deep-seated separation of the wound to occur since he had used this method.

Dr. Brooks H. Wells of New York had employed iodine in a good many hundred cases in his service at the Polyclinic with uniformly good results. He had not had any cases where there was serious irritation of the skin, and he had not had any case of superficial necrosis.

Dr. A. Lapthorn Smith of Montreal stated that he had used iodine for sterilizing the skin with very satisfactory results. Occasionally he had used it in emergency cases during pregnancy, and in a few other instances where he had had to operate quickly, and the results were just as good as if he went through the many different preparations advocated by others.

Dr. B. M. Anspach of Philadelphia stated that at the University Hospital, in the service of Dr. Clark, for a year and a half they had been using iodine for sterilizing the skin. The method they used at first was to have the patient take a general bath before the day of operation, paying particular attention to the umbilicus and pubes, then to dry the skin thoroughly and apply the official tincture of iodine. A dressing was applied over this by the nurses, and the application was repeated on the following morning. With a 10 per cent. solution or the official tincture they had seen an extensive blistering in some cases. This was painful and prevented the operation from being carried out when anticipated. Since that time they had reduced the strength to 5 per cent. and had employed the same method entirely, not using alcohol or bichlorid of mercury preliminary to the application of the iodine. They had used iodine in a series of about four or five hundred cases with gratifying results.

Dr. J. M. Baldy of Philadelphia stated that he had a profound mistrust for anything which relegated to the shades water and soap and the nail brush. Those gentlemen who had been using iodine for sterilizing the skin were getting perfect results, according to their statements. On the other hand, the same gentlemen who had been practicing surgery for fifteen or twenty years to his knowledge had made equally positive statements in regard to the value of past methods. What had prompted them to change to the use of iodine? Did they tell the truth about past methods? If they did, why were they changing and looking around for new drugs? He must say, there was a heap of mistrust in these discussions as regards the actual truth of what they were talking about.

Dr. Leroy Broun of New York stated that he had used iodine at the Women's Hospital, and had done so for ten months, although he had gotten no better results by using it than he had been getting before. The results before its use were satisfactory.

Dr. Lewis S. McMurtry of Louisville believed that all the gentlemen who were using tincture of iodine for skin disinfection could obtain the same results by much simpler and easier methods than by the iodine treatment. For instance, last summer he made a vacation visit to the Mayo clinic. Some of the patients prepared for abdominal section were painted with tincture of iodine (50 per cent. solution) in one room, and the operations were done in the other room; other patients were treated in the ordinary customary way which was now in vogue by surgeons everywhere, simply cleansing the skin without nail brush and without traumatising the skin. The patient received a warm bath the day before. The skin was washed off with soap and water the night before, and then, when the patient was brought to the operating table, he or she received another cleansing with soap and water, and the results were the same by the two methods. There was no advantage whatever in the germicidal treatment of the skin by tincture of iodine. This was tested in a series of more than one hundred cases by the Mayos in each room, and the results were the same by both methods.

A Further Contribution Concerning the Frequency and Clinical Significance of Funnel Pelves.—Dr. J. Whitridge Williams of Baltimore drew the following conclusions: 1. In typical funnel pelves the distance between the tubera ischii was reduced to 8 centimeters or less, while the usual measurements remained unchanged. 2. Such pelves were noted in 6.1 per cent. of 2,215 consecutive full-term labors, were of equal incidence in white and black women, and sometimes gave rise to serious dystocia. 3. The funnel pelvis was the most common abnormality in white women, in whom it constituted 44 per cent. of all deformed pelves. In colored women, on account of the incidence of the more unusual types, it was relatively less important, and stood fourth in order of frequency. 4. The prognosis depended not so much upon the actual narrowing of the pubic arch or upon the distance between the tubera ischii as upon the relation between it and the posterior sagittal diameter. 5. Moderate degrees of dystocia could frequently be overcome by placing the patient in an exaggerated lithotomy or an exaggerated Sims' position. In either event the antero-posterior and posterior sagittal diameters underwent an average increase of 1.62 centimeters, which so increased the available space as to make spontaneous labor possible. 6. Such an enlargement afforded an explanation for the successful outcome of certain low forceps operations which appeared theoretically impossible from the measurements taken in the usual position. 7. Pubiotomy was the operation of choice in cases of pronounced dystocia, as it not only effected the

delivery of the child, but led to a permanent increase in the size of the outlet, which might be further enlarged by the softening of the fibrous union under the influence of the hyperemia incident to pregnancy, and thus made possible the spontaneous termination of subsequent labors.

Dr. Edward Reynolds of Boston stated that the inferior strait of the pelvis was of vastly more importance than the gynecologist had supposed, and was probably of more importance than the superior strait. Dr. Williams had had the courage and intelligence to throw the traditions of the past overboard and approach the obstetrical pelvis from the point of view of common sense and sound mechanics.

Dr. Edward P. Davis of Philadelphia desired to call attention to the fact that in cases of dystocia from funnel-shaped pelvis, where the obstetrician was called in consultation because the family physician could not secure expulsion of the child, or found it difficult to extract it, the instrument slipping, and the head of the child being low down, it was the duty of the practitioner to perform craniotomy, as such cases could not be treated safely in any other way.

Diagnosis and Treatment of Contracted Pelves.—Dr. J. M. Munro Kerr of Glasgow, Scotland, stated that the diagnosis of contracted pelvis was not difficult, and the greater the deformity the easier the diagnosis. A careful measurement of the pelvis, both by the hand and by a pelvimeter, should be made. An estimate of the size of the child's head should be attempted both by palpation and cephalometer. The relative size of the head and pelvis should be estimated, and that should be the basis of treatment. Whenever possible this examination should be made in the thirty-sixth week and again at the beginning of labor if the pelvic deformity was of medium degree. To obtain the best results in the treatment of contracted pelvis it was essential that the accoucheur should be able to form a correct estimate of the relative size of the pelvis of the mother and the head of the child. He must be able to predict whether or not spontaneous delivery was likely to occur. One of the most striking features in connection with the treatment of contracted pelvis was the prominence given by all recent writers to spontaneous delivery. In no country was this more noticeable than in Great Britain, where forceps had been so extensively employed for many years. As illustrating the successful results obtained by spontaneous delivery, he exhibited a table of all such cases that had occurred in his clinic during the last two and a half years. The table showed that spontaneous delivery was quite frequent with a conjugata vera of 9.3 cm. He had twice seen a child born spontaneously, even with a pelvis of 7.5 cm., but no such case had occurred in his clinic during the last two and a half years. He reported 130 cases of contracted pelvis treated by forceps. The fetal mortality was 50 per cent., with a conjugata vera of 7.5 cm.; 33 per cent. with a conjugata vera of 8.1 cm., and 15 per cent. with a conjugata vera of 8.7 cm. He had performed craniotomy seventeen times in the last two and a half years. With reference to pubiotomy, he had had to fall back upon this operation three times, and symphyseotomy once. All these cases did well; all the children did well. He considered pubiotomy an excellent operation, but said it had a very limited field. Cesarean section was dangerous in suspect cases. In suspect cases the maternal mortality was 17.3 per cent., and if frequent examinations had been made it ran up to 34 per cent. With such a figure it was quite obvious that ordinary cesarean section was hardly justifiable. If cesarean section was performed in the suspect cases, undoubtedly the best results were obtained by removing the uterus.

Dr. J. Whitridge Williams of Baltimore noted with interest the number of spontaneous deliveries reported by the essayist, which was somewhat less than the number in his hand. In the 2,200 cases upon which his article on funnel-shaped pelves was based, there were 16 per cent. of spontaneous deliveries in all classes of inlet contractions in white women as compared with 81 per cent. in black women.

Dr. A. Lapthorn Smith of Montreal stated that the author of the paper had sounded an important note to the teachers of obstetrics both in this country and in the old country with reference to teaching young men to take more time and to allow nature more time to effect delivery in these cases of contracted pelvis. The tendency to hurry matters in these cases was a curse rather than a blessing, and it came about very largely from conditions peculiar to this country.

Dr. Richard C. Norris of Philadelphia said that his attitude towards inducing labor in properly selected cases not more than two or three weeks before the calculated term would add to the table of spontaneous deliveries given by the essayist. It was in this class that induced labor should be considered. The question of transperitoneal and intraperitoneal cesarean section had never appealed to him. He believed that craniotomy was yet a conservative operation, which must be used in certain instances. He had twice in the past year been called upon to perforate the head of the living child.

Dr. Henry D. Fry of Washington, D. C., stated that in that city they had a large colored population and he had noticed in examining a large number of pelves that fully 50 per cent. of the women had justominor pelves.

Dr. John O. Polak of Brooklyn said that his results from premature labor had been unsatisfactory. The fetal mortality had been considerable, and it had subjected his patients to the possibilities of infection. He and his associate had done cesarean section in sixty-one cases without a death, and many of these patients were handled and brought in off of the ambulance after several attempts at delivery with forceps had been made. He had had no difficulty in delivering these women, and he had had no marked morbidity, and no mortality.

Dr. Robert L. Dickinson of Brooklyn said there was a large field for the induction of labor. He did not allow primiparæ to run overtime unless they had been well starved. Starvation and early delivery had given him successful results so far as the fetal death rate was concerned.

Dr. Edward P. Davis of Philadelphia said, with reference to the cesarean section, when a woman had had a test of labor and had a contracted pelvis one needed not necessarily wait for labor, but should resort to cesarean section and in clean cases would get good results.

Salpingostomy in Pregnancy.—Dr. George Gellhorn of St. Louis said that the occluded tubes were extirpated by the majority of operators. In a minority of instances, however, where the patient desired offspring, a plastic operation might be performed with safety. This operation was devised by A. Martin of Berlin in 1885, and was termed salpingostomy. It consisted either in a resection of the peripheral portion of the tube or in an incision through the occluded fimbriated extremity, together with fixation of the everted flaps to the serosa of the tube by means of a few fine catgut or linen sutures. He reported a case in which the left adnexa were removed and the right tube split open. The patient gave birth to a healthy child three and a half years later and was about to be confined for the second time. All pus tubes caused by infection with streptococcus and staphylococcus should be removed radically. On the other hand, in tubal occlusion caused by ectopic pregnancy, or chronic appendicitis; furthermore, in hydrosalpinx of moderate extent, and hematosalpinx, salpingostomy was indicated. To prevent the recurrence of occlusion after salpingostomy he recommended an appropriate after-treatment, mainly by the use of high degrees of dry heat. If the plastic operation was thus re-

stricted the patient would suffer no ill effects, even though a certain percentage of the tubes might again become sealed.

Dr. Thomas J. Watkins of Chicago said he had recently been interested in the technique of salpingostomy, having had trouble in making an artificial opening in the tube to avoid constricting it. Even in cases where the incision was made parallel, where the mucous membrane was turned over into the serosa and stitched, and after the operation was completed the opening was surprisingly and disappointingly small. Of late he had modified the technique, which would seem to be a great advantage, namely, making a longitudinal incision, beginning at the distal end of the tube and suturing the mucous membrane on either side to the ovary, and in that way offering hope of not constricting the tube and of its not becoming occluded.

Dr. Franklin H. Martin of Chicago stated that for three or four years, instead of doing salpingostomy in these slightly sacculated cases, he had been in the habit of employing a method of opening the tubes and rendering them patulous by means of hydrostatic pressure. Any tube that would hold from ten minims to half an ounce of fluid should be treated in this way. The tube was brought to the surface, and, after being liberated from adhesions, was placed upon a thick laparotomy gauze sponge, and then the tube was milked in the direction of the fimbriated end. Almost every one of these tubes would rupture at the fimbriated end, opening up the tube along the fimbria, and at the same time causing evacuation of the tube.

Salpingitis.—Dr. Frank T. Andrews of Chicago said that salpingitis was not a disease by itself. It was a part of a general pelvic inflammation. It was referred to as an entity because of the distressing symptoms and dire consequences which followed if the infection reached the tubes. The field of action was not the pelvis alone; the forces were not test-tube bearers and the limitations to action were many. Pelvic inflammation in the majority of cases began as an acute vulvar or vaginal or uterine infection, with a tendency to spread through the tubes to the pelvic peritoneum. The infecting agent might be the gonococcus, streptococcus, members of the colon bacillus group, pneumococcus and staphylococcus. Each variety, having its many grades of virulence, varied also in the intensity of its virulence as the case proceeded. Patients differed in their power to resist or combat infection, and this resistance was not a fixed state, but changed constantly during the progress of the disease. Operators knew well the changes that had been taking place in the tubes by which the uterine and abdominal ostia became sealed. The tube was now an abscess sac, increasing in size and weight. By reason of weight it sank by a backward rolling movement toward or into Douglas' pouch. The weak place in the sac was the point where the fimbriæ were glued together to seal the abdominal end. Some quick movement or the gradually increasing pressure caused a rupture at this weak spot, and pus escaped into the pelvic cavity. Peritonitis ensued, but it was local. The patient was in bed with pain and temperature for a few days, and then was as well as before the rupture until the next attack, due to another rupture. In some cases such leakages were frequent. An operation in this case would disclose the conditions described.

Dr. Seth C. Gordon of Portland, Maine, said that pyosalpinx was very much more common years ago than it was now. In the early days of gynecology in America almost every practitioner wrapped a probe with cotton, dipped it in some solution, and passed it around the uterus. He found a number of cases of pyosalpinx in those days. Occasionally he found it following an abortion, when the tube would become very large and adherent to the vault of the vagina. He operated upon most of these cases through the vagina, making a free incision and establishing drainage, and nearly all these patients got well.

Dr. Edward Reynolds of Boston said that in many cases of chronic vaginal discharge, as soon as the tubes were dealt with the vaginal discharge decreased. This was certainly very true in his experience. He was inclined to believe it was due to the probability that in chronic salpingitis there was a passage downward of small quantities of discharge or of a ferment, which, on emerging into the uterus or vagina, kept up a much more profuse discharge in the larger passages, the tubes acting as reservoirs for the ferment, thus increasing the vaginitis, and after its removal the tubes were clear.

Dr. Thomas J. Watkins of Chicago said that Dr. Andrews' paper was along the line of developing immunity, and he had said that a patient did not get well because the local disease got better, but the local disease got better because the patient developed a general immunity. And this had been the idea in the treatment of pelvic infections. Now the gynecologist did everything he could to develop immunity. He had found that if he drained a pus tube or took it out in the most surgical manner, without spilling the pus, the patient's temperature was not shortened. The patient ran a fever for two or three weeks, probably a little longer with an operation than without it, because the amount of bacteria and poison removed by the operator was less than the amount of physiological resistance cut down as the result of the operation. So in these cases the surgeon had very much to be thankful for in this contest between physiological resistance and bacterial invasion.

Double Ovarian Dermoids in Pregnancy.—Dr. Walter P. Manton of Detroit said that in the total number of cases collected there were twenty-seven double tumors noted in the non-gravid, and seventy-three single and nineteen double associated with pregnancy. In the non-gravid, twenty-three tumors were situated on the right side and sixteen on the left. In the pregnant, of the single growths eleven were on the right and ten on the left side. From the fact that, even with double tumors, menstruation was unaffected, or showed only slight disturbance late in the disorder, it appeared that these growths had little influence on that function, and from the number of reported pregnancies did not as a rule prevent conception. On the other hand, their existence was always a menace to the health and even life of the mother during pregnancy, and especially following delivery, from the peculiar liability of dermoids to twisting of the pedicle, and in occasional instances during gestation, to the pressure caused by the size and position of the associated cyst. The coincidence of other new growths of the pelvic organs and dermoid cysts added still greater danger to the maternal host, the two morbid products not infrequently becoming formidable complications in pregnancy, labor, or the puerperium.

Dr. Thomas J. Watkins of Chicago said that with a double dermoid it would seem very feasible to simply leave a part of the tumor which retained the corpus luteum, and this probably would prevent the interruption of pregnancy. He was making some experiments along this line, but they were not far enough advanced to be conclusive.

Dr. Brooks H. Wells of New York stated that the removal of these ovaries during pregnancy did not interrupt pregnancy. He recalled a case in which there were two dermoid cysts of both ovaries, which were removed, the patient being advanced four months in pregnancy and going on to term.

Dr. Manton in closing stated that in all of these cases he personally had never had a case on which he had operated on both sides during pregnancy, removing the dermoids. In all reported cases, where the dermoid was on one or both sides, pregnancy had gone on uninterrupted The majority of operators advocated leaving behind a portion of an ovary.

Some Advances in Obstetrics During the Last Twenty-five Years.—Dr. A. Lapthorn Smith of Mon-

treal stated that if one were to ask any practitioner with a large obstetric practice what had been the greatest advance in that department of medicine during the last twenty-five years he would reply, without hesitation, asepsis and the abolition of puerperal fever. Every doctor and every nurse felt that it was now a personal disgrace to have a case of puerperal sepsis on their hands, and yet he was convinced that in many of the cases he had been called to they had been absolutely blameless. The speaker then discussed inversion of the uterus, the abandonment of ergot, injuries to the soft parts, the use of forceps, the preliminary placing of the perineal stitch, the repair of old lacerations of the cervix and perineum at the next confinement, pelvimetry, delivery by cesarean section, cesarean section for ventrofixation, puerperal convulsions and the toxemias of pregnancy, vomiting of pregnancy, spinal and other anesthesia, the use of anesthetics for the second stage of labor, and lastly the trained nurse in obstetrics.

The Blood Supply of Uterine Myomata, Illustrated with Lantern Slides.—Dr. JOHN A. SAMPSON of Albany, N. Y., stated that in his paper he presented observations from a study of eight injected uteri containing myomata. He spoke of the methods of study, arterial and venous injections, and presented photographs and enlargements, saying that the latter would show details that were not readily seen in the enlarged photographs, and he also spoke of the use of salts impervious to the *x*-ray, radiographs, and stereoscopic radiographs, etc. By means of stereoscopic radiographs of serial sections of any specimen, in which either of the arteries or veins were filled with a substance impervious to these rays, it was possible to follow the entire course of each vessel so injected. The blood supply of the normal uterus, the main intrinsic uterine arteries, to which the name arcling might be given, penetrated the anterior and posterior uterine wall and lay between the outer and middle third. Their course was horizontal in the lower portion of the body of the uterus, and obliquely horizontal (upward) as one approached the fundus. Each arcling artery terminated in a medial, radial, or centripetal branch and peripheral branch, the latter often anastomosing with a similar branch of the opposite arcling artery, thus establishing a communication between the two main arteries. All along the course of each arcling artery, radial branches arose which terminated in the endometrium, and also peripheral branches arose which nourished the myometrium. Sections of injected uteri containing myomata showed that all tumors of an appreciable size had an arterial blood supply which varied greatly in different specimens, and in the large tumors was frequently greater than that of the myometrium. These same sections failed to demonstrate any vein in many of the tumors; in others a few small veins might be seen throughout the tumor or about its periphery, while occasionally they were quite evident, but never as abundant as in the myometrium.

Anatomical Study of the Ovary.—Dr. JOHN G. CLARK of Philadelphia gave a talk on the anatomical study of the ovary, which was illustrated with numerous lantern slides. He referred to the development of the ovary from the Wolffian body. The differentiation of sex was early determined by the radical differences in the blood supply to the primitive ovary and testicle. Upon the ovarian vascular distribution apparently depended the proper development and maturation of the Graafian follicle. He traced the successive stages of development of the ovary from infancy to old age. The corpus luteum was of the greatest importance, and nature has devised a very comprehensive vascular scheme for its development and retrogression. Upon the maintenance of the vascular system of the ovary apparently depended the perpetuation of the menstrual life of the individual.

The Function of the Ovary.—Dr. ROBERT T. FRANK of New York drew the following conclusions: 1. Both from anatomical evidence and functional behavior the active portion of the corpus luteum must be regarded as an epithelial structure. 2. A sharp distinction should be drawn between proestrum and estrum (menstruation was the homologue of proestrum). 3. Proestrum and maturation of follicles coincided in all mammals, but as yet no proof had been forthcoming that maturation actually caused proestrum. 4. The period of desire (estrus) was the climax of the preparatory changes occurring during proestrum and probably due to the same causation. 5. Ovulation was the end result of follicular maturation. In some species it occurred during or immediately after estrus; in others the bursting of the follicle was postponed for months. Such differences in time relation were most probably accounted for by the rate of growth from the ovum and follicle. (a) Ovulation might be accelerated by coitus. (b) Ovulation was inhibited by the corpus luteum. 6. (a) The corpus luteum sensitized the uterine mucosa and thus rendered it responsive to mechanical stimuli, with resulting formation of maternal placenta. (b) The corpus luteum was essential in the early part of pregnancy and the ovum failed to obtain a foothold unless the uterus was sensitized. (c) The corpus luteum lengthened the cycle by interfering with the maturation of growing follicles and ova. (d) The factor which caused the persistence of the corpus luteum during pregnancy had not been discovered. Persistence of the corpus luteum might also be found independent of gravidity. 7. Animals with interstitial glands in their ovaries might ovulate spontaneously, consequently the interstitial gland had not been shown to replace the function of the cylical corpus luteum. 8. Growth of the mammary gland was due to ovarian influence (maturation of follicles, activity of corpus luteum). The same factors which produced the persistence of the corpus luteum probably caused the breast hyperplasia of pregnancy.

Is There Any Clinical or Experimental Proof That the Ovary Has an Internal Secretion?—Dr. W. H. MORLEY of Detroit, Mich., stated briefly that from the experimental reports, from the clinical investigations, and from the anatomical and histological data gleaned from the literature and from personal experience, the following tentative conclusions seemed justifiable: 1. The ovary possessed an internal secretion. 2. The internal secretion was produced by the corpus luteum. 3. In so-called ovarian insufficiency relief might be obtained with an extract of the corpus luteum. 4. No untoward symptoms resulted from its use in conditions where it was indicated, even if no relief was obtained. 5. The extract should be properly prepared and given a fair trial before it was discontinued.

Conservation of the Ovary.—Dr. W. W. CHIPMAN of Montreal, said that the loss of the ovaries meant the loss of sex influence to the individual with all the grave disturbances in general metabolism which this loss signified. The earlier in life that it occurred the greater was the calamity. Ovarian transplantation sought to replace the lost or disabled gland. In animals this procedure had been so successfully carried out that conception had followed it, even in heteroplastic transplantation. In the human subject only one such case had been reported, that by Robert T. Morris, although in homoplastic transplantation Morris and Frank had both reported cases. In homoplastic transplantation the cases must be few wherein an ovary in whole or in part was healthy enough to be removed and engrafted, and was not healthy enough to leave alone. In this connection it was wise to remember the value of the ovarian ligament, for this frequently contained active parenchyma tissue. It was also generally believed that the ovary possessed considerable capacity for regenerative tissue after its partial removal, and hence an additional reason for leaving the segments *in situ*. In selected cases the ovarian extract had a definite therapeutic value, al-

though the results in different individuals were by no means uniform. He had seen no ill effects follow its use, and in some instances the results were almost miraculous. A single instance of a case seen some three months ago might be cited. This was a young woman of twenty-seven, from whom both ovaries had been feloniously removed for dysmenorrhea two years before. The condition of this woman was pitiable, and the close correlation of the ovaries to the sympathetic system was amply borne out by her appearance. A state of chronic surgical shock, with pronounced mental instability, perhaps best described it. The exhibition of two 5-grain tabloids of "varium" three times daily recreated this woman within a month. In some cases he had found that the addition of arsenic or small doses of the thyroid extract gave more favorable results. The natural and proper conservation of the ovary consisted in leaving it alone. As a society we could not too strongly fortify this position, and especially as concerned the woman in her second or third decade.

Behavior of the Ovary after the Removal of the Uterus.—Dr. Robert L. Dickinson of Brooklyn stated that conservation of ovarian structure after hysterectomy showed four-fifths of the patients free from disturbances of the surgical menopause. The results were somewhat better where both ovaries remained than where one was left or where resections were done. Where the disturbances had occurred their character was less severe and more gradual than after bilateral removal of the ovaries. In married women the conservation showed nearly uniform persistence of sexual desire. The practice of removing ovaries when taking out a uterus at or near the time of the menopause was strongly opposed, except in cases of malignant disease or when infected. Conservation after operations for incurable tubal infections left more tender and troublesome ovaries than after hysterectomies for fibroids, prolapse, or the hemorrhages of chronic metritis. After removal of the uterus, particularly of one ovary, or a large fibroid, ovarian edema or hypertrophy was frequent. The menopause was likely to occur earlier than the average time in a woman who had lost her uterus. To preserve the functional activity of the ovary its circulation must not be impaired. Removal of the tubes frequently compromised the ovarian blood supply, and was a delicate and unnecessary adjustment. Barring disease and closed tubes and malignancy and tuberculosis, they should be disregarded and allowed to remain. In forty cases in which both or one remained behind, he could not see that any harm had resulted.

The End Results When Hysterectomy Has Been Done and an Ovary Left.—Dr. John Osborn Polak of Brooklyn drew the following conclusions: 1. The technique of the operation and the general health of the patient had much to do with the end results. 2. A conserved ovary, if unhealthy, would leave the patient in a worse state mentally, nervously, and physically than if a total extirpation had been made. 3. When the woman was at the age in which the menopause should occur, or when she was past the menopause, a total ablation gave the best results. 4. The nervous phenomena were more marked when the patient was operated upon, when she was in comparatively good health, with a high preoperative blood pressure, than when the blood picture showed anemia or toxemia. 5. The symptoms of the operative menopause were less after extirpation for pelvic inflammation than when the ablation was done for fibromyomata. This was probably due to the associated vessel changes which were found in fibrosis. And finally, when one or both ovaries were healthy they should be conserved, and the younger the patient the more necessary was conservation.

Ovarian Transplantation in Lower Animals: Review of the Literature.—Dr. Franklin H. Martin of Chicago drew the following conclusions. 1. His work and the work of Mauclaire, Marshall, Jolly, Sauve, and Casalis and others on human females, and the work of Pankow and Sauve on animals, clearly demonstrated that there was a definite antagonism between the blood or the tissues of one individual and that of another to an ovarian graft. 2. The work of Pankow and Sauve seemed to show that this lack of homogeneity of conditions existed between animals closely related by consanguinity. 3. On the other hand, his experience and the reported work of Casalis, Sauve, Marshall and Jolly, Mauclaire, Pankow, and others demonstrated that there was practically no antagonism between the blood or tissues of an individual to ovarian graft from her own ovaries. 4. As the lack of success in transplanting ovaries from one individual of the same species to another was not one of technique apparently, but one of tissue or blood antagonism, would it be possible for us by some process of preparation of patients to render the blood or the tissues of the donor and recipient homogeneous, and thus make more successful tissue transplantation?

Dr. Seth C. Gordon of Portland, Maine, believed that when they were obliged to remove both ovaries they should always remove the uterus along with them. He did not know of any condition by which they could justify themselves in leaving the uterus after the ovaries were removed.

Dr. A. Lapthorn Smith of Montreal stated that the unfortunate part of his professional experience had been so-called conservative gynecology. He was a happy operator before he began conservative work on the ovaries.

Dr. W. Gill Wylie of New York stated that what was done today was a great improvement on the past, and he would accept most of what had been said by the authors of these papers; still the experience of some of them who were older in the profession had had a bad effect in one way and a good effect in another; that was in the days when Battey proposed the removal of normal ovaries for dysmenorrhea, hemorrhage, and other conditions; they were even then cured. In those days he removed the ovaries for reflex troubles in some cases, but in very few. The reason he did not do more of these operations was because he had found imperfect development had a great deal to do with the ovary, and that a faulty development of the ovaries had much to do with the growth and development of the woman, not only as to how she menstruated, but as to the effect on her growth.

Dr. Walter P. Manton of Detroit, Mich., stated that he was the first in the Middle West, he believed, to take up the conservative treatment of ovaries. Years ago he published a list of one hundred cases on which he had operated in a conservative manner and followed them carefully, and he found in that number a little over 94.6 per cent. of somatic cures and 5.6 per cent. of the women afterwards become pregnant. Since that time he had continued this conservative work satisfactorily, and the somatic cures had remained about the same.

Dr. Edward Reynolds of Boston said he had been working along the lines of conservatism in the treatment of the ovaries for a good many years, and he found that the conservative management of these cases, and the institution of operations for the correction of minor pathological conditions in the ovaries had grown upon him steadily, so that to-day he believed it was practically never necessary to remove all the ovarian tissue from a woman of child-bearing age except in cases of malignancy, or tubo-ovarian abscess, or extreme inflammatory disease.

Dr. J. M. Baldy of Philadelphia said with reference to the internal secretion of the ovary, until absolute and unmistakable proof was furnished along this line, he did not propose to base his surgical methods and the health of his patients on any such nonsense.

Dr. George Gellhorn of St. Louis stated that he had used ovarian extract for a number of years, and frequently in patients who had reached the menopause, both natural and artificial, and his results had not been uniform, nor were they convincing. In the menstrual disorders of puberty the results had been a trifle better but not constant.

Dr. Thomas J. Watkins of Chicago said he could see no logical reason for removing a normal ovary, but he could see much logical reasoning for leaving parts of diseased ovaries, especially in young women. He had left parts of suppurating ovaries, and he had never left part of a suppurating ovary that had given any trouble afterwards, the sac of the abscessed ovary being very thoroughly excised.

Dr. I. S. Stone of Washington, D. C., stated that there was cause occasionally for leaving the uterus after the removal of the ovaries The uterus was left frequently for the purpose of repair of intestinal injuries. It ought to be and could be used in that way. He knew of nothing in his surgical work with reference to the saving of human life which had given him more satisfaction than conservative surgery upon the ovaries.

Dr. Joseph Brettauer of New York stated that he had had a good deal of experience with the administration of ovarian extract which came from the market, with practically no results in hundreds of cases. He had had most gratifying results in fighting the disagreeable symptoms accompanying the climacteric with very small doses of thyroid which surely was not derived from the ovary. As to conservative surgery, he was extremely loath to open the abdomen, but when he did open it, he was very rarely conservative.

Dr. Frank T. Andrews of Chicago stated that for some time he had held that every rupture of a follicle consisted of a spontaneous inoculation of the patient, and was followed by a small amount of inflammation within the pelvic cavity, and that there was a sort of response on the part of the tissues of the patient. If the spermatozoa passing into the ova exerted an influence on the female, and they got future development and maturation of the ovum, that furnished to the female the one thing which was needed to make a great many changes in the body. It furnished the ambocepter and allowed the working of Ehrlich's side-chain theory, and therefore, they had not an internal secretion, but a doubleheaded internal secretion, a combination of substances that brought about all changes in the site of attachment of the ovum in the uterus. The changes in the ovary led to the changes in the corpus luteum, changes in the breast and general physique of the patient.

Dr. Lewis S. McMurtry of Louisville stated that he was sure every man present, when at the operating table, would deal with ovarian diseases in practically the same way. Some of the speakers had discussed inflammatory diseases. They had alluded to adhesions, and they were going to deal radically with all those cases in which there were longstanding acute infections, and they were going to remove infection and remove useless organs. Others had been talking about moderate degrees of cystic degeneration, which was an entirely different subject both from a pathological and surgical standpoint, so that he was satisfied that those who had spoken would all do practically the same thing.

Dr. J. Whitridge Williams of Baltimore said in connection with the corpus luteum, when associated with the condition of hydatidiform mole, they frequently had tumors arising from the corpus luteum of very large size. They got double cystomata of the ovary, multilocular cystomata of the size of his two hands developing on either side. These cystomata were made up of cysts, of varying size, many of them reaching an inch and a half in diameter, lined by lutein cells. Whether they were the cause of the hydatidiform mole, or whether the hydatidiform mole brought about their production, he was not prepared to state, but an interesting point was this: recent observation showed that many of these cases, if followed for a reasonable time, after extrusion of the mole, underwent absorption, and there were a number of cases where tumors larger than a cyst had disappeared within six months after extrusion of the mole.

Dr. J. M. Munro Kerr of Glasgow, Scotland, stated that they were all agreed that there were certain cases in which the ovary should be conserved. On the other hand, in cases of malignant disease of the uterus, and suppurative conditions of the adnexa, it would not be considered good surgery to conserve ovaries. In such cases the uterus, tubes and ovaries should be completely extirpated.

Vaginal Cesarean Section in Eclampsia.—Dr. Reuben Peterson of Ann Arbor, Mich., discussed in his presidential address vaginal cesarean section in the treatment of eclampsia, based upon a study of 530 published and unpublished cases. He drew the following general conclusions: (1) The maternal and fetal mortalities were lower, the earlier the uterus was emptied after the first convulsion in antepartum eclampsia. (2) Hence no time should be lost in employing the slower methods, but as soon as the diagnosis of eclampsia was established, the uterus should be emptied by the operation which would give the best results for mother and child. (3) Vaginal cesarean section met these requirements because it was based upon sound surgical principles, was quickly performed, while its technic could be acquired by anyone familiar with the rudiments of obstetric surgery. (4) Early diagnosis and early operation in antepartum eclampsia would lead to a marked reduction in both the maternal and fetal mortalities.

Dysmenorrhea Relieved by Nasal Treatment.—Dr. Joseph Brettauer of New York called attention to a monograph published in 1897 by Dr. Wilhelm Fliess in which he claimed that certain spots in the nasal mucous membrane, the tuberculum of the septum, and the anterior half of the lower turbinate had a direct connection by way of the sympathetic system with the genital organs. During menstruation these circumscribed areas were invariably swollen, more prominent, hyperesthetic, and bled easily upon the slightest touch, all of which symptoms disappeared after cessation of the menstrual period. In cases of severe dysmenorrhea, the symptoms—nausea, vomiting and pain in the iliac regions—had immediately disappeared upon the application of a twenty per cent. solution of cocain to the genital spots. Whenever such prompt relief was obtained, permanent relief was often secured by cauterization of the genital spots during the menstrual interval, with trichloracetic acid, the galvanocautery or bipolar electrolysis and by attention to any pathological condition found in the nose. The accuracy of these claims had been substantiated at several clinics and they had been endorsed by Schiff and others. He had had remarkable results in several instances by this treatment, and in his paper he cited the histories of five cases in detail.

The Pelvic Kidney.—Dr. J. Dougal Bissell of New York presented a further contribution to the study of pelvic kidneys and their replacement, and reported two new cases.

Anteflexion of the Cervix and Spasm of the Uterine Ligaments in Relation to Retroversion, Dysmenorrhea, and Sterility.—Dr. Edward Reynolds of Boston stated that for about eight years the muscular character of the so-called uterine ligaments had seemed to him of clinical importance in connection with the constantly accumulating evidence of the frequency of their spasms, which he had observed in the course of clinical work. His paper dealt

at some length with the anatomy of these so-called ligaments and with the evidence of their muscular character as described in anatomical literature. This was frequently perceptible in dissections made during life, namely, during operations, but was not readily detected post-mortem except by serial microscopical sections involving considerable technical difficulties. For this reason adequate descriptions of their musculature had only recently been embodied in the anatomical textbooks, but were now almost universal. This muscular tissue existed in especially important quantities in four situations, throughout the uterosacral ligaments, and at the bases of the broad ligaments, along the upper edges of the broad ligaments, and in a sheath underlying the bladder and attaching the cervix and vaginal vault to the descending rami of the pubes. The insertion of the anterior vaginal wall into the cervix was also a uterine attachment of much importance. This wall was largely nonmuscular and was attached at one end to the cervix and at the other to the arch of the pubes. The muscular character of the uterine ligaments accorded with general zoological law which held throughout the mammalian order, that except in a very few instances in which ligaments of elastic yellow connective tissues, as the ligamentum nuchae, were especially provided, all weight-bearing function was clonic and continued, they were usually of unstriped muscular fiber. This universal law was thus proved by recent progress to be as true of the so-called uterine ligaments as it was of all the other structures throughout the body and throughout the mammalian order. His paper dealt at some length with the anatomy of conpubertal anteflexion of the cervix, and with the exaggeration of this deformity by spasm of the muscular ligaments. He believed that his observations showed that the many cases of marked anteflexion of the cervix which were free from symptoms were also those which were free from spasmodic exaggeration of the deformity, and those which were attended by symptoms were usually the subjects of much spasm. He discussed the relation of this deformity to obstructive dysmenorrhea, sterility, and to many cases of retroversion. He then described a plastic operation which he had found successful for its correction, and for the relief of symptoms in these conditions.

Exhibition of Specimens.—Dr. Philander A. Harris of Paterson, N. J., exhibited numerous specimens of gallstones and gallbladders, and made some remarks on the subject of gallstones.

Epilepsy and Pregnancy.—Dr. G. Brown Miller of Washington, D. C., stated that epilepsy had little direct influence upon the course of a pregnancy, except that traumatism produced by epileptic seizures might cause a premature labor and abortion. The influence of pregnancy upon epilepsy was of greater interest. In a certain proportion of cases the toxemias of pregnancy might influence very unfavorably the epilepsy even to producing the status epilepticus. The difficulty in making a diagnosis between the status epilepticus and eclampsia was great, but the proper diagnosis was necessary as the treatment was radically different. He reported a case of probable status epilepticus, discussed it, and reported a few similar cases from the literature. From a careful study of his own case and the literature, the following conclusions would seem to be warranted: (1) In women with epilepsy where pregnancy apparently caused the convulsions to become more frequent or more severe, one should always consider the necessity of terminating the pregnancy. (2) In cases of pregnancy in epileptic women, one should watch with extreme care for indications of toxemia or the premonitory signs of eclampsia, and should put an end to pregnancy at the appearance of symptoms of much less gravity than would indicate this procedure in women who were not the subject of disease.

Repeated Ectopic Pregnancy, with a Report of Four Cases.—Dr. Richard R. Smith of Grand Rapids, Mich., reported four cases in which a second tubal pregnancy followed a first. In two the interval was about two years; in the others but one; in two of these women these pregnancies constituted the only ones, the other two having previously borne children. He had found about 170 similar cases in the literature, to which he added these, and a number of others obtained through correspondence. In a total of 2,998 cases there had been 11 recurrences, or about 3.8 per cent. He pointed out the difficulty of following up hospital cases over a period of years to know of their welfare and the fact that age, social condition and lapse of time since operation were not taken into consideration in these figures. He believed the percentage would be higher in cases where a patulous tube was left and social conditions were favorable to pregnancy. These cases of repeated ectopic had occurred, as might be expected, in the child-bearing age and in the decades in which normal pregnancies were most prevalent. There was a high death-rate following the second ectopic, but later reports seemed more favorable and showed a death-rate apparently not higher than that following a single ectopic. In 116 cases of second ectopic, there were 101 recoveries, and 15 deaths with or without operation. The average length of the interval was about thirty months, but no rule could be formulated as to when a second ectopic might be expected. A considerable number occurred in less than six months. Baldy reported one occurring twelve years after the first. The percentage of interval pregnancies was small; most of the recurrences took place in the opposite tube, but a number were reported as recurring in the same one, also several ovarian pregnancies (doubtful), and an abdominal followed by a tubal. Several instances of three ectopics occurring in the same women were reported. He had been unable to obtain exact data in any considerable number of cases as to further normal pregnancies following an ectopic, but believed them to be less frequent than ordinarily assumed. He gave as his opinion that the matter of the disposal of the other tube should be discussed with the patient before operation whenever practicable. In young women and those desiring children the opposite tube might be saved; in those who had already borne as many as desired, it should be sacrificed rather than to submit the woman to the distressing possibilities of a second accident. The appearance of a tube when patulous was no criterion as to its capabilities.

Election of Officers.—The following officers were elected for the ensuing year: *President*, Dr. Howard A. Kelly, Baltimore; *First Vice-President*, Dr. Richard R. Smith, Grand Rapids, Mich.; *Second Vice-President*, Dr. John A. Samson, Albany, N. Y.; *Secretary*, Dr. Leroy Broun, New York, re-elected; *Treasurer*, Dr. J. Wesley Bovee, re-elected.

Baltimore, Md., was selected as the place for holding the next annual meeting.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held March 9, 1911.

Dr. William Shannon in the Chair.

Hereditary Syphilis and the Wassermann Reaction, with Five Cases in One Family.—Dr. Mark S. Reuben presented these patients. On October 16, 1909, a child, one and a half years old, was brought to the Vanderbilt Clinic for treatment. The mother stated that there had been a fissure of the anus for six weeks and that there was no tendency to heal. The child had never been ill before; there were no signs of snuffles nor rash of any kind. The

family history, however, was very interesting and helped to clear up the diagnosis. The mother had been married once before, and by that marriage had conceived six times. The first child lived three years and died of scarlet fever and measles; the second child lived two years and died of cholera infantum; the third child, the fourth, and the fifth were all stillborn at full term. The sixth child was prematurely born at eight months and died within one week. Her first husband died in 1899 of cerebrospinal meningitis and pneumonia. She remarried in 1900 and by her second marriage had five children, the infant above described being the youngest of these. The physical examination of the infant was entirely negative; neither the spleen nor liver were enlarged; no glands were enlarged and there were no scars but there were some signs of a mild rickets. On the strength of the family history and the chronicity of the anal fissure a diagnosis of syphilis was made. The patient was put upon mercury internally and calomel locally. The v. Pirquet test was negative. The fissure did not look as sluggish as before and this treatment was continued. Ten days later a Wassermann test was made but was negative; however, the same treatment was continued and within three weeks after the first visit the ulcer was completely healed. On November 19, 1909, the second daughter, aged seven and a half years, was brought to the clinic suffering from a unilateral sore throat; the examination showed a diphtheritic-like deposit on the right tonsil. The cultures taken were negative. The cervical glands on that side were enlarged. Six weeks later she developed a typical roseola. On December 16, 1909, a nine-year-old child developed a throat condition similar to that of the above. On December 13, 1910, a boy was brought to the clinic suffering from mucous patches on both tonsils. On December 13, 1910, another boy was brought to the clinic suffering from sore throat and mucous patches were found. On December 20, blood for the Wassermann reaction was taken from every member of the family and with the following results:

Second husband, W.R. —. Physical examination negative.
Wife, W.R. +. Physical examination negative.
Girl, 11 years old, W.R. +. Physical examination showed mucous patches in the throat.
Girl, 9 years old, W.R. +. Physical examination as above.
Boy, 7 years old, W.R. +. Physical examination as above.
Boy, 5 years old, W.R. —. Physical examination negative.
Boy, 3 years old, W.R. +. Physical examination showed mucous patches in the throat.

Hereditary Syphilis and the Wassermann Reaction.—Dr. Mark S. Reuben read this paper. He first reviewed the literature of syphilis from the fifteenth century to the discovery of the Wassermann reaction and then discussed the effects of the discovery of this test upon preconceived ideas in regard to syphilis. He concluded as follows: "1. The most usual mode of transmission of syphilis to the fetus is through the placenta. If the infant is syphilitic the mother is invariably syphilitic also; the father may or may not have syphilis. 2. Mothers who have no syphilitic symptoms, but who give birth to syphilitic children, have syphilis in a latent form; 72 per cent. of these women give a positive Wassermann reaction. 3. Mothers with syphilitic symptoms, who give birth to syphilitic children, give a positive reaction in 72 per cent. of the cases. 4. The earlier the blood of the mother is examined after the delivery of the last syphilitic child, the greater the percentage of positive Wassermann reactions. Thus of the mothers whose blood was examined within one year of the birth of the last syphilitic child, they obtain 90 per cent. of positive Wassermann reactions; of those examined within two years they obtain 65 per cent. positive reactions, and of those examined within four years they obtain 40 per cent. of positive reactions. 5. In women with no syphilitic symptoms, who have given birth to from one to seven syphilitic children they obtain a positive reaction in 60 per cent.; if they have more than seven children they get a positive reaction in 46 per cent. of the cases. 6. In mothers with symptoms who give birth to one syphilitic child they obtain 20 per cent. positive Wassermann reactions; to those who give birth to two syphilitic children, they get 60 per cent. of positive reactions; to those who give birth to four, five, six, or seven syphilitic children they obtain 100 per cent. of positive reactions, and in those who give birth to eight syphilitic children they obtain 80 per cent. of positive Wassermann reactions. 7. The great majority of infants of syphilitic mothers are themselves syphilitic. A syphilitic mother may give birth to a syphilitic child, or during her latent stage to a healthy infant, but never to one who is immune to syphilis. Of 123 infants born to syphilitic mothers, 110 gave a positive Wassermann reaction, *i.e.* about 90 per cent. 8. Over 99 per cent. of infants with hereditary syphilis gave a positive Wassermann reaction. 9. Children suffering from late hereditary syphilis give in 50 per cent. a positive Wassermann reaction. 10. An infant suffering from hereditary syphilis may give a negative Wassermann before any symptoms are present and a positive reaction later when symptoms arise. a. Mercury and salvarsan cause a positive Wassermann reaction to become negative, but in a certain number of cases the reaction becomes positive again within six months. b. Mercury and salvarsan do not cure syphilis; they only transform an active lues into quiescent or latent lues. c. The blood of every wet nurse should be examined for the Wassermann test; if the reaction is positive she has syphilis and should not be employed; if it is negative the blood of her infant should be tested; if this gives a positive reaction, the mother should not be employed for she has syphilis, even though her own reaction is negative. 11. In women in whom syphilis is suspected and who give a history of frequent abortions, a positive Wassermann reaction is found in 87 per cent. of the cases. 12. The virus of syphilis is mild at first, increases in severity for a few years, then remains stationary, and later begins to decline. 13. Syphilitic women on the average conceive about six times, but seldom have more than 2¾ living children unless their number of pregnancies is more than six. Of all the conceptions of syphilitics 75 per cent. result in death within one year. Twenty per cent. of all pregnancies result in abortion; 10 per cent. of all pregnancies result in still births; 10 per cent., in premature births; 22 per cent. result in full term syphilitic children; 18 per cent. die within one year of syphilitic or intercurrent diseases, and only 2 per cent. of all pregnancies of syphilitic women result in healthy children."

Dr. L. E. LaFetra said that he had asked Dr. Reuben to present these patients because the family history illustrated more points than any with which he had met. The first husband presumably had the disease. There were two points in particular which Dr. La Fetra wished to emphasize. The first was the value of the Wassermann reaction in making a diagnosis of hereditary syphilis, even though there were no symptoms presented that were definitely syphilitic. The baby shown had had an ulcer at the anal margin, which was seen by several dermatologists at the Vanderbilt Clinic, and they all thought that the lesion was tuberculous. However, they still adhered to the diagnosis of syphilis. The von Pirquet test was negative. The Wassermann reaction cleared up the diagnosis. The second point which Dr. La Fetra emphasized was in regard to the Wassermann reaction in the selection of wet nurses. While it would rarely be needed it might in doubtful cases be of decided help. Infants born of syphilitic mothers gave a positive reaction in 99 per cent. of the cases; in only 1 per cent. did the reaction fail; this was certainly a very small percentage. If the reaction was present in either the baby or the mother it would be wiser, notwithstanding the slight danger to the foster child, to look for another wet nurse. Dr. La Fetra thought it safer

to use wet nurses whose babies were over six weeks old, then the clinical examination would usually be all that was needed.

Dr. Henry Koplik said that at present there was going on great discussion regarding the value of the Wassermann reaction. The question had been raised as to whether or not this test should be taken as a standard in the selection of wet nurses. If this reaction could be taken and something like uniform results obtained it would be a good thing. As yet they were not able to say with positiveness that this reaction was of great value in the selection of wet nurses. Dr. Rudolph Fischl, after an experience of twenty-five years in the selection of wet nurses, stated that he had not seen one case when he had "passed" a wet nurse on clinical grounds in which syphilis had developed in the foster child. Any clinician with his eyes open need not subject the children or mothers to this test. Dr. Koplik thought the time was premature for deciding upon the value of this test; we were not ready for it yet.

A Duodenal Tube for Infants.—Dr. Alfred F. Hess read this paper and presented a tube with which he was able to gain access to the duodenum in infants ranging from two to fourteen months of age and weighing as little as seven pounds. This tube consisted of a simple rubber tube to which a perforated leaden ball was attached. It acted by means of gravity, entering the duodenum quickly within from twenty to thirty minutes. Dr. Hess exhibited *x*-ray photographs which clearly showed the tube in the duodenum; in one of these the stomach was filled with bismuth and the metal end of the tube was below in the intestine. He also showed alkaline bile-stained duodenal juice, which was the characteristic juice of the duodenum and which might be taken as a criterion that they had passed through the stomach into the intestine. This was the first time that it had actually been shown that they could reach the duodenum in infants. Dr. Hess said that he did not as yet know the value of this new method, but it would have scientific value in investigating cases of malnutrition of infants and therapeutic measures. In practice at present its general value seemed to lie in the diagnosis of pyloric stenosis, in which, if they entered the duodenum and obtained the characteristic juice, they could rule out the presence of a marked stenosis. It could also be used in the feeding of infants who suffered from protracted vomiting where the tube could be left *in situ* and the baby fed for some days in this manner.

Dr. Max Einhorn said that about one year ago he had reported a case of stenosis of the pylorus in an infant three months of age, which was helped by stretching the pylorus. Since that time he had had occasion to introduce the instrument he presented through the pylorus and into the duodenum. After he had employed this method in the adult he conceived the idea that it was well worth trying in infants. Dr. Einhorn presented his duodenal bucket and told of its value in ascertaining the permeability of the pylorus. He had also devised a duodenal olive for use in little children which was for the purpose of determining whether or not the pylorus was permeable. The distance to the cardia was ascertained by certain measurements. After the introduction of the olive it was left in a few hours and then withdrawn; the distance from the lips to the bile stain was noted. If there was any regurgitation of bile this was shown on the thread portion lying in the stomach. Dr. Einhorn had also used a duodenal pump for infants and had succeeded in obtaining duodenal secretion. There was a control test in infants; they were allowed to suck milk while the pump was in the duodenum. In the case of a three months old infant the instrument reached the duodenum in forty minutes, when clear duodenal fluid of a golden color was obtained. To make the test positive the baby should be given milk; while suckling pure bile could be withdrawn without the admixture of milk. Dr. Einhorn demonstrated an apparatus for stretching the pylorus in children similar to that used for the same purpose in adults.

Dr. Louis Fischer said that he was much interested in the work of Dr. Hess which had been duplicated by Dr. Einhorn. The instrument was passed into the stomach as one would pass an ordinary stomach tube. He waited a little longer than did Dr. Hess. An ordinary glass syringe was then attached and the duodenal contents aspirated. If milky fluid was obtained it was presumed that the duodenum had not been entered. If one waited for from twenty-five to thirty minutes a golden yellow or greenish fluid would be obtained. Dr. Fischer reported the case of an infant, three days old, with constant vomiting and active peristaltic waves, most pronounced when food reached the stomach. The condition persisted for over two weeks. Neither casein nor fat flocculi were found in the feces. The Einhorn duodenal bucket was introduced and left in the stomach over night. When removed it was seen by the stained cord that the bucket and the cord to which it was attached had passed through the pylorus and into the duodenum for at least seven centimeters. Thus the grave doubt as to the existence of a pyloric stenosis was removed. This infant made a complete recovery under treatment consisting of daily lavage and rectal feeding.

Dr. Thomas S. Southworth did not believe it was necessary to introduce the bucket presented to tell whether or not there was true stenosis of the pylorus; clinical evidences could be obtained. If there was true stenosis there would be no milk residue in the movements.

Dr. Henry Koplik expressed wonder at the confidence that had been shown in the ability to get good results in cases of either real or apparent stenosis of the pylorus. He could not see how they could speak of treating these cases with any such confidence as had been expressed. If the pylorus was sufficiently dilated to allow the beads to pass he did not believe it was a case for dilatation. One should watch the stools to see if there was any milk residue present. Any pylorus that allowed a small amount to pass through had no spasm but was relaxed. What had been said regarding the value of these instruments seemed to him rather utopian. He doubted whether any man could say that he had passed such a sound from the mouth to the pylorus and through it in fifteen minutes; certainly not in pyloric spasm or stenosis.

Premiums for Nursing Mothers and Milk Depots for Infants.—Dr. Charles Hermann read this paper. He had made a study of this subject in France and Germany. In Berlin each nursing mother who presented herself regularly with her baby at the milk depot received a fortnightly sum in advance not exceeding $1.40 per week. The majority received from thirty-five to eighty-five cents. The object of these premiums was to encourage breast-feeding and to keep the infant under observation so that the mother might be instructed. Some thought that the percentage of nursing mothers was increased by this plan, while others did not believe that there was much if any increase in the number. Dr. Hermann did not think that the results justified the great expenditure of money. It was quite generally admitted that the mothers stayed away from the depots as soon as the premiums were discontinued. The mothers were not sufficiently educated to appreciate the value of the instruction received. If they were truly educated they would learn from their first experience how to care for succeeding children, but this was not the case; the same mothers came again with the second and third child to get the premium which was often used for purposes other than the purchase of food for the mother as was intended. Even with the premiums it was impossible to keep the mothers under observation for any length of time. Dr. Hermann thought the money could be employed to better advantage by paying visiting nurses $75 per month. Milk

depots which simply distributed milk were of little value. It was necessary to emphasize the fact that they might be harmful by diminishing the number of breast-fed infants. Even if instruction and medical supervision were added to the work of the milk depot there was usually no corps of visiting nurses or their number was very inadequate. The first milk depots were established in Berlin in 1905, and at present there were seven under the direction of well-known pediatrists. Tugendreich summed up the results as follows: "When we consider the small number of institutions, the small attendance at many places, the short period of observation, which in many cases did not admit of any beneficial results, it was not difficult to understand that a marked success of the depots was not perceptible and that there was no distinct reduction in infant mortality. It was not the fundamental idea that was at fault, but the imperfect and incomplete carrying out of the plan." Dr. Hermann called attention to the many reasons why mothers did not or could not come to the depots, and was of the opinion that sending the trained nurse into the home was a much better plan. He described the method that had been adopted at the Lebanon Hospital for following up the mothers after infants were born in the maternity wards. While still in the hospital the mothers were instructed in the care and feeding of infants. Printed forms were given to assist the memory, and also a card to the pediatric department of the dispensary with the instruction that they should return to the dispensary in ten days after leaving the hospital, or in special cases sooner. If they did not come a postal card was sent to them; if they failed to respond to this a visit was made to the home. Sick babies were to be brought to the dispensary immediately. Dr. Hermann emphasized the following points: 1. The importance of giving the mother instruction from the start. 2. Of 14 deaths seven occurred during the first month of life and five of these occurred during the first two weeks; therefore anyone who expected to see a drop in the infant mortality as soon as a milk depot was established was bound to be disappointed. 3. The milk depot should be established in connection with an out-patient department for treating babies that are slightly ill, and a hospital ward for those which were very ill. Breast milk should be provided for special cases. 4. From 75 to 80 per cent. of these mothers were able to give the breast for five or more months. Of the remainder few were too poor to buy bottled milk and could easily be taught to modify this milk. It was not necessary to distribute modified milk. 5. For the majority of cases one visit a month to the depot was sufficient; for special cases more were necessary. The city need not try the very expensive experiment of supplying modified milk for infants. The emphasis should be placed on breast feeding and not on the distribution of cow's milk of good quality.

Dr. Edwin Bradford Cragin said that the most important point to emphasize was the value of breast-feeding and the advantage of the mothers coming to the depots while still nursing their infants. The responsibility was thrown on the obstetrician who should see that the infant was kept at the breast until it got to the depot. He showed how much could be done to promote nursing in cases that seemed unpromising and even hopeless.

Dr. L. E. LaFetra said that he was opposed to all measures that reduced the responsibility of the father or mother of the family for the care of the children they voluntarily brought into the community. There was too much of a tendency to give things and do things for the poor. Instead, careful instruction should be given with the baby as the text. Encouragement of breast-feeding was of the greatest value, and his experience had been that nursing for six months could be carried on by from two-thirds to three-fourths of the women they saw at the dispensaries. The modification of milk at home for supplemental feeding and for feeding after weaning was perfectly satisfactory. Dr. LaFetra expressed himself as in sympathy with the conclusions presented by Dr. Hermann.

Dr. Josephine Baker stated that there were two points to be considered in reference to the work of the milk stations: 1. The milk stations must be supplemental to the work of visiting the mothers in their homes. 2. The milk stations should not be allowed to defeat their own purpose, which was that of the reduction of infant mortality by encouraging artificial feeding. The question of breast-feeding among the tenement population was largely an economic one. The mothers were often forced to go to work or were insufficiently nourished themselves to furnish proper nourishment for their babies. The milk stations should give milk to nursing mothers. Dr. Baker was opposed to the giving of premiums to nursing mothers. She thought the name "Infants' Milk Station" was an unfortunate one, and that a name should be devised which would call attention to the educational side of the work as well as to the distribution of milk. She approved of the home modification of milk and said it was the intention of the Health Department to furnish plain milk and to have the mothers instructed in the methods of modification for infant feeding.

Dr. Sidney V. Haas agreed with the conclusions of Dr. Hermann. Five years ago, while abroad, he looked up the question of milk stations. These had been started in Berlin about six months before, under the name of "Fürsorge-Stelle"; they had distributions of money premiums to nursing mothers, although in Paris, where the idea was first tried out at the "Consultations des Nourrisons," the money premiums had at that time already been abandoned because of the unfortunate experiences they had had with them. It was found that one woman, because of her small income, received 9 francs weekly, and another, because of a somewhat larger income, received only 5 francs; when the latter learned of this larger sum being received she threatened to discontinue breast-feeding unless her premium was raised. The work progressed more satisfactorily without premiums. The other organization in Paris at that time was the "Goutte de Lait," an organization comparable to one of our large milk companies, with numerous stores at which milk could be obtained either at the regular price by anyone or for half price or for nothing, tickets for the latter being obtained at the central office after careful examination and investigation which required renewal each month. This concern was able to pay a large dividend.

In regard to milk stations nothing could be worse than calling them by that name. The name implied that milk could be obtained there and that breast-feeding was not necessary. It seemed to Dr. Haas that they were going to add to the infant mortality and to create chaos instead of order. These depots might be made of great value if the babies could be supervised according to the methods outlined. In procuring physicians for this work they should get men trained by institutional work or other experience It was thought a few years ago that breast-feeding was fast becoming a lost art, but more recent experiences had shown that from 70 to 80 per cent. of the babies could be breast-fed. It was important to impress upon the mothers that the infants should be breast-fed. Dr. Haas said that the plan of having milk stations was an ideal one, but the name should be changed; the stations should be placed in the rooms of some organized institution and the milk supply should be at no cost to these institutions.

Dr. Charles Gilmore Kerley said that in his experience these women did not require much persuasion to continue nursing their children; they learned that it was best to nurse their babies. He believed that the milk stations were useless and might prove to be harmful unless supplied with adequate instruction. His eighteen years' experience with out-patients on the East Side impressed him with the fact

that not only did they need instruction, but they were willing to receive it.

Dr. Henry Koplik said that we were apt to make a mistake when we tried to carry out in America the work done in Europe. Reluctance on the part of the mother to nurse her child was a factor which in his experience in this country could be left out. He thought the milk depots had come to stay, but there should be a physician in attendance to instruct the mothers. These stations did much good in saving life. The only ones that did harm were those without proper control.

Dr. Godfrey R. Pisek agreed in the main with Dr. Hermann's conclusions, but did not agree as regarded the value of the consultations. There was no doubt as to the real value of these consultations. The mothers were given an opportunity to compare their infants with others, not only as regarded nutrition, but clothing and general development as well. They looked forward with interest to these weekly consultations. There was no doubt as to the value of the "follow up" system and the conferences that were held between mother and nurse. He had found that it was only the very exceptional mother who could not be taught how to modify milk at home. As to the distribution of pamphlets for the instruction of mothers it should be remembered that the personal equation counted far more than literature. The only way to reach these women was through doctors and nurses.

Dr. Thomas S. Southworth said that if as stated there were thousands and thousands of children that were being fed on the bottle because there was no breast milk this was the strongest argument in favor of sending out nurses into the homes to give advice about their feeding before they were entirely deprived of their breast milk. If the importance of breast-feeding were better taught so many of these children would not come to the milk dispensaries.

Dr. Edward B. Cragin said that the education of the public regarding the importance of breast-feeding had borne fruit and the majority of women were not opposed to nursing their babies. The percentage of those in the so-called higher walks of life who were unable to nurse after a few weeks was extremely large. This was one of the penalties of modern life. As many as 30 or 40 per cent. of such women were incapable of furnishing milk for their babies.

Dr. Charles Hermann, in closing the discussion, said that because of the birth certificates they could get information regarding these babies at the time of birth. Forty per cent. of the births in the greater city were in the charge of mid wives and their reports came to the Department of Health. He thought that there was no doubt but that the milk depots should be conducted with the affiliation of proper instruction on the part of visiting nurses.

Gastrointestinal Radiography a New Auxiliary in Legal Medicine.—Charles Vaillant says that we can control by radiography the earliest phases of infantile life, since we get different appearances according as the lungs have or have not been inflated at birth. Infants which have never lived at all show no visible organs; those which have inspired a few times show the stomach slightly; when the child has lived an hour the stomach is more transparent and the intestine becomes visible; when the child has been fed the lungs as well as the abdominal organs become visible, the liver is seen and then the heart comes into view. Infants which have been fed regularly show all the organs, and the gas in the intestine causes a more intense image of the intestines. In case of the death of a newborn child the lapse of time between birth and death is indicated by these radiographic appearances within certain limits. These appearances are of medicolegal value.—*Journal de Medecine de Paris.*

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Vol. XI. By Sir John Batty Tuke, M.D., and James Ritchie, M.D. Oliver & Boyd, Publishers, Edinburgh.

Diseases of the Lungs. By Sir. R. Douglas Powell, Bart., K.C.V.O., M.D. Lond., F.R.C.P., and P. Horton-Smith Hartley, M.V.O., M.A., M.D. Cantab., F.R.C.P. 712 pages; illustrated; cloth; price $6.00 net; P. Blakiston's Son & Co., Publishers.

Suggestive Therapeutics, Applied Hypnotism, Psychic Science. By Henry S. Munro, M.D. 409 pages; cloth; price $4.00 C. V. Mosby Co., St. Louis, Publishers.

Transactions of the Southern Surgical and Gynecological Association. Vol. XXIII, 23rd Session, held at Nashville, Tenn., December 13, 14 and 15, 1910. By W. D. Haggard, M.D. 532 pages; illustrated cloth. Published by Southern Surgical and Gynecological Association.

Handbuch der Speziellen Chirurgie des Ohres und der Oberen Luftwege. By Dr. H. Preysing and Dr. F. Blumenfeld. 240 pages; illustrated; paper; price 12 M. Curt Kabitzsch, Wurzburg, Publisher.

Heredity in the Light of Recent Research. By L. Doncaster, M.A.; 143 pages; illustrated; cloth. G. P. Putnam's Sons, Publishers, New York. Price $.40 net.

The Coming of Evolution. By John W. Judd, C.B., LL.D., F.R.S.; 171 pages; cloth; price $.40 net. G. P. Putnam's Sons, Publishers, New York.

A Comparison Between the Bordet gengou Fixation Reaction, and the Wassermann Reaction Based on the Relative Dosage of the Reacting Substances. By Frederick P. Gay. 28 pages. Published by University of California.

The Fixation Reaction in Relation to the Formation of Specific Serum Precipitates. By Frederick P. Gay. 22 pages. Published by University of California.

Diseases of the Stomach. By Charles D. Aaron, Sc.D., M.D. 555 pages; with 42 illustrations and 21 plates; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

Thirty-fourth Annual Report of the Board of Health of the State of New Jersey, 1910, and Report of the Bureau of Vital Statistics. 607 pages; cloth.

Norsk Medicin. By S Laache. 289 pages; illustrated; paper. Steen'ske Boktrykkeri, Publishers, Kristiania.

Progressive Medicine. Vol. XIII, No. 3. By Hobart Amory Hare, M.D. and Leighton F. Appleman, M.D. 328 pages; illustrated; price $6.00 per annum. Lea & Febiger, Publishers, Philadelphia and New York.

On the Relation Between Rat and Human Leprosy By L. S. Schmitt. 73 pages; paper. Published by University of California.

Errors of Refraction Occurring in the Students of the University of California. By Theo. C. Burnett. Published by the University of California.

Some Factors Influencing the Quantitative Determination of Gliadin. By J. E. Greaves. Published by the University of California.

Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic) 1910. 633 pages; illustrated; cloth; price $5.50 net. W. B. Saunders Co., Philadelphia, Publishers.

A System of Medicine. Vol. IX. Diseases of the Skin By Sir Clifford Allbutt, K.C.B. and Humphrey Davy Rolleston, M.A., M.D. 869 pages; illustrated; cloth; price $6.00 net. The Macmillan Company, New York. Publishers.

A Text Book of the Practice of Medicine. The New (10th) Edition, Revised. By James M. Anders, M.D., Ph.D., LL.D., 1328 pages; illustrated; cloth; price $5.50 net, half Morocco $7.00 net. W. B. Saunders Company, Philadelphia, Publishers.

The Treatment of Fractures. The New (7th) Edition, Enlarged. By Chas. L. Scudder, M.D. 708 pages, with 990 illustrations. Price, Polished Buckram, $6.00 net; Half Morocco, $7.50 net. W. B. Saunders Company, Philadelphia, Publishers.

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Nursing in the Acute Infectious Fevers. Second Edition Revised. By George P. Paul, M.D. 246 pages; illustrated; cloth; price $1.00 net. W. B. Saunders Company, Philadelphia, Publishers.

The Conquest of the Nerves. By J. W. Courtney, M.D. 209 pages; cloth; price $1.25. The MacMillan Company, New York, Publishers.

Dorland's American Illustrated Medical Dictionary. The New (6th) Edition Revised. By W. A. Newman Dorland, M.D. 986 pages, with 323 illustrations. Price, flexible leather $4.50 net, indexed $5.00 net. W. B. Saunders Company, Philadelphia, Publishers.

Practical Pathology. By Aldred Scott Warthin, Ph.D., M.D. Second Edition. 310 pages with 55 figures; cloth. George Wahr, Ann Arbor, Publisher

Lehrbuch der Spezifischen Diagnostik und Therapie der Tuberkulose. By Dr. Bandelier and Dr. Roepke. 296 pages; illustrated; paper; price 6.60 M. Curt Kabitzsch, Wurzburg, Publisher.

Experimentelle Grundlagen der Chemotherapie der Spirochaeten-Krankheiten mit Besonderer Berucksichtigung der Syphilis. By Prof. Dr. Paul Uhlenhuth. 313 pages; paper, price 18 M. Urban & Schwarzenberg, Berlin, Publishers.

The Practical Medicine Series. Vol. VI. General Medicine. By Frank Billings, M.S., M.D., and J. H. Salisbury, A.M., M.D. 353 pages; cloth; price $1.50. The Year Book Publishers, Chicago, Publishers.

Principles of Anatomy. By Wm. Cuthbert Morton, M.A., M.D. 174 pages; illustrated; cloth; price $12.00. Rebman Co., New York, Publishers.

Refraction and Visual Acuity. By Kenneth Scott, M.D., C.M., F.R.C.S. 191 pages, with 16 illustrations and a colored plate; cloth; price $1.75. Rebman Company, New York, Publishers.

Cesare Lombroso. By Hans Kurella, M.D. 194 pages; cloth; price $1.50. Rebman Company, New York, Publishers.

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord. By Robert Bing. 215 pages with 70 illustrations; cloth; price $2.50. Rebman Company, New York, Publishers.

The Mechanism of Life. By Dr. Stephane Leduc; 172 pages; illustrated; cloth; price $2.00. Rebman Company, New York, Publishers.

Love and Letters. By Frederick Rowland Marvin. 252 pages, cloth; price $1.50 net. Sherman, French & Company, Boston, Publishers.

Experimental Transmission of Leprosy.—Rodolfo Stanziale has injected into animals fresh material obtained from two cases of anesthetic leprosy, aspirated from cutaneous tubercles and consisting of a leprous fluice. Two series of experiments were made on thirty-one rabbits in all. After the reports on his work had been made by the author to the commission appointed by the Academy of Medicine this body endorsed his work. The commission found that the author has established the experimental transmission of leprosy from man to animals. He exhibited preparations derived from intraocular experiments, rich in lapra bacilli, which by their large number, by the structure of the cornea and the topographical position of the germs in the anterior chamber of the eye, as pure granulomatous formations on the iris, leave no doubt that these lapra bacilli were generated in this position by proliferation, and not simply by disaggregation of the injected bacilli. Small tumors were formed at the place of inoculation and in the iris which were rich in lepra bacilli.—*Giornale Internazionale delle Scienze Mediche.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended October 7, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	408	136
Diphtheria	179	20
Measles	76	—
Scarlet Fever	65	—
Smallpox	—	—
Varicella	19	—
Typhoid Fever	90	11
Whooping Cough	35	8
Cerebrospinal Meningitis	3	3
Malarial Fever	—	
Totals	875	178

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended October 6, 1911:

Places	Date	Cases	Deaths
CHOLERA			
Austria-Hungary: Budapest	Aug. 27–Sept. 3	5	3
Dalmatia—Arbe	Aug. 28–Sept. 3	3	..
Krizovljan	Aug. 28–Sept. 3	2	..
Susac	Aug. 28–Sept. 3	1	..
Near Fiume.			
Sülv	Sept. 2	1	1
Ujpest	Sept. 2	4	3
Near Budapest.			
China: Manchuria—Dalny	Aug. 19–Sept 2	35	19
Swatow	Aug. 26	..	..
Decreasing			
France: Marseille	Aug. 1–31	..	70
India: Calcutta	Aug. 6–19	..	28
Madras	Aug. 20–Sept. 2	4	3
Indo-China: Saigon	Aug. 7–20	11	2
Japan: Nagasaki	Sept. 11	1	..
On s.s. *Kasuga Maru.*			
Java: Batavia	Aug. 13–19	11	5
Russia		..	..
Total Aug. 20–26: Cases, 174; deaths, 80.			
Governments—Astrakhan	Aug. 20–26	87	43
Baku—Baku	Aug. 20–26	1	1
Chernomonsk, district—			
Novoryssisk	Aug. 20–26	1	1
Jaroslav	Aug. 20–26	8	3
Kouban	Aug. 20–26	..	1
Moscow—Moscow	Aug. 20–26	1	1
Rostov on Don, city	Aug. 20–26	11	4
Samara	Aug. 20–26	8	4
Saratov	Aug. 20–26	38	10
Simbirsk	Aug. 20–26	14	10
Tambov	Aug. 20–26	5	2
Servia: Rachka	Sept. 3–8	8	3
Studenitza district.			
Siam: Bangkok	July 9–Aug 5	47	47
Straits Settlements: Penang	Aug. 6–12	1	1
Singapore	Aug. 6–12	3	4
Turkey in Europe: Constantinople	Sept. 5–11	258	145
Medua	Aug. 24–Sept. 1	5	1
Salonica	Aug. 11–Sept. 10	110	50
Valona	Aug. 27–Sept. 7	28	8
Turkey in Asia: Bagdad	Aug. 27–Sept. 9	103	62
Basra	Aug. 26–Sept. 9	46	34
Erzeroum, vilayet	Sept. 13	..	..
Present in Erzinghan and Kerassund.			
Harput	Aug. 20–26	15	12
Mekka	Sept. 1–10	231	98
Smyrna	Aug. 28–Sept. 10	344	150
Zongouldak	Aug. 28–Sept. 10	20	12
YELLOW FEVER			
Brazil: Manaos	Oct. 2	4	..
Para	Sept. 3–9	1	..
Mexico: Merida	Sept. 10–16	7	2
Venezuela: Caracas	Aug. 20–26	3	..
PLAGUE			
Brazil: Para	Sept. 3–9	2	2
Barbadians.			
Rio de Janeiro	Aug 6–26	7	2
British East Africa: Kismayu	July 30–Aug. 5	..	2
China: Hongkong	Aug. 13–19	1	1
Shanghai	Aug. 20–26	2	..
India: Bombay	Aug. 13–Sept. 2	53	48
Calcutta	Aug. 6–12	..	19
Kurrachi	Aug. 20–Sept. 8	11	10
Rangoon	July 1–31	249	331
Indo-China: Saigon	Aug. 7–20	11	4
Java: Pasoeroean Residency	Aug. 13–19	36	10
Siam: Bangkok	July 9–Aug. 5	21	21
SMALLPOX			
Brazil: Rio de Janeiro	Aug. 6–26	7	..
France: Marseille	Aug. 1–31	..	1
Germany			
Total for Germany, Sept. 3–9: Cases, 2.			
Gibraltar	Sept. 4–10	1	..
India: Bombay	Aug. 20–Sept. 2	7	5
Madras	Aug. 20–Sept. 2	24	10
Rangoon	July 1–31	32	9
Indo-China: Saigon	Aug. 7–20	8	5
Italy: Palermo	Aug. 27–Sept 2	52	38
Java: Batavia	Aug. 13–19	3	1

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Original Articles.

SPECIALISM IN MEDICINE.*

By EDWIN B. CRAGIN, M.D.,

NEW YORK.

THE type of medical man which most appeals to the writers both of poetry and prose is that of Dr. William MacLure, in "Beside the Bonnie Brier Bush," who through summer and winter on his old mare Jess rode up and down the glen of Drumtochty, ministering to the needs of the common folk and their bairns. MacLaren says of him: "He was chest doctor and doctor for every other organ as well; he was accoucheur and surgeon; he was oculist and aurist; he was dentist and chloroformist, besides being chemist and druggist." Yet even MacLure, when Tammas Mitchell's wife Annie lay desperately ill, knew that only he could save her who had spent his life in a special line of training, and the story of how he brought Sir George through the Tochty flood to the bedside of Annie and how Sir George by successful operation saved her life has touched the hearts of thousands.

Specialism in medicine is characteristic of the times, and specialism has come to stay. No one working along a special line can meet in consultation the good all round man of the country who has to meet the demand for anything in medicine or surgery and run the gamut of all the specialties between, without being impressed with the breadth and manysidedness of the general practitioner of the country. Truly it may be said of him as Sir George said of MacLure, "He is an honor to our profession." However, the science of medicine today is too extensive for any one man to compass it. The literature of any one specialty is almost beyond the grasp of the individual. Limitation is a necessity for thorough work, and thorough work is successful work.

It must not be thought that specialism as it is found in medicine is unique or unusual. The same tendency to specialize is seen in the arts and trades. In the erection of the new gynecological building of the Sloane Hospital I was interested in noting the number of special workers employed, and was somewhat surprised to find that from the turning of the first sod in the excavation till the building was ready for the first operation thirty special classes of workmen had been employed, each working in an individual field, each trained to do a special kind of work and no other. Certainly specialism is not confined to medicine, nor would the sum of human knowledge be what it is to-day had it not been for special workers delving deep into the wells of technical knowledge whose secrets are hidden from all save those who search day in and day out along a special lead.

Granted that there are certain definite advantages in the special study of one branch of medicine and that long focusing of attention and effort upon the science, diagnosis and technique in one line of work brings crystallized results, the question naturally arises, What are the disadvantages? That such exist is known to every one, and it is only by recognizing them and warding against them that the best type of special workers is developed. In the first place the specialist is naturally a narrow man. The aurist who day after day spends his time confining his vision to the limits of his tubular speculum, even if in modern times he has extended his field to the throat, the mastoid and the lateral sinus, naturally has a narrow field of work, and unless he is careful his thoughts by day and his dreams by night are on ears, ears, ears, and other organs of the body fade away in the distance. In the same way the ophthalmologist whose life work has been limited to the technical knowledge and treatment of diseases of the eye naturally narrows his view and is inclined to think of the body in terms of the eye. What has been said of the aurist and ophthalmologist may be said with equal force of the laryngologist, the proctologist, the gynecologist and the other specialists.

Many a man has so centered his study, his thought, his practice and his interest in one organ as practically to forget, that this is only one of many organs in the body more or less interdependent and each demanding consideration. The result in technical knowledge of the different organs as derived from specialism has been great, but the natural effect upon the special worker is narrowing. Unless the specialist is careful he becomes nothing but a tool in the hands of the general medical adviser, whose vision is broad enough to study the human body as a whole, and to select from the collection of tools at his command, the proper one for the cure of his patient. The disadvantages and evils of specialism have been laid before you. The problem now is how can these be overcome?

In the first place do not specialize too early. One of the common tendencies among young medical students and even prospective medical students, is to have a fixed idea that they are to be specialists in medicine, and that a certain specialty is to be the field of their life work. If a personal allusion may be pardoned, the speaker remembers distinctly, prior to his first year in the medical school, writing to a well-known ophthalmologist of his native State, saying that he expected to make the eye his life work and asking his advice as to the best course to pursue. My learned friend wisely advised me to postpone my decision as to a specialty until I had finished my college and hospital course. The years have rolled by and those who are familiar with the

*Opening Address to the Students of the College of Physicians and Surgeons, Medical Department of Columbia University, September 28, 1911.

field of my life work would hardly consider that I had been true to my first love. In fact, if my colleague in the chair of ophthalmology were to express an honest opinion, it would probably be that the only disease of the eye the speaker was fitted to treat was ophthalmia neonatorum and even of this he might have grave doubt.

As medical students we know little of what line of work will especially attract us. We know little of what work we are best fitted for, and still less in what work our best opportunities will present themselves. If you were to ask the best preparation for a good specialist I should say, develop yourself first as a man, second as a doctor, third as a specialist. Whatever the field of your choice, it is first the man which counts. One writer has said, "What you are speaks so loud I cannot hear what you say," and this holds good in medicine. That there are apparent exceptions to the rule that the true man in medicine is the one who deserves and wins success may be granted for a time, and in small towns you will occasionally hear it said, "I would rather have A drunk than B sober," but such a result is short lived and exceptional. It is the man of strict integrity, sterling character and broad sympathies who alone has the right foundation for the successful general practitioner or specialist. If it is important that the general practitioner should have a broad general education before beginning the study of medicine, it is still more important for the specialist, as the former has not to cope with the narrowing tendencies which handicap the latter.

We have spoken of the need of a broad general education for the specialist before beginning the study of medicine. This need for a broad general education applies with even greater force in medicine itself. I feel that I am safe in saying that the one great regret in the mind of every specialist in active practice is that he did not have a broader medical training before limiting his field of experience. Oh, if he knew more pathology! If he only felt more certain of the exact condition of that heart! Does that eruption mean scarlet fever or German measles? These are echoes from the mind of more than one specialist whose field of work has been more or less foreign to these suggestions. To say that the medical training of the specialist should be like a pyramid with broad foundation rising from the plain and tapering to its apex as he limits his field of work would be trite, almost a platitude. Nay, rather would I compare the specialties in medicine to the presidential range of the White Mountains, viewed from a distance. The lower portion of the range belongs to them all in common, and it is only as you approach the summits that you see Washington, Adams, Jefferson, etc., standing out in the sky line. So it should be with the specialties in medicine, their foundations interwoven and formed in common and only on the broad foundation of general medical knowledge should the true specialiasts project in the sky line, here ophthalmology, and there otology, and the other specialties.

The time may come in the life of any one of you when the limitation of your field of work is either necessary or distinctly desirable. What will be your choice? This should depend largely upon two conditions. 1. Your opportunity for work. 2. Your natural taste and fitness for the work. Probably the first question which presents itself to every would-be specialist is what branch of the profession offers me the greatest opportunity? If you are an army surgeon and expect to perfect yourself as an army surgeon there will be very little sense in your specializing in Gynecology. It is only rational to select that line of work of which there is much to be done, and preferably much done in hospitals, for here it is that the necessary training and experience must be obtained. The question of opportunity naturally resolves itself into this: In what line of work have you hospital opportunities, or after years of dispensary service are you likely to have hospital opportunities? You may have thought and dreamed for years of student life that a certain line of work would be your specialty. Yet suddenly your opportunities in that direction may be closed and the doors open in another. In general, the guiding hand to the individual specialty in a large city is that of opportunity, and foolish is the man who does not consider it. The next question which presents itself is that of taste and fitness. Of several specialties presenting opportunities, which appeals most to your natural taste and for which are you best fitted? Although closely related and interdependent there appear to the speaker to be three classes of specialties. (1) The laboratory specialty, in which, secluded from the beck and call of the public, the special worker can pursue uninterruptedly the solution of the problem which is to bring fame to himself and perhaps lasting benefit to the world. (2) The surgical specialty, in which a surgical training and fondness for surgery are a prerequisite. (3) The non-surgical specialty.

The first division comes along the line of practice, or no practice. One man has no taste for dealing with people, his interest in the patient only begins as life departs. He is perfectly happy in the autopsy room and in his laboratory, with his test tubes, his microscope and various instruments of precision. The other man cares little for the seclusion of the laboratory, but is fond of dealing with people; of studying their individual needs and relieving them. Nothing gives him so much happiness as to keep from the pathologist him or her whose life he has spent anxious days and nights in trying to save.

The second division falls along the line of surgery or no surgery. Some men have no liking for surgery, or are by nature incapacitated for it. On the other hand, the definiteness of results and the speedy attainment of results from surgery appeal to some men as nothing else would. Now, while nearly every specialty is intimately connected with surgery and requires surgery in some of its lines of treatment, the different specialties vary greatly in this respect. In some the work is practically all surgical and must be done by the specialist himself, while in others, the need for surgery is only occasional and can easily be referred to the general surgeon for its performance. In fact, it is better so referred as the need for surgery in the specialty of this class is so infrequent as to be insufficient for the maintenance of the proper technique and practice on the part of the operator. Now, for a man to select, in deciding upon his special life work, a specialty in which the work is chiefly surgical, when he both by taste and by training is unfitted for surgery is most unwise, and the more so as there are other specialties in which surgery enters very little, and in those instances can easily be delegated.

It will be noticed that in discussing the two conditions; opportunity and taste, in the choice of a

specialty I placed opportunity first and taste second, and this I did advisedly, feeling that the taste for a line of work is often a changeable quantity and is often dependent upon opportunity. Well do I remember the time when the present occupant of the chair of anatomy in this university, now known far and wide as an authority on his subject and absolutely devoted to it, was a skilled and most enthusiastic surgeon, looking forward to surgery as a life work, yet there came in his path a parting of the ways with the choice between anatomy and surgery as his career. From its opportunity for greater usefulness, anatomy woed and won him, and the two have been happily united ever since, and I venture to add without a regret over his choice.

Having decided upon your specialty and having laid your foundation broad, both in general education and in general medicine, both theoretical and practical, the question naturally presents itself: How can I prepare myself for my individual specialty?

With a view to answering this question authoritatively for you, I wrote to the heads of several of the special departments of this faculty, inquiring their opinion as to the best preparation for their specialty. With their permission the following is abstracted from their replies:

From Professor Starr, Department of Neurology.—"For preparation in neurology the first requisite is a thorough knowledge of the histology of the nervous system. This requires eight hours' work a day in a laboratory for three months, to be followed by a similar time in a laboratory on the pathology of nervous diseases. The best laboratories offering these courses are Obersteiner's in Vienna; Oppenheim's in Berlin and Dejerine's in Paris, or Spiller's in Philadelphia. After this preliminary work a year should be spent in clinical work in dispensaries and in hospitals. In Vienna, Berlin and Paris such courses are offered. Work in London is limited to two hours daily in the Hospital of Epileptics and Paralytics, but on the continent six hours daily can be done. During this year of clinical work three months should be given to psychiatry in a hospital. This is best obtained with Ziehen in Berlin, or with Kraepelin in Munich. The only way of obtaining instruction in psychiatry in America is to obtain a place as interne in an asylum, and there the routine duty precludes systematic study. There are at present no adequate hospital courses in neurology offered in America as no such special wards exist in the hospitals."

From Professor Bacon, Department of Otology.—"For the best preparation for an aurist a man should first obtain a degree in Arts or Science. After leaving the medical school he should have the best training he can get in a general hospital, particularly in surgery. He ought to have a medical service as well, so that he can look at his patient in a broad way and not jump at the conclusion at once that if a patient has tinnitus aurium, local treatment of the ear will cure the difficulty. It would be a good thing if he could have several years of general practice before taking up otology. He should then become an interne at an eye and ear hospital and serve through the different grades. In a hospital like the New York Eye and Ear Infirmary, where there are performed each year between six and seven hundred mastoid operations and many operations for intracranial complications, a man can obtain an immense experience in a very short time and learn at the same time from many teachers. The internes who have followed such a course have acquitted themselves well after leaving the hospital, and are a credit to the institution."

From Professor Knapp, Department of Ophthalmology.—"For the best course to be pursued by one desiring to become an ophthalmic surgeon I would advise by all means a general hospital service in which both medicine and surgery are combined. If this is not possible I think a surgical service would be of greater value than a medical one. I would then advise a year's service in a special eye hospital, and after that, if possible, to study for a further year in European eye clinics and hospitals with particular attention to nervous diseases and general pathology."

From Professor Jackson, Department of Dermatology.—"Dermatology of all the specialties is most a part of general medicine. A great number of the diseases of the skin are due to disorders of the internal organs, of nutrition and of the nervous system. The better a general practitioner a man is, the better dermatologist he will make. Therefore, the best preparation for a dermatologist is a thorough training in general medicine, including hospital experience. A young man should serve for years under older and more experienced men. Dermatology can not be learned from books alone. Any man who has not spent years in handling cases and subjecting himself to the constant criticism of other experts should not esteem himself a competent specialist."

From Professor Simpson, Department of Laryngology.—"In preparation for a laryngologist a man should have a good general surgical training, for surgery enters so very largely into laryngology and rhinology that it becomes absolutely necessary to be well grounded in surgical principles and technique. This would permit him to meet all the requirements of the specialty when the aid of surgery was to be invoked. It is sometimes the case that a patient is turned over to a general surgeon, who, though having a better knowledge of surgery, has not the proper regional or functional knowledge for the best treatment of the case. The laryngologist should combine both of these requirements. He must be a good surgeon. After a hospital internship he should connect himself with a good laryngological dispensary service, preferably one in which there is a hospital bed service, so that he can properly follow his operative cases. In addition to a laryngological dispensary service he should follow general practice for some years before devoting his entire time to laryngology. This could be done either by association with a medical clinic, or by general bedside practice. This aids greatly in preventing a specialist from becoming a man of one idea, and permits him to place his cases in their proper relation. A laryngologist should also have a good training in pathology and bacteriology. Deftness, gentleness and patience in instrumental manipulation should be an absolute requirement in laryngology. This may be partly inherent in the individual, but is generally the result of long practice and experience. Study in foreign clinics, though perhaps not absolutely necessary, is undoubtedly of great value. Of equal value also is an acquaintance with the methods and ideas of those prominent at home."

Department of Obstetrics and Gynecology.—In these departments, over which the speaker has the honor to preside, there can be no question that a

broad general training, and especially a thorough surgical training, is of the utmost importance. For preparation as a specialist in obstetrics, thanks to the donors of the Sloane Hospital for Women, it is no longer necessary for students and graduates of Columbia University, if of high rank, to pursue their study of this branch abroad. In no place in the world is a better preparation obtainable than that gained by taking after graduation from a general hospital, especially one with a surgical service, a three months' service at the Sloane Hospital, spending one month in each of the three grades of Junior Assistant, Day Senior Assistant, and Night Senior Assistant Obstetrician, and then crowning this experience by an appointment for two, or, better, for three years as Resident Obstetrician to the Sloane Hospital with the title of Instructor in Obstetrics in Columbia University. While this appointment is made at the earliest only once in two years, it is a reward possible to those of marked fitness for the work, and who are anxious to specialize along this line. As regards the specialty of gynecology I am forced to admit that at present Vienna, with its wealth of material and its unique control of the same, offers a greater field in gynecological diagnosis than is easily attainable in this country, but there is developing at the Sloane Hospital in connection with the Vanderbilt Clinic a Department of Gynecology, in which a man after a broad general surgical training can spend two years in the position of Resident Gynecologist, and obtain ere long a preparation in the specialty of gynecology second to none in the country, and it is hoped in the world.

Nothing has been said thus far of what might be called the specialty of the general medical consultant, the head of the clearing house of the different specialties, a specialty possible only in large towns or cities, and a specialty perhaps the least crowded of any. This represents a field of work open only to those of large medical experience in hospital wards and usually in teaching chairs; the crowning reward of the medical man with broad training, wide experience and the universal respect of the community, both lay and medical, in which he lives.

Gentlemen, I have tried to present to you the highest types of specialism in our chosen profession. Low ideals and insufficient preparation bring neither satisfaction nor permanent rewards, but if after a thorough college and hospital training you decide to limit your field of work and will each aim at high ideals as a man, as a doctor, and as a specialist, success will deservedly be yours.

10 West Fiftieth Street.

RESULTS IN TWO CASES TREATED BY VACCINE THERAPY.

By C. L. McDONALD, M.D.,

CLEVELAND.

BACTERIOLOGIST TO ST. ALEXIS HOSPITAL.

My reason for reporting these cases is that they represent a type of chronic infection very amenable to bacterial therapy. It might be well to mention that such infections as occasionally follow amputation, scalp injury, etc., are equally responsive to this form of therapy. The following cases were both due to infection by the *Staphylococcus albus* and were treated by stock vaccines prepared in my laboratory.

Mr. R., while handling lumber, drove a splinter into the palm of his hand. Three days later the hand became greatly swollen and very painful. The next day it was opened in several places and a large quantity of pus evacuated. The patient was then instructed to soak his hand in hot bichloride solu-

Fig. 1.—Case I, before inoculations were begun; the dressing shows the amount of discharge in twenty-four hours.

tion one hour three times a day and return every day for dressing. At the end of two weeks the discharge had greatly decreased but the swelling persisted. Eight weeks later with the hand still much swollen and discharging the amounts seen on the first photgraph he was referred to me for vaccine treatment. A smear and culture showed the causative organism to be a *Staphylococcus albus*. The patient was inoculated with a stock vaccine prepared from a similar case, the initial dose being 150,000,000 dead staphylococci. He returned seven days later with the swelling and discharge greatly lessened. A second inoculation of 200,000,000 was given, followed by further improvement. On the fourteenth day a third inoculation of 300,000,000 dead staphylococci was given and on the twenty-fifth day the discharge and swelling, as shown on the second photograph, had entirely disappeared.

The next case is of special interest in that vac-

Fig. 2.—Case I, after three inoculations had been given.

cines were not used until the usual medical and surgical measures had ceased to benefit the patient. Mrs. B., twenty-five years old, had a severe postpartum hemorrhage at the birth of her last child. The physician in charge gave a physiological

saline infusion under the breast. About two weeks later an abscess appeared at the site of operation, which was opened and packed in the usual way. At the end of six weeks, owing to a continuous discharge, the breast was again opened, curetted, and

Fig. 3.—Case II, before inoculations were begun, the dressing shows the amount of discharge in twenty-four hours.

packed, which brought about considerable improvement but at no time did the discharge subside completely. A third operation two months later, similar to the second, followed by daily irrigation by saline solution, brought about no further improvement. Six months after her last operation, with her breast discharging about 2 drams of pus a day, she was referred to me for therapeutic immuni-

Fig. 4.—Case II, after two inoculations had been given.

zation. Smears and cultures showed the causative organism to be a *Staphylococcus albus*. The patient was inoculated with 150,000,000 dead staphylococci, which was followed by slight soreness at the site of the inoculation and slight increase of the discharge from the breast for the following two days. On the fourth day the discharge was considerably lessened, and became more watery. On the seventh day she was given a second inoculation of 200,000,000 dead staphylococci, and this was followed by a disappearance of the pain, which had been continuous since the beginning of the infection. On the fourteenth day, with the discharge and pain absent, she was given a third inoculation to prevent a recurrence. Six months have elapsed since her last inoculation and her breast has remained well.

254 Lennox Building.

TONSIL REMOVAL WITH SPECIAL REFERENCE TO QUININE ANESTHESIA.

By BRYAN D. SHEEDY, M.D.,

NEW YORK.

ADJUNCT PROFESSOR RHINOLOGY AND LARYNGOLOGY, FORDHAM UNIVERSITY MEDICAL COLLEGE; INSTRUCTOR DISEASES NOSE AND THROAT, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; CONSULTING OTOLOGIST, RHINOLOGIST, AND LARYNOLOGIST, ST. JOSEPH'S HOSPITAL.

The technique connected with tonsillar enucleation cannot be properly understood and appreciated without a proper and definite understanding of the anatomy and physiology of the faucial tonsil. In this article tonsillectomy and tonsillar enucleation will be considered synonymous terms, the term tonsillotomy being used only when referring to the old operation where a portion of the tonsil was removed by the tonsillotome, snare, scissors, or punch. The newer operation aims to remove all of the gland with its capsule, while the operation that has been practised for years aimed to remove only a portion of the hypertrophied tissue. To appreciate this subject properly, it is necessary for us to refresh our memory in regard to the arrangement of lymphoid tissue surrounding the upper opening into the body. This ring of lymphoid tissue bears the name of the great anatomist, Waldeyer, who first presented a description of it to the medical profession.

The lymphoid tissue, located in the various recesses of the nasopharyngeal space, is generally described as tonsils. The more prominent being: (1) The faucial tonsils, (2) the pharyngeal tonsil, (3) the lingual tonsil.

The glandular tissue distributed in and around the larynx in more or less irregular outline I shall not designate as a tonsil though many laryngologists speak of the arrangement as the laryngeal tonsil. It is necessary in connection with this description to remember that there are such masses and that these masses frequently ulcerate in typhoid and other pathological conditions.

The faucial tonsils are two masses of lymphoid tissue symmetrically located between the anterior and posterior pillars of the fauces. Their free surface opens into the oropharynx while externally they rest on cellular tissue, which in turn rests on the pharyngeal aponeurosis. External to the aponeurosis we have the superior constrictor of the pharynx with the sheath of the external carotid artery. Pulsations from this artery are readily felt through the tonsil when the same is enlarged. Above the tonsil is a triangular space generally spoken of as the supratonsillar space. Below the tonsil is a deep sulcus separating the tonsil from the tongue. This depression is often filled with lymphoid tissue so that the faucial and lingual tonsils appear as one mass.

In the days of tonsillotomy, when the assistant

forced in the tonsil from without, it was important to press the side of the neck corresponding to the interval between the angle of the lower jaw, the anterior border of the sternocleidomastoid muscle, and the tip of the great cornu of the hyoid bone. This is also the space in which we make our incision when approaching the tonsil from without.

The close proximity of the carotids, as well as the ascending pharyngeal and the ascending palatine vessels, should be uppermost in the mind of the operator where the newer operation is being performed. At the present time there seems to be little difference of opinion among men best qualified to judge that, if the tonsil is in such condition as to require operative procedure, the whole of the diseased organ should be removed. At the beginning of the Christian era the teaching of the profession seems to have been that "tonsils which remain indurated after inflammation should be loosened and torn out and if this cannot be done they should be seized by a hook and excised." I presume that the large number of hemorrhages following this procedure caused another writer about five hundred years later to advise that "only one-half of the gland or the projecting portion be removed." With the perfection of the microscope and the acceptance by the medical profession during the past few years that the tonsil is an acknowledged gateway for such diseases as rheumatism, tuberculosis, and many other infectious conditions, there can be little doubt in the minds of the profession that if we are to operate at all we should remove the whole of the diseased organ, thus bringing about a complete cure. In other words, this gateway should be completely removed and the entrance closed to infectious material.

Almost every practitioner is daily called upon to care for patients suffering from tonsillar hypertrophy and symptoms associated with disease of these glands. Common conditions found in these patients are: (1) Chronic tonsillitis; (2) Peritonsillar abscesses due to infection of the small crypts in the peritonsillar tissues through enlargement of the tonsillar tissue and the interference of proper drainage; (3) Enlarged tonsils with crypts constantly containing tubercle bacilli and other infectious material; (4) Chronic pharyngitis due to the enlarged tonsil; (5) Ear conditions due to interference with proper aeration of the middle ear; (6) Enlarged glands in the neck due to the escape of infectious material from the tonsils into the lymphoid channels; (7) Laryngeal and lung conditions in children, due to mouth breathing on account of enlarged lymphoid ring; (8) Anemia due to the mouth breathing caused by nasal obstruction; (9) The below-par condition of all these patients due to lack of oxygen on account of mouth breathing; (10) Blood conditions such as rheumatism and heart diseases due to absorption of infectious material from decomposing matter found in the lacunæ of the enlarged tonsils.

There is little question but that many of the neuralgic conditions of the face and head are due to pressure by these large masses and there is no doubt in the minds of those who are daily caring for patients suffering from enlarged tonsils that the above symptoms and findings disappear and are permanently cured where the whole of the diseased mass is removed. While I believe tonsillectomy is the operation that should be performed in adults suffering from symptoms due to hypertrophied tonsils, I, at the same time, desire to impress upon the reader its dangers and contraindications. The operation is one that should not be done in the office or dispensary. A great many cases of death following the operation, due to one cause or another, have been recorded. The operation should be done in a hospital with all the surroundings that contribute to success in the event that unforeseen conditions arise. A few years ago all tonsils were removed under ether or chloroform anesthesia, and in children under ten years of age I believe that ether should be given in preference to any other anesthetic to-day. Following the introduction of cocaine and adrenalin many men injected these solutions into the tissues surrounding the tonsil. The large number of deaths reported have caused a number to discontinue the use of the cocaine and adrenalin mixture.

At the meeting of the laryngological section of the American Medical Association at St. Louis in 1910 I reported the following:

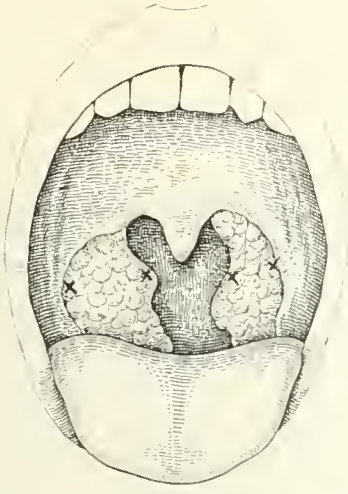
Case I.—(Before reported by T. I. H.). Man, aged thirty, in apparently good health, was given 1/60 of a grain of strychnine sulphate by the mouth. In about half an hour 2 drams of 1/5 of 1 per cent. cocaine hydrochlorate solution, containing adrenalin chloride were injected into the tonsils. This was followed in a few minutes by another injection, in all amounting to about 1/12 of a grain of cocaine and from 8 to 10 minims of a 1 to 1,000 adrenalin solution. Immediately after the second injection he complained of feeling ill, had a slight convulsion and turned ashy pale with profuse perspiration. His head was supported by an assistant and both tonsils were removed with the patient in an upright position. No hemorrhage followed the operation. The appearance of the patient following the operation, which did not require more than two or three minutes, was that of marked prostration and shock. He was therefore placed in the recumbent position, restoratives administered, and artificial respiration employed, but without result. Autopsy: Muscle wall of heart normal. Right auricle swollen and full of blood. All important organs of body apparently normal. Thymus enlarged.

Case II.—Man, aged twenty-five, in good health, except for an indisposition due to a slight attack of tonsillitis. About 1 dram of a solution made up of 1 grain of cocaine hydrochlorate and 1 dram adrenalin chloride 1 to 1,000 solution to 2 ounces of normal salt solution was injected in and around each tonsil. The patient almost immediately became faint, broke into a profuse perspiration, became very pale; as he complained that he was about to faint he was placed in a reclining position, restoratives applied, and after a few minutes he was put in an upright position and both tonsils removed. No hemorrhage followed the operation. As he seemed to be in a profound shock, he was kept in a room adjoining the operating room for more than an hour. He then started for home and fell in the street about a block away, and before assistance arrived he was dead. Autopsy: Slight extravasation of blood around tonsil region. All important organs apparently normal. No glandular enlargement.

Case III.—Man, aged forty-four, always enjoyed good health except for an attack of kidney trouble following scarlet fever when a boy. He called on his physician for removal of a large tonsil which had been giving some trouble. About 1 dram of a solution of cocaine hydrochlorate, 1

grain to the ounce, with from 7 to 10 minims of a 1 to 1,000 adrenalin chloride solution, was injected in and around the tonsil. As a part of the solution seemed to escape, in about fifteen minutes the injection was renewed. In less than three minutes' time after the second injection the patient became deathly pale, with no pulse at the wrist, and respiration became slow and labored, but improved slightly under a hypodermic of sulphate of strychnine, 1/30 grain. The head was supported by an assistant and the tonsil enucleated. The patient complained of marked weakness and prostration and was placed on a sofa, but before the surgeon could realize it there was no heart beat. All the ordinary restoratives were applied but without success. No autopsy.

Case IV.—Young man, aged between twenty-five and thirty, had always enjoyed good health except for a slight nervousness, which was attributed to overwork. The physician making the report writes as follows: "The patient had a deviated septum, with enlargement of the faucial tonsils, but otherwise was in perfect health, so far as we knew." Primary anesthesia was induced by a mixture of 3 parts of ether and 2 of chloroform. About 15



Cut showing pillars and tonsil and point for needle introduction. X X Points at which needle should be introduced.

minims of a 1 to 1,000 adrenalin chloride solution was injected, the amount being divided into 3 insertions of the hypodermic needle. In half a minute after the last injection the patient's skin blanched as white as skin could, the respirations deepened and slowed down until they finally ceased. In one minute after the patient became deathly pale he was dead. All the ordinarily employed restoratives were used with no apparent effect. No autopsy. The physician making the above report further remarks: "I am surprised at the apparent indifference of laryngologists to syncope and collapse following operations on the nose and throat, in which cocaine and adrenalin solutions have been used."

I enumerate these four cases merely to emphasize the fact that cocaine and adrenalin solutions can not be injected into the soft tissues surrounding the tonsils without grave danger, and mention these cases as a warning, and would suggest that in all cases in which local anesthesia is desired the application of cocaine be limited to the surface and not injected.

The many partial poisonings and the large number of prostrations in connection with the use of cocaine and adrenalin led me to look around for something to take the place of these poisonous and dangerous drugs. Water has been used for local anesthesia in other parts of the body with much success for a great many years. Quinine solutions in connection with urea have been tried but the anesthetic effect was not uniform and there was considerable sloughing following their use and a very great increase in the amount of post-operation pain. My first cases were operated upon after injecting sterile water, but this was not satisfactory as most of the patients complained of pain. I then used a 5 per cent. solution of quinine bisulphate. While there has been what appeared to be an increase of hemorrhage over the cases in which quinine was not used, I can report the complete absence of pain in all cases in which the solution was deposited outside the capsule of the tonsil and into the cellular tissue forming its bed. The solution should be introduced by an ordinary one-ounce piston syringe to which a long curved needle is attached, the point of the needle being forced through the mucous membrane between the pillars and the capsule of the gland at the point indicated in the illustration. About ½ drachm should be introduced inside the border of the anterior pillar and about the same amount at a point opposite between the capsule and the posterior pillar. The enucleation may begin as soon as the solution is injected, there being no occasion to wait as when cocaine is used.

There is no necessity to prepare the patient as for an ether operation. In fact, I believe that the patient can stand the shock of the operation much better if it is done following a meat meal. This is particularly so in cocaine operations. If the patient, however, is oversensitive in and around the fauces, it may be advisable to operate on an empty stomach rather than have the stomach contents ejected during the operation.

In adults the patient should be seated in a rhinological chair so that the head will be properly supported. As there is no pain associated with the work, it is not necessary for an assistant even to hold the head. As a rule the tongue will keep out of the way after the tenaculum is applied to the tonsil. A description given by Dr. O. A. Lothrop of Boston, Mass., of the manner in which he removes the tonsil seems to me almost complete and I, therefore, use it here:

"The gag should be inserted and steadied by the assistant. If necessary hold the tongue down with the depressor and with a small pledget of gauze on a holder sweep or wipe the pharynx dry. By so doing a clearer view is obtained and the blood does not spread so rapidly. With a curved tonsil tenaculum seize the tonsil in a firm grip, inserting one claw in the supratonsillar fossa and the other just on the under side. Catch the tonsil a little anterior to its center. This one grasp, if properly placed and locked, should be sufficient for the complete enucleation. Depress the base of the tongue on the side from which the tonsil is to be removed and the fold of the anterior pillar will become prominent. The assistant should now steady the tongue depressor as above suggested, while the tonsil is drawn inward by means of the tenaculum. Insert the edge of a small, very sharp scalpel under the tonsil and incise carefully through the mucous membrane and plica down to the capsule. The mucous membrane is very thin, and as soon as divided, there being traction on the tonsil, will retract and the shining

white capsule appear. Do not cut through the capsule, for the proper line of cleavage will then be difficult to find. There will be much more bleeding if the tonsillar tissue is cut. Continue incising cautiously through the mucous membrane along the inner edge of the anterior pillar until the supratonsillar fossa is reached. Do not insert the knife up under the pillars. With a blunt dissector push back the mucous membrane and anterior pillar, thus exposing a band of capsule, one-quarter inch wide, extending from the under surface of the tonsil to the supratonsillar fossa. There should be little or no bleeding if only mucous membrane has been incised. Any blood that may appear should be wiped away, for a clear view is essential. Traction should be made on the tonsil and the handle of the tenaculum should swing to the corner of the mouth on that side. The patient's head should be turned to that side and the other corner of the mouth retracted by the etherizer. Take the scalpel in the left hand if the left tonsil is to be removed first, and with the edge uppermost incise the reflected mucous membrane from the posterior pillar close to the tonsil, upward to the supratonsillar fossa, and then across its floor or apex to meet the anterior incision. By cutting up no blood from above can obscure the mucous membrane to be severed. Push back the mucous membrane and posterior pillar with the dissector and expose the capsule to the supratonsillar fossa. Any hemorrhage should be sponged away, as it is very important that the field be not obscured. The capsule has now been exposed and partial dissection has been begun on the complete periphery of the tonsil beyond its equator. Slip a wire snare loop over the handle of the tenaculum and down to the tonsil, but do not release traction of the latter. Place the loop between the capsule and the posterior pillar, being careful not to include the uvula. Bring the cannula of the snare down to the edge of the anterior pillar, but do not let the part of the loop first placed change its position. When the loop is tight set the screw on the snare and cease traction on the tenaculum, but do not remove it. The snare should now be screwed up very slowly, allowing three to five minutes in adults.

"The snare takes the plane of least resistance and thus completes the shelling out of the capsule from its bed. The only structures which it cuts are a little areolar tissue and the vessels entering in the lower part. If the line of cleavage has not been started the wire may cut through the tonsil tissue. It is possible, however, to remove a tonsil with its capsule intact without a preliminary incision. This is done by forcibly drawing the tonsil into the mouth and thus inverting the capsule. By this method the snare severs the mucous membrane and it may draw in with the mucous membrane portions of the pillars and thus do harm. For this reason the mucous membrane over the whole circumference should be incised first. By freeing the anterior pillar first the tonsil can be drawn inward and forward over the anterior pillar, thus giving better access to the posterior pillar. The writer has seen cases in which a nasal voice has followed because of laceration of the posterior pillar, which was drawn in by the unsevered mucous membrane. There is less hemorrhage in this method than in any other, for the cleavage plane of the capsule is the least vascular. Injury to the pillars and other tissues may cause considerable bleeding."

I would amend the above description by advising that a blunt-pointed tonsil knife be used after the first incision through the mucous membrane has been made.

If the patient is too young to have the operation done without ether the above description may be followed by placing the patient in the upright position and maintained in range of the light by the assistant, who should make it his business to see that the mouth-gag is properly adjusted and the head kept in the desired location.

The statement made by many writers that there is not as much hemorrhage after a tonsillectomy as after a tonsillotomy does not agree with my experience. I would, therefore, urge that all tonsillectomies be done in a hospital with proper assistance; that in children the operation be done with ether anesthesia, and that in adults bisulphate of quinine anesthesia be employed for the reason that up to date we know of no disadvantages, while at the same time it has all the advantages of the dangerous cocaine solutions.

164 West Seventy-third Street.

A PRELIMINARY REPORT OF A METHOD OF TREATMENT OF EMPYEMA IN YOUNG CHILDREN.

By JAMES H. KENYON, M.D.,
NEW YORK,
ASSISTANT SURGEON, BABIES' HOSPITAL.

The following method of treatment of empyema in young children has given such good results during the past year at the Babies' Hospital that this brief

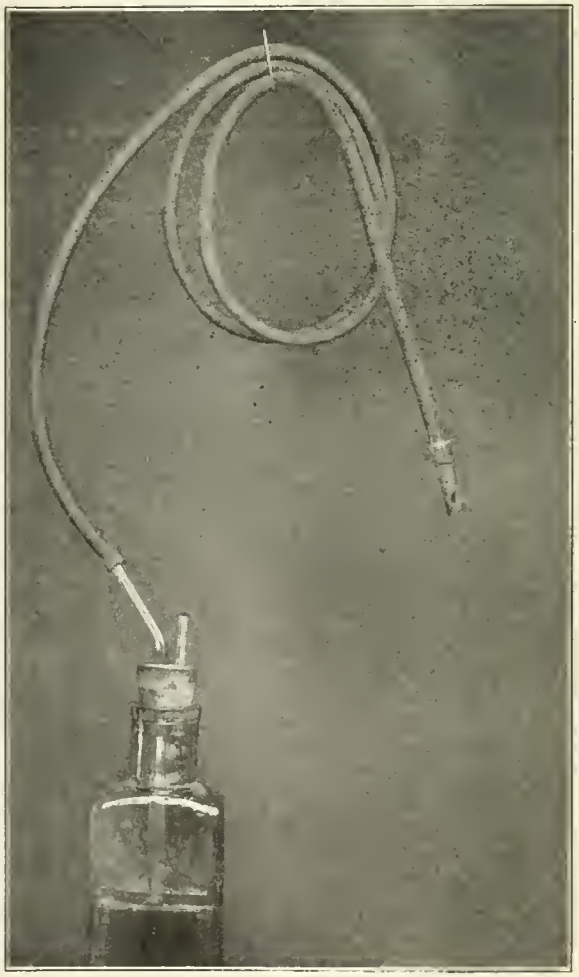


Fig. 1.—Tube with window, cuff, and tape; bottle with long and short glass tubes, half filled with salt solution; the long tube is always below the level of the fluid.

preliminary report of its important features seems warranted.

The pus having been located with the aspirating needle, a narrow-bladed knife is inserted into the pleural cavity along the lower side of the needle, which is left in place as a guide. This punctured

Fig. 2.—Showing the method of fastening the tube in the chest by means of tape and adhesive plaster.

wound is then enlarged along the upper border of the rib, *i.e.* between the needle and the rib below it, to avoid wounding the intercostal vessels. This opening is made just large enough to admit snugly the rubber drainage tube which is inserted at once with as little escape of pus as possible.

The rubber drainage tube consists of rather stiff rubber tubing 3/16 inch inside diameter; the wall is about 1/16 inch thick, with a window near the end, and a narrow section, about ¼ inch long, of a slightly larger (¼ inch inside diameter) tube slipped over it as a cuff, leaving about 1 to 1½ inches protruding, just enough to penetrate the chest wall. A piece of tape ½ inch wide and 4 to 6 inches long with a hole, preferably buttonhole-stitched, in its center is threaded over the tube down to the cuff, over which it will not slip.

The tape is securely fastened to the chest with narrow strips of adhesive plaster about 2 inches from the wound. The cuff thus held between the chest wall and the tape makes a tight fit and firmly anchors the tube in place. The application of one or two small gauze pads partly split so as to surround the tube and cuff and fastened to the chest with adhesive plaster completes the dressing. Unless the tube becomes plugged neither tube nor dressing will have to be changed for three or four days.

The rubber tube should be two to four feet long so that it can be easily connected, without tension, to a bottle suspended under the bed or resting on the floor. The bottle contains warm sterile salt solution and has through its stopper two pieces of glass tubing, one just through the stopper and the other long enough to reach nearly the bottom of the bottle. To this long tube is connected the rubber tube from the chest.

The bottle, of about one-pint capacity, though this is immaterial, is one-quarter to one-third full of warm sterile salt solution, which is changed two or three times a day or as often as necessary to keep it fairly clean. The tube is clamped and the end protected with sterile gauze during this process, thus keeping the interior of the bottle, tube, and chest free from outside infection and also preventing a pneumothorax. When a change of tube is required it is advisable to have a duplicate outfit, tube, tape, and bottle, sterilized and ready.

Immediately after putting fresh salt solution in the bottle it is raised to about the level of the chest, or higher if necessary, tilted over in the manner of using a wash bottle in the laboratory so that the warm salt solution slowly runs into the pleural cavity. The bottle is then lowered and the fluid mixed with the pleural exudate flows back into it.

It often happens that the patient's respiratory movements are sufficient, particularly when the bottle is about on the same level as the chest, to produce this in and out flow and thus automatically irrigate the pleural cavity.

If, for any reason, a larger opening in the chest wall is required, as might be necessary in order to break up adhesions or to drain a thick discharge with large masses of fibrin, the usual method of resecting a portion of a rib may be employed with the application of this same principle with correspondingly larger tubes and bottle.

The advantages of this method may be summed us as follows: (1) Operation simple, easy to perform. (2) No shock, due to the simple and quick operative procedure and the slow escape of pus and to the absence of pneumothorax. (3) Single dressing which does not require very frequent changing,

Fig. 3.—Dressing complete; in this case, however, there is more gauze than is necessary.

as there is little, if any, leakage around the tube and in this way the danger of the serious and often fatal complication of a mixed infection in the pleural cavity is greatly lessened. (4) Convalescence has appeared to be shorter. (5) The patients are certainly more comfortable with this method than with any of those formerly employed. (6) This method seems to be particularly applicable to very young children, as it has been successfully employed on babies three months old. (7) The drainage has been very efficient, as the discharge is continually thinned and diluted by mixing with the warm salt solution.

37 West Seventy-first Street.

THE DIAGNOSTIC VALUE OF THE USE OF THE SPHYGMOMANOMETER IN EXAMINATIONS FOR LIFE INSURANCE.*

By J. W. FISHER, M.D.,

MILWAUKEE, WIS.

MEDICAL DIRECTOR THE NORTHWESTERN MUTUAL LIFE INSURANCE COMPANY.

The Northwestern Mutual Life Insurance Company, in August, 1907, required the local examiners of the company in several of the larger cities to furnish the company with a blood-pressure reading of applicants examined by them where the applicant's insurable age was 40-60 years. (The company does not insure persons whose insurable age is over 60.) Gradually this requirement has been extended to all localities where it has been possible to secure the blood-pressure reading, so that at the present time the blood-pressure is furnished in all localities in which the company does business, where it is possible to induce the examiner to secure a sphygmomanometer. The blood-pressure is required, regardless of the amount applied for, in persons where the insurable age is between the years forty and sixty, and at any age where the medical department deems it advisable. In our home office examinations the blood-pressure is taken at all ages. We therefore have a record of 420 accepted cases under age 40, with a blood-pressure average of 125.20 mm. Hg. See Table I. In addition, 20 applicants under age 40 were rejected, whose blood-pressure was 150 mm. Hg or over.

TABLE I.—The Average Systolic Blood-Pressure, Accepted Risks at Age 15-39.

Ages	Number	Mm. Hg of Pressure	Average Blood-Pressure
15–19	21	2,478	118.00
20–24	56	6,917½	123.53
25–29	80	10,049	125.61
30–34	86	10,793	125.50
35–39	177	22,346½	126.25
Total	420	52,584	125.20

TABLE II.—Average Systolic Blood-Pressure, Risks Accepted at Ages 40-60.

Ages	Number	Mm. Hg of Pressure	Average
40	1,112	142,050½	127.74
41	1,199	153,228½	127.80
42	1,163	149,015½	128.13
43	994	127,755½	128.53
44	956	123,651½	129.34
Total	5,424	695,701½	128.26
45	895	115,962½	129.57
46	857	111,856½	130.52
47	748	97,687½	130.60
48	727	95,607½	131.51
49	640	83,553½	130.55
Total	3,867	504,667½	130.51
50	626	82,296½	131.46
51	515	67,539	131.14
52	371	49,137	132.44
53	369	48,988½	132.76
54	288	38,327	133.08
Total	2,169	286,288	131.98
55	292	39,106	133.92
56	223	29,952	134.31
57	197	26,531	134.67
58	159	21,238½	133.57
59	127	17,223½	135.62
60	189	25,549	135.18
Total	1,187	159,600	134.46
Grand Total	12,647	1,646,257	130.17

*Read before the Association of Life Insurance Medical Directors, October 4, 1911.

By reference to Table No. 2 it will be seen that 12,647 persons were insured with an average blood-pressure, at ages 40-60, of 130.17 mm. Hg; at ages 40-44, this average was 128.26 mm. Hg; at ages 45-49, average 130.51 mm. Hg; at ages 50-54, average 131.98 mm. Hg; at ages 55-60, average 134.46 mm. Hg. In all of the readings the pressure was adjusted as nearly as possible to a cuff of 12 cm. in width.

TABLE III.—The Average Systolic Blood-Pressure Risks Accepted Whose Weight Exceed the Average by More Than 20 per Cent.

Ages	Number	Mm. Hg of Pressure	Average
Under 40	21	2,675	127.38
40	76	9,942½	130.82
41	72	9,484½	131.73
42	102	13,440½	131.77
43	87	11,418½	131.25
44	70	9,325	133.21
Total	407	53,611	131.72
45	90	11,994	133.27
46	67	8,882	132.57
47	86	11,644½	135.40
48	83	11,253	135.58
49	52	7,106	136.66
Total	378	50,879½	134.60
Grand Total	806	107,165½	132.96

By reference to Table No. 3 you will find that 806 persons were insured whose weight exceeded the average by more than 20 per cent.; 21 of these were under age 40, with an average pressure of 127.38 mm. Hg; 407 were insured at ages 40-44, with an average pressure of 131.72 mm. Hg, and 378 were insured at ages 45-49, with an average blood-pressure of 134.60 mm. Hg. In all cases where a number of blood-pressure readings were taken the average blood-pressure was used in compiling the tables showing the average at the different ages.

TABLE IV.—Mortality of Accepted Risks with Systolic Blood-Pressure of 140-149 mm. Hg, with an Average of 142.43 mm. Hg, All Ages.

Years	Number	Expected	Actual	Per Cent
1907	217	11.338	4.	35.279
1908	652	30.178	12.	39.764
1909	953	27.800	8.	28.777
1910	846	12.541	7.	55.817
Total	2,668	81.857	31.	37.870

Table No. 4 shows the mortality (taken by the Actuary's Table) of 2,668 insured, with a blood-pressure of 140-149 mm. Hg, was 81.85 expected deaths, 31 actual deaths, a percentage of 37.87, which is slightly below the normal death rate of the company on exposure of two years. It should be stated that the average exposure in all of these cases was 2.09 years, covering a period from August, 1907, to January 1, 1911, and carried up to the anniversary of the policies to July 1, 1911.

Table No. 5 shows the mortality record of 525 persons insured with a blood-pressure reading of

150 mm. Hg and over, with 22.19 expected and an actual of 12 deaths, which is about 35 per cent. in excess of the general average mortality of the company covering the same period, and 18 per cent. higher than the general average mortality during the first five years of exposure covering the 20-year period 1885-1905.

TABLE V.—Mortality of Accepted Risks with Blood-Pressure of 150 mm. Hg, and Over; Average 152.58 mm. Hg, All Ages.

Years	Number	Expected	Actual	Per Cent.
1907	87	4.884	5	102.370
1908	210	10.654	6.	56.317
1909	163	5.547	0	0
1910	65	1.112	1	89.929
Total	525	22.197	12.	54.062

Table No. 6 shows a mortality record of 722 persons declined for insurance, in whom the blood-pressure averaged 171.03 mm. Hg; 20.61 deaths expected, with 32 actual deaths, a percentage of 155.27, almost four times greater than the general average of the company.

TABLE VI.—Mortality of Applicants Rejected with Average Blood-Pressure of 171.03 mm. Hg, All Ages.

Years	Number	Expected	Actual	Per Cent.
1907	40	2.495	9.	360.72
1908	119	6.187	9.	145.47
1909	209	7.253	9.	124.09
1910	225	4.119	4.	97.11
1911	129	.555	1.	180.18
Total	722	20.609	32.	155.27

Table No. 7 shows 356 of the 722 rejected cases in which there were one or more other impairments than the high blood-pressure. The nature of the impairments will be found in Table No. 8. Of the 356 cases, 10.47 deaths were expected, with an actual of 18 deaths, or a percentage of 171.93 of the table.

TABLE VII.—Mortality of Applicants Rejected with High Blood-Pressure (average 171.73 mm. Hg,) and One or More Other Impairments.

Number	Expected	Actual	Per Cent.
356	10.469	18.	171.93

TABLE VIII.—Impairments Recorded on Applications at Time of Medical Examination of the 356 Cases Recorded in Table No. 7 Above.

Arterio-sclerosis — Atheroma	Heart Murmur	Heart Hy-pertrophy	Albumin and Sugar	Albumin in Urine	Sugar in Urine	Albumin and Casts	Casts in Urine	Nervous Symptoms	Prostatic Disease	Miscel-laneous	Total
53	69	17	10	110	14	10	6	21	5	41	356

Table No. 9 shows 366 cases, the remainder of the 722 rejected, in which there were no other impairments than the high blood-pressure recorded on the application at the time of its receipt at the home office. The expected deaths were 10.14, with an actual of 14 deaths, or 138.07 per cent. of the table.

TABLE IX.—Mortality of Applicants Rejected with High Blood-Pressure Only. (Average 170.36 mm. Hg.)

Number	Expected	Actual	Per Cent.
366	10.140	14.	138.07

Table No. 10 shows subsequent impairments reported in the 366 cases recorded in Table No. 9. You all appreciate the difficulty of securing additional data on rejected cases. In all of the rejected cases, especially the 366 noted in Table No. 10, a special effort was made to have repeated readings of the blood-pressure and examinations, with a view to discover, if possible, the probable cause of the high blood-pressure or what might in any way account for it. We invariably called for a specimen of the urine to be forwarded to the home office for chemical and microscopical examination, with the results shown in Table No. 10. In almost all of the impairments in which casts, albumin, and sugar were found, and in some of the heart lesions, these impairments were discovered on examinations made at the home office, or were secured at a later date by furnishing the local examiner who made the original examination with a list of the cases and the name of the applicant's family physician, through whom the local examiner might determine as to the physical condition of the applicant. In some instances the local examiner saw and examined the applicant at a considerable period subsequent to our declination. By this method we have secured recent reports on about 90 per cent. of the inquiries made on declined cases where the applicant held no insurance in this or other companies in the interchange. We have made an effort in various other ways to bring the records up to date on all of these rejected cases. In the same manner, we have endeavored to secure the cause and date of death of those who died.

It will, therefore, be seen that the mortality shown in the tables covering the rejected cases is undoubtedly more favorable than the exact facts would show, as the chances are, with all the care we have taken to follow up rejected cases, that some deaths must have occurred of which we have no record.

TABLE X.—Impairments Subsequently Discovered or Developed in the 366 Cases Recorded in Table No. 9 Above.

Arterio-sclerosis Atheroma	Heart Murmur	Heart Hy-pertrophy	Albumin and Sugar	Albumin in Urine	Sugar in Urine	Albumin and Casts	Casts in Urine	Nervous Symptoms	Miscel-laneous	Total	Expected	Actual	Per Cent.
6	9	4	2	13	5	33	13	6	10	101	3.061	4	130.66

Table No. 11 shows the causes of death of, first, the 525 risks accepted (see Table No. 5) with a blood-pressure of 150 mm. Hg. and over (with an average blood-pressure of 152.58 mm. Hg), the average blood-pressure of those who died being 151.71 mm. Hg, and, second, the 722 cases rejected with a blood-pressure of 171.03 mm. Hg, the average pressure of those who died being 183.61 mm. Hg. (See Table No. 6.)

Three hundred risks were accepted with a blood-pressure of 109 mm. Hg and under, an average of 103.43 mm. Hg, with only three deaths. Of these, 248 were insured at ages 40-50, with two deaths; 52 at ages 50-60, with one death; 1,488 risks were insured with a blood-pressure of 110-119

mm. Hg, with only five deaths; 1,186 of these were insured at ages 40-50, with one death; 302 at ages 50-60, with four deaths.

The local examiners are furnishing the company with blood-pressure readings in their examinations in about 500 cities, towns, and localities in which the company does business.

TABLE XI.

Causes of Death				Causes of Death
Risks accepted as shown in Table No. 5.. Average Blood-Pressure of those who died was 151.71 mm. Hg.	1	Angina Pectoris	2	Risks rejected as shown in Table No. 6.. Average Blood-Pressure of those who died was 183.61 mm. Hg.
	1	Aneurysm aorta	1	
	1	Apoplexy	7	
	1	Arteriosclerosis	1	
	1	Appendicitis	2	
		Cirrhosis of Liver	2	
	1	Cancer of Liver		
	1	Duodenal Ulcer		
		Heart Disease—Organic	7	
		Nephritis	8	
	2	Pneumonia		
	1	Prostatic Hypertrophy		
	1	Railway Accident		
	1	Rheumatism—Acute		
	2	Suicide	1	
		Stokes-Adams Disease	1	

The records of this company show that during the period from August, 1907, to January, 1911, the blood-pressure of 13,789 applicants was furnished the company, and that in 1,247 of these cases the blood-pressure was 150 mm. Hg, or over, with a mortality of 102.80 per cent. of the table; 33 of these were under age 40 and the remainder were ages 40-60. The percentage of high tension was about 8 per cent. in the younger group and 9 per cent. in the older group.

Notwithstanding the number of cases under observation at ages under 40 is comparatively small, in my judgment the results are sufficient to justify insurance companies requiring the use of the sphygmomanometer in examinations for life insurance of applicants under age forty, at least until a large number of cases have been under observation for a sufficient length of time to enable us to definitely determine the diagnostic value of the sphygmomanometer at the younger ages.

No practitioner of medicine should be without a sphygmomanometer. He has in this instrument a most valuable aid in diagnosis. The sphygmomanometer is indispensable in life insurance examinations, and the time is not far distant when all progressive life insurance companies will require its use in all examinations of applicants for life insurance.

CONCENTRIC PROGRESSIVE DIMINUTION OF THE AREA OF LIVER DULLNESS IN THE DIFFERENTIATION OF FREE GAS IN THE PERITONEAL CAVITY FROM ABDOMINAL TYMPANITES.

By HENRY W. BERG, M.D.,

NEW YORK,

ASSOCIATE ATTENDING PHYSICIAN TO MT. SINAI HOSPITAL; ASSOCIATE IN PEDIATRICS, COLUMBIA UNIVERSITY; ATTENDING PHYSICIAN TO THE WILLARD PARKER HOSPITAL.

Disappearance of the area of liver dullness and flatness is one of the most valuable symptoms indicative of the presence of free gas in the peritoneal cavity—a condition known as pneumoperitoneum. In this condition, instead of the normal dullness and flatness over the hepatic and splenic areas, percussion elicits at these sites loud, deep resonance. Inasmuch as free gas in the peritoneal cavity, due to conditions such as perforations of the hollow viscera, demands immediate recognition and urgent surgical care, it becomes important for us to be able to differentiate positively such tympanitic resonance, due to free gas in the peritoneal cavity, from a similar tympanitic resonance over the hepatic and splenic areas due to excessive tympanitic distention of the abdominal hollow viscera with no perforation and no pneumoperitoneum. Such differentiation is never very easy, and sometimes very difficult, especially shortly after the perforation has occurred.

The differentiation can be made, however, with approximate certainty on a basis of clinical data which I have learned to recognize from a considerable observation of these cases in recent years. In all cases of typhoid fever, indeed in most medical cases admitted to the hospital, accurate records of the upper and lower boundaries of liver dullness and flatness, as well as the site of the lower border by palpation—if palpable—are kept, including the status at the time of admission, together with all changes occurring from day to day during the stay of the patient in the hospital; so that on the occurrence of the earliest subjective or objective symptoms leading to even the suspicion of perforation we are enabled to compare the area of liver dullness, carefully mapped out both as to the upper and lower borders, with the boundaries present before the suspicious symptoms occurred.

I found that in all cases in which subsequent surgical interference enabled me to confirm the diagnosis of perforation, the earliest suspicious symptoms had been accompanied by a rapid and progressive diminution and final disappearance of the area of hepatic dullness and flatness, the hepatic area becoming tympanitic. This disappearance of hepatic dullness had progressed *synchronously* downward from the upper border of the liver dullness, and upward from the lower border, until the whole area of dullness disappeared and tympany was present where the dull hepatic area had been; the central area of hepatic dullness was the last to be replaced by tympany, the areas of tympany progressing from above downward and from below upward, and finally meeting at the centre. This is at variance with the general conception that in these cases the area of hepatic dullness is encroached upon by tympany from below upward, the last of the area to become tympanitic being the upper border.

When excessive tympanitic distension of the bowel becomes so great as to diminish, or even occlude, the area of liver dullness, the progress of the disappearance of liver dullness is from below upward only; the upper border of liver dullness in cases of moderate distension never disappears, but is displaced further upward at the expense of the area of pulmonary resonance, as shown by comparison with the record of physical examination of the patient, made previous to the occurrence of the distension. Even when the tympanitic distension is extremely marked, careful percussion will generally succeed in mapping out the upper border (however narrow) of hepatic dullness, although relatively high up the chest. Under all circumstances, if the patient is observed during the progressive substitution of tympany for dullness over the hepatic area, it will be found that this tympanitic area moves from below upward, pushing upward before it the upper border of liver dullness which encroaches gradually upon the area of pulmonary resonance.

When, on the other hand, free gas enters the general peritoneal cavity, the air naturally rises to

the highest level in the abdominal cavity. The patient lies with head and shoulders supported by pillows, so that the upper, diaphragmatic portion of the peritoneal cavity is on a higher plane than the lower. The air thus rises in the vault of the diaphragm and fills the spaces between the liver and the diaphragm, both in front and behind, and on either side of the suspensory ligament of the liver, pushing the liver downward and away from the chest and abdominal walls, and the diaphragm, upward.

This upward displacement of the diaphragm results in a compression of the lungs, particularly of the right lung, the base of which in its circumference is forced as far as possible into the sulcus or angular space between the lower ribs and the costal attachment of the diaphragm. The respiration, owing to the conditions present in perforative peritonitis, becomes very shallow, and the circumference of the bases of the lungs thus forced into this space practically suffer cessation of their respiratory functions. The air cells of this portion of the right lung therefore retain their dilated condition and come to lie between the chest wall and the area of the liver which the lung overlies—in other words, the upper area of liver dullness gradually comes to be concealed by pulmonary resonance. Meantime the free gas in the peritoneal cavity, as the patient lies upon his back in bed, also intervenes between the diaphragm and the liver and displaces this organ downward and backward from the diaphragm and abdominal wall. Tympanitic resonance due to the cushion of air thus conceals the lower portion of the area of dullness and flatness present when the liver lies in direct contact with the abdominal wall and diaphragm.

It follows then, that free gas in the peritoneal cavity diminishes to disappearance the area of liver dullness, the progress being simultaneously from above downward and from below upward, the middle of the area of hepatic dullness being the last to be replaced by tympanitic resonance.

It is true that the progress of the concentric diminution to disappearance of the area of hepatic dullness is most readily followed in hospital cases, in which accurate records of the upper and lower boundaries of the area of dullness are kept on the charts and any change is noted, and where the house physician, being constantly present, can follow the gradual progressive change in the percussion area of the liver. Even in private practice, however, cases of intestinal or other perforation of hollow abdominal viscera will show after a short time total disappearance of hepatic dullness, while cases in which diminished area of hepatic dullness is due to tympanitic distension of the intestines will show on careful percussion at least a narrow line of dullness encroaching upon the normal area of pulmonary resonance, higher up than the upper border of liver dullness observed normally in all cases, and in the patient in question at the previous examination. This is due, as has been stated, to displacement of the liver and diaphragm upward by the distended colon.

I have found these data obtained by percussion so valuable as aids in distinguishing between pneumoperitoneum and tympanitic distension of the colon that since I have used them I have never been many hours at fault as to which condition was present in a given case, with the result that the diagnosis of a perforation was rendered certain at a much earlier stage, and undoubted evidences of an existing perforation were always found by the surgeon when the abdomen was opened. Indeed, the skillful surgeons who have operated on the cases thus submitted to them have invariably found the one or more perforations that had caused the pneumoperitoneum which had been diagnosticated.

I do not wish to minimize or negative the importance of the other valuable early symptoms that lead to the diagnosis of pneumoperitoneum, such as rapidly increasing leucocytosis, increased rapidity and pulse rate, symptoms of shock, etc. All of these should be used to clinch the early diagnosis, but of all these no one—in my opinion—gives the same security to the physician of the correctness of his diagnosis of the occurrence of pneumoperitoneum as this symptom which I have outlined, and which may be formulated as the *concentric* progressive diminution to disappearance of the area of liver dullness. In other words, that free gas in the peritoneal cavity is shown by the substitution for the area of liver dullness and flatness, of a tympanitic resonance, rapidly progressing synchronously from above downward, and from below upward, the last to disappear being the mid-area of liver flatness.

923 Madison Avenue.

A PRACTICAL CONSIDERATION OF HYPERCHLORHYDRIA AND HYPERSECRETION.

By CHARLES SUMNER FISCHER, Ph.D., M.D.,

NEW YORK.

The differentiation between these two conditions should be made in every case of chronic dyspepsia with increased hydrochloric-acid content of the stomach. It is doubtful, however, whether it is done in the average case as ordinarily examined. The usual diagnosis reads, hyperchlorhydria, organic or neurotic, according to the history of the individual. To a certain extent this is excusable, for it is the practical method of avoiding the entanglement and confusion of a diagnostic labyrinth which has resulted from attempts at classification or identification of varying degrees and phases of the gastric-acid secretion as interpreted by different observers. In this manner there have developed various supposed distinct types with special features of cause, course, and effect, with the result that the literature upon this subject has become well-nigh unintelligible. The discussion has been intense, but the atmosphere has not been cleared. Secondary phenomena still assume the dignity of diseases, and a comprehensive view of the whole subject is generally lacking. It would seem advisable, therefore, to reconcile conflicting theories to the plain facts of common observation of the practical clinic.

That various types of secretory disturbance may occur is very probable. Undoubtedly, other peculiarities will develop in the course of further speculation, to which special names will be given. In an organ subjected to such a variety of insult in the ordinary daily routine and capable of such voluminous secretion one may expect almost any vagary of function. That each diversion from the normal, however, should be classified as a special type of abnormality is going somewhat astray, for it is more than probable, in the light of ordinary clinical experience, that most of the so-called distinct affections are not justified and exist only as a result of specialistic enthusiasm. It is this mad desire for novelty which often confounds the sane

judgment of broad biological facts underlying all digestive function and produces imaginary conditions entirely at variance with tested physiological laws.

In dealing with native hyperacid conditions in the stomach, we have primarily to do with two changes in gastric secretion—namely, increase in volume or increase in concentration. These two factors stand out as a result of all clinical and experimental observation. In the one case the whole quantity of fluid secreted is increased, with or without augmented percentage composition. In the other the percentage of acid is increased without increase in quantity of fluid secreted. In every case these two states must be differentiated, a proposition which is sometimes difficult in the rapid ordinary routine work of a clinic. In this connection, all the elaborate methods devised in the course of years are useless, even though they were as exact as they are claimed to be, which is very doubtful. By the demonstration of a higher normal percentage of hydrochloric acid in the gastric juice than formerly supposed, the actual degree of acidity has lost some of its diagnostic value. This is especially evident since more experienced clinical observation has shown that the intensity of immediate symptoms and remote effects depends largely upon the volume of the secretion, irrespective of acidity.

To determine the volume of fluid secreted by the stomach during digestion is not an easy matter. The exactest methods proposed for this purpose are either unreliable or would, in any case, be too complicated and impractical for the rapid routine work of a clinic. Hence, in the average type of chronic dyspepsia, the solution of this question depends more upon individual experience and judgment than upon manipulation and technique. There are some rough clinical tests, however, which, if corroborative one of the other and employed with systematic routine, would indicate the existence of a hypersecretion with some degree of certainty.

In any case of primary hyperchlorhydria there is always presumptive evidence that the volume of fluid secreted is increased proportionately. This physiological law is amply supported by the ordinary experience of extraction of gastric contents. In most of these cases the material gushes through the tubes without effort or hindrance, and its subsequent filtration is rapid. Such a character of the specimen may well serve as a hint to the careful observer.

If the subsequent analysis of such material reveals only a slight difference between free and total acidity, the condition may be one of either hypersecretion or hypermotility. The latter may mask the former, and must be determined by further examinations. The presence of these analytical features simply indicates that secretion has continued after the food has been satisfied as to its acid requirements or has left the stomach. Such excess of secretion would represent the gastric juice in its habitual state for that particular individual.

Physical examination will at times lead to a suspicion of hypersecretion. While the ordinary succussion sound in the stomach has lost much of its clinical value, if the same can be elicited markedly at the time of extraction of the various test meals it will be presumptive evidence that an excess of fluid is present. This is especially true in cases where the motility is normal or increased. In these cases the patients themselves may complain of decided splashing within the stomach between meals.

The motility of the stomach has an important bearing upon hypersecretion. If hypermotility is present as a constant factor and the stomach contains acid fluid in appreciable quantity, even though this be small, a hypersecretion can be suspected, for secretion should have ceased at the end of digestion, and any residual fluid carried away with the food.

Hypersecretion must be thought of in those cases where a decided discrepancy exists between the degree of acidity and the intensity of the symptoms. A normal stomach is fairly insensible to considerable variation of temperature and chemical irritation within its cavity. It is especially sensitive, however, to the extremes of pressure from within, be those positive or negative. Clinical observation demonstrates amply that most of the disagreeable sensations of chronic dyspepsia are due to excessive fullness or emptiness. We know that no positive relationship exists between the degree of acidity and severity of symptoms. There is a fairly constant relationship between the volume of the contents and the resulting symptoms, irrespective of acidity. In other words, we may have a hyperchlorhydria without symptoms. We rarely have a hypersecretion without symptoms. In so-called "water-brash" the volume of fluid is increased enormously, and the symptoms are intense, whereas the acidity is usually negative. The stomach usually responds to experimental insult by pouring out increased fluid, the acidity of which may vary to any extent. It may normally be very decided.

In addition to the above observations, we may test the secreting capability of the stomach with the more recent dry meal. Originally proposed to determine the existence of a certain type of hypersecretion—namely, alimentary hypersecretion—it can well be employed to develop the volume capacity of secretion in any case. If such a meal be administered to an individual with normal stomach, the extracted specimen will show a certain but not marked excess of fluid above solid material. According to Strauss, such contents should reveal a half and half proportion upon standing. This he calls the normal "Schichtung's Quotient." In cases of hypersecretion a decided discrepancy will appear between sediment and fluid. The test is useful in that it reveals not only the volume of secretion, but also indicates the habitual degree of acidity attained by the gastric juice. This is as nearly unadulterated as it can be obtained by rough clinical methods. The method has its limitations like all others. A fertile source of error lies in the possible absence of homogeneity of the contents themselves within the cavity of the stomach. In such instances—and there is no way of guarding against them—the relative proportions of sediment and fluid may give false impressions as to the actual conditions. Hence this method should only be employed comparatively and in connection with the others already noted.

The impression one receives from the perusal of the literature as to the various types of excessive native acid secretion in the stomach would foster the belief that, given certain conditions of digestive abuse or deficiency, there always must result a distinct type of secretory disturbance natural to such conditions. In this way a variety of secretory anomalies have been conceived, based upon the direct relationship of cause and effect. In other

words, given such and such conditions, such and such secretory anomalies must necessarily follow. The result has been the adoption of more or less fanciful data as necessary foundations for the production of distinct types of abnormal secretion, both causes and effects being judged according to individual conception and preference.

To counteract this speculation we have the practical experience of the average clinic. The impression here received from observation of large masses of material, from study of the histories of cases as ordinarily presented, involving the common practices of everyday life, is that the finer adjustment of special causative factors to the production of specific clinical types of abnormal secretion is more or less fanciful, that the differences found are probably matters of accident or individual peculiarity, dependent upon special features of environment or habit, which always exist in each case. Whatever these may be, and dependent upon their duration, there is revealed at the time of examination an anomaly of secretion which represents only a certain stage of a progressive disturbance, which will at some period of its development give all the signs and symptoms of any one of the various types described by different authorities. Viewed in this light, the several types of hyperchlorhydria or hypersecretion would represent only a certain stage of advancement of one and the same general process. In this connection it is interesting to note that, while the various authorities insist upon the special features of their selected types, they are almost universally agreed that they are all produced by about the same causative conditions and that treatment is practically the same for all. It may be stated here that it is immaterial what the original producing cause was. Whether physicochemical or psychoneurotic, the time comes in every case when the two become so merged in the remote effects that they are absolutely retro- and interactive. Original neurotic or organic conditions generally fuse to form vicious circles in their usual chronic courses.

The practical question involved is: Have we in the various types of gastric hyperacidity separate clinical entities or are they simply different degrees of one and the same process? Such a conservative teacher as Boas believes that a chronic hypersecretion may exist as a primary condition, that an original insult to the gastric mucous membrane can result in a continuous pathological secretion from the beginning. There are no clinical data to refute this conception. This would require continuous observation upon a series of such cases from the time of the first insults to the completion of the process. The conception is justifiable, but not entirely reasonable. Viewed in the light of daily practice and the habits of the average individual, it is more probable that the original attacks were isolated and indistinct and have been forgotten. In dealing with an organ so peculiarly insensitive as the stomach, it is possible to conceive that pernicious influences may be at work for years producing changes without adequate perception on the part of the individual. Such perception may be postponed until the process becomes very pronounced or a necessary physiological setting is present. These two conditions arrive sooner or later in most cases, and examining at this moment we may find a complete picture of one of the prevailing types, which represents, however, only a certain stage of a common process. Transient conditions of hyperchlorhydria can very well escape notice. This is entirely an individual matter, dependent upon local sensitiveness and general susceptibility.

The tendency of every normal stomach is to hypersecrete upon insult, and if the latter are frequent enough, a habit of hypersecretion may be established. Arrived at this stage each digestive act is accompanied by an excess of secretion and the intervals between the occasional attacks of ordinary hyperchlorhydria are shortened. In this manner a permanent condition of hyperchlorhydria is developed. Such individuals always exhibit an excess of acid with each food ingestion. They may or may not exhibit symptoms of the condition. These stomachs always empty themselves between meals and no acid is found. These cases represent by far the greatest class of our chronic dyspeptics and give the common symptom-complex of gas eructations, pyrosis, and painful pressure coming on at the end of the digestive act. In this condition they may remain stationary for years.

There is always danger, however, that this more or less physiological hyperchlorhydria may develop into a hypersecretion by extension into the interprandial periods. Upon this conception the diagnosis of hypersecretion is based. Such extension may be apparent or real. It is real only when the motor functions of the stomach remain normal. In the advanced stages of excessive acid secretion, when motor interference of one sort or another has been established, it is generally impossible to say which condition is present. The volume of the gastric contents at this stage may be due either to retention or hypersecretion. The differential diagnosis can only be made early and all the arguments constantly advanced as to the obstructive nature of the Reichman complex are necessarily futile. With retention once established the determination of excess volume and acidity need not indicate a hypersecretion.

A positive diagnosis of hypersecretion *per se* postulates a normal motility. There can be neither retarded or accelerated muscular activity of the stomach. In the first instance the excessive secretion may well be a mechanical manifestation; in the second it may be only apparent. Attention of late has been directed to the relation existing between hypermotility and hypersecretion. It should be remembered in this connection that the same influences which affect the secreting structures also affect the muscular structures. It is not reasonable to suppose that causes activating the one function should depress the other. Clinical experience confirms this, for the early association of apparent hypersecretion and hypermotility is a matter of common observation. Such stomachs empty themselves very rapidly, but contain acid fluid within the normal digestive period following ingestion. Analysis of this fluid reveals only a slight difference between free and total acidity. To diagnose hypersecretion in all such cases would be manifestly an error, for the volume of the secreted juice may be directly proportional to the original stimulus. If this physiological secretion leaves the stomach within a reasonable time after meals, it need cause no special symptom or disturbance. Such stomachs exhibit an excessive but physiological activity. In this condition they may remain for years.

There is always danger, however, that the motor functions may be affected eventually. It should be remembered that the tendency of every hyperacid

stomach is toward retention. It is a physiological process in the beginning, instituted for protective purposes. Excessive gastric acidity must induce prolonged pyloric contraction. The duration of this reflex act stands in direct relation to the quality and quantity of the gastric juice. In itself it is purely a very active normal function. The time will come, however, when the passage of food will be retarded little by little and a vicious circle established within the organ itself. The retained food increases secretion, which, in turn, prolongs pyloric contraction and increases retention. Arrived at this stage, we have the familiar combination of hypersecretion with retention, but this result has been attained gradually by more or less physiological processes. Judging from practical observation of large clinical material and the examination at all stages, the development of these conditions is along fairly fixed lines. The primary insults induce hyperchlorhydria and hypermotility. As a result of the latter the stomach contains acid secretion during the interprandial periods. This, in turn, induces prolonged pyloric contraction. The time comes when food is retained. This causes additional secretion and the combination is complete. The degree of development and the relationship between the secretory and the motor functions will depend more or less upon the period of examination.

It can readily be appreciated that the diagnosis of a primary hypersecretion presents certain difficulties. All the aspects of each case must be taken into consideration, and it is more than probable that some of the distinct types are more or less fanciful, and that they represent for the most part certain stages of development of one and the same process. The initial stages are usually not observed and represent the mass of attacks of acute indigestion, "sour stomach," and so-called bilious attacks from which people suffer in the course of their daily lives, and which yield to ordinary domestic remedies. It is not reasonable to suppose that a definite relationship of cause and effect, tending to the production of distinct types, exists in most cases. The histories of the majority of these cases are similar. The insults to the gastric mucous membrane are delivered either directly or indirectly—that is, they are either physiochemical or psychoneurotic—and they are common to all classes. It is only in the rapidity with which the final result is reached that the cases differ. This is a matter of individual resistance. In the beginning the organ always returns to normal between the attacks, but, unless supervision is exercised, an occasional hyperchlorhydria may become habitual and develop into a hypersecretion with all the attendant evils of compulsory and physiological retention. The last may appear contradictory, but it should be remembered in this connection that the act of retention in itself in these cases is purely physiological, whatever may be the pathological features of the results of this act.

The time has arrived when we are in a position to take a broader view of such conditions as hyperchlorhydria and hypersecretion, thanks to a mass of clinical and experimental evidence, and we should eliminate certain fanciful conceptions which have resulted from the enthusiasm attendant upon the exploration of a comparatively new field.

144 East Thirty-eighth Street.

THE PROPHYLAXIS OF THE OROPHARYNX AND NASOPHARYNX.*

By J. H. GÜNTZER, B.Sc., M.D.,

NEW YORK,

ASSISTANT SURGEON, MANHATTAN EYE, EAR, AND THROAT HOSPITAL; ADJUNCT PROFESSOR OF OTOLOGY, NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

It is my purpose to call your attention to some of the pathological conditions involving the oropharynx and nasopharynx, particularly to such as accompany the acute infectious diseases, incidentally mentioning two conditions, the one an infection *per se*, the other the result of hypertrophic changes in the lymphoid tissues of this region. Aware that little can be advanced which is new, it will, however, be profitable, even at the expense of repetition, to point out the conditions that may be overlooked by the practitioner or else are regarded by him as of minor importance, yet these conditions often lead to serious consequences, which, if they could not have been entirely avoided, at least could have been ameliorated by careful prophylactic treatment. Diphtheria, syphilis, tuberculosis, and local benign or malignant conditions of the oropharynx or nasopharynx will not be considered here, since the local manifestations of these are apparent and are usually looked for or are indicated by the clinical history of the case. In scarlet fever combined with a true or pseudodiphtheritic throat, treatment is directed locally, but in the ordinary case of scarlet fever without such a clinical picture and in the case of measles, whooping cough, typhoid, etc., the treatment of the nasal and pharyngeal cavities is more frequently neglected.

Let us consider the importance of the local conditions, limited to the oropharynx and nasopharynx in some of the infectious diseases. With few exceptions, such as typhoid, paratyphoid, cholera, dysentery and bovine tuberculosis, which gain their entrance into the system through the digestive tract and some other infections that enter the blood through the skin as malaria, yellow fever, uncinariasis, and others having a parasite or protozoan as the etiological instigator, it is conceded that the causative microorganisms in a majority of the infectious diseases enter the body through either the lymphatic or vascular system, and that the portal of entry in most instances is through the mucosa or else through the lymphoid structures of the upper respiratory tract. In epidemics of cerebrospinal meningitis, the *Diplococcus intracellularis meningitidis* has been repeatedly found in the nose and nasopharynx of those associated with cases of this disease; we know that the disease is usually preceded by an acute rhinitis. In poliomyelitis, which no doubt is caused by a microorganism as yet unidentified, secretions from the nasopharynx injected into laboratory animals have produced a similar clinical condition as accompanies this disease in man. In scarlet fever, virulent streptococci invariably abound on the tonsils, and in about one-half of the cases a membrane is found often associated with diphtheritic infection. With measles, we have a more or less pronounced catarrhal condition invading the upper respiratory tract with a variety of microorganisms in the secretions, and while it is usually considered a mild disease, we know that it is frequently followed by serious complications and often by fatalities. In whooping cough and mumps

*Read before the Greenwich, Conn., Medical Society, June 7, 1911.

the nidus of infection is probably somewhere in the oropharynx or nasopharynx. The insidious streptococcal tonsillitis usual at the beginning of rheumatism is often overlooked. With follicular tonsillitis the streptococcus is usually the offending organism, and through the tonsil may cause a systemic infection with endocarditis.

In most of these diseases the streptococcus is the particular microorganism which adds to the seriousness of the infection, and although not the specific agent it is undoubtedly the cause of the more frequent and graver complications, since it is known to show a predilection for the serous surfaces or cavities. Beginning primarily in the nose, pharynx, or tonsils, the streptococcus infection may extend to any one or all of the accessory nasal sinuses, to the middle ear, and to the meninges, either of which may be accompanied by a streptococchemia. Ordinarily the middle ear is more often contaminated than the nasal sinuses. In scarlet fever the percentage of purulent middle-ear disease is highest (about 20 per cent) and half of the number of cases, or 10 per cent, are found in diphtheria, measles showing about 5 per cent. of the cases, and here the infection seems to be milder than in the other two; it is most severe in scarlet fever, where about half of the cases show a bilateral involvement. In typhoid fever, and pneumonia too, a purulent middle-ear complication not infrequently arises.

There is a further affection, not an accompaniment of the infectious diseases which constitutes an infection *per se,* whose initial clinical manifestations begin in the oropharynx. A purely streptococcal infection of the throat would not be a rare affection were it more frequently recognized. It often simulates the early stage of typhoid fever. The patient complains of slight soreness of the throat, which on inspection merely shows a redness of the pharynx, tonsillar pillars, and tonsils; sometimes the tonsils have one or more ill-defined, pale, membranous exudates. The temperature is rather remittent, as a rule not higher than 102° or 103° F. in the evening and falling in the morning to nearly normal. Vomiting during the first few days has been noted, and the bowels may be loose or constipated. There is more or less prostration, varying according to the resistance of the patient; with low resistance usually, if carefully watched, within a week or ten days an endocardial murmur will be detected, and this fact marks the seriousness of a streptococcal sore throat. The writer believes that many a valvular heart lesion or acute nephritis that cannot be related to any particular causation is the result of an unrecognized streptococcal throat infection, and hence the importance of being on our guard to meet this condition and so prevent any permanent cardiac or kidney damage.

With the formidableness of these not infrequent infectious complications before us, it would almost seem unnecessary to emphasize the urgency of instituting prophylactic measures in order to combat the virulency of the offending microorganisms that may be harbored in the mucosa and in the lymphoid structure of the oropharynx and nasopharynx, and of limiting the fertility for their growth and propagation by the radical removal of all diseased lymphoid tissue during the quiescent stage, when free from acute infection. Indeed, this really is the primary and most essential factor in the prophylaxis of this region. We should consider the lymphoid ring of the pharynx an incubator for most of the infectious diseases. Recurrent inflammatory processes of these lymphoid tissues change them pathologically and favorably for bacterial invasion, and also change them into reservoirs supplying the adjacent and remote lymphatic and glandular chains and aiding in disseminating the microorganisms into the general circulation, and so to the various organs of the body. Aside from the usual indications for the removal of tonsils and adenoids, it is recommended by the writer as a means of combating the spread of tuberculosis, to remove the diseased tonsillar and adenoid tissue in all children who are exposed to this disease in families where a member is afflicted with tuberculosis. Following an acute attack of rheumatism, it is recommended to remove tonsils and adenoids so that subsequent attacks may be frustrated. We all have seen a puny, cachectic child bloom into ruddiness and ruggedness soon after the removal of the diseased tonsillar and adenoid tissue which had supplied the system with the toxin that created a constant, slow-fed autointoxication.

Cognizant that the diseased processes, bred or originating in the oro- and nasopharynx as outlined above, may eventuate into a general systemic infection, and that local measures alone cannot abort or reach the true seat of inflammation, it may be admitted, however, that local antisepsis can mitigate the process to the extent of inhibiting the local growth of the pathogenic bacteria, and also can limit the amount of septic or toxin absorption. Cleansing of the nasal, pharyngeal, and oral cavities with an alkaline antiseptic solution, diluted to proper strength (a half or one quarter) made from the liquor antisepticus, U. S. P., preceded by a one in three dilution of peroxide of hydrogen in either cinnamon or peppermint water, or a 2 per cent. solution of sodium perborate, using these solutions as a gargle and spray, will aid in removing the macerated epithelium and contaminated secretions; it is a good plan to paint the mucosa of the nasal and pharyngeal cavities two or three times a day with a 25 per cent solution of argyrol or any other agent that may have bactericidal qualities. Attention to the elimination by the emunctories, skin, kidneys, and bowels is important. Water should be used plentifully both internally and externally. Urinary and heart examinations should be carefully and repeatedly made. Insist on rest in bed in any case, may the throat symptoms appear ever so mild. To antagonize the systemic infection, the injection of an appropriate serum to meet the exigencies of the case, usually an antistreptococcus serum or else an autogenous vaccine, is indicated and medicinally guaiacol carbonate or urotropin in the required doses should be used internally, as well as the Credé ointment of colloidal silver by inunction; this may be prescribed in ten-grain doses in oiled or waxed paper, using one for each rubbing, the attendant to rub it into one of the joint flexures for ten minutes with the gloved hand.

By carrying out such a plan of local and general treatment, an advancing infectious process or its sequelæ can be made regressive, and in many instances the treatment is both prophylactic and curative. Especially in the exanthemata must we direct local treatment to the nose and throat, thereby often preventing middle-ear disease and intracranial complications, and by this means also conserving the sense of hearing. During the prevalence of epidemics of either cerebrospinal meningitis or poliomyelitis, I would especially advocate regular and stringent local cleansing and antiseptic measures to

the nose and pharynx of both the child and adult. Internally we should administer urotropin, since this is known to circulate in the internal secretions and blood and so can exercise its bactericidal qualities. I believe that in this way much can be done to limit the spread of these diseases.

In concluding allow me to briefly mention a pathological condition of the pharynx, not ranking in importance with the described infectious processes, yet one that merits inclusion in this paper, being pertinent to our subject. In cases of persistent cough, hypertrophy of the faucial, pharyngeal, and lingual tonsils is often overlooked, and with a persistent cough the physical examination should not end with "going over the chest," but the mouth and pharynx should be inspected in every case. Thickening of the lymphoid tissue at the base of the tongue (so-called lingual tonsil) often impinges on the epiglottis and is responsible for many a case of intractable cough and sometimes for asthmatic seizures; an elongated uvula is often the offending factor. These conditions are by no means prevalent only in the adult, but are sometimes found in children. These patients complain of a fullness in the throat and have the sensation of a lump being present, which they attempt either to swallow or to cough up and expectorate. Neither attempt is successful. The harrassing cough and vain attempts to rid the throat of this irritating mass often show their constitutional effect. The patient is depressed, has little appetite, soon loses weight, and suffers from loss of sleep because these attacks are worse in the recumbent posture; these patients are often thought to be tuberculous, yet recover wonderfully when the offending causative factor is removed. The physician prescribes through the whole gamut of cough remedies without relief—and the only relief is the removal by ablation or electrocautery of the mechanically irritating tissues of the oropharynx.

61 East Eighty-sixth Street.

A CASE OF ASPIRIN POISONING.

By DAVID I. MACHT, M.D.,

BALTIMORE, MD.

Aspirin was introduced into medicine by Dreser some dozen or so years ago. The drug, which is acetyl-salicylic acid, with the chemical formula $C_6H_4O.C_2H_3O.COOH$, is a substitution-product of salicylic acid, and was recommended as a substitute for salicylic acid and sodium salicylate in rheumatic cases, as causing no untoward symptoms and by-effects. The reason for its lesser irritability was experimentally shown by Dreser (Pharmakoligisches über Aspirin. *Arch. f. d. ges. Phys.*, lxxvi, 306). He found that the compound is affected little or not at all by weak solutions (2 per cent.) of hydrochloric acid, but that it quickly disintegrates in the presence of a weak alkali. He therefore argued that the drug passes unchanged without irritating it, through the stomach, and begins to liberate the salicylic acid slowly, only after it has come in contact with the alkaline contents of the intestine. The drug was quickly taken up by the profession, and extravagant claims were made for its virtues. Liesau, for instance, wrote in the *Deutsche medizinische Wochenschrift*, No. 21, 1900, that "it has a pleasant taste, does not attack the stomach, causes only rarely any ringing in the ears, and has a safe and prompt analgesic and antipyretic action."

The truth, however, is that aspirin is not devoid of toxic action, and may often produce vertigo, ringing in the ears, vomiting, depression, etc., as noted by careful clinical observers, such as noted by Gazert (*Deutsches Arch. f. klin. Med.*, lxviii, 142). Occasionally it may cause symptoms of a more toxic nature. I have recently had an opportunity of observing such a case which, from its rarity of occurrence, I think worth while reporting:

M. I. L., aged 30 years, Dentist. Patient is an athlete and a man of admirable physique and hardened constitution. His family history is negative. He has never been seriously ill, except for an attack of gonorrheal urethritis, for which he was treated and cured. He drinks very moderately and does not smoke. He consulted me three times within the past year for myalgic pains in the back, and was each time given aspirin, with the same results. The first time he received the drug in the form of powders, 10 grains each. Soon after taking one powder he felt "sore" in the stomach, but not nauseated, and did not vomit. His chief complaint, however, was a feeling of constriction around his throat, as if he were choking, and of salivation. The latter he described as thick and ropy mucus gathering in his mouth and causing him to spit. There was difficulty of speech and in deglutition. He also had a headache or constriction in the head, and a congestion of the nose "as if he had a cold there."

On the second occasion the patient took one 5-grain tablet of aspirin about 6 o'clock in the evening. He awoke about 3 A.M. with a feeling of choking, or "constriction around the neck," as he always describes it, and was again salivated, or rather spat thick ropy mucus.

On the third occasion I gave the patient two aspirin capsules of 5 grains each, purposely telling him that I was giving him a different drug. This was done partly in order to make the patient take the substance, as he strongly resented repeating aspirin on account of its affecting him so disagreeably, and partly in order to exclude any mental element that there might be added in describing the effects of the drug. The same result, however, was noted. Some four to six hours after ingestion he had his constriction and salivation. He was, moreover, depressed to some extent on each occasion. On examination, there was reddening of the pharynx and a general edematous condition of the tissues of the neck.

I have looked over the literature on the subject in search of similar cases, and have been able to find only three cases presenting such a picture. Hirschberg (*Deutsche med. Wochenschrift*, xxviii, 416) reports a case of aspirin poisoning with congestion of nose and swelling of eyelids, edema of the pharynx, and salivation with thick mucus. Otto (*Deutsche med. Wochenschrift*, 1903, xxix, 123) reports a case of aspirin poisoning with "constriction" or edema of the throat, difficulty of speech and deglutition, and salivation. There was also a papular eruption on the skin. Meyer, in the same number, page 124, reports a similar case.

I may note that in all these three cases the doses of aspirin administered were much larger than in mine. I did not notice any special skin eruption in my case, although one occasion when the patient took the drug, he did have a few vesicles which he could not account for. Neither was there any irritation of the kidneys noted.

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THE MEDICAL STUDENT AND HIS BOOKS.

CONSIDERABLE experience with the students of four of the leading medical schools in America has led the writer to believe, among other things, that many, if not most, such students use too few text-books while in school. The soundness and the importance of this belief will be obvious and this discussion more effective if certain considerations be set forth decently and in order. We may cite two main causes of this state of things anomalous in an earnest profession and an exacting one; one of them is purely human, and the other pedagogic, As human beings who are the chosen teachers of mankind in most important subjects, students of medicine should be interested in both causes, and seek the remedy.

1. Of all students on this earth (unless it be those of art?) medical students are most emphatically and consistently, that is, continually, "broke." This must be owing to the extreme interest that the embryonic physician takes (more or less) professionally in every phase of human nature, leading often to his over-frequenting of theatres, music halls, etc., and to his over-indulgence sometimes even in what Sam Weller calls conviviality; over-generosity in tips to his landlady, on the other hand, probably is not largely concerned. This root of the matter we can fondly wish, but hardly hope to see immediately improved. Its consequence meanwhile in the respect of which we are speaking is that all too often the rather expensive text-books on medical subjects offered in the shops are as consistently passed by as is the contribution-box in meetin'. It need only be remarked that in the active, not to say vehement, struggle for a competent practice later on, when collections are low and the groceries high, the value of acquaintance with the standard text-books on the subjects of the medical curriculum at best fairly rivals the value of acquaintance with human nature and "the world." The average medical student cannot, of course, be taught this fact and it is not expected that he can; he must learn it for himself, each of him and her, by personal experience, but observe, only when it is too late to be of the best use. But none the less, knowledge retains always the greater part of a young physician's capital and his income, therefore, is more or less proportional thereto; the more of this capital, plus personality, the lower down the opera seats and the higher up the auto charges allowed madam and the kiddies later on. This basal-knowledge sort of capital, in the six or eight fundamental subjects at least, is derivable very largely only from text-books. And text-book expense is relatively small after all. An income of $1,500 represents a capital of say $30,000, and one of $5,000, $100,000. Compared with this, forty or fifty dollars a year, while a student expended for extra and adequate books is obviously of trifling account. As for the occasional medical student who buys no books or only the absolute minimum of cheap ones (second-hand or compends) his myopia and mistake are too obvious to need more than admonitory mention. A young man with so narrow an idea of the science of human medicine as that would be better, and probably more lucratively, employed at some useful trade, such as conducting a trolley car, rather than studying a profession. The medical schools have never at best been over-discriminative in the material they accept for their doctorates, as many facts, this among the rest, suggest.

2. The major premise, so to say, of our conclusion, that students use too few text-books, was that the chief reason is a pedagogic one. This rests on a principle of psychology as well as on common sense. The common sense aspect of the matter is obviously that an abundance of ideas represented by several different books on a subject would insure one a better medical education, other things equal. How important this is might be discussed, but there seems need only to remind the reader that mastery of a subject progresses in geometrical ratio with the facts acquired. The pedagogic principle underlying the matter, simple enough, but important, is that even the same facts and theories stated by different educators and, therefore, in different ways, are more easily fixed in the mind (owing to the additional richness of the associations) than if stated to the student by one man in only one book. The importance for easy and permanent learning of this variety of statement it would be hard to exaggerate. In addition, of course, every writer on a subject states facts, if not theories, omitted by the others, and so the actual knowledge derivable from various books is greatly augmented. The same obviously is true of the illustrations in the text-books, and in general their importance as a means of teaching is rarely appreciated at their true high value.

The habit of selling the text-book on a subject when that course has been "passed off" is another custom usually regretted in after years. At times when a dollar looks as large as a moral law the temptation to part with a school book may be considerable to be sure; yet, if students realized how greatly in later and more opulent years they would prize these companions of the dear student-life days, they certainly would never part with them for a little money, but rather keep them as the prized nucleus of the future medical library in the consultation room. For hasty reference purposes, in knotty cases of practice, the old books often have far more value than newer ones owing

to their owner's thorough familiarity with their arrangement and details. Moreover, in the early years of practice the purchase of new books is apt to be a financial burden and many a busy man has regretted the loss of volumes almost given away in over-sanguine (or indigent?) moments years before. Even an old bird in the hand is worth a whole flock of young ones, sometimes, in a distant book store or library.

TUBERCULIN TESTS.

So much has been written about the use of tuberculin for diagnosis since the appearance of the cutaneous and ophthalmic tests with this substance that the busy practitioner of medicine has been overwhelmed with the arguments for and against each method and its reliability. A sober statement of facts, as observed by a man commanding a great deal of material, is, therefore, welcome, and such a statement is given by Lawrason Brown, in the October number of the *American Journal of the Medical Sciences*. Brown considers the specificity, the danger, and the accuracy of tuberculin tests. The specificity of the test is practically absolute. Among laboratory animals only those which are tuberculous react to tuberculin; healthy human beings, babies, for example, having no tuberculous inheritance, fail to react to large doses of tuberculin; among the sick only lepers show a tendency to react to this toxin, but even in this case the reaction differs in character from that observed among the tuberculous.

Danger in the use of tuberculin is present in the employment of the ophthalmic tests, several unfortunate accidents having been reported; the danger, however, is much diminished by excluding all patients from the test who have ever had any trouble with their eyes. The cutaneous test has very rarely given rise to a lymphangitis or a lymphademitis; in the overwhelming number of cases, however, it has proven a safe method. The subcutaneous test, demanding a general reaction, has frequently resulted in a prolonged and severe malaise; it has often brought on increase in the physical signs of the affection; it has been blamed for the "activation" of the disease even to the extent of resulting in the appearance of tubercle bacilli in the sputum, an accusation which Brown is very loth to accept.

Of great importance is the discussion of the accuracy of tuberculin tests. The cutaneous test is most valuable in early life bfore the age of seven or eight years; after that, a positive reaction is of little meaning, for it fails to distinguish between tuberculous infection *per se* and clinical tuberculosis. Brown's conclusion with reference to the ophthalmic test is as follows: In any individual patient, if he react to one drop of a 1 per cent. or of a 5 per cent. solution of old tuberculin given in different eyes, he is more likely to have clinical tuberculosis than if he reacted only to the cutaneous test. The intracutaneous method still remains, perhaps, the most accurate test of the three. Negative skin reaction does not exclude tuberculous infection or even clinical tuberculosis, while failure to react to 10 mg. of old tuberculin, given subcutaneously, probably means, according to Brown, that treatment is unnecessary.

It is seen, thus, that tests with tuberculin have practically no such absolute values as have been claimed for them by many enthusiasts. Often enough, they only add confusion to the clinical data which, after all, must be used as criteria for action. As Brown concludes, no modifications of the tuberculin test "differentiate clearly clinical tuberculosis that demands vigorous treatment, from non-clinical tuberculosis, that requires only a God-fearing life."

TOXEMIA OF PREGNANCY.

One of the greatest sources of confusion in dealing with this subject is the considerable number of toxic substances which might be at fault. These could arise from the food, from intestinal putrefaction, from catabolic products of the mother, from the placenta, from the fetus, etc. Another source of confusion is the number of defensive and eliminative structures which might be at fault. The liver is the organ principally accused, but the kidneys and certain ductless glands are not far behind, and if not primarily at fault the kidneys seldom fail to be involved in the toxemia. This takes no account of merely mechanical pressure disturbances of the intestine, urinary system, and lungs—all of which militate against proper oxidation and elimination. The prevalent belief is that the pregnant woman is ordinarily able to defend herself from the operation of toxic influences through the formation of antibodies. The neutralization is very often incomplete, so that the petty morbidity of pregnancy so-called is commonly in evidence. The less the degree of neutralization the more severe the symptoms; in rare instances there seems to be no attempt whatever at defence, so that even early in pregnancy death rapidly sets in during apparent health.

At a recent meeting of the physicians of the City Hospital at Frankfurt (*Münchener medizinische Wochenschrift*, September 2), Mosbacher reported a case of pruritus gravidarum in which he effected a rapid cure by injecting the serum of a pregnant woman which presumably contained the protective antibodies which the affected woman lacked. In speculating on the nature of the underlying toxicosis the author announced his adhesion to the syncytial theory. It is a fact, however, that some of the most deadly cases of toxemia have occurred long before syncytial tissue could have formed, so that it would be necessary to accuse the cells from which the syncytium develops, which cells have also been accused by embryologists of being somehow responsible for malignant growths in later years, just as they are responsible for chorioepithelioma in connection with gestation.

Diabetes Insipidus.

It has long been the fashion among certain clinicians to deny the existence of an essential polyuria. For them diabetes insipidus is simply a secondary polyuria or pollakiuria of one kind or another. One

clinician sees only the polyuria of contracting kidneys, another a reflex polyuria, a third the evidences of enlargement of the prostate, which mimics an increased excretion of urine, a fourth a merely neuropathic polyuria, etc. It is therefore a matter of great interest to note that Stuber at a recent meeting of the Freiburg Medical Society (*Deutsche medizinische Wochenschrift*, July 27), describes a true essential polyuria, which he terms insipid diabetes, and which was due to increased adrenalin content in the blood as shown by the frog test. The proportion was from two to seven times that normally present. There was a definite relationship between the adrenalinemia and polyuria. There is, therefore, very probably an essential polyuria from overaction of the chromaffin system. It is not commonly known that with a high degree of polyuria some glycosuria may be transiently present. In other words the two types of diabetes shade into each other, thus justifying the old nomenclature. This association is readily understood if we bear in mind that an increase of the adrenal principle in the blood may also cause glycosuria, doubtless by overantagonizing the pancreas. A symptom of diabetes insipidus is intolerance of sodium chloride which readily sets up salt fever.

Disturbances of Metabolism in Nervous Diseases.

It has long been known that metabolic disturbances occur in neuroses and psychoses, and not long ago a monograph was written on the subject by Kaufmann, in which, however, only psychoses were discussed. We know less about metabolism in neuroses and, therefore, it may be of interest to note a discussion on this subject held in the biological section of the Aerztliche Verein of Hamburg last June (*Münchener medizinische Wochenschrift*, August 29). Stoelzner agreed with Hirschstein, the author of the paper, as to the existence of an oxypathic element, with especial reference to unsaturated phosphoric acid compounds. Trömner implied that a study of periodic psychoses and neuroses would furnish a key to the situation, as metabolic disturbances should precede, accompany, or follow these attacks. Metabolic disturbances, while present in various psychoneuroses did not tend to follow definite types. Changes in calcium or phosphorus metabolism had not been sufficiently studied with reference to the diet. We could build up a thin or reduce an obese patient by feeding, yet his disease might not be improved. A patient with neurasthenia might be readily cured without reference to his metabolic processes. Hirschstein said that too much stress seemed to have been laid on the mere retention of phosphoric acid. It was much more important to consider the nitrogenous acids or so-called proteinic acids. There might, of course, be an acidosis—an acid intoxication—to which a number of acids could contribute. Given an essential acidosis, we could determine the secondary consequences, the effects of diet, etc., and so reach a special type of disease.

Deafness Following Purpura.

It has long been known that deafness sometimes follows purpura hemorrhagica, peliosis rheumatica, and similar hemorrhagic conditions, and also that hemorrhage limited to the labyrinth is by no means rare. But not enough attention has been paid to the connection between the two phenomena, probably because in the latter of the two a slight trauma is the cause, and the syndrome of Ménière asserts itself as the true disease, overshadowing the mere initial hemorrhage. Sirgar was the first to note in purpura hemorrhagica an ear syndrome, made up of vomiting, tinnitus, and deafness. Most of the patients promptly recovered, but one, a child, did not fare as well, being left permanently deaf and ultimately dumb. Güttich recently reported a case before the Physicians of Charité Hospital, Berlin (*Berliner klinische Wochenschrift*, August 28). The woman had rheumatic purpura, and the ear syndrome comprised tinnitus, vertigo, and incoercible vomiting. Meningitis could be excluded. The woman became deaf and dumb for a time, suffered greatly from vertigo, and developed nystagmus. Nevertheless she improved much, while troubled somewhat with recrudescence of ear symptoms. It is evident that the mechanism of these purpuric complications is by no means clear, and the belief that they are due to hemorrhage is thus far speculative.

News of the Week.

Civil Service Examination.—The New York State Civil Service Commission announces an examination to be held on November 11, 1911, for the purpose of filling vacancies in the position of physician, either regular or homeopathic, at a salary of $900 to $1,200 with maintenance, and in the position of physical instructor (woman) at a salary of $600 and maintenance. Detailed circulars and application blanks may be obtained from the State Civil Service Commission, Albany, N. Y.

City's Low Death Rate.—For the week ending October 7 the death rate in New York City was 12.60 per 1,000 of population, a decrease of 1.88 points, as compared with the corresponding week of last year, and the lowest rate ever recorded in New York. The low rate of mortality during the week was due to a decreased number of deaths at all the different age groups, not being confined to any particular period. No deaths from scarlet fever or measles were reported, an occurrence unprecedented in the history of the Health Department. Every preventable cause of death against which the Department of Health has been directing its energies showed a considerable decrease, while deaths from causes not so amenable to sanitary surveillance, such as heart disease, pneumonia, diseases of the kidney, and violence, remain fairly constant.

Medical Colleges Consolidate.—Announcement has been made of the consolidation of Barnes Medical College, St. Louis, and the St. Louis College of Physicians and Surgeons. This action was taken following the discrediting of the two schools by the Missouri State Board of Health, and it is hoped that the combination of the equipment and the organization of a new and enlarged faculty may bring the institution up to the State standard.

Dr. Charles E. Simpson has recently resigned as superintendent of the Lowell Hospital, Lowell, Mass., after twenty-five years of continuous service.

Antispitting Ordinance.—Spokane, Wash., has started a crusade against the spitters on the streets and in public places, and the sanitary inspectors have orders to arrest all violators of the antispitting ordinance. The health officer will ask for jail sentences for all those convicted of the offense.

Italian Cholera Deaths.—During the last week of September there were 450 cases of cholera in Italy with 116 deaths. In Rome the disease appeared among the inmates of an insane asylum, causing 44 cases and 12 deaths.

Dr. Herbert Fox has been appointed director of the Pepper Institute of Clinical Medicine in the University of Pennsylvania.

The Friends' Asylum for the Insane, at Frankford, Philadelphia, opened on October 12 a new building for hydrotherapeutic applications and other treatment. The structure is two stories high and contains on the first floor a general hydrotherapy room, with needle and shower bath, shampoo bath, and other apparatus for the treatment of violent patients. On the second floor is an operating room, with sterilizing and lighting arrangements. Here also are a leucandescent lamp, a static machine, and a vibrating machine, as well as a rest room.

New Reformatory Rules.—Beginning with the first of October, 1911, the New York State Reformatory at Elmira has declined to receive any prisoner suffering from a contagious disease, and also to accept any prisoner unless he has had a culture taken from his throat and has a certificate showing that the culture was non-infectious and free from the Klebs-Loeffler bacillus. This action has been taken as the result of an investigation into the causes of the frequent epidemics of diphtheria in the institution. Since the first of November, 1910, cultures have been taken from the throats of all new arrivals, and more than 80 cases of diphtheria were found in 1920 examinations. This constant stream of infection was a menace to the health of the inmates of the reformatory, and on the advice of the Attorney-General of the State, and at the request of the Board of Managers, the State Commissioner of Health has promulgated an order requiring the examination of prisoners before they are transferred to the reformatory. Culture outfits can be procured from the State Board of Health, and the State Laboratory at Albany will make prompt examinations and reports on specimens sent there.

Sale of Infected Meat.—The charge that the meat of tuberculous cattle is being put on the market for sale in New Jersey is made by the Chief of the Chemical Bureau of the New Jersey State Board of Health. The proper State inspection of animals, he declares, is impossible with the present force, and the result is that many infected animals are imported and later slaughtered.

The New Jersey State Pediatric Society.—A Symposium under the auspices of The New Jersey State Pediatric Society on "The Welfare of Young Children from the Educational Standpoint," will be held in the ball room of the Laurel House, Lakewood, N. J., on Saturday, October 28, at 8.30 P. M. This will be a general meeting to which all physicians, clergymen, teachers, and others interested in child welfare are invited. The following papers will be read: "The School and the Doctor," by Dr. Henry E. Jenkins, District Superintendent of Schools of the City of New York; "The Home Schools for Infants at Rome," by Prof. Howard C. Warren, Princeton University; "The Care and Training of Feeble-Minded Children," by Mr. E. R. Johnstone, Superintendent New Jersey Training School for Feeble-Minded Girls and Boys, Vineland, N. J.; "What New Jersey Is Doing for the Epileptic," by Dr. David F. Weeks, Superintendent New Jersey State Village for Epileptics, Skillman, N. J. Arrangements have been made whereby members or others who plan to attend this meeting may obtain week-end accommodations at either The Laurel House or The Lakewood Country Club. The president of the Society is Dr. Henry L. Coit; the secretary, Dr. Martin J. Synnott of Montclair.

The Medical Society of Pennsylvania.—At the sixty-first annual meeting of this society, held at Harrisburg September 25-28, 1911, the following officers were elected for the ensuing year: *President,* Dr. James Tyson, Philadelphia; *First Vice-President,* Dr. Hugh Hamilton, Dauphin Co.; *Second Vice-President,* Dr. Walter Lathrop, Luzerne Co.; *Third Vice-President,* Dr. George W. Kehl, Berks Co.; *Fourth Vice-President,* Dr. Howard C. Frontz, Huntingdon Co.; *Secretary,* Dr. Cyrus Lee Stevens, Athens; *Treasurer,* Dr. G. W. Wagoner, Johnstown; *Delegates to the American Medical Association,* Dr. G. W. Guthrie, Wilkes-Barre; M. H. Fussell, Philadelphia; T. B. Appel, Lancaster; John B. Lowman, Johnstown, and L. B. Kline, Catawissa.

The Homeopathic Medical Society of the State of New York held its annual dinner at the Hotel Savoy, New York City, on October 11. Addresses were made by Dr. E. Rodney Fiske of Brooklyn, who spoke on "The Family Doctor," and by Dr. Augustus S. Downing, Assistant Commissioner of Education in the State Department, whose subject was "Progress in Medical Education."

Minnesota State Medical Association.—At the annual meeting held in St. Paul on October 6 and 7 the following officers were elected for the ensuing year: *President,* Dr. Haldor Sneve of St. Paul; *First Vice-President,* Dr. O. T. Sherping of Fergus Falls; *Second Vice-President,* Dr. W. F. Wilson of Lake City; *Secretary,* Dr. Thomas McDavitt of St. Paul; *Treasurer,* Dr. R. J. Hill of Minneapolis. The 1912 meeting of the society will be held in Detroit.

Southern Homeopathic Medical Association.—The following officers were elected at the annual meeting held in St. Louis, Mo., recently: *President,* Dr. F. A. Reed of Eustis, Florida; *Vice-Presidents,* Dr. A. H. Schott of St. Louis, and Dr. H. Schwartz of St. Louis; *Secretary,* Dr. Lee Norman of Louisville, Ky.; *Treasurer,* Dr. H. Warren Johnson of Knoxville, Tenn. The next meeting will be held in Richmond, Va.

Lexington County (South Carolina) Medical Society.—At the regular meeting of the society held in Lexington on October 2, the following officers were elected: *President,* Dr. Frank G. Roberts of Lexington; *Vice-President,* Dr. James P. Drafts of Barr; *Secretary-Treasurer,* Dr. J. J. Wingard of Lexington.

Thurber Medical Association.—The annual meeting of this society was held at Milford, Mass., on October 5, when officers for the year were elected as follows: *President,* Dr. Francis H. Lally of Milford; *Vice-President,* Dr. J. W. Ledbury of Uxbridge; *Secretary,* Dr. A. J. Gallison of Franklin; *Treasurer,* Dr. C. B. Hussey of Franklin.

American Society of Sanitary and Moral Prophylaxis.— A joint meeting of this society with the New York Association of Biology Teachers was held at the New York Academy of Medicine, Thursday, October 12, at 8.30 P. M. The general subject for discussion was: "The Teaching of Sex in the Schools and Colleges." Papers were

read by Dr. G. Stanley Hall, Prof. M. A. Bigelow, and Rev. Josiah Strong.

Tri-State Medical Society.—At the annual session in Fort Madison, Ia., on September 27 the following officers were elected for the ensuing year: *President,* Dr. J. R. Christie of Quincy, Ill.; *Vice-President for Iowa,* Dr. C. P. Frantz of Burlington; *for Missouri,* Dr. J. J. Link of St. Louis; *for Illinois,* Dr. H. H. Fletcher of Winchester; *Secretary,* Dr. E. Liddleton of Pontiac, Ill.; *Treasurer,* Dr. Emery Lanphear of St. Louis. Jacksonville, Ill., was chosen as the place for the next meeting.

American Association of Obstetricians and Gynecologists.—The twenty-fourth annual convention was held in Louisville, Ky., on September 26 and 27. The election of officers resulted as follows: *President,* Dr. X. O. Werder of Pittsburgh; *Vice-Presidents,* Dr. Louis Frank of Louisville, and Dr. M. A. Tate of Cincinnati; *Secretary,* Dr. E. G. Zinke of Cincinnati. The next meeting will be held in Toledo, Ohio, on the third Wednesday in September, 1912.

Obituary Notes.—Dr. William Bertram, a retired physician of Keokuk, Ia., who was graduated from the University of Berlin, Germany, in 1849, died at his home on October 3, aged 85 years.

Dr. Jerome Bruce of Sanford, Fla., a graduate of the Jefferson Medical College of Philadelphia in 1856, died at his home on September 28, aged 75 years.

Dr. Walter H. Peters of Lafayette, Ind., a graduate of the Medical College of Ohio, Cincinnati, in 1886, and a member of the American Medical Association, the Indiana State and Tippecanoe County Medical Societies, and the Academy of Ophthalmology and Oto-Laryngology, died at his home after a long illness on September 28, aged 52 years.

Dr. John Titus Hay, superintendent of the Nebraska Hospital for the Insane, Lincoln, Neb., a graduate of the Medical Department of New York University in 1878, and a member of the American Medical Association and the Nebraska State and Lancaster County Medical Societies, died at his home after a short illness on September 29.

Dr. Henry Gibbons, Jr., Dean of the Cooper Medical College, San Francisco, died at his home after a short illness on September 27, aged 71 years. Dr. Gibbons was graduated from the Medical Department of the University of the Pacific, San Francisco, in 1863, and in 1870 was elected dean of the college, becoming professor of obstetrics and the diseases of women and children in 1882. From 1870 to 1873 he served as health officer of San Francisco, and was a member of the San Francisco Board of Health from 1880 to 1883, and of the Board of Education from 1889 to 1891. He was a member of the American Medical Association, the American Association of Obstetricians and Gynecologists, and the California State and San Francisco County Medical Societies.

Dr. Charles C. Sage of Monroe, La., a graduate of the medical department of the Tulane University of Louisiana in 1861, died at his home on September 26, aged 79 years.

Dr. Hermann Kiefer of Detroit, Mich., a graduate of the University of Heidelberg, Germany, in 1849, a member of the American Medical Association and of the Michigan State and Wayne County Medical Societies, and a former regent of the University of Minnesota, died in Grace Hospital, Detroit, on October 11, aged 86 years.

Correspondence.

PHOTOMICROGRAPHS IN NATURAL COLORS.

To the Editor of the Medical Record:

Sir:—In your issue of October 7, 1911, is a paragraph entitled "Photomicrographs in Natural Colors," which concludes with this statement: "The high cost, the great amount of time required, and the large number of failures in proportion to the number of successful plates secured seem to account for the present commercial insignificance of color photography."

In my "Handbook of Physiology," Macmillan, 1905, is an atlas of sixteen colored plates. Plates II, IV, V, VII, IX, X, XV, and XVI are photomicrographs in natural colors, printed on an ordinary press at an expense but little greater than that of ordinary process plates. These were prepared from negatives of stained histological specimens, taken through two or three color-filters by Dr. Edward Leaming. The color plates were made through a transparent screen with a ruling of 175 lines to the inch. The etching was done in comparison with the actual objects, which were used as color guides. The printing was done in the same way as in ordinary three-color work. To quote from the preface: "The cost of the three-color work has made but an insignificant addition to the price of the book, while, it is believed, the color illustrations have added greatly to its practical value."

The eight plates taken from actual histological preparations contain six figures each, in all, forty-eight figures. While the initial labor in the preparation of these plates was considerable and the early disappointments many, the direction given for the work, it was hoped, is such that little trouble would be experienced by any who might follow. Our greatest disappointment is in the fact that the production of these illustrations has not been noticed by those who, we hoped, would be interested in such work.

Austin Flint, M.D.

New York.

WASP-STINGS AND INFLUENZA.

To the Editor of the Medical Record:

Sir:—A patient fifty-four years of age is accustomed to being stung by wasps without much disturbance beyond the use of expletives and local pain lasting for a few minutes. Recently he suffered from an acute attack of influenza with profuse watery discharge from the nose, dusky red fauces, loss of appetite, and general malaise. On the third day of this attack he was stung on the leg by a yellow jacket (*Vespa arenaria*).

The site of the sting became excessively painful and swollen, with extensive serous infiltration in the tissues from the knee to the ankle. An hour later the symptoms of influenza subsided rapidly, and three hours later the patient felt perfectly well, with a hearty appetite for his dinner. This relief from the influenza continued for two days, during the time when reaction from the sting of the wasp was most intense. On the subsidence of the inflammation of the leg on the third day symptoms of influenza again reappeared, and while not as marked as previously, persisted for a fortnight.

We know that bee-stings have been used for the cure of rheumatism, and in some parts of the coun-

try bee-keepers receive a fee from rheumatic patients for systematic application of bee-stings. This rather crude method of treatment has never received much recognition on the part of the profession, and I have been skeptical of the actual importance of such treatment, but the observation of the effect of a wasp-sting in the case quoted would suggest that the severe local reaction and the general effect from so slight an amount of poison as that introduced by a single yellow jacket brings up a subject worthy of really serious consideration.

ROBERT T. MORRIS, M.D.

NEW YORK.

FLUID EXTRACT OF THYROIDS IN EPILEPSY.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—About six weeks ago I administered a fluid extract of sheep's thyroids to a young lady suffering since childhood from both petit and grand mal, attacks occurring almost daily, with all the constitutional consequences. This therapeutic endeavor was based upon the fact that the thyroid extract, by its action on the vasoconstrictors, equalizes the blood distribution. A very beneficial effect appeared in a couple of weeks, but then the necessity developed to support it by a tonic for the heart. For this was selected, following Bechterew tincture of adonis vernalis, and with an occasional, at first, dose of the bromide of sodium the attacks subsided to a very light one once a week. The last two weeks there was only one very light one, brought on by fright. Iron, in the shape of Blaud's pill, could be added with improvement in digestion. The formerly almost helpless young woman now assists her mother in the household, but she is not yet allowed to come to the office for an additional electric treatment. Encouraged by this result, I have taken two other young women under treatment; one three weeks ago with already very great reduction of the number and severity of the attacks; the second one, but one week ago, feels better, too. The formula which I use is fluid extract of thyroid in from 2 to 2½ drams, tincture of adonis vernalis 10 drops, distilled water to make 4 ounces; one teaspoonful in water three times a day. The publication of these cases may seem premature, but the object may pardon this.

C. AM ENDE, M.D.

NEW YORK.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

LORD MAYOR A DOCTOR—HOSPITALS ASSOCIATION CONFERENCE—OPENING OF SCHOOLS—COST OF HOSPITALS—COLOR BLINDNESS—MEDICAL CURIOS FOR EXHIBITION—CEYLON'S OFFER TO TROPICAL SOCIETY—JOINT TUBERCULOSIS IN SANATORIUM—THE BRITISH PHARMACOPŒIA—OBITUARY.

LONDON, September 29, 1911.

TO-DAY Sir Thomas B. Crosby, M.D., F.R.C.S., England, who is also a justice of the peace and alderman for the city, has been elected Lord Mayor of London, with all the old-world ceremonial. I believe this is the first occasion on which a medical man has occupied that position, and I rather think he is the oldest gentleman who has filled the chair, for he is over eighty years of age. For some thirty years he has devoted himself largely to city work. In 1898 he was elected alderman. In 1906-7 he was sheriff and that year was knighted. He practised for many years in the city. He has been president of the Hunterian Society, and his oration (1871) was published under the title "Modern Medicine." He has received a number of foreign honors, as the French Legion of Honor, the Russian Order of the Crown, the St. Olaf of Norway, Danebrog of Denmark, and the Rising Sun of Japan.

Yesterday the British Hospitals Association opened its second annual conference at Manchester and Sir William Cobbett, chairman of the Royal Infirmary, presided. He spoke of the probable effect of the insurance bill on voluntary hospitals which must, he held, divert two of the sources of income. It taxed both workers and their employers, and they would cease to subscribe. Mr. Lloyd George pretended to think better of human nature than that, but advanced no argument to meet the experience of those who administered hospitals. To jeopardize them was not statesmanlike. The sympathies of the meeting were with the chairman, who suggested that insured persons who became in-patients should be paid for. Dr. Mackintosh of Glasgow would make the health committees defray the cost of hospital treatment for their members, and Mr. Lupton of Leeds said if subscriptions fell the burden would be laid on the municipalities. Dr. J. E. Smith of the Children's Hospital of Bristol saw the time approaching when hospitals must be state aided. Sir H. Burdett said the scheme was being pushed too hastily, and Mr. Lloyd George should be told that in its present form it would be the death of the voluntary hospitals which were admired throughout the world. To abolish that system would be a bitter wrong. They asked for no doles but were willing to take state patients on business terms. Scarcely a doubtful speaker intervened, and the conference passed to consider the question of the several societies which are more and more dissatisfied.

Monday next is "our opening day" at the medical schools. It is celebrated in a very different manner from former times. As you know, several schools have for some years given up the time-honored introductory lecture, but will in some way or other keep up the opening. Even at Old Bart's, which has abandoned all formal ceremony, the old students gather at a dinner in the great hall of the hospital, under the presidency of the senior ophthalmic surgeon, Mr. Jessop. A dinner is also fixed for most of the other hospitals; in some a conversazione is arranged for additionally; in some a prize-giving; in some an address, which may partake more or less of the introductory.

The cost of hospitals is a pretty constant subject of discussion, and the necessity of economy is impressed on administrators from various sources. A real contribution to the facts has been made in a report for 1910 issued by the honorable secretary of King Edward's hospital fund. Since such reports have been published many economies have been effected, and a comparison between 1910 and 1909 shows a continuance of reductions in expenditure. It is pointed out these reductions cannot be on the same scale as those which followed the first reports. In 1905 they were reckoned in the case of sixteen hospitals at £21,000 per annum: in 1906, with forty-eight hospitals, at an additional £18,000 per annum. Then came a period when exact comparison was not possible because a change in the system of keeping the accounts was being made. The first comparable years under the new system were 1908 and 1909, and they show a further saving

of £6,000 in fifty-five hospitals. Last year a further decrease, as stated above, is reported. The new report gives a mass of statistics of expenditure in various depatrments comprising total cost, cost per bed, per out-patient's attendance, and of controllable items, year by year, in London hospitals, which number 106. These are sixteen general, which averaged over one hundred beds in daily occupation during the year, fifteen with under one hundred, four consumption hospitals, five ophthalmic, five for women, seven for children, three for epilepsy and paralysis, twelve cottage, eight lying-in, and thirty-one unclassified. The total number of beds available was 9,949; the average number in daily occupation, 8,447. The total number of out-patients was 1,515,194.

Color blindness is so obvious a danger in certain employments, as signalers or seamen, that it is strange precautions are not more constantly and thoroughly taken by those responsible for their employment. Stranger still is it that some persons continue to deny that accidents have been caused by the mistakes of color-blind persons. Our leading authority on the subject, Dr. Edridge-Green, Hunterian professor at the Royal College of Surgeons, has consequently contributed to the current *Lancet* a number of instances collected from various publications in which fatal mistakes have been made and others in which there have been narrow escapes. Two of the latter are especially convincing, as the accidents were only prevented by the prompt intervention of the captain of the ship. Color-blindness in a navigating officer is a natural explanation of many a mysterious shipwreck. Dr. Edridge Green has long ago shown the inadequacy of the Board of Trade tests and supplied a reliable method which ought to be substituted.

Sir F. Champneys, Bart, is chairman of a committee to organize a medical department of the missionary exhibition which is to be held next June. Many doctors, travelers, missionaries, and others are possessors of medical curios from other lands and the committee would be grateful for the loan of such articles during the exhibition. They promise to take the greatest care of them and to return them immediately after the exhibition.

The School of Tropical Medicine here has received an offer from the Ceylon government of £750 for an investigation of sprue. It is probable this offer will be accepted and an able worker will go to Ceylon to begin a research, which I suppose will extend to other countries where the disease is met with. It is hoped that an additional sum of at least £250 will be given by the Ceylon Tea Planters' Association.

Dr. Duncan Forbes reports that the experiment of treating tuberculosis of joints and bones in the Brighton Sanatorium has been successful. Two hip cases have been cured without deformity but one of the knee was not improved. Nine cases are under treatment, four of spine and five of hip. One of each will be discharged as cured in a few days. The Brighton town council has authorized the experiment to be continued for another year.

The new edition of the British Pharmacopœia is to be edited by Dr. Tirard and Professor Greenish.

Dr. Surgeon-General Charles Kelway Colston of the Indian Medical Service, retired, died September 21, in his seventy-ninth year.

Mr. James Reid, F.R.C.S., consulting surgeon to the Canterbury Hospital and for some time surgeon to H. M. Prison, died September 12.

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 5, 1911.

Symposium on Salvarsan from the Clinical Standpoint. Introduction. H. P. Towle.
The Parasitology of Syphilis. H. C. Ernst.
The Chemistry of Salvarsan. W. F. Boos.
The Preparation of Salvarsan for Injection. J. Godsoe.
Clinical Observations on the Use of Salvarsan, with Special Reference to Its Administration. H. Cabot.
Personal Impressions of the Value of Salvarsan. S. Pollitzer.
Personal Experience with Salvarsan. A. Post.
The Frequency of Venereal Diseases. A Reply to Dr. Cabot. P. A. Morrow.
A Reminiscence of My Professional Life. D. W. Cheever.
Prognosis in Infantile Paralysis. B. E. Wood.

Salvarsan.—H. P. Towle states that this drug is still under fire and that physicians are still in doubt as to many of the facts concerning it.

Parasitology of Syphilis.—H. C. Ernest notes that *Treponema pallidum* being placed in a new genus and removed from among the spirochetes, the relationship between it and the trypanosomes has become less probable than before.

Chemistry of Salvarsan.—W. F. Boos discusses this subject with the aid of a series of graphic formulæ. He states that salvarsan is very stable and acts as such rather than through decomposition products. That is why relatively much greater quantities of arsenic may be given in form of salvarsan than as cacodylate of sodium or atoxyl. A considerable part of the dose injected is probably bound immediately by the liver, which then permits a small quantity at a time only to pass into the circulation on its way to excretion. In this way long-continued action is insured.

The Preparation of Salvarsan for Injection.—J. Godsoe describes the technique of the preparation of salvarsan for injection.

Clinical Observation on Salvarsan.—H. Cabot suggests that some modification of the intramuscular method which will remove or mitigate the pain is likely to become the method of election. He still clings to the view that the production of a profound effect upon the disease is desirable and that the use of repeated small intravenous injections is less likely to produce this effect. In the light of present knowledge the author believes that one may safely affirm that the drug is a valuable addition to our means of treating syphilis, but it has yet to be shown that it will revolutionize our practice.

The Value of Salvarsan.—S. Pollitzer concludes that salvarsan is the most effective drug we possess for the symptomatic cure of the active lesions of the disease; that its best effect is produced by an intravenous followed by an intramuscular injection; that while one or two injections are not likely to cure the disease they will materially advance its cure; that its use, together with treatment by mercury or sometimes by iodides, will bring about a negative Wassermann reaction far more certainly and more quickly than is possible with mercury alone; that properly used it is practically harmless even in repeated doses.

Personal Experience with Salvarsan.—A. Post points out that there is a certain analogy between mercury and salvarsan. Both of them are toxic; with both we get apparent cures; with both we get recurrences. Salvarsan acts more quickly. It gives one apparent cures in cases in which mercury has failed; but one finds occasionally cases in which the real value of salvarsan is doubtful.

The Frequency of Venereal Diseases.—P. A. Morrow criticises the observations recently made by R. Cabot, relative to the frequency of venereal diseases, based upon hospital investigation. It is laid down as a general proposition that the statistics of general hospitals as to the actual or relative frequency of venereal morbidity are worthless. In concluding his article the author states that venereal diseases, viewed in their triple significance as a danger to the public health, a peril to the family, and a

menace to the vitality, health, and physical progress of the race, are the greatest of modern plagues, and that the prophylaxis of these diseases is the most pressing problem of preventive medicine that confronts one at the present day.

Reminiscences of Professional Life.—D. W. Cheever, among other things, discusses the modern eclipse of the general practitioner and the rise of the specialist. He states that the single doctor, the general practitioner, the family doctor, to use convertible terms, was a pastor, a mental healer, a refuge of last appeal, a father confessor, as well as a medical curer or caretaker. By long familiarity he knew the body and the mind of the patient, his tendencies, his inheritances, his constitution. Specialists, with occasional calls and limited fields of vision, do not respond to these needs. More might be said of the inestimable advantage of overseeing the whole body, and not a part. There can be no isolation of functions.

Prognosis in Infantile Paralysis.—B. E. Wood states that in anterior poliomyelitis complete recovery or functional recovery occurs in something over 25 per cent. of cases examined at the end of four years. Atrophy may exist without impairment of function. In about half of the author's recovered cases the onset was mild. The distribution of the paralysis in such recovered cases was not essentially different from that in cases which do not recover. Recovery in many instances required months, and in several cases from one to three years.

New York Medical Journal.

October 7, 1911.

A Résumé of the Opinions upon the Nauheim Treatment of Chronic Disease of the Heart. J. M. Swan.
The Surgical Consideration of Carcinoma of the Stomach. J. F. Erdmann.
Further Experience in *X*-Ray Diagnosis of Ulcer of the Stomach and Duodenum, Embracing Seventy-five Cases. H. Adler and H. E. Ashbury.
Fatal Vasomotor Gangrene. R. N. Willson.
Music as a Therapeutic Agent. J. Knott.
A Case of Partial Tremulous Scrivener's Palsy. T. A. Williams.
The Indications in Psoriasis. F. C. Curtis.
Achroodextrin in Stomach Contents. H. Weinstein.

The Nauheim Treatment.—By J. M. Swan. (See MEDICAL RECORD, September 30, 1911, page 695.)

Carcinoma of the Stomach.—J. F. Erdmann states that a palpable or even a palpably non-movable tumor of the stomach is not an inoperable entity. Analyses of symptoms and stomach contents are at present at fault for perfect diagnosis, so that early exploration is necessary in cases whose train of symptoms causes more than a suspicion of carcinoma of the stomach. Due weight should be given to the possibility of carcinoma being present in the patient who complains of some stomach difficulty for years, or who gives a clear history of having had ulcer of the stomach some years previously, as this disease is more than a factor in the history of carcinoma; to the time of pain in its relationship to food intake, and to the question of vomiting and its character—whether it, the vomitus, contains food of one or more meals back, *i.e.* retention or cumulative vomiting. Due weight should also be given to emesis containing blood in various stages; to blood in the stool; to loss of weight; to rapid diminution in hemoglobin, to prostration, etc.

X-Ray Diagnosis of Ulcer of the Stomach and Duodenum.—By H. Adler and H. E. Ashbury. (See MEDICAL RECORD, vol. 79, page 1024.)

Fatal Vasomotor Gangrene.—R. N. Willson reports the case of a man aged fifty-three years, in whom there were a long continued cyanosis and a gradually developing gangrene of the extremities and of the nose. The cold extremities became warm, and the natural color returned as though the causal influence had momentarily been set aside. The opportunity was afforded of obtaining by dissection the arteries leading into and supplying the gangrenous extremities. In no instance could either obliteration or thrombotic process be discovered. As is often the case, the anterior tibial and the posterior tibial were small, and the dorsalis pedis spread out into a fan-shaped division of tiny vessels supplying the dorsum of the foot. Nowhere was the arterial tree obstructed, however, and nowhere was there an explanation afforded for the gangrenous process other than the supposition that the case was one of Raynaud's disease, and that the active cause of the gangrene was to be found in a peripheral vasomotor constriction, with consequent starvation and gangrenous degeneration of the extremities and of the tip of the nose.

Music in Therapeutics.—J. Knott continues his article on this subject.

Writer's Cramp.—T. A. Williams reports the case of a naval paymaster, aged thirty-two years, who after recovery from an operation for perityphlitis found that his signature was no longer uniform, was exceedingly shaky, and was made with increasing difficulty as the day progressed. In explaining the pathogenesis of this condition, the author states that the patient's attempt to resume work, necessitating long continued writing, before he was in a proper state to do so, led to a tremulousness of the hand and arm similar to that which ensues upon excessive consumption of coffee or tobacco or is caused by the toxin of some infectious or fatigue condition. The treatment consisted in explaining to the patient that the fear of making an improper stroke caused lack of freedom and cramping of the muscles. He was directed to make free arm movements with chalk on the blackboard, paying no attention to the forms he drew, then to pass to a slate and later to pencil and paper, and then to gradually reduce the size of the writing. After performing these exercises for one month the patient recovered.

Psoriasis.—F. C. Curtis discusses the indications for treatment in this disease. A person who is anemic, debilitated, neurotic, rheumatic, plethoric, overfed, indifferent to his elimination, and sedentary in his habits needs the treatment appropriate for himself, not for his psoriasis.

Achroodextrin in Stomach Contents.—H. Weinstein describes his method of determining by means of a 1 per cent. alcoholic solution of iodine the amount of achroodextrin in the stomach contents. This method he calls the "achroodextrin saturation test." He notes that achroodextrin and erythrodextrin are both frequently found in hyperchlorhydria, and amylodextrin may be absent. In normal secretion there may be no erythrodextrin, but small quantities of achroodextrin and a preponderance of amidulin may be found. Even in subacidity there may be no erythrodextrin, while achroodextrin and amidulin may both be present. All the dextrins may frequently be demonstrated in the filtrate, irrespective of the secretory condition, excepting anacidity. Achroodextrin and maltose are almost always present in the filtrate.

Journal of the American Medical Association.

October 7, 1911.

Resection of the Posterior Roots of the Spinal Cord with the Report of One Case and Citation of Other Cases as a Basis of an Inquiry into the Course of the Sensory Pathway. W. A. Jones.
Pathological Findings in Hypertension. R. I. Lee.
Reserve Renal Capacity in Chronic Interstitial Nephritis. E. F. Wells.
Treatment of Diabetes Mellitus. A. J. Hodgson.
The Detection and Estimation of Glucose in Urine. S. R. Benedict.
Dangers of Certain Ethical Proprietary Preparations to Both Physicians and Public. M. H. Fussell.
Therapeutics of Abnormal Heart Rhythm. M. Schulman.
The Incidence of Serofibrinous Pleurisy and Empyema as Complications and Sequelæ of Pneumonia, with Remarks on Their Medical Treatment. J. M. Anders and A. C. Morgan.
Eosinophile Cells and Pollen in Vernal Catarrh. B. Pusey.
An Arthroplastic Operation for Hammer-Hoe. By J. O'Neill.

Resection of the Posterior Roots of the Spinal Cord.—W. A. Jones concludes that old and new chartings of sensory areas are variable and unreliable. Each individual, according to circumstances, has an individual center for pain. The segments in the spinal cord follow no defi-

nite order except when gross lesions are present, and even here one may be in error. When the posterior roots are sectioned for pain, it may be necessary to divide more than three, perhaps as many as five, roots to accomplish relief. In some instances it is advisable to section one-half of several roots, or alternate roots, to abolish or diminish pain and spasm. If this order is followed, there is less likelihood of disagreeable results, such as helplessness from greater or less loss of voluntary control. One should allow the patient to come out of the anesthetic and should reopen the wound for further root section, in case pain persists.

Pathological Findings in Hypertension.—By R. I. Lee. (See MEDICAL RECORD, July 8, 1911, page 93.)

Reserve Renal Capacity in Nephritis.—By E. F. Wells. (See MEDICAL RECORD, July 8, 1911, page 93.)

Treatment of Diabetes Mellitus.—A. J. Hodgson states that the following points are essential to the successful treatment of diabetes mellitus: (1) To impress on the patient that after his apparent recovery continued care in eating is essential to continued health. (2) To dispense, as a general thing, with such drugs as codeine and arsenic and to make the patient rely practically entirely on the diet and hygiene. (3) To insist on the restriction of the quantity of food just as much as on the kind. (4) To overcome constipation by the use of castor oil and olive oil or by the use of a mixture of these two with glycerin. (5)To insist that the food must be thoroughly masticated. (6) To restrict carbohydrates at the outset to the smallest possible amount consistent with safety. (7) To add starches gradually in but one form rather than in several until the point of tolerance has been reached. (8) To eliminate from the dietary those articles of food that have been found to be difficult of digestion, even in health, though their starch-content may not be objectionable for a diabetic. (9) Above all, to impress the patient with the fact that his disease is essentially the result of vicious dietetic habits and that it is useless for him to expect any favorable results so long as the habit is persisted in.

Detection and Estimation of Glucose in Urine.—By S. R. Benedict. (See page 839.)

Ethical Proprietary Preparations.—M. H. Fussell objects to the use of these preparations without an exact knowledge of their composition and action.

Abnormal Heart Rhythm.—A. Schurman notes the following points: A disturbance of cardiac rhythm does not in itself indicate a bad prognosis. A disturbance of cardiac rhythm in itself is no indication for the institution of treatment directed to the heart. It is necessary to analyze a cardiac irregularity, so as to determine which of the types is present, for the prognosis and treatment depend on the type of disturbance. One should not rush to digitalis as soon as a pulse irregularity is discovered, for in most of the types this drug is contraindicated. When auricular fibrillation accompanies symptoms of cardiac failure digitalis is the drug strongly indicated.

Serofibrinous Pleurisy and Empyema.—By J. M. Anders and A. C. Morgan. (See MEDICAL RECORD, July 8, 1911, page 94.)

Eosinophile Cells and Pollen in Vernal Catarrh.—B. Pusey, having noted many points of similarity between vernal catarrh and the conjunctivitis of hay-fever, has been led to the examination of smears taken from a series of cases of the latter disease. In smears taken from the conjunctivæ of a series of cases of hay-fever he has found eosinophile polymorphonuclear leucocytes in great abundance; indeed the cellular content of a smear from the one disease is the same as that from the other. This observation shows another, and possibly a very important, similarity between the two diseases. It is known that the conjunctivitis of hay-fever is due to pollen. The author believes that the presence of eosinophile cells in the conjunctivitis of hay-fever and in vernal catarrh and their absence in ordinary forms of conjunctivitis point strongly to a similar etiological factor—pollen.

Hammer-Toe.—B. J. O'Neill reports a case in which Murphy's arthroplastic operation was applied in the treatmen of this condition.

The Lancet.

September 30, 1911.

The Possible Toxic Origin of Some Kinds of Insanity. E. Goodall.
The Surgical Treatment of Some Forms of Epilepsy. W. Alexander.
The Viability of Human Carcinoma in Animals. C. L. Williams.
An Experimental Comparison Between "606," Mercury, and Iodide of Potassium as Antisyphilitics. J. McIntosh and P. Fildes.
A Case of Intussusception of the Appendix Vermiformis in an Adult, with a Pathological Report and an Explanation. J. H. Watson.
Foreign Bodies in the Vermiform Appendix. L. A. Bidwell.
A Case of Erysipelas Complicated with Meningitis Following an Intranasal Operation; Recovery. L. A. Parry.
Some Clinical Observations Upon Septic Infections of the Hands and Fingers. C. A. Pannett.
A Case of Congenital Atresia of the Duodenum. W. F. Roe and E. H. Shaw.

The Possible Toxic Origin of Some Kinds of Insanity.—E. Goodall believes that there are no adequate grounds for believing that the organisms which have been found in the tissues in any case of insanity play more than a secondary rôle. The outstanding pathological fact which indicates a toxic pathogenesis for some of the psychoses is leucocytosis. The condition is found very commonly in acute and recent mental disorder, and in states of exacerbation during chronic insanity. As a generalization, in the acute and recent mental disorders there is leucocytosis with percentage increase of the polynuclear cells; in the subacute and chronic ones there is little or none, and the proportion of large mononuclears and lymphocytes is increased. In acute mental disorders absence of leucocytosis and a fall in the percentage proportion of polymorphs go with deficient reaction, and are an unfavorable indication, as is the case in those infectious fevers in which leucocytosis is observed. This, from the standpoint of toxemia, is significant.

Surgical Treatment of Epilepsy.—W. Alexander concludes that there are some cases of epilepsy that prove intractable to general medical and hygienic treatment, and these, unless the disease be somehow arrested, will soon terminate in imbecility and death. In these cases the affected motor area is covered by more or less edema of the pia-arachnoid, and this edema probably so affects the cells of the cortex as to predispose to, or cause, the epilepsy and imbecility. In cases with localizing aura, one can, by the operation of fenestration of the dura mater, drain these edematous areas and prevent reaccumulations. By the operation the progress of the disease has always been retarded. In several the fits have stopped, and in many have been reduced to fractions of the original number.

Viability of Human Carcinoma in Animals.—C. L. Williams found that portions of human carcinoma implanted into animals were observed during the first five days to retain their vitality and to exhibit mitosis after implantation. After the expiration of this period no evidence of vitality was observed. Mitosis was markedly inhibited within twenty-four hours of implantation, while the life of the implanted cells was abolished less rapidly.

Salvarsan, Mercury, and Potassium Iodide.—J. McIntosh and P. Fildes compare the curative efficacy of these substances in experimental syphilis in the rabbit and conclude that salvarsan possesses spirocheticidal properties much in advance of mercury, and that potassium iodide is not a direct antisyphilitic.

Intussusception of the Appendix.—J. H. Watson reports a case of this condition.

Foreign Bodies in the Appendix.—L. A. Bidwell states that a foreign body has been found in about 20 per cent. of the appendices which he has removed. The interesting point is that a foreign body by itself sets up

very little irritation, and does not produce acute inflammation; it is only when a fecal concretion forms around it that acute appendicitis will occur. According to many authorities no foreign body or fecal matter can enter a healthy appendix, and it is stated that some previous inflammation must occur in order to make it possible for the body to enter. If this is the case, a foreign body by itself could not have very much influence in producing appendicular disease. It is, however, more reasonable to suppose that the irritation of the foreign body excites an extra secretion of mucus, which is deposited upon the body, producing the concretion, and so becomes the starting point of an attack of appendicitis.

Erysipelas and Meningitis Following an Intranasal Operation.—L. A. Parry reports a case of extensive erysipelas of the pharynx, face, and scalp following an operation of submucous resection of the nasal septum in a man aged 27 years. The erysipelas cleared up but was followed by a severe meningitis, which was combated with a polyvalent antistreptococcus serum. Recovery ensued.

Septic Infections of the Hands and Fingers.—C. A. Pannett presents a series of clinical observations on this subject. In affections of the fingers the pus may be subcuticular or subungual, subcutaneous, thecal, or subperiosteal. Subcutaneous whitlows are the commonest met with in the fingers—much commoner than thecal whitlows. Infection of the tendon sheaths can usually be easily diagnosed before incision. In the case of the subcutaneous whitlow flexion and extension, to some extent at least, are usually possible without great pain. In a thecal panaritium there are extreme tenderness and pain, often localized to one point, and any attempt at extension or flexion of the finger markedly aggravates the suffering. The finger is held rigidly flexed. The synovial sheaths in connection with the tendons of the little finger and the thumb extend upward and are continuous with the great anterior carpal synovial sac. Yet involvement of this sac in a thecal panaritium of the thumb or little finger is not common. The subperiosteal whitlow is most commonly seen in the case of the terminal phalanges. Another result of deep infections of the finger is a septic arthritis of one of the joints.

Congenital Atresia of the Duodenum.—W. F. Roe and E. H. Shaw report a case of this condition.

British Medical Journal.

September 30, 1911.

Treatment of Antepartum Hemorrhage. G. E. Herman.
Malformations of the Female Genital Organs in Their Clinical Aspects. A. E. Giles.
The Inefficiency of the Present Methods of Saline Infusion. A Description of a New Method. N. S. Carruthers.
Painless Swellings of the Parotid Secondary to Local Sepsis. C. E. L. Burman.

Antepartum Hemorrhage.—G. Ernest Herman states that accidental hemorrhage, slight in amount, is not uncommon, and seldom dangerous. Concealed accidental hemorrhage is a very dangerous thing and is rare. Plugging the vagina is bad treatment. Practically it is illusory, for it only prevents the escape of blood for a little while. Theoretically it is unsound, for if it did prevent the escape of the blood from the uterus it would only convert the case into one of concealed hemorrhage, which is the most dangerous form. The best treatment for the majority of cases is to rupture the membranes. This acts instantly, lessens the tension within the uterus, and stimulates the uterus to contract. Before doing this, care should be taken that the long axis of the child coincides with the long axis of the uterus, and, if possible, that the head presents. If the patient has lost so much blood that it seems likely that the inevitable hemorrhage of the third stage of labor will be fatal, the best treatment will be amputation of the body of the uterus, after preliminary ligature of the vessels. In placenta previa as soon as the diagnosis is made premature labor should be induced. The placenta should be separated with the finger, the membranes ruptured, and the child's foot brought down. The hemorrhage can be controlled by pulling on the child's leg. In a lying-in hospital the dilation of the cervix can be hastened by the insertion of a Champreties de Ribes' bag. The author does not favor cesarean section in the treatment of placenta previa.

Malformations of the Female Genital Organs.—A. E. Giles discusses these in their clinical aspects and reports illustrative cases. The first group includes malformations leading to confusion of sex. Example: a case of androgyny, the patient living as a married woman. These are cases of pseudohermaphroditism. The second group includes malformations that preclude or are unfavorable to childbearing, but allow menstruation and marriage. In this category are cases of underdevelopment of the uterus of minor degree. There may also be congenital retroversion of a small uterus. Another class of cases is that in which there is some malformation of the tubes, such as congenital occlusion. The third group of malformations preclude childbearing and menstruation, but not marriage. This group includes cases of infantile uterus and of normal uterus with defective ovulation. The fourth group of malformations are those that preclude marriage and childbearing but not menstruation. These are cases of stenosis of the vaginal orifice. The next group of malformations are those that preclude menstruation, marriage, and childbearing: *e.g.* atresia of or absence of the vagina. The former condition is remediable; the latter is not. The sixth group of malformations allow of menstruation, marriage, and pregnancy, but may be attended by complications. Examples are uterus unicornis, uterus septus, uterus bicornis, uterus didelphys. This group also includes cases of double uterus and vagina with atresia of one-half of the vagina.

Saline Infusion.—N. Stuart Carruthers describes a new apparatus for the subcutaneous administration of saline solution.

Painless Swelling of the Parotid.—C. E. L. Burman reports three cases of this condition secondary to local foci of sepsis: pyorrhea alveolaris, follicular tonsillitis, and mastoiditis, respectively. In each of the cases a definite cause could be assigned—namely, sepsis from neighboring parts. One would expect some pain to have been present in the parotid swelling, but this was entirely absent. In all three cases that part of the gland which lies in front of the lobe of the ear and the angle of the lower jaw showed the largest amount of inflammation. The character of the swelling did not simulate that of mumps or that due to the more severe forms of inflammation. Fever was entirely absent in all three cases, and the condition quickly subsided after treating the septic focus.

Berliner klinische Wochenschrift.

October 2, 1911.

The Salvarsan Treatment of Syphilis.—Von Zeissel has now treated 273 cases of syphilis with salvarsan and writes with especial reference to the alleged neurotropic action of the drug. He denies that such an action exists but admits that like mercury salvarsan may cause the appearance of precocious syphilitic affections of the nerves in certain predisposed individuals. The author is an enthusiast as to the curative properties of the drug. He had but one relapse of mucous patches in his 273 cases. We are accustomed to see relapses under mercurial treatment as soon as the latter is suspended.

Simulation of Albuminuria.—Hadda relates a case of the simulation of a renal disease. Such malingering is extremely rare and the author can find but three similar cases on record. The subject was a girl of 12 who had suffered from chorea, endocarditis, angina, and event-

ually with high fever, edema, and mild uremia, the urine containing blood and albumin not derived from the latter. The patient made a complete recovery from the nephritis and soon afterwards began to menstruate for the first time. At a late period without apparent cause large amounts of albumin began to appear in the urine. This was found eventually to be nothing but white of egg which had been placed there by the mother, who had been led apparently to practise deception in order to obtain money from her dead husband's unsettled estate.

Chemistry of Digitalis.—According to Kantorowisz the chief problem to-day in the chemical investigation of digitalis is to determine the amount of digitoxin. But the leaves contain another substance in much larger amounts than digitoxin. This is digitalein, a valuable cardiac glucoside. The latter is a very unstable substance, readily decomposed by enzymes. Leaves which have been in storage for long periods show on this account diminished activity. It should be necessary to determine the amount of digitalein as well as that of digitoxin, but we do not fully comprehend the nature of the former and it cannot be isolated pure or subjected to quantitative analysis. The nature of digitalin, digitoxin, and digitonin is fairly well known, each of these glucosides containing certain sugars in different combinations. In regard to digitalein, however, we only know that it contains a certain amount of dextrose.

Münchener medizinische Wochenschrift

September 26, 1911.

Idiosyncrasy to Ten Substances in a Single Patient.—Mertens discusses idiosyncrasy in general. It has been defined as a reaction to one substance or a definite group of substances. In rare instances only do we find idiosyncrasy toward several different substances. The author's case belongs to this exceptional type. The patient was a woman aged 42, who had been operated on for chronic appendicitis. It became apparent that she was intolerant to the following: iodoform, mercury, bromine, veronal, morphine, boron, zinc, and also strawberries and crabs. The phenomena present were those most commonly encountered in idiosyncrasies to the various substances and were in part local, in part systemic.

Transient Glycosuria in Phlegmonous Affections.—Becker quotes the prevalent views on sugar metabolism. The content in the blood is kept constant by an automatic mechanism. The liver stores it as glycogen and the diastatic liver enzyme changes it to dextrose, whereupon it reenters the blood as required. The mechanism is controlled by the internal secretion of the pancreas on the one hand and the adrenals on the other—the former acting as a check to the latter. The thyroid and pituitary body also act synergistically with the adrenals. But this mechanism cannot explain all the instances encountered of glycosuria of a transient character. The author cites numerous examples of the latter in connection with furuncles and other phlegmonous affections. The association is important, for when a subject is attacked with furunculosis our first thought is usually of latent diabetes, and the occurrence of phlegmonous processes in manifest diabetes is well known. It is evident that the trace of urine sugar found in connection with boils and carbuncles, which has often led to a diagnosis of diabetes, may not have proceeded from antecedent glycemia, but is a simple consequence of the phlegmonous process.

Röle of the Pig and Rat in Trichinosis.—Stäubli found that when rats were fed on trichinous pork they often escaped infection. When infected, the animal, if it lived, suffered only moderately from muscle trichinosis. If the rat died with the disease and was eaten by other rats, these were attacked with intestinal trichinosis. A systemic infection did not follow. If an infected rat was eaten by a pig, the latter usually contracted only a mild muscle trichinosis. The rat doubtless plays a minor rôle in the propagation and maintenance of the malady.

Deutsche medizinische Wochenschrift.

September 28, 1911.

Influence of Affects on the Distribution of Blood.—Citron discusses both physiological and pathological shifting of the blood from one region to another. The former is seen in blushing and pallor, the latter in various active congestions and ischemias and generally speaking in all vasomotor pathology. Various drugs, notably alcohol, cause notable changes in the distribution of blood, and the same is encountered throughout the entire domain of hydrotherapy. The subject of anomalies of blood distribution is therefore psychophysiological, and the lability of the vasomotor system in neurasthenia, Graves' disease, etc., causes it to be readily influenced by both psychic and physical factors. The author has experimented extensively with the plethysmograph upon the distribution of the blood as influenced by affects, both psychical and physical, and believes that plethysmography will have a place in practical diagnosis.

The Toxin of the Mosquito—Bruck writes of the essential chemical poison of the culex which is able to cause the formation of wheals and papules. Our knowledge of insect poisons is still crude. We know about cantharidin, bee poison, and the venom of arachnids, which latter can generate antibodies. Little is known evidently of the poison of ants, fleas, bedbugs, etc., and our knowledge of the toxic principle of wasps and hornets is largely inferential, from its probable resemblance to that of the bee. The poison of the mosquito is termed by the author culicin. It is believed to reside in the insect's saliva, and is obtained by extraction from the bodies of large numbers of the creatures, using water, glycerine, chloroform, etc. Animal experiment shows that the extracts possess hemolytic powers. The author inoculated his own skin with culicin and produced lesions which behaved exactly as do those following natural mosquito bites.

Behavior of Salvarsan in the Organism.—Stümpke and Siegfried conclude that directly after its injection a large proportion of salvarsan is deposited in the liver. This state of affairs persists for some days. Gradually the amount in the liver becomes less, but traces may be found therein for months. Other parenchymatous organs contain arsenic in much smaller amounts. Arsenic may be present in the urine even when absent in the kidneys. The occurrence in the heart and lungs of arsenic is not readily intelligible. It is never found in voluntary muscle. It occurs in the blood only for the first twenty-four hours after injection, and then in traces. Evidently as the drug is released from the liver it must circulate for a short time in the blood, yet the most delicate tests fail to reveal a trace.

Operative Cure of Cancer of the Bladder.—Riese calls attention to the rarity of relative cure of cancer of the bladder after operation. He refers to cancer which begins in the bladder proper, and which is technically operable. In 1905 he removed a growth from the bladder of an old lady. It was a papillomatous cancer. Four years later death occurred from old age and without recurrence of the tumor. In a second case of the same type the date of operation is omitted, but it is stated that recovery was permanent. A third patient of the same class remained well one year after operation.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

NERVOUS SYSTEM.—The stress in modern methods of business and the excesses in certain classes of society, especially in the large cities, are causing a large and increasing number of cases of diseases of the nervous system, some of which are difficult to discover in the early stages and are both incurable and fatal. One of our foremost neurologists has made the statement to a medical director of one of the companies that he would guarantee to produce individuals who would be passed by the majority of the best life insurance examiners and yet who would die in three or four years. While, then, a searching inquiry should be instituted whenever the applicant admits the history of a disorder which is likely to be associated with some mental derangement or which is liable to recur or leave a permanent physical defect, the examiner should also have in mind the possibility of the existence of one of these dreaded diseases in which the premonitory signs are so insidious and obscure. Subjects of marked disease of the nervous system, when the diagnosis is comparatively easy, rarely apply for insurance except in the case of those who have had infantile paralysis and been left with some atrophy and difficulty in locomotion, a condition which does not detract from the value of a life as a rule. An examination for life insurance cannot be considered complete unless the reflexes are tested, the pupils inspected, and the tongue scrutinized for the presence of the fine tremor which indicates alcoholism or the onset of general paralysis of the insane. The actual inspection of the person of the applicant for the detection of these troubles will be taken up further on under the subject "Physical Examination."

Dizziness, Vertigo.—In reporting, give the date and cause of each attack. Most people have had some dizziness or vertigo as the result of a gastric disturbance, bilious attack, or constipation, and if it was undoubtedly due to one of those causes it may be considered of little consequence, especially if the applicant was under 40 years of age at the time. Inquiry should be made, however, as to whether there was any loss of consciousness during the attacks, and, if so, whether there was any suspicion of convulsions or one of the mild forms of epilepsy. When the individual has passed the age of 40 dizziness or vertigo should not be regarded with complacency, as it may then be an early sign of cardiac weakness, vascular changes in the brain, or nephritis.

Unconsciousness, Fainting.—Give the date, duration and cause of each attack. It may have been due to injury, shock, emotion, or some illness. In the absence of any known cause it will be safer to assume that it was the result of cardiac weakness, some vascular cerebral change or epilepsy.

Epilepsy.—Give the frequency and severity of the attacks and the date of last occurrence. A history of confirmed epilepsy will cause rejection of the applicant even after a long period of immunity from attacks, as, in addition to the danger of recurrence, there is almost always a physical and mental impairment.

Convulsions.—Give the date, severity, and cause of each attack. A history of convulsions of infancy may be overlooked if there has been no recurrence since. Under all other circumstances they must be considered a grave manifestation either of some organic lesion, as nephritis, or of some neurotoc weakness, such as hysteria, epilepsy, insanity, etc., any one of which will justify rejection of the risk.

Paralysis.—Give the date and cause of the attack and the variety of paralysis. A history of Bell's paralysis is inconsequential, although it should be recorded after a careful inquiry has convinced the examiner that the palsy was due to a peripheral neuritis and not to a central lesion. Disability, following an early anterior poliomyelitis, should be fully described, as there is no objection to the acceptance of such risks provided the locomotion is not too much interfered with and the assistance of crutches is not required. Local palsies, such as "writers' cramp," lead poisoning, traumatic local paralysis, etc., may only lead to postponement of the application, until the local causes are relieved. A history of any paralysis of cerebral origin will be regarded seriously and the risk rejected.

Apoplexy.—Any history of cerebral apoplexy leads to absolute rejection. When an applicant admits dizziness, vertigo, syncope, or unconsciousness, the examiner should keep the possibility of apoplexy in mind and institute a strict inquiry into the nature of the attack.

Insanity.—Insanity is seldom acknowledged as such by the applicant; he will usually insist that the malady was in some other form, such as neurasthenia, nervous prostration or nervous breakdown. Any history of mental derangement almost always indicates a short life, although it is true that some of the worst cases of insanity enjoy vigorous physical health. Such risks will be rejected.

Neurasthenia, Nervous Prostration.—Always give dates, duration, severity, and cause of each attack. Whenever there is a history of a nervous breakdown or of a resort to treatment for nervousness, worry, fatigue, etc., there should be a careful inquiry as to the exact nature of the attack. This history is often elicited from business and professional men. The condition known as neurasthenia or nervous prostration is often regarded too lightly, and an examiner is apt to record the bare statement of its occurrence without making further inquiry. There is a fairly wide range of possibilities in the disorder. It may be defined as a functional disturbance of the nervous system, characterized by weakness and irritability, lying between hysteria and insanity, occasionally overlapped by one or the other —more frequently the former, rarely the latter. It must be ascertained positively whether the disorder was one of "brain-fag" or cardiac irritability, or whether it was accompanied by insomnia or some form of mental derangement. It should not be forgotten that insomnia is a common symptom of neurasthenia and insanity.

Neuralgia, Neuritis.—The ordinary neuralgias, so commonly met with, need little or no comment. The history of sciatica should be given in full, for, while it is usually due to a peripheral neuritis which disappears without leaving any effect on the general constitution, it may indicate some trouble in the brain or spinal cord in rare cases. With a history of neuritis the examiner should bear in mind that this condition is often the result of alcoholism and that careful questioning, therefore, is necessary.

Delirium Tremens.—Give frequency of occurrence and date of last attack, and state whether applicant resorted to a "cure," and has been a total

abstainer since the last attack and also since taking the cure.

Tremor.—The presence of a tremor should lead to a careful inquiry as to the cause. It may be congenital and of no great importance, it may occur in nervous people excited by passing causes, it may be due to the nervousness of illiteracy, or it may be a symptom of "writers' cramp." On the other hand it may result from alcoholic excesses, paralysis agitans, or disseminated sclerosis.

Headaches.—The ordinary headaches are not worth mentioning unless they have been severe, protracted, or frequent. If they are reported the examiner should give full particulars as to frequency, severity, duration, and cause, and he should state specially whether they are due to gastrointestinal disturbances, eye-strain, migraine, overwork, etc., or whether they are due to some more serious organic lesion or functional disturbance.

Sunstroke.—Give date and full details of any sequel such as epilepsy, headache, and inability to work in the sun. The acceptance of such risks is not advisable until they have gone through at least one more summer without feeling any effects of the sun or heat.

The Diagnostic Value of the Sphygmomanometer in Examination for Life Insurance.—By J. W. Fisher, M. D. (See page 818.)

The Ocular Signs of Renal Disease.—F. A. Newman first reviews the anatomy of the retina. Consisting of epiblastic tissue only, it does not show marked inflammatory changes. Its nerve fibers converge toward the disc: small hemorrhages in the nerve fiber have therefore flame-like appearances, and exudates in the macular regions form star-shaped figures. Blood supply is from the central artery of the retina, which is an end artery, and also from vessels of the choroid; in case the former is blocked the macular region, supplied by choroidal vessels, stands out as a pink disk in contrast to the exsanguinated retina elsewhere. A cilioretinal branch is occasionally present, running from the disc to the macula; in such cases central vision is maintained even when the main retinal artery is blocked. In the normal fundus the vessel walls are not seen, only the columns of blood; the central white streak, especially conspicuous in the arteries, is due to the reflection of light from the cylindrical blood surfaces. In arteriosclerosis this streak is much accentuated and of a lighter hue. Medullary nerve sheaths usually stop at the disc; occaionally they penetrate the eyeball and appear as white, crushlike patches at its periphery. Rarely they may appear on the fundus, quite a distance from the disc. Latter appearance has been mistaken for albuminuric retinitis, especially if albumin was found in the urine. The following appearances are found in arteriosclerosis: Central white streak is accentuated; occasionally vessels appear as mere white streaks, no blood being seen (silver-wire arteries); sometimes the blood is visible in several segments of the artery only. Arteries are tortuous, though this appearance *per se* is not of pathological importance, unless accompanied by other changes. Veins are pressed upon when crossed by the arteries; vein appears dilated on distal and attenuated on proximal side of the artery. Aneurysmal dilatations of the arteries are very rare. Hemorrhages are flameshaped, if in the nerve layers and small. These leave small white patches when absorbed. Deep hemorrhages are globular or hemispherical. In the macular region such hemorrhage may cause immediate blindness, which may slowly give way to partial vision, blood being absorbed and nerve fibers not injured totally.

Albuminuric retinitis really shows manifestations of edema of the retina, inflammatory changes being slight and secondary. Probably all the intraocular tissues share in the edema. Nutrition of the retina is disturbed, cells undergo fatty degeneration, cysts may form, and later lime salts may be deposited. The ophthalmoscopic appearances depend largely upon site of edema; if in the deeper layers, there are white, irregular patches in posterior pole of the eye; if in the nerve fibers near macula, star-shaped figures are produced. Edge of disc is blurred and the disc is swollen. A few small hemorrhages in the nerve fiber layer may be found. Choked disc, secondary to intracranial pressure, simulates albuminuric retinitis; but in the latter swelling of the disc is not so great and the veins are not so dilated. Albuminuric retinitis may occur in acute nephritis, albuminuria of pregnancy, and chronic tubular nephritis, but is most frequent clinically in cases of contracting granular kidney with a subacute nephritis developed on top of the chronic lesion. Arteriosclerotic appearances, therefore, frequently accompany retinitis. The prognosis in all cases of albuminuric retinitis is absolutely bad, not only as to recovery, but also as regards life. Death generally occurs in the course of a few months, except in the albuminuria of pregnancy. The eye symptoms are frequently the first brought to the attention of the physician in cases of nephritis, though it must be inferred that the disease is already far advanced by the time retinitis has developed.—*Australian Medical Journal*, July 29, 1911.

A New Reagent for the Detection and Estimation of Glucose in the Urine.—S. R. Benedict notes the defects of the usual tests for glucose in the urine. He shows that the presence of a strong alkali in Fehling's solution may under certain circumstances interfere with its power to demonstrate small quantities of sugar, and that urine contains compounds, chiefly creatinin, which seriously interfere with the detection of glucose. While a solution containing copper sulphate, Rochelle salts, and sodium carbonate is more than ten times as delicate a test as is Fehling's solution, and also more specific, not being reduced by the non-carbohydrate substances which readily reduce copper in the presence of the stronger alkali, it rapidly deteriorates. The author offers a formula for a solution which contains sodium or potassium citrate instead of Rochelle salts, which solution is free from this disadvantage and is not appreciably reduced by creatinin, uric acid, chloroform, or the simple aldehydes. It can be kept indefinitely in uncolored glass or cork-stoppered bottles. The formula is as follows: Copper sulphate (pure crystalized), 17.3 grams; sodium or potassium citrate, 173.0 grams; sodium carbonate (crystallized), 200.0 grams; one-half the weight of the anhydrous salt may be used; distilled water to make 1,000.0 c.c. The citrate and carbonate are dissolved together (with the aid of heat) in about 700 c.c. of water. The mixture is then poured (through a filter if necessary) into a larger beaker or casserole. The copper sulphate (which should be dissolved separately in about 100 c.c. of water) is then poured into the first solution, with constant stirring. The mixture is then cooled and diluted to 1 liter. By modifying the composition of the solution, it can be applied to the accurate and rapid quantitative estimation of sugar in urine. In this method, instead of the reduced copper being precipitated as the red suboxide which obscures the end-point of the reaction, it is precipitated as cuprous sulphocyanate, a snowwhite compound which rather aids the accurate observation of the disappearance of the last trace of blue color. In addition to the substances contained in the above-given solution, the solution for quantitative determination contains potassium sulphocyanate and a small amount of 5 per cent. potassium ferrocyanate solution. The amounts of the ingredients in the former solution are also slightly raised.—*Journal of the American Medical Association*, October 7, 1911.

Book Reviews.

Handbook of Suggestive Therapeutics, Applied Hypnotism, Psychic Science. A Manual of Practical Psychotherapy designed especially for the General Practitioner of Medicine and Surgery. By Henry S. Munro, M.D., Omaha, Neb. Third Edition, Revised and Enlarged. Price $4.00. St. Louis: C. V. Mosby Company, 1911.

The appearance of a third edition of a book on suggestive therapy by an American author within two years certainly indicates an awakened American interest in the subject. This author is not disposed to be conservative respecting the field of application of psychotherapy. He states that he finds "its greatest field of usefulness in the general practice of medicine in all classes of medical and surgical practice." In this he boldly takes issue with the neurologist and psychiater who are inclined to limit its field of application to conditions which come within the sphere of their own specialties. The author explains the application of suggestion, both with and without hypnotism, and illustrates his explanations with clinical cases from his own experience. His book is intended for the general practitioner. The present edition contains a number of added chapters. The fundamental principles underlying the psychoanalytic methods of psychotherapy are stated in the new edition. He finds the Freud method of "small value." The book is written in an interesting and entertaining style, and much of the new matter deals with mental training and hygiene.

La Neurasthénie Rurale. Frequence, Causes sociales et individuelles. Étude psychologique et clinique de la neurasthénie chez le Paysan contemporain. Par le Dr. Raymond Belbèze (de Nevers). Préface de M. le Professeur Rémond (de Metz). Price 3.50 francs. Paris: Vigot Frères, 1911.

This interesting little book treats exclusively, as stated in the title, of neurasthenia among those resident in rural districts. The author draws his conclusions from a study of 200 cases found in the peasantry of a certain region of France. About 30 per cent. of patients in eight years' practice in five small communities were classed by the author as neurasthenics. Isolation, economic conditions, intermarriage, autotoxemia, and intemperance were found to be frequent causes. Mental symptoms predominated. Some cases may have been charitably kept within the border line of insanity which others would place beyond that shadowy line. A chapter is devoted to neurasthenia in women and children. The general types of "rural neurasthenia" are divided into sexual, traumatic, melancholic, and paranoid. The chapter on treatment embraces some apparently original views on prophylaxis, interesting from a sociologic and psychologic standpoint. Some of the conditions existing in France mentioned under etiology, such as obligatory military service, fortunately, do not prevail in this country. The book commends itself to the country practitioner, but may be read with profit by the consultant.

Traité International de Psychologie Pathologique. Directeur: Dr. A. Marie. Tome deuxième, Psychopathologie clinique, par MM. les Professeurs Bagenoff, Bechterew, Drs. Colin, Capgras, Deny, Hesnard, Lhermitte, Magnan, A. Marie, Professeurs Pick, Pilcz, Régis, Drs. Riche, Roubinovitch, Serieux, Sollier, Professeur Ziehen. Avec 341 gravures dans le texte. 25 francs. Paris: Félix Alcan, Éditeur, 1911.

The first volume of this important work treated of General Psychopathology. It appeared last year, and has been reviewed in these columns. There is a similar collaboration of eminent neurologists and psychiaters (exclusive of the Kraepelin school, and especially representative of France, Germany, and Russia) in the preparation of the present volume, which is devoted to Clinical Psychopathology. The third volume, which will complete the work, is promised by the publishers the present year. Among the most important chapters of the present volume are the first one on the neuroses and psychoneuroses begun by Raymond, who has recently died; and the chapter on dementia paralytica by A. Marie and Dr. Lhermitte. Von Bechterew also gives an extremely interesting and valuable chapter on the psychic conditions accompanying organic diseases of the brain and other parts of the nervous system. Ziehen, Pick, Sollier, and others are assigned to the dementias and states of arrested brain development. Pilcz, Régis, Bagenoff, and others discuss circular and confusional forms of insanity; Magnan, Serieux, and Capgras the paranoias. The classification is a sort of compromise with the French. The descriptions are authoritative. The book is a useful one for reference.

The Refraction of the Eye: A Manual for Students. By Gustavus Hartridge, F.R.C.S., Consulting Surgeon to the Royal Westminster Hospital, etc. With 110 illustrations. Fifteenth Edition. Price $1.50. Philadelphia: P. Blakiston's Son & Co., 1911.

The fact that this work has reached the fifteenth edition is abundant evidence of its excellence and popularity with medical students. The volume is one of 275 pages, is well printed and well illustrated. The whole subject of refraction is taken up in logical order and treated in a simple, direct manner. The formulæ employed are not abstruse. The work is reliable. It is well adapted for the use of undergraduates in medicine and for the purpose of giving practitioners a working knowledge of refraction.

Die Pathologie des Wachstums im Säuglingsalter. In Ihren Beziehungen zu allgemein biologischen Problemen und in ihrer Bedeutung für die Klinik. Von Dr. Ernst Schloss. Mit 39 Kurven im Text und 2 Tafeln. Berlin: S. Karger, 1911.

The normal and pathological phenomena of growth in infancy comprise an unexplored territory in the domain of pediatrics. In this monograph of 155 pages the author presents a philosophical and experimental study of the morbid manifestations of growth, so far as these are related to biological problems and to the experiences of the clinic. In the first chapter he discusses the significance of nutrition with reference to the pathology of growth. In the second chapter are described the clinical manifestations of pathological growth, while in the third chapter is discussed the general pathology of growth in infancy. In the fourth and last chapter is discussed the significance of the pathology of growth in pediatrics. The work is a learned study of a most fundamental subject.

Thérapeutique Usuelle du Praticien. Par Albert Robin, Professor de clinique Thérapeutique à la Faculté de Médecine de Paris; Membre de l'Académie de Médecine. Deuxième Série. Price 8 francs. Paris: Vigot Frères, 1911.

This work forms the second series of the treatise on clinical therapeutics as presented in the practical course by the author at the Hôpital Beaujon of Paris. This series comprises 26 lessons, presenting a practical discussion of the mode of management of concrete cases, all theoretical considerations that have no direct bearing on the treatment of the particular patient being set aside. In this volume are discussed the following diseases: typhoid fever, erysipelas, acute articular rheumatism, and gonorrheal rheumatism; arthritis deformans, acute and chronic gout, diabetes mellitus, and diabetic albuminuria; pneumonia, acute edema of the lungs, pleurisy with effusion, diffuse bronchitis, and pulmonary emphysema; paresis, cerebral syphilis, paralysis agitans; and prurigo. Every little detail in the treatment together with its rationale is discussed: the drugs and their mode of administration, the hygienic measures, the use of mineral water, and physicotherapeutic measures. The author in writing this "practitioner's therapeutics" displays a keen appreciation of the everyday problems of the bedside as they are presented to the general practitioner. The typography and paper of this volume are of an unusual degree of excellence.

Wassermann Sero-Diagnosis of Syphilis in Its Application to Psychiatry. By Felix Plaut, Scientific Assistant in the Psychiatric Clinic of the University of Munich. Authorized Translation by Smith Ely Jelliffe, M.D., Ph.D., Professor of Psychiatry Fordham University, New York, and Louis Casamajor, A.M., M.D., Assistant, New York Neurological Institute. Price $2.00. New York: The Journal of Nervous and Mental Disease Publishing Company, 1911.

The author of this monograph, Plaut, is a pupil of Wassermann. His book is intended, he states in his preface, to give a short survey of the historical development of the Wassermann method and the diagnostic opportunities that have been afforded for the serodiagnosis of syphilis in the application of the method at the Psychiatric Clinic of the University of Munich, especially in the field of psychiatry. The phenomenon of complement fixation is a biological reaction the nature of which is still undetermined. Its application in practice, however, is but little contested because of the definite results obtained. Its application in the field of psychiatry is important on account of the relationship of syphilis to some forms of insanity, particularly to general paresis, of which it is a cause in men in more than three-fourths of all cases; and in conditions of idiocy and feeblemindedness where syphilis is often found present by the serodiagnosis test when all external appearances are healthy.

Manual of Psychiatry. By J. Rogues de Fursac, M.D., formerly Chief of Clinic at the Medical Faculty of Paris; Physician-in-Chief of the Public Insane Asylums of the Seine Department. Translated and Edited by A. J. Rosanoff, M.D., Second Assistant King's Park State Hospital, New York. Third American from the Third French Edition. Revised and Enlarged. Price $2.50. New York: John Wiley & Sons; London: Chapman & Hall, Limited.

Some revision has been made and considerable new matter added to the third edition of this convenient little manual of modern psychiatry. The volume is increased in size by about eighty pages. The author has added sections on disorders of writing; on acute mental attacks in the feeble minded; and on prognosis. The editor has contributed a description of some of the newer views in the progress of psychiatry, and the book is therefore made more valuable and up-to-date. The Kraepelin classification is followed, as in the previous editions. The references to original sources in connection with new matter will be appreciated.

A Manual of Pathology and Morbid Anatomy. By T. Henry Green, M.D., F.R.C.P., Consulting Physician to Charing Cross Hospital and to the Brompton Hospital for Consumption and Diseases of the Chest. Eleventh Edition, Revised and Enlarged by W. Cecil Bosanquet, M.A., M.D. (Oxon.), F.R.C.P. (Lond.), Assistant Physician (late pathologist) to Charing Cross Hospital and to the Brompton Hospital for Consumption and Diseases of the Chest; formerly Fellow of New College, Oxford. With 350 illustrations. Price $4.50 net. Philadelphia and New York: Lea & Febiger, 1911.

A good deal has been done in this eleventh edition of Green's Pathology to make it more useful for the student, for whom the book is designed. A considerable number of new cuts have been added and a good many changes have been introduced into the text to bring it more accurately into line with recent investigations. Within its limitations as an elementary textbook of pathology and bacteriology it cannot but prove satisfactory.

Pathological Technique. A Practical Manual for Workers in Pathological Histology and Bacteriology, including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By Frank Burr Mallory, A.M., M.D., Associate Professor of Pathology Harvard University Medical School, Pathologist to the Boston City Hospital; and James Homer Wright, A.M., M.D., S.D., Director of the Pathological Laboratory of the Massachusetts General Hospital, Assistant Professor of Pathology Harvard University Medical School. Fifth Edition, Revised and Enlarged, with 162 illustrations. Price $3.00. Philadelphia and London: W. B. Saunders Company, 1911.

The high esteem in which this volume on laboratory technique is held by all laboratory workers is clearly shown by the appearance of the fifth edition. The additions to the text are chiefly in the methods of clinical pathology, though the portion on the bacteriological diagnosis of Asiatic cholera has undergone a timely revision. The various forms of serum tests for syphilis have been added, as well as special staining methods, including the use of India ink, for demonstrating the *Spirochæta pallida*. The admirable photomicrographs are still a striking feature of the book, which may be safely commended as the most practical of the purely technical guides for use in pathological laboratories.

The Prevention of Malaria. By Ronald Ross, D.P.H., F.R.C.S., D.Sc., LL.D., F.R.S., C.B., Nobel Laureate. With contributions by Professor L. O. Howard, United States; Colonel W. C. Gorgas, Panama; Mr. J. A. Le Prince, Panama; Sir R. Boyce, West Indies; Dr. W. T. Prout, Jamaica; Dr. H. Wolferstan Thomas, Amazon Region; Dr. Oswaldo Cruz, South Brazil; Dr. Ian Macdonald, Spain; Professor A. Celli, Italy; Professor C. Savas, Greece; Professor C. Schelling, German Possessions; Dr. Ed. Sergent, French Possessions; Mr. H. C. Ross, Egypt; Dr. A. Balfour, Khartum; Dr. L. Bostock, South Africa; Dr. P. Murisir, Durban; Dr. M. Watson, Malay States; Professor T. Takaki, Formosa; Colonel C. H. Melville, Troops in War; Major C. E. P. Fowler, Troops in Peace. With many illustrations. Price $5.00. New York: E. P. Dutton & Company, 1911.

As stated in the preface by the author of this work, "malaria is of all diseases the one regarding which we possess perhaps the fullest knowledge. We know the cause of it and the manner in which it is spread. We know a specific cure for it and several efficient methods of prevention. It is our own fault then if we do not reduce it as much as possible." The economic importance of this disease is indicated by the large and prolonged morbidity which it causes, particularly in tropical countries, in India alone the death rate from this disease reaching the annual total of 1,130,000 persons, a mortality greater than that of the plague or of cholera and dysentery combined. It is quite fitting that the writing of this book should have been undertaken by one whose scientific career has been so closely identified for many years with the progress of the knowledge of the causation of malaria, who indeed was the first to demonstrate that the anopheles is the actual carrier of the disease from man to man. In this connection Major Ross points out that in 1848 Dr. Josiah Nott, of Mobile, Ala., appears to have stated that both yellow fever and malaria may be transmitted by mosquitoes, and refers to the speculation as having been already advanced as regards malaria. The various steps that led up to the discovery of the transmission of the malarial organism, from the discovery of the plasmodium by Laveran to the demonstration of the mode of transmission by Ross, are described in detail. This volume does not take up the pathological and clinical aspects of malaria except in so far as these are related to the larger subject of prevention. Considerable stress is laid upon quantitative or enumerative ideas. The laws governing the diffusion of malaria in the community are elaborated with considerable mathematical detail. The "measurement of malaria" is considered from the viewpoint of the "parasite index," the "spleen index," the "fever index," the "constantly-sick index" and the variation of the malaria index according to age. It is concluded that the spleen index, obtained by palpation only, is by far the best method of measurement. The mortality and cost of malaria present startling figures. In Mauritius malaria produces one-half of the total mortality. L. O. Howard estimates that malaria costs the United States $100,000,000 a year. In the chapter on prevention the author discusses all those measures that have been found effective in preventing malaria, including screening, culicifuges, mosquito reduction, treatment, segregation, personal prophylaxis, selection of measures for public prevention, conduct of the campaign, directory, malaria survey, measures in schools, and cost of prevention. The campaign against malaria in the various countries is discussed in each case by an authority on this subject. The list of these authorities is indicated on the title page. Dr. Howard's description of anti-malarial work in the United States is particularly full. It is pleasing to note the merited credit accorded to Dr. Doty for the splendid manner in which he succeeded in practically exterminating the anopheles on Staten Island. Professor Angelo Celli's account of the campaign against malaria in Italy indicates the important part which this disease plays in the political measures of that country. The free distribution of quinine has apparently produced remarkable results; in seven years the annual consumption of State quinine has progressively increased from 2,242 to about 23,000 to 24,000 kilograms, and in the same period of time the mortality from malaria has progressively diminished four-fifths. Professor Savas of Athens describes the antimalarial work that has been accomplished in Greece, in which, from prehistoric times, malaria has been a greatly dreaded scourge. In 1905 Savas founded the Antimalarial League, which on the historic plain of Marathon worked out an object lesson with which to convince the nation of the efficacy of antimalarial measures. It is impossible within the narrow limits of this review to refer to many other interesting phases of this work, which should be on the reading shelf of every public health officer and student of sanitary science. The lay reader will find this book a most illuminating exposition of modern methods of organized medicine. The mature scholarship of the author, combined with his own practical experience, has enabled him to produce a truly monumental work.

Immune Sera. A Concise Exposition of the Main Parts and Theories of Infection and Immunity. By Charles Frederick Bolduan, Bacteriologist, Research Laboratory, Department of Health, City of New York. Fourth Edition, Rewritten and Enlarged. Price $1.50. New York: John Wiley & Sons; London: Chapman & Hall, Limited, 1911.

The title page adequately indicates the scope of this small volume, the demand for which and the rapid development of whose subject matter have necessitated the preparation of a fourth edition. The intricate phases of infection and immunity are simply and clearly presented by the author, who has included in the present edition all of the most recent contributions to this subject, such as the conglutination reaction, the Much-Holzmann cobra venom reaction, the meiostagnum reaction, Weil's cobra venom test in syphilis, and antitrypsin determinations.

Society Reports.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Twenty-Fourth Annual Meeting, Held in Louisville, Ky., September 26, 27 and 28, 1911.

THE PRESIDENT, DR. HERMAN E. HAYD OF BUFFALO, N. Y., IN THE CHAIR.

THE meeting was held at the Seelbach Hotel, and addresses of welcome were delivered by Dr. Lewis S. McMurtry and the Mayor of Louisville, Hon. William O. Head. These were responded to by Dr. Charles N. Smith of Toledo.

Another Protest Against the Routine Use of Purgatives.—Dr. EDWIN WALKER of Evansville, Ind., stated that purgatives were used entirely too often by the profession and laity. Nearly all who consulted a physician used purgatives habitually. This routine use was vicious, and did much harm. This condition was due to their excessive use by the profession. A patient, when he first consulted a doctor, almost always received a laxative, and when he was dismissed he was directed to use it when necessary. All patients received a purgative before a surgical operation; this was a routine with practically all surgeons in and out of hospitals. Was it good practice to assume that every one who required a surgical operation likewise required a purge? If there was fecal accumulation it should present some symptoms. A large number of these patients had no disease or trouble with the alimentary canal. It was rare to find anything in the small intestine except in emergency operations soon after a full meal. If there was fecal retention, it was in the colon, and an enema was the better way to remove it. If there was fecal impaction, a simple purge would not remove it; several days at least would be necessary. The purgative increased the amount of fluid and also stimulated germ activity, which rendered the condition less favorable for an operation on the intestine or elsewhere. For seven years he had carefully recorded in all cases the habit in regard to purgatives, and he found over 90 per cent. of his cases used them habitually. Of this number all but a very small percentage were relieved of their constipation or other trouble as soon as the cathartics were withdrawn and regular habits and a suitable diet were adopted. The small number not thus relieved suffered from some trouble, organic or otherwise, which required treatment in which purgatives played a very small part. Careful study of cases with more accurate diagnosis would almost do away with the habitual use of laxative drugs. The purge after a surgical operation was needed in some cases to prevent accumulation in the rectum, which was not serious but caused some discomfort. Quietude and a limited diet were the causes of their failure to act, and when a liberal diet could be taken laxatives were rarely required. The purgatives could not remove infection. For local or general peritonitis following a laparotomy a purgative was contraindicated. Ochsner's treatment for appendicitis was applicable to these cases, as its aim was to inhibit peristalsis. Much had been written to emphasize this, but still physicians were purging these patients to their injury. When no infection existed, recovery, with the exception noted above, was better without a laxative. For seven years he had not given a purge for a surgical operation, except in rare cases, not 1 per cent. Patients were stronger and in a better condition for the ordeal. They had done better in every way, were more comfortable, and the abdominal cases had less pain and tympany. Gas pains were much less frequent. They had no complications which could be ascribed to the omission of the purge. The routine purgation of all surgical cases was absurd, was contrary to reason, and should be abandoned.

Dr. E. GUSTAV ZINKE of Cincinnati said it was his practice to take a daily scant teaspoonful of epsom salts. After this was taken the bowels acted naturally and satisfactorily in from fifteen to twenty minutes after breakfast. This must be associated with a mixed diet, solid food, and exercise, to keep the tone of the muscular structure of the colon in its natural condition. Diet and exercise, with a little saline every morning before breakfast, would answer in the vast majority of cases.

Dr. H. W. LONGYEAR of Detroit said there was one place where the protest of the essayist was certainly warranted, and that was, if one gave cathartics in cases of enteroptosis, it was extremely harmful. There was nothing more injurious than that, except the habit, perhaps, of prescribing very commonly cathartics in such cases without making a diagnosis. If the practitioner had a colon to deal with which was angulated and dropped down into the pelvis, if he gave the patient having that trouble cathartics, he was going to do him or her, as the case might be, a vast amount of harm. He was whipping the colon into an increasing action. It was like whipping a tired horse. He would get a little response from the whip, but the animal was injured. And so it was with the colon. If one constantly whipped it up with cathartics, he would make it worse and worse.

Dr. WILLIAM H. HUMISTON of Cleveland stated that a great many practitioners had been guilty of prescribing purgatives when they should not do so. A distinction should be made between a purgative and a laxative. A purgative was an irritating medicine always, while a laxative was not. He did not know how he could treat a number of cases that he saw that suffered from constipation asociated with the diseases peculiar to women without regularity of the bowels. There were women who came to the practitioner who did not have a bowel movement more than once in two or three days, or oftentimes only once a week. He did not give these patients purgatives, but he would dislike to continue the practice of his specialty unless he could avail himself of the benefits of what he called tonic laxatives. In the cases of long standing constipation that he saw, and with the form of tonic laxative he used, he was enabled within six weeks by constantly decreasing doses to establish the regularity of the bowels. After establishing regularity of the bowels, and the constipation had been apparently corrected, in examining these patients one might find disease of the pelvic organs, disease of the rectum, such as hemorrhoids and fissure, which he naturally saw when he treated cases of diseases peculiar to women. The form of tonic laxative he gave these patients was composed of cascara, strychnine, and aloin, in small doses, with a little ipecac, made up in pill form and gelatine coated. In his abdominal operations, where the patients were in the hospital, he had the bowels thoroughly cleaned out two days before operation by the administration of a dose of castor oil. A short time before the operation a high enema was given.

Dr. JOSEPH M. MATHEWS of Louisville thought that six-tenths of the people were constipated. If this was true, what were we going to do to unload their bowels? What harm could a purgative or laxative do if one gave it two days before an operation to unload the bowel of toxins or of fecal matter? It was known that every one had fecal matter in the colon, if not in the small bowel, and all one had to do to assure himself that this was true was to take a purgative and find out how much more he would pass after the administration of it than when he did not The bowel was the sewer of the body, and why not wash it out, and what harm did it do to wash it out? For a great many years he had given purgatives to patients

two or three days before operating on them to empty the bowel. He had given crab-orchard salts, as it surpassed all other salts, and it would do its work when epsom salts would not do so. He had for thirty years given these salts two or three days prior to operation, and sometimes it was surprising to note the amount of fecal matter a patient would pass. In many instances the condition of some of these patients who suffered from constipation was a surgical one, and oftentimes one was warranted, with Mr. Lane and Mr. Mummery, in removing the colon.

Dr. Hugo O. Pantzer of Indianapolis said he would not denounce the routine use of purgatives as strongly as did the essayist. It was the rectal retention of feces that did great harm.

Dr. Charles L. Bonifield of Cincinnati stated that it was necessary for the majority of people to have at least one evacuation of the bowels every twenty-four hours, and most people would be better off if they had more frequent evacuations. The essayist to some extent answered the question himself when he told how prevalent it was for the laity themselves to take laxatives. They used laxatives for the reason that they felt better after a free bowel movement. He had not succeeded very well in relieving many of these patients with a simple diet, but he had cured many of them by removing their hemorrhoids. A great many patients were constipated because the movement of the bowels was attended with more or less pain, and on account of this discomfort they put off going to stool as long as possible. In inflammatory conditions of the pelvis he knew of nothing except the prolonged use of hot douches that had so much tendency to deplete the congested pelvic organs as a free calomel purge, followed by a saline cathartic.

Dr. James F. Baldwin of Columbus said that when patients came to him with constipation as a marked symptom, he sent them to a professional friend who made diseases of the alimentary canal a specialty. He examined the stomach and alimentary canal in general and the stools, and gave enemata, douches, etc., and if after a few weeks or months he found he could not cure these patients, the speaker himself took them in hand and made a modification of the Lane operation, namely, switching the ileum from the beginning of the colon to the sigmoid, throwing it from one side to the other, as a man would throw a switch. He had had no deaths from this operation, and no morbidity, and the operation had given him in these bad cases excellent results.

Treatment of Sliding Hernia.—Dr. Walter C. G. Kirchner of St. Louis, after discussing the etiology, nature, and diagnosis of sliding hernia, described a method which he had employed in the treatment of these conditions. The principal steps of the operation were to convert immovable or adherent bowel into movable bowel; to make complete reduction possible; to construct the partial or incomplete sac into a normal complete sac; to permit ligation of the sac high up beyond the ring; to enable the complete repair of the hernia to be made by one of the typical and accepted operations for hernia. In his operation the sac, after it had been isolated, was incised on either side, near and parallel to the bowel, and in this way the bowel was provided with two lateral flaps of sac. The adherent bowel having been made movable beyond the ring, the sac flaps were turned back and sewed over the denuded area of bowel, and reposition of bowel into the abdominal cavity was thus made easy. The next step lay in the partial reconstruction of the sac so that ligation or suture at the neck as in normal cases was made possible. Of the fifteen cases of hernias operated on by the reconstruction of the sac and the flap method, ten were sliding hernias of the sigmoid, and five were sliding hernias of the cecum. All the cases occurred in adult male patients. In one case the sliding hernia was through the femoral ring, there being also present a right and left inguinal hernia. In eight cases there were double inguinal hernias, and in two instances these were complicated by femoral hernias. Undescended testicle was encountered once, and hydrocele four times. In the fifteen cases twenty-five separate herniotomies were performed, all the cases making a satisfactory recovery. In conclusion, the speaker emphasized the following points: (1) That a sliding hernia was irreducible by any of the nonoperable methods, and that a truss when worn might be harmful and painful. (2) That in these cases the usual surgical methods for treatment of hernia failed in their lasting results, and that recurrences were frequent. (3) That for success it was necessary to free the bowel so that it might be properly replaced, and to completely obliterate the sac. (4) That the method had proven successful, and that the steps of the procedure were applicable in the majority of cases, so that the method of repair might be considered typical.

Dr. John Young Brown of St. Louis said that his experience had been limited to five cases, and he had had the opportunity of seeing Dr. Kirchner operate in six or eight of his cases. In the cases that came under his observation the hernia had been on the right side. In three of them the cecum and appendix were densely adherent to the sac, making it difficult to liberate the adhesions, and he had found that the method adopted by the essayist of converting this complicated variety of hernia into a simple one, so that one could do the radical operation, had been of the greatest possible value to him. There was one thing in dealing with these hernias that must be carefully avoided. The sac was incomplete. In one of his cases, in endeavoring to open the sac, the bowel being detached behind, he came near getting into the bowel proper. This sliding variety of hernia was attached behind by the folds of mesentery, and by opening the sac in front, lifting up the bowel in the manner in which he had described, cutting the sac at right angles, one should see to it that the bowel was returned so that there would be no constriction of it at this point.

Angioma of the Uterus, Bladder and Broad Ligaments.—Dr. Hugo O. Pantzer of Indianapolis reported a case of racemose angioma of the uterus, bladder, urethra, and broad ligament. The patient was twenty-six years of age, married, and went through three pregnancies, two of which terminated at full term by forceps delivery. The cause of the dystocia was unknown. Both of the children were born dead. The third pregnancy terminated in the second month, probably owing to the angioma. This event was followed by grave hematuria and vesical tenesmus, excessive metrorrhagia, and menorrhagia. A fatal issue was averted by celiotomy and circumambient ligation. There was no more hematuria except a transient amount shortly after operating, provoked by exposure to cold and subsequent acute bronchitis and coughing. This attack of hematuria lasted two weeks, then it disappeared. Vesical irritability subsided gradually and permanently. Menstruation, which was at first profuse and prolonged, gradually became normal. One year and a half later the patient developed suppurative appendicitis. Operation revealed a recurrence of the angioma in the broad ligament external to the previous seat of the neoplasm. Ligation was again resorted to. Examination of the patient two years after the first operation revealed the nonpresence of angiomatous growth. There had been no return of the hematuria. The bladder was not irritable. Menstruation was normal. The general health of the patient was good.

Dr. Walter B. Dorsett of St. Louis said he had had two cases of angioma of the uterus in which he had taken out the organ, and he understood the essayist to say that he did not remove the uterus in his case. If so, so much

the better, for this was an advance in surgery. In operating on these cases, in which there was a suspicion of angioma on account of hemorrhage, which was the greatest difficulty encountered, he thought the ligation of the vessels, ovarian and uterine, was best made by the *en masse* method; that is, to grasp the whole mass with a good strong forceps and ligate on the outside of the forceps. In one of his cases he atempted to ligate the ovarian artery, and the ligature slipped off and the ovarian artery slipped up under the peritoneum. He slit up the peritoneum, seized the bleeding artery, and secured it, but the woman had a sudden hemorrhage during the night, from which she died, so he believed that in the ligation of angiomas of the uterus, where there was an abnormal condition of the arteries themselves, it was best to ligate them *en masse,* and not only do so in that manner, but to sew in the suture after one had thoroughly tied it with a No. 2 catgut ligature.

Dr. John W. Poucher of Poughkeepsie said that in one of these cases, after an operation had been performed by a colleague from another city, he had the after-care of the patient, but unfortunately this patient—although there was no sign of hemorrhage at the time the angioma was ligated—suffered severely from a secondary hemorrhage, and the family insisted upon waiting for the operator to come from a distant city, and the patient died as the result of the secondary hemorrhage. If in all these cases one could be assured of not having a recurrent hemorrhage, the conservative method of operating was preferable.

Dr. Francis Reder of St. Louis said he had met with various angiomatous conditions of the uterus in connection with fibroid tumors, where it was necessary to ablate the organ. Sometimes one met with angioma in the broad ligament, or the pampiniform plexus. He knew that in these racemose angiomas there was destruction of the anterior uterine wall, and one would find a resisting organ of considerable density.

Dr. Charles L. Bonifield of Cincinnati agreed with Dr. Dorsett that it was best to ligate the ovarian arteries *en masse,* and during the report of this case it struck him that it might have been possible and would have made the operation easier had Dr. Pantzer by ligating the ovarian artery on the right side proceeded to have ligated the internal iliac artery, as was done in some cases of extensive cancer. In this way he would have controlled effectually the arterial supply of the tumor.

Congenital Multicystic Mucoid Tumor of the Small Intestine.—Dr. H. W. Longyear of Detroit said the tumor was about two inches in length, situated subperitoneally on the sides and mesenteric aspects of the small intestine, and was composed of an aggregation of small cysts, filled with mucus. The pathology in the case reported was discovered accidentally during an appendectomy, and the tumor was not removed, as it was apparently benign and causing no symptoms. It was thought by some to be allied to the gas cysts of the intestine, as reported by Finney and others, although differing materially in some respects. The etiology was obscure, but such tumors were probably congenital in origin, like dermoids, developing from foreign cells, accidentally misplaced *in embryo.* Their growth was slow and without symptoms, excepting where the lumen of the bowel might become occluded, and they required no treatment unless the symptoms of such condition were present, when a resection of the bowel containing the tumor was indicated.

Diseases of the Thyroid in the Female.—Dr. Miles F. Porter of Fort Wayne said the thyroid was of especial interest to the gynecologist and obstetrician. Women were five times more prone to thyroid disease than men. The thyroid was originally a sex organ. The thyroid was especially active during the period of sexual activity, and increased in size during menstruation and pregnancy. The toxemia of pregnancy and puerperal infections were probably often due to inactivity of the thyroid. Both clinical observation and post-mortem findings supported this statement. Goiter might be due to disease of the genital organs. Disease of the thyroid might cause amenorrhea, dysmenorrhea, menorrhagia, sterility, mental aberration, premature separation of the placenta, and chlorosis. Goiter in the mother often produced bone deformities in the offspring. He reported six cases occurring in his own practice, and cited facts supporting the above statements. Clinical investigations along the lines suggested promised an abundant harvest, and the object of his paper was to stimulate such investigation.

Dr. William D. Haggard of Nashville stated that only a few days ago, showing the relationship between the sexual function and the thyroid gland, he saw a woman with exophthalmic goiter, with very marked symptoms, and hyperthyroidism, who married last November, at the age of thirty, and in January had marked enlargement of the thyroid, with tachycardia, tremor, and a beginning exophthalmos. She conceived in February, and aborted in May. During her pregnancy her symptoms were considerably exaggerated, and an interesting feature was that these symptoms all subsided after the miscarriage. She still had a chronic hyperthyroidism which had recently become more active and for which he thought a partial thyroidectomy was necessary to afford relief. He was satisfied that there was a great undiscovered country in the ductless glands bearing upon their interrelation in the causation of some of our mysterious pathology.

Dr. Hugo O. Pantzer of Indianapolis recalled a case he had in his own practice two years ago. He removed a fibroid tumor of the uterus, doing a unilateral oothectomy in an individual who had at the time moderate Graves' disease. Within twenty-four hours after the operation this patient had a very conspicuous thyroid. At his visit the following morning he found that the thyroid had been as absolutely removed as though he had taken it off with a knife. Nine or ten days afterwards the patient developed bilateral trouble, and then had hyperthyreoidea in the worst degree from which she recovered only slowly within the next two months.

Dr. Albert Vander Veer of Albany had been impressed with the enlarged thyroid in connection with uterine fibroids, and recalled one case that he had under observation for some time. He removed a fibroid tumor from this woman ten years ago. She was thirty-one years of age then, she had a good-sized fibroid tumor, and she had a marked enlargement of the thyroid gland. Ten years later she came to him and said, "Doctor, I must be having the change of life." Her uterine appendages had been removed at the time with the fibroid, and she had gone along without any unpleasant symptoms up to this time. When she came to him, she had all the marked symptoms of goiter, with hot flashes, etc. On examining her he found that the thyroid gland was slightly enlarged. She presented many of the symptoms of exophthalmic goiter. Her case cleared up nicely under the use of the thyroid extract, but the cause of the condition and the therapeutic remedy given for it were not clear to his mind.

Dr. Edwin Walker of Evansville said that a number of years ago he had an experience along this line that made a deep impression upon him. The patient came from a highly neurotic family and had suffered from epilepsy during her early life. At about puberty these attacks became worse, and a good deal of the time the patient was in the condition of status epilepticus, having from forty to sixty attacks a day. Bromides had no effect whatever on these attacks. At that time he had a case of myxedema in a man who had his thyroid destroyed by suppuration, and as he had this subject in mind he noticed that there

were a few symptoms about this girl that suggested the possibility of hypothyroidism, although practically nothing could be found in the literature on the subject. She had puffiness of the face, she had a swelling of her hands, and stiffness which resembled that present in the other patient. He put her on the thyroid extract. He fed her on partially cooked thyroids, and her recovery was so remarkable and so rapid that it did not seem to him to be possible. Whenever he would stop the administration of this thyroid extract there would be a return of the symptoms. At about that time the thyroid extract was put on the market. He kept her on thyroid extract for a year or more. She had been under his observation since that time; she was fifteen years of age then, and thirty-five years of age now, and she had been entirely relieved of her epilepsy.

Dr. Roland E. Skeel of Cleveland stated that last year he saw a patient who was choking rapidly because of a rapid enlargement of the thyroid. The woman was eight months pregnant. She had an attack of dyspnea, and she had such a severe stridor that it could be heard across the corridor. She had an enormous thyroid which was removed under local anesthesia, and, being fearful she might be delivered of an eight months' child, he ordered a small dose of morphine. To his consternation, after giving the morphine, she had a very marked toxemia of pregnancy, so much so that the urine contained from 10 to 15 per cent. of albumin. This was contrary to what was observed under these circumstances. There was a rupture of the bulb of the jugular vein, and the woman died instantly. The house surgeon made a post-mortem cesarean section, and secured a living child. The child lived a few weeks, then died from ordinary marasmus. This case illustrated the risk the practitioner ran in drawing any definite conclusions with reference to the thyroid.

Dr. William H. Humiston of Cleveland said that gynecologists saw many cases in which there were a rapid pulse and a great many symptoms that they were at a loss to account for, and examination of the thyroid showed no enlargement whatsoever. His experience in these cases had been that with the administration of the thyroid extract he had universally obtained good results. He very rarely saw a failure after the administration of the thyroid extract.

Dr. Robert T. Morris of New York said that if there was a hypothyroidism the thyroid extract furnished a substance which was not furnished in sufficient quantity by the gland itself. If there was a hyperthyroidism, it often meant that there was a compensatory hypertrophy of the gland which was under great demand, and in that case if one gave the thyroid extract he lessened the need for compensatory hypertrophy on the part of the gland, so that in certain cases of hypothyroidism and in cases of hyperthyroidism one used precisely the same therapeutic resource because of the two different groups of cases, but each case in itself became a study. In one case one would find with the *x*-ray alone he could overcome almost all of the symptoms of hypo- or hyperthyroidism, in another case with the thyroid extract he was using, while in another case he had to use both together, and in still another case he would produce disastrous results with either one of the two. One could not at the present time anticipate precisely what the result was going to be from the use of the thyroid extract until he had a much more elaborate classification of these cases, and a statement of them in such a way that one might anticipate results.

Dr. Porter (closing the discussion) stated that it was not at all proven that a woman with Graves' disease was suffering from an overactive thyroid, but up to date this was our best working hypothesis. Here was a woman with a large goiter and she got better with the administration of the thyroid extract. He believed nine-tenths of these women would get better for the simple reason that an individual with a large goiter was not suffering from hyperthyroidism. It was the myxedemic patient, and not the hyperthyroid case, that suffered. The size of the thyroid cut no figure, and the patient might die from so-called Graves' diesease with no enlargement of the thyroid gland.

(To be continued.)

AMERICAN RONTGEN RAY SOCIETY.

Twelfth Annual Meeting, Held in Richmond, Va., September 20 to 23, 1911.

The President, Dr. Percy Brown of Boston, Mass., in the Chair.

Officers Elected.—The following officers were elected to serve for the ensuing year: *President*, Dr. Frederick H. Baetjer, Johns Hopkins University, Baltimore; *Vice-Presidents*, Drs. H. W. Van Allen, Springfield, Mass.; G. M. Steele, Oshkosh, Wis.; J. H. Edmondson, Birmingham, Ala.; W. H. Eagar, Halifax, N. S., and Hollis E. Potter, Chicago; *Secretary*, Dr. Henry K. Pancoast, University of Pennsylvania, Philadelphia; *Treasurer*, Dr. Charles F. Bowen, Columbus, Ohio; *Librarian*, Dr. H. W. Dachtler, Toledo, Ohio. *Executive Committee:* Drs. P. M. Hickey, Detroit; Arthur Holding, Albany, N. Y., and Alfred L. Gray, Richmond, Va.

Niagara Falls, N. Y., was selected as the place for holding the next annual meeting in September, 1912.

Röntgenology and Its Relation to the Law.—Dr. Percy Brown of Boston, Mass., said that the practice of röntgenology as a specialty of medicine and the practice of the law had been brought into contact on many occasions during the past fifteen years. This relationship had been distinctly of two kinds: one, where evidence of disease or injury, obtained by *x*-rays, has been made use of in court, and another, where, for alleged malpractice by improper or injudicial use of *x*-rays, certain medical practitioners had been made the defendants in processes of civil litigation. Of cases where legal proceedings had been engendered by the alleged misuse of *x*-rays, either as a diagnostic or therapeutic agent, it was a satisfaction to be able to say that occurrences were far fewer than formerly. This was no doubt due to the fact that through discouragement of one sort or another the clinical application of *x*-rays was being relinquished by many unqualified and incompetent persons. The earliest attempts, apparently, to introduce into court the results of examination by *x*-rays consisted of the presentation, for examination by the jury, of solar prints upon paper, from the original diagnostic plates. This procedure was ill-advised—at least it was an unfortunate thing to have evidence presented by a means so inaccurate, for prints were more or less naturally accepted by many courts as photographs, to come under the head of documentary evidence, and considered quite as any record produced with the photographic lens by solar illumination. This early attitude of the courts toward the character of evidence of this sort was shown in nearly every supreme court decision upon the subject to be obtained from the reports. It would be seen in almost every citation obtained from the records that evidence produced by means of the röntgen rays was regarded much in the same light as a solar photograph would be. Consequently it was considered of a nature documentary, and certain lawyers had even gone so far as to attempt on this ground to have it introduced as secondary evidence. A perusal of early judicial opinions, thus recorded upon the status of the *x*-rays in court, only tended to stimulate, through the very adversity of this opinion, the röntgenologist having any belief in the dignity of his position in medicine.

It stimulated him to set up for himself, and for his fellows, certain standards to which should be lifted not only his conduct in court, but the evidence which he offered. Inferences of distinct value to the good conduct of a case had been offered, in matters connected with *x*-rays, by witnesses who would have been quite unable to qualify as medical experts. The very fact that this question allowed of a direct and a converse interpretation suggested an element of confusion. Since they could duly qualify under the law as medical experts, many admirable physicians or surgeons believed themselves able to give expert opinion upon matters connected with the interpretation of *x*-ray records in court, and were on record as saying so. Let them under oath essay the not infrequent röntgenological problem (and, by the way, a possible very pretty legal problem as well) of the differential diagnosis between a tibial periostitis sustained traumatically in a railroad collision and the same lesion in the same place contracted as the result of a social misdemeanor, and their qualifications as medical experts might avail them little. In short, the qualifications of the röntgen worker as a medical expert witness should be themselves qualified. The court should not be content to accept him as a medical practitioner (which he invariably should be) alone, but his recognition in his own community and in a recognized society of his colleagues should be ascertained and testified to. The first standard to be set up should be proper professional qualifications. The röntgenologist as a medical expert in court held untold power to effect a good or bad impression by his manner of conduct. He could also by his testimony very easily alter many aspects of the case. An absolute neutral attitude, therefore, should ever place him absolutely beyond reproach. Consequently, just because he was armed with advantages far beyond those possessed by the average expert, he could well raise as his second standard "proper professional conduct." The very fact that he was empowered by means of his art to produce evidence from the realms of the unseen, which was ordinarily denied to the human eye, added additional dignity to that evidence and to the testimony of the one producing it in court. Since this was so, he could never overexert himself in the preparation of such evidence as he might have to present. It often happened that there was no suspicion of possible litigation at the time he made his original examination. This fact made it all the more necessary for him to apply to himself one of the fundamental essentials of the true röntgenologist, namely, attention to detail. Thus, whatever might be the ultimate outcome of any case, the careful worker should never be caught unawares whenever his services were sought by the courts. The employment of pains and care, however, the röntgenologist must be careful not to ovedo. The evidence of his zeal might be misappropriated. This caution applied especially to the marking of his records before the case came up for trial. Beyond a general mark for purposes of identification, such as his own case number or plate number, it were better that all records be marked in the presence of the court at the time they were admitted as evidence. It might be likewise argued that evidence by *x*-rays be ruled out on the ground that the examination was made at a period of time too remote from the time of injury to make the evidence competent. The röntgenologist might also have his evidence challenged on the ground that its presentation to the jury might tend to excite sympathy or prejudice. Unless his evidence could rest upon the framework of his professional qualifications as an expert (and qualifications much more drastic than those required by law), it would surely lose weight, if indeed it was not quite discredited through its own incompetence. As a röntgenologist one would naturally like to see all evidence bearing on physical examinations by *x*-rays exalted from the level of secondary documentary evidence to the plane of primary evidence of opinion. One would like to see röntgenologists removed from the gamut of the photographer on the witness stand, their statements received with disdain by our legal brethren, to that class of conservative rational expert witnesses whose statements suggested safety and sanity if nothing more. This would be accomplished just as soon as the legalized practice of röntgenology was given over to intelligent, cool-headed, and deep-thinking medical men, and taken from the hands of whirling dervishes.

Röntgen Ray in Hypertrophied Prostate.—Dr. James W. Hunter of Norfolk, Va., said the ideal treatment in hypertrophied prostate was radical removal of the gland. In the hands of expert operators who selected their cases the results were excellent; in the hands of the occasional operator or the inexpert the mortality was high. In selected cases röntgenotherapy was of great value. When the increase in size was due largely to overgrowth of the epithelium the röntgen ray would quickly diminish the size of the gland, but not so if there was much increase in the amount of connective tissue. The results from the treatment depended largely on the histological structure. Massage was indicated as an adjuvant. The mortality was *nil*.

Dr. Hollis E. Potter of Chicago thought it was not easy to differentiate by digital examination between a fibrous, muscular, or epithelial enlargement of the prostate; but by raying the testicles as well as the prostate one could produce an effect analogous to that produced by raying the ovaries and uterus, reducing the size of the gland considerably. He had, however, seen few good results follow the röntgen treatment of hypertrophied prostate.

Dr. George E. Pfahler of Philadelphia thought sufficiently good results had been obtained by careful workers to cause one to consider this treatment of hypertrophied prostate in otherwise hopeless cases and to justify its use. It was especially indicated in the case of old or decrepit patients, who could not stand an operation, and where the question of procreation was not to be considered.

Postoperative Röntgenization in Cancer.—Dr. Clarence E. Skinner of New Haven, Conn., said the widespread prevalence of such bitter antagonism toward *x*-ray therapy in cancer on the part of perfectly sincere and honest members of the surgical profession seemed to him to demonstrate that a grave duty to humanity imperatively confronted the members of the society, namely, the inauguration of an earnest, vigrous, and persistent campaign for the enlightenment of the lamentable ignorance which withheld from the cancer sufferer the beneficial potentialities of prompt postablative röntgenization. Cancer victims were going to continue to look to the surgeon for guidance in the management of their ailment, hence as long as he lingered under the burden of misapprehension, which was responsible for his present sceptical attitude, just so long would lives continue to be lost that might have been saved and suffering endured that might have been avoided. The potency of the *x*-ray influence over malignant processes once demonstrated, its prompt postablative employment, in every case, without waiting for recurrence, became a logical sequence. It was impossible to tell at the time of operation in which cases recurrence was going to take place; hence, in order to be sure that the cases which would need it would be treated, it was necessary to apply the measure to every case. Early recurrences were frequently internal, hence undiscoverable until such organs and tissues had been involved as to render absolutely useless the application of any remedy at present known. Many

recurrences were more vicious and resistant to röntgenization than the original lesion. When the *x*-ray had been thoroughly and skilfully applied immediately after the operation, it was known that everything had been done that offered the patient a chance of recovery. Postoperative röntgenization also rendered it possible to save some members of a class of cases which were hopeless under ablative treatment alone and usually hopeless under *x*-radiation alone, namely those in which the neoplasm had become so extensive that it could not be completely removed by the knife. He was aware that the *x*-ray alone would occasionally cure a case of this sort, but, as a rule, the *x*-ray alone would fail in such cases. By combining the knife and the ray, however, by first removing as much of the malignant tissue as possible and then röntgenizing immediately, not necessarily even waiting for the operation wound to heal in such a case, the cancer could sometimes be destroyed and the patient saved. The *x*-ray could frequently destroy small masses of cancer tissue when it could not destroy large masses, and initial extirpation of as much as possible of the growth reduced the amount of therapeutic work demanded of the ray. Some operators recommended that such cases should be rayed before operation, and the fact that reliable men reported good results from this method of administration showed that it had value, but he did not approve of it as a routine practice for the following reasons: First, the usual effect of vigorous *x*-radiation of a malignant growth was to produce a certain amount of systemic toxemia, which had been known to be severe enough to kill the patient of itself. Preoperative radiation was likely, therefore, to produce more or less depression of the vital powers, and it did not seem logical to him to invite systemic depression just before an operation. Second, radiation of parts containing malignant tissue caused fibrous tissue to take the place of the malignant tissue, and frequently resulted in such a fusion of tissues and obliteration of normal tissue distinctions and relations as to seriously embarrass the operation during the subsequent ablative procedure. Third, if the ray was capable of influencing the total original mass of such a growth happily, it would surely be capable of producing a much greater beneficial influence after the mass had been materially reduced in size by partial extirpation. Fourth, and to his mind the most important, effectual preoperative radiation meant delaying the operation for weeks, during which time the neoplasm was constantly threatening extension. It seemed to him distinctly inadvisable, to say the least, to subject the patient, by election, to such an ominous possibility.

Dr. George E. Pfahler of Philadelphia thought there was no doubt of the good effect of the röntgen ray in these cases. Unfortunately, the average surgeon would only refer those cases in which there was bound to be a recurrence and in which, therefore, little good could be effected. Anteoperative radiation was not advisable as a routine procedure, although he did not believe that it was as harmful as Dr. Skinner seemed to think. He had not seen any evidence of toxemia. However, postoperative treatment was certainly advisable and effective.

Dr. J. H. Edmondson of Birmingham, Ala., asked if it was not advisable to excise nodular recurrences in the scar before beginning the röntgen treatment.

Dr. W. H. Eagar of Halifax, N. S, said that one undoubtedly got a tremendous degree of toxemia from preoperative treatment, but early and effective radiation following operation was the proper thing. Unfortunately, these patients were not referred to us until after recurrences had appeared.

Dr. J. H. Selby of Rochester, Minn., believed that surgeons were becoming aware of the value of immediate postoperative röntgenization of these cases, because when the treatment was carried out by an expert who cooperated with the surgeon the results were always good.

Dr. Frederick H. Baetjer of Baltimore thought the preoperative treatment of these cases was criminal. The röntgen ray was stimulative and destructive, and any such form of treatment of a malignant process was wrong. One must not do anything to increase cell division because that increased the possibility of metastases occurring. A carcinoma that was operable was a surgical condition and not to be treated by the röntgen ray. So far as postoperative treatment was concerned, he agreed with the other speakers. He believed, however, that in many cases where enlarged glands were broken down by radiation these glands were not carcinomatous, but simply enlarged as the result of an inflammatory condition or reaction.

Carcinomatosis of Bones Secondary to Growth in Some Epithelial Organ.—Dr. Russell H. Boggs of Pittsburg said that carcinoma of the bone was always secondary. As a rule, it was not recognized until fracture occurred. It might be secondary to cancer, situated in any part of the body, and any bone might be involved, although it was usually a long bone. It was slow-growing and gave rise to symptoms which frequently led to a diagnosis of rheumatism.

Dr. Henry K. Pancoast of Philadelphia had one case in which a metastasis occurred in the femur just below the great trochanter eight years after the removal of a cancer of the breast. In another case a similar metastasis occurred following the removal of a bronchial cyst which had undergone carcinomatous degeneration. He had also seen metastases in the vertebræ.

Dr. George E. Pfahler of Philadelphia said that patients who complained of vague rheumatic pains after operations for the removal of malignant growths often were later found to be suffering from a bone metastasis, and unless fracture of the bone occurred the condition was not detected. A patient with recurrent carcinoma and metastases in the breast fell and broke his arm. He made a röntgenogram and found metastases not only in that arm, but in the other arm, and in one femur. Another patient fell and injured her hip. The röntgenogram showed distinctly a metastatic carcinoma, and on careful examination the original tumor was discovered in the breast, a small cancer, of whose existence the patient was not aware.

Dr. Frederick H. Baetjer of Baltimore had seen quite a number of cases of metastases of cancer in bone. Four of these were in the femur following a primary cancer of the breast. The femora and the spine were the most frequent seats of concerous metastases. He had had two cases of cancer of the humerus secondary to cancer of the stomach, and one case secondary to cancer of the bladder. In another case there were extensive metastases in the femur, and in the scapula secondary to the breast cancer.

Dr. George H. Stober of Denver had seen four cases of metastatic cancer of bones in which the primary tumor was situated in the breast. In one case the condition was not discovered until a fracture of the bone occurred twenty-five years after the removal of the breast cancer.

Dr. John H. Selby of Rochester, Minn., had seen a patient develop sciatica-like pains following the removal of a tumor of the kidney. He found complete destruction of the pubes, extending to the acetabulum. He had seen several cases of bone metastasis following cancer in distant parts of the body.

Duodenal Diagnosis: X-Ray Considerations, Describing a Technique for Fluoroscopy.—Dr. E. H. Skinner of Kansas City, Mo., said that they had been able to estimate a mechanical diagnosis of duodenal ulcer upon the following: When a bismuth and water suspension was

swallowed by a fasting patient, it readily passed the pylorous into the duodenum (because the acid stomach content was not taken up as when food was offered the stomach, neither was there a closure of pylorus as when a food bolus was swallowed). The stomach appeared normal after the ingestion of a bismuth meal (two ounces of bismuth oxychloride to thirteen ounces of cream of wheat porridge), but there was a vigorous peristalsis and a rapid emptying of the stomach in as short a time as one-half hour, and at least in two hours. The duodenum seemed to be sluggish and cast a shadow for a longer interval than usual, but the food rapidly traversed the remaining portion of the small intestines. By this method of filling the duodenum, as described above, the duodenum might present an hour-glass contraction at the site of the ulcer. Usually the duodenum was sluggish and did not exhibit any pronounced peristalsis. When the duodenum was filled and pressure was made at the outer curve of the duodenum, as shown by the shadow, the patient usually experienced some pain or discomfort. They placed the greatest weight upon the rapid emptying of a stomach that exhibited the usual normal J-shaped shadow and a vigorous peristalsis.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting Held October 6, 1911.

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR.

THE meeting was held under the auspices of the Section on Pediatrics.

The Secret Division of Fees.—The following resolution, voted by the Council, was read and it was voted unanimously that this resolution be endorsed by the Academy:

Resolved, That the secret division of a fee, or fees, with any person, or persons, who may be instrumental in influencing a patient, or patients, to apply for operative care or professional advice is unworthy of any member of the medical profession.

Resolved, That if such a division of fee is made by a member of The New York Academy of Medicine it should be counted as of sufficient ground for the expulsion of the member.

Resolved, That the Council considers it its duty to investigate charges against members made on the basis of such a division of fees, and on the receipt of proof of offense the Council may either permit the resignation of the person or expel him from the Academy.

The Influence of Milk Station Work on the Reduction of Infant Mortality.—Dr. GODFREY R. PISEK presented this paper, in which he described the work done by the milk stations in New York City during the past summer and of the results of this work. Cosmopolitan New York presented a problem in the reduction of infant mortality much more difficult than that presented by most other cities. There were 125,000 new-born babies every year in this city and it was felt that, if success could be demonstrated here, the movement would become state-wide and the appalling mortality revealed by the last census correspondingly reduced. The Committee for the Reduction of Infant Mortality had raised through voluntary contributions a quantity of money sufficient to establish 31 milk depots and had secured assistance toward the maintenance of 15 more stations under the control of the Department of Health. There were at the beginning of the summer 79 milk stations, including those of the Straus Laboratories, the Diet Kitchen, the Babies' Dairies, and two stations supported by the Nurses' Settlement and the Morningside Milk Dispensary. All of these agencies were associated for the purpose of eliminating wasted effort by confining the activities of each organization to a definite territory. The sum total of babies enrolled in these stations on the first of July was 5,932; by the end of the month there were 9,888; and at the end of August the enrollment was 11,702. Contrary to all expectation the enrollment continued to increase daily in spite of the fact that the warm weather was past. These stations dispensed 74,000 quarts of milk weekly. However, the milk station was no longer primarily designed merely for the distribution of milk, the education of the mothers had come to the front and the doctors and nurses were the more important factors. The intimate contact of the visiting nurses with the mothers allowed them to teach the mothers how to modify milk in their own homes according to the doctor's instructions presented according to the needs of the individual child. In these stations the whole milk with dilutions of simple gruels and the addition of ordinary granulated sugar was found to serve the purpose so well that this became the rule. The milk used was an excellent raw product and was preserved from deterioration in the homes by simple home-made ice boxes. The mothers were taught the value of breast milk and to recognize the danger signals of summer diarrhea and the necessity of immediate action. They were also instructed in the prenatal care of the infant. The writer felt convinced that many more lives had been saved than the statistics indicated. The children were strengthened so that there would be a lessened morbidity and they could better resist the encroachment of intercurrent diseases. Knowing that the work in New York City was being watched by cities all over the country they had decided to issue a weekly bulletin giving comparative statistics in infant mortality in the different cities. They had communicated with 355 health officers, 79 of whom expressed a willingness to give their statistics, while the others stated that their vital statistics were so imperfect that they would be of little value, thus showing the need for a national and State clearing house of information relating to infant mortality. The committee would continue their agitation on the subject of standardizing vital statistics with the hope that in another year comparative information might be made available. Statistics showed that the work of the summer had been effective. The number of deaths from all causes for the first nine months of the year was 11,733, while during the corresponding period of 1910 the number of deaths reached 12,920, or, in other words, a rate of 124.6 per one thousand infants this year against a rate of 142.3 for 1910, a decrease of 17.7 per one thousand infants. During the months of June, July, August, and September of this year there were 1,244 less deaths than during the corresponding period of 1910. There was a decrease of 1,417 deaths from the average of these four months for the past five years. In the Borough of Manhattan, from January 1 to June 1 there was an increase in the number of infant deaths of 28 per cent. over the corresponding period of 1910, but during the month of June, after the milk campaign was begun, there was a decrease in the mortality of 50 per cent. from that of last year. During July the decrease was 60 per cent., and the average for the whole summer was a decrease of 41 per cent. from the mortality of last year. A comparison of the results in New York City with those of other cities seemed to show that the diminished mortality was in direct relation to effective measures directed against the deaths of infants. In London, owing to hot weather, there was a sudden rise of infant mortality at the end of July from 173 to 304, and toward the end of August to 635 per 1,000 infants. To further prove the effectiveness of the campaign, comparative studies were made in different districts of the city. For instance two equally congested districts were taken for comparison. In one district having a milk station there were 419 deaths in 1910; in 1911 there were 298, a gain over last year of 29 per cent. In the other district, having no milk station, there were 302 deaths in 1910 and 333 in 1911, or an increase of 9 per cent. Dr. Pisek urged the members

of the profession to support the Health Commissioner in his attempt to get an appropriation sufficient to carry on the work throughout the year. If the work was kept up there would be less need of corrective work during school age, fewer inmates of our asylums and institutions, and a lessened burden on society.

The Principles of the Reduction of Infant Mortality, with Suggestions for Future Work.—Dr. S. Josephine Baker, Director of Child Hygiene of the Department of Health, read this paper. She stated that there was no other public health problem of the times, unless it might be that of tuberculosis, upon which they had so much absolute knowledge as upon that of the reduction of infant mortality. The problem of the reduction of infant mortality was an infinitely complex one having factors that might be classed as sanitary, hygienic, social, economic, humanitarian, philanthropic and individualistic. They must concede that no one line of endeavor, no matter how vigorously worked out, would permanently lower the infant death rate. Every beneficent feature must be used to its utmost worth and every undesirable one eliminated, and until this could be done they could only touch upon the high places, congratulating themselves one year upon achievement and deploring their lack of success the next. No greater danger could threaten their hope of ultimate victory than that of assuming that the total reduction of the death rate in any one year was wholly due to the specific efforts made during that year. The infant death rate of some years was lower than that of others irrespective of any efforts made to reduce it. From their present knowledge they could formulate one fundamental principle with certainty, namely, that prevention of disease must be their aim, and education their main weapon. That the educational work of recent years was beginning to bear fruit was shown by the fact that the reduction in infant mortality was constant over the entire country both in rural and urban districts notwithstanding the periods of heat which were more protracted and intense than for many previous years. If infant mortality was to be definitely and permanently lowered public opinion must be stimulated to demand that all civic forces be so adjusted and coordinated that the babies might be allowed to live, instead of forced into illness and doomed to death. Public opinion could insist upon better housing conditions, with sunlight and fresh air in living apartments, upon clean streets, adequate water supply, increased park space, playgrounds, recreation centers, the use of docks for the breezes from the waterfronts. Public opinion could place in the hands of the Health Department sufficient funds to carry out a widespread campaign for the instruction of mothers in the care of infants, and the provision of a sufficient number of milk stations to meet the needs of the infant population, and then it could uphold the wise expenditure of these funds with intelligent criticism and interest in results. Specifically the principles for the reduction of infant mortality included: 1. The study of the problem of the institution baby. During the present year up to October 1, 42 per cent. of all infant deaths in the Borough of Manhattan had occurred in institutions. 2. A supply of milk safe for infant feeding at a price within the reach of the majority of the people. Purification could not take the place of purity, but the matter was economic, and purity seemed beyond our reach at the price we could pay. 3. The broadening of the courses in pediatrics in the medical colleges so that they assumed the importance that was their due and assured every physician a thorough knowledge of infant hygiene and care. 4. The interest of social students and workers, and of philanthropists in meeting individual family needs and adjusting economic conditions. 5. The instruction of each mother in the necessity of nursing her baby, and if that was impossible then in the proper substitute feeding and how she might take advantage and apply the essential methods of hygienic baby care. 6. A right understanding of the immediate causes of infant mortality. These principles had been applied in part and a study of the thirty-year period from 1880 to 1910 demonstrating the changes in infant mortality was of interest. The death rate from contagious diseases in 1880 was 15.72 per one thousand; in 1910, 4.07 per one thousand; in 1880, the death rate from diarrheal diseases was 62.74; and in 1910, 39.71 per one thousand; the death rate from respiratory diseases in 1880 was 43.70; in 1910, 27.20 per one thousand; the death rate from congenital debility was 47.57 in 1880; in 1910 it was 45.68. The total death rate from all causes was 288.9 in 880 against 133.9 per one thousand in 1910, a reduction of 54 per cent. The number of deaths from diarrheal diseases from January 1 to October 1 was 3,227 or a death rate of 34.2 per thousand infants, as against 4,011 deaths, or a rate of 44.2 per one thousand infants, for the year 1910. They had never before had such a low death rate or such a systematic campaign in this city. The death rate among babies cared for by the milk stations was 2.5 per cent. of the entire number cared for. The nurses under the Department of Child Hygiene of the Department of Health had under their care 16,987 babies under one year of age from May 1 to September 10. Each baby was visited at least once in ten days; if ill or delicate more visits were made. One physician was assigned to each group of two or three nurses, and held daily consultations with them regarding the babies visited. All sick babies were cared for by the physicians and a record kept on file in each Borough office. The cost of this work amounted to about fifty cents a month for each baby. In addition the Department of Health held conferences for mothers and Little Mother's League, to teach older girls how to keep babies well. Dr. Baker said that she was convinced that they must put into effect a more comprehensive program for future achievement and suggested the following plan. 1. A more comprehensive and widespread campaign of educational publicity—one that would reach both the general public and the individual mothers. 2. The statistics cited showed that in that class described as congenital debility there had been practically no decline in the mortality rate during the past thirty years, thus making it evident their attention should be directed to this class. Here the obstetrician was needed; his control should not be limited to the confinement and the few succeeding weeks, but the mother should place herself under his control and follow his directions during the entire period of pregnancy. To this end they should have proper control of the midwives, classes for the supervision of pregnant women, a form of insurance that would provide a stated payment for a period of at least one month before and one month after the birth of a child, thus obviating the necessity for physical labor at this time, the cooperation of philanthropic forces and social workers to provide hygienic surroundings and freedom from anxiety for the mother during the prenatal period of the child's life. The question of institutional care versus the placing out system for foundling babies should be practically worked out. The death rate in institutions was abnormally high and all studies on the subject seemed to show that this rate was greatly reduced by boarding the children out in properly supervised homes. It was essential that they should recognize that infant mortality was an all year round proposition. The time to save the baby was before it got sick and not afterwards. Their educational campaign should be carried on in the winter as well as in the summer and their vigilance should never relax. Until this lesson was learned and provision made for persistent effort throughout the entire year they could never be wholly successful. Their present policy was shortsighted and expensive and utterly at variance with their present knowledge of preventive medicine.

Ernest J. Lederle, Ph. D., Commissioner of Health, said

that the Department of Health had asked the Board of Estimate for sufficient funds to carry on under permanent municipal auspices the work of the seventy milk stations that had been established in the City of New York, partly by the city and partly by the New York Milk Committee and other private organizations. During the last thirty years there had been remarkable changes in the control of the milk supply by the municipal authorities, especially by the Board of Health. Thirty years ago milk was adulterated by the removal of the cream, the addition of water, or both. About twelve years ago certain physicians became interested in infant feeding and it was found that there were often more important features to be considered in the milk supply that was used for infant feeding and the chief one was that the milk should be clean. The use of unclean milk meant injury to the infant. It was known that certain diseases were transmitted to infants as well as to adults through the agency of milk, and this pointed to a a new field of work. In 1902 and 1903 the Department of Health took upon itself the task of making bacteriological examinations to learn the condition of uncleanliness of the milk of the city, even going to the farms and creameries for this purpose. A system of inspection was established. Great results had been accomplished. At present they found, however, that they could not supply the quality of milk demanded, especially that required for infant feeding. It was impossible for the City of New York to use 1,600,000 quarts of milk a day that had been brought to the standard which would be proper for infant feeding; it was not, in fact, necessary that the whole supply of 1,600,000 quarts should be brought to this standard; it was not economic, nor was it proper to raise the cost of such a milk to a prohibitive degree. Therefore the Department of Health had decided to adopt an official grading of the city's milk supply into three classes as described in detail on a chart to which the Commissioner referred. There was Grade A for infants; Grade B for adults, and Grade C for cooking.

Dr. W. A. Evans, ex-Commissioner of Health of Chicago, said that one-third of the people of Chicago died from what were termed "bad air" diseases; one-third died from infant diseases; while the remaining one-third died from all the other things combined. It was, therefore, evident that this was a field of work that should be cleared up. From an economic standpoint it was worth while, for there was nothing in dead or neglected babies. In some communities it was very difficult to get people to understand the importance of this work. In the State of Mississippi there lived an old man who had not ben very well-to-do and he had a daughter named Sal, who always went barefooted. Once she was standing by the fire bare-footed, as usual, and with her eyes shut. Her mother said: "Sal, Sal, you got one bare foot on a red hot coal." Sal replied: "Which foot, ma?" This was similar to the attitude of the community toward the sick and dying child. He said that attitude should be changed.

Dr. Philip Van Ingen said he had made a study of infant mortality in the Borough of Manhattan for the last three years. In making comparisons up to the first of October, he found that in the Borough of Manhattan 33 per cent. of the decrease in infant mortality had occurred in 144 blocks immediately surrounding 11 milk stations. Of the total decrease in infant mortality in Manhattan, 33 per cent. occurred in an average of 13 blocks surrounding these stations. Since the work was begun by the Board of Health and other agencies, infant mortality had been on the decrease. There had been a decrease of 882 deaths among babies in four months in the Borough of Manhattan alone; there had been a total decrease of 1,811 in the Greater City of New York. Comparing the infant mortality since the founding of the milk stations with the previous years, or the average for the two previous years, they found a diminution of 29 per cent.; this showed that there was something at work. Their chief efforts were not directed toward the curing of sick babies, but keeping all infants well. The nurses went from house to house and talked with the mothers regarding their babies, urging them to make efforts to keep them well. This was an economical way of handling the proposition.

Dr. Henry Dwight Chapin called attention to the high mortality among infants in institutions; among a certain class of babies, the mortality would never be reduced so long as the babies were cared for in institutions. A large number of decrepit and underfed babies were not properly cared for at home; they drifted from place to place seeking relief and eventually died. Such a class of cases should be boarded out. Ten years ago he chose a certain district in the country where he had a doctor and nurse on salary and the babies were sent there to be boarded out. These were the atrophic, badly nourished infants. A large proportion of these had been saved. The city of New York should have districts near the city where such babies could be boarded out in small homes and receive a mother's care under the oversight of a doctor and nurse specially trained to handle sick infants. This would greatly reduce the death rate in this class of cases.

Dr. L. Emmett Holt said he was glad to hear Dr. Baker emphasize the fact that there was a high infant mortality all the year round. It was often forgotten that 25 per cent. of all infant deaths occurred during the first month of life and were due to congenital feebleness, prematurity, accidents of birth, etc., and were not influenced by the season of the year. The prevention of infant mortality should be begun by caring for the mother before the baby was born. The work of midwives should be carefully scrutinized; the newly born children should be followed up in the homes by the visiting nurse before they got sick. One of the most striking things to be noted in infant mortality in the past was the small number of deaths from gastrointestinal diseases among the well-to-do in contrast to what was seen among the poor. This was in part due to the difference in the milk supply, but largely to the care, instruction and attention which the well-to-do classes were able to command. Until very recently poor people had little opportunity to know what was proper in the care and feeding of children. Infant mortality was to be solved by methods of prevention, not therapeutics. Of all methods of prevention, education took first place. Dr. Holt strongly endorsed the application made by the Commissioner of Health to have the work now going on continued throughout the year.

Dr. William P. Northrup spoke of the importance of not treating these children in hospitals; his experience in attempting to cure them in hospitals was not encouraging. The follow-up nurse was of great value; she followed the mothers who brought their babies to the Out-Door Department and gave them instructions; the instructions were the most important part of her functions. The matter of education was the most important part of this subject. The doctor could not get far on the road of instruction without the aid of a follow-up nurse.

Dr. A. Jacobi said that the fact had been alluded to that a large number of cases died before the child was one week or one month old; they should not forget that. It was not a question of milk stations exclusively; it was a question of nursing from the very first. What could be done for the newly born baby should be done by the mother if she were capable. The mothers themselves, however, were not properly cared for. As a rule of 100 women, if properly fed and instructed, at least 95 were able to nurse their babies. These did not want milk stations; they had their milk stations in their own breasts. The mother should be cared for before the baby was born and particularly afterwards. There was no place in New York where these

poor women could go to rest up for six or eight weeks. There were now no more than 1,000 beds for any class of convalescents in the city of New York; they should have 10,000 beds. A number of private persons were now studying this question to learn what to do with these women after confinement. Now they were treated like acute patients in the hospital who were discharged as soon as the main symptoms of an acute disease had disappeared. Before considering what they should do for the babies, they should first do something for the women. If private persons would not do it, the community must do it. If a baby died, it was somebody's fault; if a baby died because of bad air or bad food, it was due to the community; the community should hold itself responsible. It was said that this was socialism. Dr. Jacobi said if this was so, the sooner they had it the better for the mothers and for the babies. He referred to the housing of these people. They must have good, pure air; not only should they have rest and good food, but they should get away from the foul air of the tenements. As an example they could not succeed in treating tuberculous patients unless they did that. The same with babies. They could not thrive in a badly ventilated and congested room. They would die of lack of fresh air and excess of heat. They would often die as people died from heat stroke. Heat stroke and bad air should be avoided. There should be better housing for the people, for the whole people, rich and poor.

Metabolism in Rheumatism; Food Factors in Rheumatism; Management of Valvular Lesions.—Dr. Joseph E. Winters said that he was thoroughly and absolutely convinced of the chemical etiology and chemical pathology of rheumatism. That contention was based on the products of protein metabolism; the irritant effects of these products existed when they were not neutralized by sufficient basic constituents in the food. The acid products of protien metabolism, when not neutralized by sufficient basic constituents, resulted in all the manifestations of rheumatism. The foul smell, the acid perspiration, the acid urine, etc., were phenomena never seen except in rheumatism, and for this toxic state the great laboratory of nature had provided a specific, namely, wintergreen which contained a large percentage of methyl salicylate, and which yielded salicylic acid. This was what destroyed the rheumatic element because it united with the acid. The end product of protein metabolism was invariably acid; the acid radical was always constant; protein contained basic constituents. Acids resulting from exogenous metabolism were immediately neutralized. Living molecules could not exist in an acid medium; the fluids in the tissues were rendered alkaline chiefly by the sodium compounds; the tissue cells chiefly by the potassium compounds. The mere trace of free acid menaced the alkaline medium. Acids were the foes of the body and they were distinctive of the disease rheumatism. Those who were susceptible or not susceptible to pathogenic bacteria as such were determined by the functional integrity of the enzymes. Salts that were to fulfil any important part in the life process must be taken into the body organically combined in the food. The mineral constituents that were not organically combined were useless. Beef tea, beef extract, bouillon, chicken broth and mutton broth were positive rheumatic factors; from these they got nitrogenous extractives, broken-down portein. Nitrogenous extractives excited excessive metabolism of the cell nuclei. The rheumatic factors were definite. The human body contained seven or more pounds of mineral matter and to provide ample salts in proper combinations in the food to neutralize the acid made it necessary to study with care the food. Lactic acid bacilli might convert 80 per cent. of the sugar into lactic acid. A large amount of water was necessary to dissolve the sugar for absorption; the result of this abstraction of water was delay, and this was followed by fermentation, and in this fermentation 50 per cent. of the sugar was converted into lactic acid. The lactic acid promptly withdrew alkalies from the tissues, and this was an important factor in the etiology of rheumatism. The natural history of rheumatism and chemical pathology were inseparable and interwoven. Acute rheumatism might continue for weeks and for months and the inflammatory causes were the same as they were on the first day; the disease might cease spontaneously and the joints would be found to be in as good a condition as they were before the disease began. The natural history of rheumatism had no parallel in diseases. The chemical pathology made it intelligible, understandable and clear.

Dr. Egbert Le Fevre said that he was sorry that time had not permitted Dr. Winters to differentiate between the types and conditions of so-called rheumatism based upon a chemical etiology and chemical pathology. He thought that all appreciated that as a result of the chemical changes mentioned by Dr. Winters there occurred arthritic conditions. Dr. Winters had not differentiated between the arthritic conditions which were undoubtedly due to faulty metabolism, that was, the gouty affections and acute articular rheumatism or rheumatic fever. From the brief presentation of his paper it was impossible to determine if he made a distinction. If he included the gouty conditions, then many of his premises and the conclusions based on them could be accepted. If, however, acute articular rheumatism was only considered, then many of his premises could not be accepted. That acute rheumatism was associated with hyperacidity of the secretions and other manifestations of acid intoxication he granted, but he was not willing to subscribe to the statement that it was dependent entirely upon metabolic changes resulting in the body from the want of a neutralizing base. He believed that the infectious nature of acute rheumatism must be considered. The very fact that the disease had pathological manifestations that were so definite, that the onset, the course, the termination and even the sequelae were so true to type, forced them to the conclusion that rheumatism was, in the majority of cases at least, an infective condition. The predisposing conditions in acute rheumatism, he believed, might be metabolic. Dr. Winters had struck an important point that they were very apt to overlook, namely, that improper food, especially in children, among other things so changed the resistance of the child that, during this vulnerable age, he was especially liable to infections. He believed in the infectious nature of rheumatism, although they had not as yet found the infectious agent. Dr. Le Fevre did not believe that rheumatism was due to a single infective agent; it might be due to a number as the streptococci, the pneumococci and influenza bacilli. He believed that they should consider acute rheumatism as an infectious disease. He was a strong believer in the efficacy of salicylic acid and its compounds, not only in its power to control the symptoms, but also to influence the sequelæ.

Dr. Harlow Brooks said that Dr. Winters had certainly presented the theory of the chemical or metabolic etiology of acute rheumatic fever in a most favorable light; a more logical argument in its favor could not be made; nevertheless, although "almost persuaded to believe" he could not relinquish his firm conviction that rheumatic fever should be grouped with the infections, and personally he believed that it was a mixed infection, not a pure one, for he did not believe that the contention of Poynton and Payne had been sufficiently supported by other workers. There were a few clinical facts not mentioned by Dr. Winters which tended to support the chemical theory; among them was the well-established observation that this disease existed for the greater part in localities and among subjects who were very resistant to most infections; also it was a disease notably of the vigorous and of the outdoor

liver, lumbermen, miners, prospectors, etc., all of whom suffered relatively but little from the ordinary infections. The well-established relationship between climatic and seasonal conditions, between dietetic and other predisposing factors and the occurrence of the disease might also be used as arguments in this direction. Taken as a whole, however, the clinical aspects of the disease certainly were those of an infection: its pathological anatomy was also typically that of an infection, as was also the case with the complications. Dr. Brooks said that it might be due to his lack of skill that he had not met with the marked success in the use of the salicylates which had been Dr. Winters' good fortune. Although the relief afforded by the drug was obvious, he was entirely unable to feel that its employment shortened the course or prevented complications; until he could feel as Dr. Winters that this was the case he could not look upon salicylic acid as a specific in rheumatism nor could he accept his theory as to its action.

Dr. Charles Gilmore Kerley believed that there was unquestionably a chemical factor in rheumatism, and that this represented a means of furnishing a soil that was favorable to the development of infection, the actual factor in rheumatism. Children who partook largely of cane sugar and high fat were in his observation particularly susceptible. He had had the opportunity of seeing a number of cases of autopsies on children who had died with acute articular rheumatism with cardiac complications, and the whole history of the disease, as well as the autopsy findings, bore out the infection theory. The so-called growing pains in children were frequently relieved by the removal of the probable source of the infection, the tonsils. One of the reasons probably that children had rheumatism more than adults, and that they were more apt to develop endocarditis and pericarditis, was because they had a lower resisting power against pathogenic infections. Salicylic acid was useful in some cases; the alkaline treatment was of value in preventing recurrences of the attacks. When a child once had rheumatism in its acute form, with endocarditis, pericarditis, chorea, etc., he was quite sure to have another attack. Placing such an infant on salicylic acid and the alkalies, giving the interval treatment, would often prevent recurrent attacks.

Dr. Walter Lester Carr believed that if they accepted the chemical, uric acid, theory that was for so long the definite view of many able clinicians, they could not fail to agree with most of the papers presented, and their discussion was limited to expressions of acceptance of many of the views advanced. Lithemia undoubtedly lessened the resisting power of cells. If, however, they believed that the word "rheumatism" had a different significance than was attached to it three or four decades ago, and they attempted to explain this wider vision, they became cognizant of the many variations presented by this disease and the extreme difficulty of drawing a clear picture of all the cases that were formerly classed under rheumatism. Up to the present enough had been learned of the etiology of rheumatism to show that the disease was occasioned by microorganisms; the exact organism that produced the majority of cases was not agreed upon by investigators, although the consensus of opinion favored the organism of Poynton and Payne. In almost all the cases the site of infection was the throat, but it was possible to have entrance through the intestinal wall by a process of sub-infection. The diplococcus found in rheumatism had an affinity for mononuclear leucocytes and for endothelial cells. This organism produced formic acid and had a hemolytic action. The formic acid was found in the urine and explained in part at least its acidity during a rheumatic seizure. The hemolytic action of the organism was shown by the anemia present in all these cases.

Dr. A. D. Hirschfelder of Baltimore said that the problems of physical chemistry were so far removed from the ordinary affairs of clinical medicine that clinicians should always be thankful when any one called their attention to them. The pioneer work of Prof. Jacques Loeb, Hans Horst Meyer, and the two Hendersons had shown them the great practical application of such problems to questions of practical medicine. Fascinating as these speculations might be, however, they should not overlook the more obvious revelations of morphology and bacteriology, and he said he could only agree with the previous speakers in accepting the multiple bacterial origin of rheumatic fever. As regards the question of feeding, one important point in the management of heart cases seemed to be that the diet at each stage of the disease should be sufficient to supply the amount of energy (number of calories) used up by the patient, and should be varied to meet the needs, though it should not be made excessive. Schieffer had shown that underfeeding alone might give rise to atrophic changes in the heart, and the experiments of Leo Loeb and Fleisher demonstrated that the interaction of two deleterious agents produced much greater effects than could be attained by one of them acting alone. It was, therefore, most important not to add the injurious effect of malnutrition upon the heart to that of the toxic agent of rheumatism.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners of the State of California.

San Francisco, August, 1911.

ANATOMY.

Answer Ten (10) Questions Only.

1. Describe the topographical anatomy of the knee, mentioning its bony landmarks and tendons.
2. What is the nerve supply of the flexor group of muscles of the forearms?
3. What are the surface points for the following: Bifurcation of the trachea; gall-bladder; spleen; termination of the spinal cord; kidney?
4. Mention from without inward the tunics of the eye, and describe one of them.
5. Give location of (*a*) deep cardiac plexus, (*b*) celiac plexus, (*c*) aortic plexus, (*d*) Auerbach's plexus, (*e*) Meissner's plexus.
6. Describe the course of the portal vein, (*b*) give its relations.
7. What is the result of total paralysis of the abducent nerve?
8. Describe the venous and arterial anastomoses about the ovary.
9. Name the structures passing through the superior opening of the thorax.
10. What is the origin of the spermatic arteries?
11. What are the surface markings of the liver?
12. Describe the pleural sac, including attachments and contents.

HISTOLOGY.

Answer Only Eight Questions and Identify Four Slides.

1. Describe and locate the characteristic features, which would enable you to tell a section from the skin of the forearm of an Ethiopian from a section of the skin of a Scandinavian.
2. Name the primary blastodermic layers and name (*a*) the structures developed from the mesothelium; (*b*) the structures developed from the mesenchyme; (*c*) the structures developed from the mesameboid group of cells.
3. Describe a section of the human cornea made perpendicularly to the surface. Make drawing.
4. Describe those microscopic features which would enable you to distinguish a section of the thymus gland from a like section of a small lymph gland.
5. What structural differences are there between the Malpighian corpuscles of the spleen and those of the kidneys? Make drawings.
6. Describe the differences to be observed between a transverse section of the trachea as compared with a like section from the esophagus.
7. Describe and make a drawing of a cell that is typical

of: (*a*) the cerebellum, (*b*) the cerebrum, (*c*) the retina, (*d*) the testes, (*e*) the blood.

8. What features would enable you to distinguish a section of the pancreas from a section of the parotid gland.

9. How do the fibers of the peripheral cerebrospinal nerves differ from the nerve fibers found in the brain and spinal cord? Make drawings of transverse sections.

10. What is an erythrocyte? Describe minutely and tell how a normal cell differs in the adult human being from that found in early fetal life.

11. Identify two slides.

12. Identify two slides.

PHYSIOLOGY.

Answer Ten (10) Questions Only.

1. Give proof that skeletal muscle possesses the properties of independent contractility and independent irritability.

2. Define the following physiological terms concerning the phenomena of muscle: Contracture, tetanus, summation, muscle tonus, rigor.

3. Discuss the inhibitory influence of the brain upon the spinal cord.

4. What are the causes of intravascular clotting?

5. How is the blood regenerated after hemorrhage?

6. Describe the coronary circulation during the heart beat.

7. What physiological properties does heart muscle exhibit which differ from those of skeletal muscle?

8. Define the terms intrathoracic pressure and intrapulmonic pressure.

9. What are the general properties of enzymes?

10. What is the origin of the hydrochloric acid in gastric secretion?

11. Describe the absorption of fats.

12. What are the internal secretions of the liver?

CHEMISTRY AND TOXICOLOGY.

Answer Ten (10) Questions Only.

1. Define: Inorganic chemistry; organic chemistry; synthetic chemistry; physiological chemistry; pathological chemistry; pharmaceutical chemistry.

2. Discuss the calcium and chorine groups.

3. How can you distinguish tin from other metals?

4. Give the names and formulæ of compounds of iron used in medicine.

5. How would you make oxygen to be administered to a patient in an emergency when a supply was not obtainable?

6. What does the normal mixed saliva contain?

7. How would you determine the specific gravity of blood?

8. What do the quantitative tests of gastric juice reveal?

9. How do acid albumins and alkali albumins differ; how are they affected by boiling; by acids?

10. What is the chemical treatment of alimentary corrosion caused by mineral acids? Why should the stomach pump be used carefully, if at all, in such cases?

11. Give the chemical and physiological treatment of phosphorus poisoning.

12. Given a urine that reduces Fehling's solution, what poisons would you suspect?

BACTERIOLOGY.

Answer Ten (10) Questions Only.

1. Name the germs which usually cause diarrhea. How would you distinguish Asiatic cholera from summer diarrhea?

2. What causes favus, ringworm, elephantiasis, soft chancre, fermentation of sugar? Give technical names

3. Discuss, not over one page, "*Bacillus diphtheriæ.*"

4. How is yellow fever transmitted? Give in detail.

5. How is tuberculin R supposed to influence tuberculosis?

6. What is the specific test for syphilis? Upon what principle does the test depend?

7. Describe Pasteur's method of neutralizing the poison introduced into a person by the bite of a rabid dog.

8. Describe briefly hemolysis, bactericide, phagocytosis, antitoxin, antigen.

9. Name the germs which are the cause of conjunctivitis. Give 5.

10. How do germs produce pus?

11. Explain briefly natural immunity.

12. Describe Boas-Oeppler bacillus. What is its significance?

GENERAL DIAGNOSIS.

Answer Ten (10) Questions Only.

1. Describe the technique of a lumbar puncture and of what diagnostic value is it.

2. Describe the symptoms and course of meningeal tuberculosa.

3. Give the differential diagnosis in angina pectoris.

4. Describe arthritis deformans. For what may it be mistaken?

5. Describe the following pulses—positives, venous, Corrigan, mollis, dicrotic, bigeminus.

6. Give the etiology and symptoms of iritis.

7. Describe primary pernicious anemia.

8. How would you proceed in examining a chest for incipient pulmonary tuberculosis, and what would you expect to find at each step of the examination in a positive case?

9. Detail the signs and symptoms of a case of aneurysm of the transverse portion of the arch of the aorta.

10. Describe the test breakfast. Describe the methods pursued in determining the presence of (*a*) free hydrochloric acid, (*b*) lactic acid, (*c*) Boas-Oeppler bacillus. N. B.—Quantitative statements as to composition of reagents need not be given.

11. Define (*a*) hallucination, (*b*) delusion, (*c*) illusion, and describe paranoia.

12. What are the complications to be feared in the third week of typhoid fever and briefly enumerate their symptoms.

PATHOLOGY.

Answer Eight (8) Questions and Identify Four Slides.

1. Describe the blood changes in leukemia and what organic changes are usually found?

2. How does scar tissue differ from normal tissues and under what circumstances is it formed instead of normal structures?

3. In the study of tumors or growths what macroscopic and microscopic characteristics would lead you to decide in favor of malignancy?

4. What are usually the immediate causes of death in typhoid fever in the third week, and describe the pathological condition you would expect to find post mortem in such a case?

5. In a severe or neglected case of diphtheria what organic lesions are usually found?

6. Describe fully the permanent changes likely to result from a neglected, long-standing case of gonorrheal infection.

7. What changes take place in the brain in senile dementia?

8. Describe the changes which take place in the eye in glaucoma.

9. Describe the condition of the lungs you would expect to find in a case of death of a child of two years old from pneumonia resulting from a severe neglected attack of measles.

10. Give the pathology of Addison's disease.

GYNECOLOGY.

Answer Ten (10) Questions Only.

1. How would you determine whether cancer of the cervix is operable or not?

2. Amenorrhea, classification, causes?

3. A fibroid tumor, the size of an orange, complicating pregnancy, what would you advise?

4. How would you determine if the pelvic floor is normal in a multipara?

5. Differential diagnosis, appendicitis and adnexal inflammation of the right side.

6. The use of the pessary in retroversion of the uterus, and the mechanism of its support?

7. Diagnosis between the menopause and pregnancy within the first four months?

8. What may be revealed by digital examination of the vagina?

9. Differential diagnosis, ovarian cyst with twisted pedicle and extrauterine pregnancy?

10. Describe a normal menstruation and state the changes that take place in the uterine mucous membrane.

11. What are the common causes of prolapsus uteri? In an operation for its cure, what conditions must be met, and how?

12. Describe the Fallopian tubes and ovaries, what are the natural supports?

OBSTETRICS.

Answer Ten (10) Questions Only.

1. What changes occur in the blood during pregnancy?

2. Give the names and measurements of the diameter of the pelvic inlet?

3. Describe fully the proper management when the head is above the superior straight and will not engage?

4. What do you understand by episotomy, and when is it called for?

5. What methods would you pursue for resuscitation of still-born child?

6. How would you determine that a dead infant had been born alive?

7. Describe conception and what is its physiology?

8. Give (*a*) some of the important intrauterine causes of asphyxia in the new born; (*b*) the external causes?

9. Describe in detail the changes that occur in uterus following childbirth and how long a time is required for involution?

10. In breach presentations describe the different methods of delivering the after-coming head?

11. What do you understand by version? Describe the management in two different forms.

12. What are the more common causes of adherent placenta?

HYGIENE.

Answer Ten (10) Questions Only.

1. Name four points to be observed in personal hygiene to prevent acquiring or imparting tuberculosis.

2. What course would you advise to be pursued to prevent tuberculosis in a child of tuberculous parents? Name four principal points.

3. What are the causes of mouth breathing and what are the deleterious results?

4. Name some special precautions a child should observe at school in order to avoid contracting disease.

5. Describe some practical steps to be pursued by a municipality for the prevention of the spread of venereal diseases.

6. What should be done in prisons to prevent the spread of tuberculosis?

7. In a residence that is heated by a hot-air furnace located in the basement, what should be done to insure that the hot air is pure?

8. What are the hygienic advantages of automobiles over horses at the home and in the city?

9. Why is candy now one of the factors in the diet of American soldiers in the Philippines? What are the usual adulterations to be found in candy?

10. What are the dangers from the house fly? How would you prevent the breeding of flies? Describe three of the best methods of killing flies.

11. Give observations and methods necessary in the inspection of milk.

12. What sanitary precautions should be observed in typhoid fever? Give methods in detail.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA.

San Francisco, August, 1911.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 1307; or Gray's "Anatomy" (1910), pages 331, 337, and 338.

2. The median and ulnar nerves.

3. The *bifurcation of the trachea* is at the level of the spinous process of the fourth dorsal vertebra.

The *fundus of the gall-bladder* is close to the outer margin of the right rectus abdominalis muscle, on a level with the ninth costal cartilage.

The *spinal cord terminates* at the lower border of the body of the first lumbar vertebra.

For *spleen* and *kidney* see Cunningham's "Anatomy" (1909), pages 1210 and 1130; or Gray's "Anatomy" (1910), pages 1448 and 1356.

4. (1) Sclera and cornea; (2) choroid, ciliary body, and iris; (3) retina. See Cunningham's "Anatomy" (1909), page 725; or Gray's "Anatomy" (1910), page 1091.

5. (*a*) The *deep cardiac plexus* is situated in front of the trachea, at its bifurcation, above the point of division of the pulmonary artery, and behind the arch of the aorta.

(*b*) The *celiac plexus* surrounds the celiac axis and root of superior mesenteric artery.

(*c*) The *aortic plexus* is on the sides and front of the aorta, between the origin of the superior and inferior mesenteric arteries.

(*d*) *Auerbach's plexus* lies between the circular and longitudinal muscular fibers of the intestines.

(*e*) *Meissner's plexus* lies in the submucous coat of the intestines.

6. See Cunningham's "Anatomy" (1909), page 902; or Gray's "Anatomy" (1910), page 754.

7. Paralysis of the abducens nerve causes internal or convergent strabismus.

8. See Cunningham's "Anatomy" (1909), page 1185; or Gray's "Anatomy" (1910), page 1403.

9. *Structures passing through superior opening of the thorax:* Sternohyoid, sternothyroid, inferior thyroid veins, trachea, esophagus, longus colli, recurrent laryngeal nerves, apex of lung, internal mammary artery, phrenic and vagus nerves; innominate vein and artery, cardiac nerves, right lymphatic duct, left common carotid and subclavian arteries, thoracic duct, sympathetic and first thoracic nerves, superior intercostal artery.

10. The spermatic arteries arise from the front of the abdominal aorta, a little below the origin of the renal arteries.

11. See Cunningham's "Anatomy" (1909), pages 1286 and 1109; or Gray's "Anatomy" (1910), page 1336.

12. See Cunningham's "Anatomy" (1909), page 977; or Gray's "Anatomy" (1910), page 1183.

HISTOLOGY.

1. See Cunningham's "Anatomy" (1909), page 773; or Gray's "Anatomy" (1910), page 1157.

2. The primary blastodermic layers are the ectoderm, entoderm, and mesoderm. From the *mesothelium* are derived the various endothelial cells which line the serous cavities. From the *mesenchyme* are derived the different forms of connective tissue, as bone, cartilage, fibrous tissue, etc., blood, blood-vessels, lymphatics, spleen.

3. See Cunningham's "Anatomy" (1909), page 726; or Gray's "Anatomy" (1910), page 1093.

4. See Cunningham's "Anatomy" (1909), pages 1220 and 906; or Gray's "Anatomy" (1910), pages 1443 and 771.

5. See Cunningham's "Anatomy" (1909), pages 1213 and 1139; or Gray's "Anatomy" (1910), pages 1447 and 1352.

6. See Cunningham's "Anatomy" (1909), pages 975 and 1041; or Gray's "Anatomy" (1910), pages 1179 and 1238.

7. See Cunningham's "Anatomy" (1909), pages 512, 585, 732, and 1161; or Gray's "Anatomy" (1910), pages 953, 893, 1103, and 1384; and see QUESTION 10.

8. See Cunningham's "Anatomy" (1909), page 1128; or Gray's "Anatomy" (1910), pages 1341 and 1228.

9. See Cunningham's "Anatomy" (1909), page 444.

10. An *erythrocyte* is a red blood corpuscle. It is a circular, biconcave, non-nucleated disc; it is soft and elastic; it contains hemoglobin and a stroma. In the adult it is non-nucleated; in early fetal life it is nucleated.

PHYSIOLOGY.

1. If an animal is curarized and a skeletal muscle is stimulated it will contract, thereby proving it has an independent irritability.

2. *Contracture* is change in the form of a muscle, due to a stimulus.

Tetanus: When stimuli are added so rapidly that the effects of the preceding ones have not had time to pass off the muscle is at no time perfectly relaxed; this condition is called *tetonus.*

Summation: If a muscle which has been stimulated is again stimulated before the effect of the first stimulation has ceased, a second curve is produced which is higher than the first, and is due to the addition of the second stimulus to the former one; this is called *summation of stimulation.*

Muscle tonus is the state of continuous contraction which is generally but slight.

Rigor is the condition into which muscle passes when it dies, or passes from a fluid to a solid state; the muscle shortens, becomes rigid, and does not respond to stimuli.

3. "In the reflex from tickling, for instance, we know that by a voluntary act we can repress the muscular movements up to a certain point; so also the limited control of the action of the respiratory and micturition centers is a phenomenon of the same character. To explain such acts we may assume the existence of a definite set of inhibitory fibers, arising in parts of the brain and distributed to the spinal cord, whose function is that of controlling the activities of the spinal centers. In view of the fact, however, that there is no independent proof of the existence of a separate set of inhibitory fibers within the central nervous system; that is, a set of fibers whose specific energy is that of inhibition, it is preferable to speak simply of the inhibitory influence of the brain upon the cord, leaving undecided the question as to whether this influence is exerted through a special set of fibers or is

brought about by some variation in the time relations, intensity, or quality of the nerve impulses."—(Howell.)

4. *Causes of intravascular clotting:* Damage to, absence of, or disease of the intima or vessel walls: the presence in the circulation of substances not covered by endothelium; retardation of the blood-stream; certain conditions of the blood such as are found after inflammations, diseases, hemorrhages.

5. *Regeneration of blood after a hemorrhage:* "If the bleeding does not go on to death the blood is restored by absorption from the tissues or from the food taken in; the first to be absorbed being the serum sanguinis, with the dissolved salts, and then the albumen. A longer time is required to form new red blood-corpuscles. Regenerated blood is at first abnormally watery and poor in cells. As a result of the greater flow of lymph into the blood the number of white blood-corpuscles is greatly increased, and then their number falls off; the red blood-corpuscles again attain their usual number, and the composition of the blood gradually returns to the normal. We do not as yet know certainly how the restoration of the red blood-corpuscles takes place. The most generally accepted view is that colorless corpuscles are being constantly formed in the lymph glands, in the spleen, in the bone marrow, and in the liver, and a certain number of these colorless corpuscles change into the red disks."—(Tillmann's *Surgery.*)

6. *Coronary circulation during the heart beat:* "During systole, the mouths of the coronary arteries are in free communication with the aorta. But the coronary system—arteries, capillaries, and veins—is in part imbedded in the musculature of the ventricles, and we should suppose that the greater pressure exerted by the contracting musculature would at the height of systole clamp off this system and stop the coronary circulation. That this result really happens is indicated by Rebatel's curves which show a great acceleration in the velocity at the beginning of systole, quickly followed by a drop to zero or even a negative value—indicating a flow in the other direction, toward the aorta. At the end of the first (relaxation) phase of diastole, there is again a sudden increase in velocity, corresponding with the injection of the arteries from the aorta, and this again by a decrease at the end of the diastole at the time when the ventricular cavity is filled with venous blood under some pressure. . . . . The rhythmical squeeze of its own vessels during systole accelerates effectively the coronary circulation."—(From Howell's *Physiology.*)

7. Heart muscle contracts more slowly than skeletal muscle, and also has the power of rhythmic contractility; heart muscle is involuntary (physiologically), whereas skeletal muscle is voluntary.

8. *Intrathoracic pressure* is the pressure in the thoracic cavity outside the lungs.

Intrapulmonic pressure is the pressure in the interior of the lungs and air passages.

9. *General properties of enzymes:* They are generally soluble in water, or salt solutions, or in glycerine; they do not work in extreme temperatures, but require an "optimum" temperature approximating that of the body; they are precipitated by excess of alcohol; they require a suitable medium to work in; the products of their activity must be removed; they are capable of causing change in a large amount of material, while they themselves remain unaltered.

10. *The hydrochloric acid* is formed from the chlorides of the blood in the secreting cells of the stomach. The sodium chloride is broken up and the chlorine combines with hydrogen and is then secreted as hydrochloric acid.

11. *Absorption of fats:* Fats exist finally in the small intestine as glycerine salts and soaps. The columnar epithelial cells certainly absorb these substances, and cause them to combine back, as it were, and thus there appear fine droplets of fat in the epithelial cells. These droplets are then extruded into the subjacent corium of adenoid tissue, where they are taken up by ameboid cells. These cells then pass into the lacteals; some give out their fatty droplets without undergoing disintegration; the majority of them, however, undergo disintegration. There is thus formed in the lacteals an emulsion, with lymph as the suspending agent. This emulsion passes along the lacteals, which converge upon a large lymphatic sac—the receptaculum chyli—whence passes the thoracic duct, to terminate by entering into the angle of junction between the left internal jugular and subclavian. Mixing with the blood, the fat droplets are carried all over the body, and are finally deposited in fatty cells in adipose tissue, probably being carried there from the blood by leucocytes.—(Lack.)

12. *The internal secretions of the liver* are glycogen and urea.

CHEMISTRY AND TOXICOLOGY.

1. *Inorganic chemistry* is the chemistry of compounds which do not contain carbon.

Organic chemistry is the chemistry of the carbon compounds.

Synthetic chemistry is that branch of chemistry which is concerned with the building up of compounds out of elements or simpler compounds.

Physiological chemistry is the chemistry of the living organism and its various processes.

Pharmaceutical chemistry is chemistry in its application to the analysis or synthesis, or preparation of drugs.

2. *The calcium group* consists of calcium, barium, and strontium. These elements are called the metals of the alkaline earths, they are bivalent in all their compounds, they form two oxides, their sulphates and carbonates are insoluble or very slightly soluble, their hydroxides are known as the alkaline earths and have basic characters.

The *chlorine group* consists of chlorine, fluorine, bromine, and iodine. They are called halogens; they are generally univalent; they form hydracids, consisting of one volume of the element in the gaseous form with one volume of hydrogen; they form monobasic acids; they all possess bleaching and disinfecting powers, and are strongly irritant. Fluorine is a gas but can be liquefied with difficulty; chlorine is an easily liquefied gas; bromine a liquid, and iodine a solid.

3. Tin can be distinguished from other metals by the peculiar crackling sound it emits on being bent.

4. Ferrous sulphate, $FeSO_4$; ferrous carbonate, $FeCO_3$; ferrous iodide, FeI_2; ferric chloride, Fe_2Cl_6; ferric sulphate, $Fe_2(SO_4)_3$; ferric hydroxide, $Fe_2(OH)_6$; ferric ammonium sulphate $FeNH_4(SO_4)_2$; ferric hypophosphite, $Fe(H_2PO_2)_3$; ferric citrate, $FeC_6H_5O_7$; ferrous lactate, $Fe(C_3H_5O_3)_2$.

5. Oxygen can be prepared by heating potassium chlorate in a glass flask fitted with a perforated cork and a bent tube for conveying the gas to a pneumatic trough, where it can be collected over water.

$$2KClO_3 = 2KCl + 3O_2.$$

6. *Normal mixed saliva contains:* Water, mucin, albumin, ptyalin, maltase, urea, potassium thiocyanate, potassium oxide, sodium oxide, calcium oxide, ferric oxide, magnesium oxide, sodium chloride, potassium chloride, sodium bicarbonate.

7. *To determine the specific gravity of blood*: Make a mixture of chloroform and benzol, in such proportions that the specific gravity of the mixture is almost 1050 to 1055. Let a drop of blood fall into it. If the blood sinks add more benzol; if it floats on the surface add more chloroform until the blood drop remains suspended. The specific gravity of the mixture is then determined, and is equal to the specific gravity of the blood.

8. Quantitative tests of gastric juice reveal: The quantity of hydrochloric acid, the total acidity, combined acidity, free acidity, and acidity due to organic acids and acid salt, the existence of hyperchlorhydria, hypochlorhydria or anachlorhydria.

9. *Acid albumins* are insoluble in water, in dilute saline solutions and in alcohol. When freshly precipitated they are readily soluble in dilute acids or alkalis, but insoluble when mixed with calcium carbonate suspended in water.

Alkali albumins dissolve very sparingly in water and in saline solutions, slightly soluble in hot alcohol. Shaken with water and calcium carbonate they dissolve, liberating carbon dioxide. They are not coagulated by heat, but are readily precipitated in an acid, if saturated with solution of sodium chloride.

10. Give magnesia suspended in water, or a solution of soap. The stomach pump should not be used, as its introduction may cause perforation of the already corroded tissues.

11. There is no chemical antidote to phosphorus; the physiological antidote is old French oil of turpentine.

12. In a urine that reduces Fehling's solution the following poisons might be suspected: Acetanilide, chloral, chloroform, morphine, antipyrine, copaiba, rhubarb and salicylic acid.

BACTERIOLOGY.

1. See French's "Practice of Medicine" (1910), pages 798 and 292; or Osler's "Practice of Medicine" (1909), pages 505 and 230.

2. *Favus* is caused by Achorion schonleinü: *Ringworm*, by Tricophyton fungus; *Elephantiasis*, by Filaria sanguinea hominnis; *Soft Chancre*, by bacillus of Ducrey: *Fermentation of Sugar*, by Enzymes.

3. See French's "Practice of Medicine" (1910), page 181; or Osler's "Practice of Medicine" (1909), page 194.

4. See French's "Practice of Medicine" (1910), page 267; or Osler's "Practice of Medicine" (1909), page 234.

5. Koch claimed that tuberculin would not directly kill the bacilli, but that it would act powerfully and specifically upon living tuberculous tissue, causing a necrotic condition and hastening its disintegration. He also claimed that it might be expected to increase the resistant power of healthy tissue, and to starve the bacilli, check their increase and so lead to the cure of the disease. (Potter.)

6. The specific test for syphilis is the Wassermann reaction. "The principle involved is that hemolysis does not occur in the presence of a hemolytic amboceptor when emulsions of bacteria are mixed with an inactivated serum with the addition of a complement. The reason is that the complement binds itself with the bacteria and thus prevents the union of complement with the red cell through the medium of the amboceptor." (Wilcox's *Treatment of Disease.*)

7. See French's "Practice of Medicine" (1910), page 461; or Osler's "Practice of Medicine" (1909), page 257.

8. *Hemolysis* is the destruction of the red blood corpuscles by a specific antiserum.

Bactericide is any agent capable of destroying bacteria.

Phagocytosis is the process by which cells (chiefly leucocytes) ingest bacteria or other cells.

Antitoxin is a substance in the serum which neutralizes a toxin.

Antigen is a substance which, when introduced into the animal organism, produces an antibody.

9. *Five germs which may cause conjunctivitis:* Koch-Weeks bacillus, pneumococcus, gonococcus, streptococcus pyogenes, and staphylococcus pyogenes aureus.

10. See Rose and Carless' "Surgery" (1908), page 63; or Da Costa's "Surgery" (1908), pages 42 and 127.

11. See French's "Practice of Medicine" (1910), page 60.

12. See French's "Practice of Medicine" (1910), page 770; or Osler's "Practice of Medicine" (1909), page 483.

GENERAL DIAGNOSIS.

1. See Rose and Carless' "Surgery" (1908), page 759; or Da Costa's "Surgery" (1908), page 763.

2. See French's "Practice of Medicine" (1910), page 348; or Osler's "Practice of Medicine" (1909), page 302.

3. See French's "Practice of Medicine" (1910), page 636; or Osler's "Practice of Medicine" (1909), page 841.

4. See French's "Practice of Medicine" (1910), pages 943 and 948; or Osler's "Practice of Medicine" (1909), pages 389 and 393.

Venous pulse is a pulsation occasionally observed in the jugular veins, owing to some of the blood of the right ventricle flowing back into the right auricle and communicating an impulse to the venous blood entering the auricle from the superior vena cava.

Carrigan pulse is a pulse characterized by a short, sharp, strong impulse, which seems to collapse under the examiner's fingers. It is found in aortic regurgitation.

Pulsus mollis, or soft pulse, is one of low tension and easily compressible.

Dicrotic pulse is one in which the first impulse is quickly followed by another impulse or secondary wave.

Pulsus bigeminus is one in which there are two regular beats followed by a longer pause.

6. IRITIS. *Causes:* Syphilis, rheumatism, gonorrhea, gout, diabetes, leprosy, scrofula, tuberculosis, injury transmission from the eye. *Symptams:* Pain, photophobia, small pupil, ciliary congestion, discoloration of iris, exudate in anterior chamber.

7. See French's "Practice of Medicine" (1910), page 516; or Osler's "Practice of Medicine" (1909), page 724.

8. See French's "Practice of Medicine" (1910), pages 346, 362 and 375; or Osler's "Practice of Medicine" (1909), page 301.

9. See French's "Practice of Medicine" (1910), page 646; or Osler's "Practice of Medicine" (1909), page 855.

10. See French's "Practice of Medicine" (1910), pages 1222 and 1224.

11. A *delusion* is a belief in something which has no real existence, but is purely imaginary; and out of which the person cannot be reasoned. An *illusion* is a false or perverted impression, received through one of the senses. An *hallucination* is the same as an illusion, but without any material basis.

If an individual believes himself to be made of glass, and is afraid of being touched lest he be broken, he is suffering from a *delusion*. If the whistling of the wind is mistaken for a voice telling a person to do a certain thing—that would be an *illusion*. If a person fancied he heard a voice when there was nothing at all to be heard, that would be an *hallucination*.

Paranoia is a primary chronic form of insanity, occurring especially in degenerates, and marked by hallucinations and delusions which are systematized, *i.e.* exhibit a logical connection and sequence, so that the patient from his perverted ideas, in which he firmly believes, draws logical and coherent influences. (From Duane's *Medical Dictionary.*)

12. See French's "Practice of Medicine" (1910), pages 81 and 86, etc.; or Osler's "Practice of Medicine" (1909), pages 70 and 80, etc.

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), pages 526, 529, and 530; or Osler's "Practice of Medicine" (1909), page 732.

2. See Rose and Carless' "Surgery" (1908), page 255; or Da Costa's "Surgery" (1908), page 114.

3. See Rose and Carless' "Surgery" (1908), page 186; or Da Costa's "Surgery" (1908), page 301.

4. See French's "Practice of Medicine" (1910), pages 70, 77, and 86; or Osler's "Practice of Medicine" (1909), pages 66 and 80.

5. See French's "Practice of Medicine" (1910), page 190; or Osler's "Practice of Medicine" (1909), pages 199 and 203.

6. See French's "Practice of Medicine" (1910), page 217; or Osler's "Practice of Medicine" (1909), page 282.

7. "The characteristic change of *senile dementia* consists of a general sclerosis of the arteries of the brain, often with hyalin fibrous degeneration. Sometimes the great vessels are intact while the small vessels and capillaries are diseased. There is an attenuation of the bones of the cranium, the diploe is visible (malum senile), generally external and internal pachymeningitis are present, quite often with hematomata, clouding of the arachnoid inlaid with calcareous plaques, large Pacchionian granulations, atrophy of the brain cortex, especially of the frontal lobes, and granulations of the ependyma. In a third of all cases there is hemorrhagic or thrombotic softening of the brain: further, sclerotic changes in the spinal cord. Microscopically, the atrophic brain shows hypertrophy of the neuroglia, sometimes with miliary sclerosis of the cerebral cortex, disappearance of the tangential fibers, decrease of the number of the nerve cells of which those present are atropho-pigmentous, and fatty degeneration with chromatolysis. The smallest vessels and capillaries often seem destroyed, sometimes changed into strings without lumen. The peripheral nerves often show signs of a degenerative neuritis."—(Mendel-Krauss.)

8. In *acute glaucoma:* "Objective examination reveals marked increase in tension; the cornea is clouded or steamy (due to edema), often presents punctate opacities, and is insensitive (from pressure upon nerve filaments): there is pronounced circumcorneal injection of a dark red color; the episcleral veins are prominent. The pupil is dilated, oval, immobile, and often presents a greenish reflex. The iris is congested, discolored, and dull. The anterior chamber is shallow, the aqueous sometimes turbid. The lens and the periphery of the iris are pushed forward. The lids are swollen and edematous. The ocular conjunctiva is markedly congested and chemotic. No details of the fundus can be seen with the ophthalmoscope, on account of the clouding of the media."—(May.)

9. See French's "Practice of Medicine" (1910), pages 329 and 687; or Osler's "Practice of Medicine" (1909), pages 143 and 622.

10. See French's "Practice of Medicine" (1910), page 549; or Osler's "Practice of Medicine" (1909), page 756.

GYNECOLOGY.

1. Cancer of the cervix is only operable when the disease does not extend beyond the uterus; and if the vagina, or broad ligament, or rectum, or bladder, or pelvic cellular tissues are involved, an operation is useless.

2. Amenorrhea is the absence of menstruation.

It is *physialogical:* Before puberty, during pregnancy and early lactation, and after the menopause. Otherwise, it is *pathological*, and may be due to: Absence or imperfect development of the generative organs; also to stenosis, obstructions, or atresia of the genital tract: also to operative removal of the uterus or its appendages. Other causative factors are: Acute infectious diseases, anemia, chlorosis, obesity, drug habits, alcoholism, overstudy, lack of exercise, exposure to cold and various emotional causes. When due to anemia, chlorosis, etc., it is said to be *canstitutional.* Amenorrhea is also called *primary* when the flow has never been established; *secondary*, when it is suppressed.

3. See Williams' "Obstetrics" (1909), page 674; or Hirst's "Obstetrics" (1909), page 223.

4. See Hirst's "Obstetrics" (1909), page 607.

5.

APPENDICITIS.	TUBO-OVARIAN DISEASE.
1. No previous local disturbances.	1. Genitourinary functions previously disturbed. Usually a history of gonorrheal or puerperal infection
2. Chill usually absent.	2. Chill may precede fever.
3. Pain in right iliac region, sudden onset, acute, and not radiating to thighs.	3. Gradual onset, pain dull, continuous, and radiating.
4. Fever of variable degree.	4. Fever often entirely absent.
5. Musular rigidity on right side of the abdomen.	5. No muscular rigidity unless complicated by peritonitis.
6. Inflammatory exudate about appendix three to five days after onset of symptoms.	6. Inflammatory exudate in the pelvis felt by vaginal examination at the onset of the symptoms.
7. Vaginal examination is rarely painful in appendicitis.	7. Always painful in tubo-ovarian disease.

—(Findley.)

6. The pessary is only indicated in the absence of adhesions and inflammation, and when it can be worn without discomfort. "The vaginal pessary retains the uterus in place by raising the posterior vaginal fornix and keeping tense the posterior vaginal wall. The posterior wall of the vagina runs over the upper transverse bar of the pessary like a rope over a pulley; therefore there is maintained a continuous traction in an upward and backward direction upon the cervix, and a resulting continuous tendency to throw the fundus uteri in a forward position. The tension of the posterior vaginal wall and the traction upon the cervix vary with the position and occupation of the woman, and are increased by anything that increases the intraabdominal pressure. The vaginal pessary does not maintain the uterus in place by pressure upon the body of the uterus, nor does the vaginal pessary correct a retrodisplacement. The uterus should be restored to its normal position as nearly as possible before the pessary is introduced."—(Penrose.)

7. In the *menopause* there is cessation of menstruation; but none of the other signs of pregnancy. See Williams' "Obstetrics" (1909), page 190; or Hirst's "Obstetrics" (1909), page 204.

8. From *a digital examination of the vagina* can be learned the presence or absence of vaginismus; the size, position, temperature, sensitiveness, moisture, and laxity of the vagina; the presence of foreign bodies, hernia, fissures, or caruncles; the position, form and consistency of the cervix uteri; lacerations (including position, number, extent and direction), erosions, growths, or cysts on the cervix; prolapse, displacements and size and position of the uterus.

9. EXTRAUTERINE PREGNANCY.	OVARIAN CYST.
1. Rapid and regular growth.	1. Slower growth.
2. Amenorrhea, followed by menorrhagia, with discharge of pieces of decidua.	2. Menstruation not altered except occasionally in broad-ligament cysts.
3. General symptoms of pregnancy present, changes in color of vagina, etc.	3. Symptoms of pregnancy absent.
4. Enlargement of the uterus.	4. No enlargement of the uterus.
5. Attacks of pain increasing in severity, finally culminating in a very severe attack, followed by shock and symptoms of internal hemorrhage.	5. In small cysts, no attacks of pain except from pressure.
6. Pain is intermittent.	6. The twisted pedicle may cause sudden and acute pain.

(From Wells.)

10. See Williams' "Obstetrics" (1909), page 81; or Hirst's "Obstetrics" (1909), page 58.

11. PROLAPSUS UTERI. *Etiology:* Injury at childbirth, lacerated perineum, relaxation and elongation of the ligaments of the uterus, loss of rigidity of the abdominal walls, increase in the weight of the uterus, subinvolution, increased intraabdominal pressure. *Treatment:* "A prolapsed uterus must first be placed in proper position, or a procidentia reduced. In many cases the introduction of a rubber ring pessary will then suffice to prevent recurrence. But it will often be found necessary to repair a torn perineum, removing at the same time redundant portions of the vaginal walls, before the ring will remain in the vagina. When such an operation is contraindicated, and the vaginal orifice is so wide that a ring cannot be kept in, some form of pessary with a vaginal stem and perineal bands will be required. In cases of procidentia, where the exposed surface is much ulcerated, the patient should be kept in bed, emollient applications made to the ulcers, and vaginal douches given. When the ulcers have healed, a pessary may be introduced. Procidentia due to supravaginal elongation of the cervix must be differently dealt with. Amputation of a portion of the cervix must therefore form the first step in the treatment, and it may be required also when the hyperplasia is secondary to descent. Cases of prolapse and procidentia which resist milder measures require further operative procedures, such as ventrofixation of the uterus or the shortening of the round ligaments. It is in cases of this kind that hysteropexy has often given satisfactory results. Total extirpation of the uterus has been advised and practised for the treatment of procidentia."—(Sutton and Giles' *Diseases of Women.*)

12. See Williams' "Obstetrics," (1909), pages 55 and 60; or Hirst's "Obstetrics" (1909), page 53.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), page 172; or Hirst's "Obstetrics" (1909), page 185.

2. See Williams' "Obstetrics" (1909), page 4; or Hirst's "Obstetrics" (1909), page 22.

3. Empty the bladder and rectum; determine if there is a faulty presentation, as bregma, brow, or face. Measure diagonal conjugate and height of symphysis and determine the true conjugate. If this latter measures less than 2¾ inches in a simple flat pelvis, or 3 inches in generally contracted pelvis, the contraction is absolute, and only cesarean section or craniotomy is possible. Ascertain by palpation whether there is serious disproportion between head and pelvis. Malpresentations must be corrected with one hand in vagina pressing upward on the fetal anterior portion of the presenting part, and if possible drawing down in the occipital pole, aided by external manipulation. Press the head downward into the pelvis; this maneuver may be aided by Walcher's position. If there is marked disproportion, cesarean section and craniotomy must be considered. If disproportion is apparently not insuperable, rupture the membranes just after the acme of a pain, when the cervix is fully dilated, keeping the patient in Walcher's position. If the head thereupon engages during the next few pains, allow spontaneous delivery, or aid with forceps if necessary. If the head still refuses to engage, apply axis-traction forceps in Walcher's position, tentatively; if unsuccessful, perform podalic version by combined or internal method. If membranes have already ruptured, note whether there is marked retraction ring. If not, podalic version is proper, subject to limitation of slight disproportion; but if the uterus has retracted markedly, forceps, and that failing, only cesarean section, symphyseotomy, or craniotomy is admissible.—(From Scott's *State Board Obstetrics.*)

4. See Williams' "Obstetrics" (1909), page 318; or Hirst's "Obstetrics" (1909), page 334.

5. See Williams' "Obstetrics" (1909), page 846; or Hirst's "Obstetrics" (1909), page 939.

6. *Application of Hydrostatic Test.*—Having opened chest, note *position* of lungs (*before* respiration they occupy a small space at upper and posterior parts of thorax); their *volume* (of course increased after breathing); their *shape* (before respiration, borders sharp or pointed; after it, rounded); their *color* (before breathing, brownish-red; after it, pale red or pink), their appearance as regards disease and putrefaction; and whether they *crepitate* on pressure (as they will *after* respiration).

"Take out lungs, with heart attached, and place them in pure water having temperature of surrounding air. Note whether they float (high or low), or sink (slowly or rapidly). Separate them from the heart; weigh them accurately, and then place them in water again, and note sinking or floating as before. Subject each lung to pressure with the hand, and note sinking or floating again. Cut each lung in pieces and test floating again. Take out each piece, wrap it in a cloth, and compress with fingers as hard as possible, and test floating, etc., as before. The crucial test of *perfect respiration* is each piece floating after the most vigorous compression."—(King's *Manual of Obstetrics.*)

7. See Williams' "Obstetrics" (1909), page 94; or Hirst's "Obstetrics" (1909), page 73.

8. See Williams' "Obstetrics" (1909), page 844; or Hirst's "Obstetrics" (1909), page 939.
9. See Williams' "Obstetrics" (1909), page 332; or Hirst's "Obstetrics" (1909), page 348.
10. See Williams' "Obstetrics" (1909), page 425; or Hirst's "Obstetrics" (1909), page 838.
11. See Williams' "Obstetrics" (1909), pages 432, 433 and 435; or Hirst's "Obstetrics" (1909), pages 827, 829 and 830.
12. See Williams' "Obstetrics" (1909), page 596; or Hirst's "Obstetrics" (1909), page 436.

HYGIENE.

1. (1) Careful disinfection or burning of sputum; (2) avoidance of spitting in public places; (3) plenty of fresh air and sunlight; (4) avoidance of kissing.

2. (1) The child should not sleep in the same bed with the parent; (2) the child should (if possible) have a sleeping room to itself; (3) avoidance of kissing; (4) the child should be kept in the open air and sunshine as much as possible, and should be well and suitably fed.

3. See French's "Practice of Medicine" (1910), page 736; or Osler's "Practice of Medicine" (1909), page 447.

4. *The principal means of preventing the spread of contagious diseases in schools* are: Regular and efficient inspection by physicians; prompt exclusion and isolation of anyone suffering from a contagious disease, or coming from a house where such disease is; compulsory vaccination; compulsory notification of all infectious and contagious disease; individual towels, drinking vessels, and other implements; children who have had a contagious or infectious disease, or who have come from a house where such disease prevailed, should not be readmitted to school until sufficient time has elapsed since the occurrence of the last case to insure safety.

5. *Practical steps to prevent the spread of venereal diseases in a community*: (1) The scientific and practical control of prostitution (this is always oposed); (2) the education of the public on the dangers of venereal diseases (this is generally opposed); adequate instruction in hygiene in the public schools.

6. The cells should be disinfected after the removal of each prisoner; tuberculous prisoners should have their individual cups and eating utensils and implements; also cloths and towels for their own use; spitting should be prohibited except in receptacles specially provided for the purpose; sputum should be disinfected or burnt.

7. The air should be filtered before it reaches the furnace.

8. *Hygienic advantages of automobiles over horses:* Absence of stables, manure, etc., flies; hence greater cleanliness and comfort, and less disease.

9. Candy is an important factor in the diet of the soldier on account of the sugar it contains. The sugar gives strength to muscles and helps to produce fat; it delays fatigue, and increases working power. After much hard work, sugar quickly revives and restores the jaded muscles.

Usual adulterations in candy: Terra alba, glucose, starch, cocoa butter, coloring agents.

10. The house fly is one of the commonest agents in the transmission of disease. *To prevent the breeding of flies*, keep the house and surroundings clean; cover up garbage, burn sputum, leave no dirt or manure in yard or stable. *To kill flies*: Catch them in traps or on flypapers, and then burn them; or "swat" them.

11. *For milk:* The inspection should include: the color, reaction, specific gravity, sediment, taste, odor, acidity, total quantity of solids and of water; the percentage of cream, fats, lactose, casein and ash; the presence or absence of preservatives, coloring matter, added solids, dilution, pathogenic microorganism, dirt or other foreign matter. There should also be thorough investigation as to its source, the cows and their environment, the method employed in caring for, milking, storing, and transporting the milk.

12. See French's "Practice of Medicine" (1910), page 107; or Osler's "Practice of Medicine" (1909), page 96.

Lemons in Fetid Bronchitis.—Kobert has recommended lemons by inhalation and per os for the fetid breath and sputum of pulmonary gangrene, phthisis and bronchiectasis. The communication was made before the Aesztlicher Verein at Essen-Ruhr by Grober. Kobert finds lemons superior to the old and time-honored turpentine for the purpose indicated. Lemons artificially purified are used, the oil being strongly antiseptic and having a pleasant odor and taste. The substance employed is apparently the commercial product used largely with us for flavoring jelly and making lemonade.—*Berliner klinische Wochenschrift.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended October 14, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	394	148
Diphtheria	182	17
Measles	82	3
Scarlet Fever	91	2
Smallpox	1	—
Varicella	39	—
Typhoid Fever	97	22
Whooping Cough	25	6
Cerebrospinal Meningitis	3	3
Malarial Fever	—	
Totals	914	201

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended October 13, 1911:

CHOLERA

Places	Date	Cases	Deaths
Austria-Hungary: Arbe	Sept. 4–10	1	..
Budapest	Sept. 6–9	2	..
Campodistria	Sept. 4–10	2	1
Czap	Aug. 24–Sept. 9	1	.
Suly	Sept. 3–9	2	..
Vienna	Sept. 4–10	3	1
Italy		..	..
Total Sept. 10–16: Cases 959, deaths 328.			
Japan: Nishomayo	Aug. 28–Sept. 3	2	..
Osaka	Aug. 28–Sept. 3	..	Present
Java: Batavia	Aug. 20–26	9	5
Roumania: Braila	Sept. 11	6	4
Sept. 13: 3 cases and 2 deaths in a village in vicinity.			
Russia		—	..
Total Aug. 27-Sept. 2: Cases, 183; Deaths, 80.			
Governments—Astrakhan	Aug. 27–Sept. 2	112	43
Nijni Novgorod	Aug. 27–Sept. 2	1	..
Novorossisk, city	Aug. 27–Sept. 2	2	2
Rostovon Don, city	Aug. 27–Sept. 2	10	3
Samara	Aug. 27–Sept. 2	2	..
Saratov	Aug. 27–Sept. 2	47	21
Simbirsk	Aug. 27–Sept. 2	9	10
Tambov	Aug. 27–Sept. 2	..	1
Straits Settlements: Singapore	Aug. 13–19	2	4
Turkey in Asia: Harput	Aug. 27–Sept. 9	12	10

YELLOW FEVER

Brazil: Manaos	Aug. 27–Sept. 9	..	4
Pernambuco	Aug. 1–15	..	2
Mexico: Merida	Sept. 17–30	10	2
Venezuela: Caracas	Aug. 27–Sept. 9	3	..

PLAGUE

Brazil: Pernambuco	Aug. 1–15	..	1
Rio de Janeiro	Aug. 27–Sept. 9	4	1
Oct. 9, 1 case.			
China: Hongkong	Jan. 1–Aug. 15	259	240
Including 38 cases and 22 deaths, on p. 1045, vol. 1.			
Egypt: Alexandria	Aug. 13–Sept. 12	3	.
Port Said	Aug. 20–Sept. 3	4	2
Province—Behera	Jan. 19–Sept. 14	3	..
Java: Madioen	Aug. 20–26	1	..
Fifty miles from plague district Imported.			
Pasoeroean Residency	Aug. 20–26	30	11
Venezuela: Baruta	Sept. 3–9	1	..
Caracas	Aug. 27–Sept. 9	2	..

SMALLPOX

Algeria: Algiers	Aug. 1–31	..	2
Brazil: Para	Sept. 9–16	2	..
Pernambuco	Aug. 1–15	..	157
Rio de Janeiro	Aug. 27–Sept. 9	5	..
Canada: Halifax	Sept. 17–30	3	..
Montreal	Sept. 26–30	5	..
Quebec	Sept. 24–30	5	..
Vancouver	Sept. 17–23	2	..
Yukon district	Sept. 17	66	1
On the Porcupine.			
Ceylon: Colombo	Aug. 13–19	3	..
Chile: Talcahuano	Aug. 13–Sept. 9	53	12
Valparaiso	Aug. 27–Sept. 2	75	..
Deaths not reported'			
China: Hongkong	Aug. 20–26	2	1
Italy: Naples	Sept. 10–16	6	..
Palermo	Sept. 9–16	49	44
Java: Batavia	Aug. 20–26	2	..
Mexico: Aguascalientes	Sept. 18–24	..	2
Chihuahua	Sept. 4–10	1	3
Juarez	Sept. 10–30	14	3
Mexico	Sept. 13–30	10	..
Porfirio	Sept. 19–23	1	..
San Luis Potosi	Aug. 27–Sept. 2	1	..
Portugal: Lisbon	Aug. 27–Sept. 16	7	..
Russia: Moscow	Aug. 27–Sept. 9	8	12
Odessa	Sept. 4–10	1	..
St. Petersburg	Aug. 27–Sept. 2	1	..
Straits Settlements: Singapore	Aug. 13–19	5	..
Turkey in Asia: Beirut	Sept. 3–9	15	5

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PSYCHANALYSIS AND CORRECTION OF CHARACTER.*

BY E. W. SCRIPTURE, Ph.D., M.D.,

NEW YORK.

ASSOCIATE IN PSYCHIATRY AT COLUMBIA UNIVERSITY.

A PERSON'S character is unknown to himself. When his characteristics are told to him he instinctively adopts an attitude of opposition. Direct correction proceeds against this resistance. When, however, the characteristic appears to him through psychanalysis it has the effect of a personal discovery which impresses itself deeply on his mind.

Methods must be used that reveal just those most fundamental traits of the person's character which are unknown even to himself. One such method is that of objectification. This I learned from Dr. Jung. The patient is instructed to report all impromptu thoughts concerning the doctor that occur to him.

One patient said that he thinks I am inclined to flights of fancy and to be fundamentally theoretical, and that much of my work has no system. I recalled to him the familiar illustration of a group of travelers who were called upon to make observations on a given object. One man remarked on its manufacture, another on its beauty, another on its salability, etc. It was not difficult to tell that one was a manufacturer, another an artist, the third a commercial traveler, etc. Each one revealed the domain of life in which his thoughts were mainly involved. I then said to the patient that every one made remarks about me according to his own special characteristics, and I asked him, "Are you not fundamentally theoretical and superficial? Don't you have trouble in working systematically?" It struck him as a new thought. Yes, his greatest worry was in the details of life; he took general views of business matters without systematically verifying details. I then pointed out to him that this was a fundamental trait of his character which could be read in his expensive but sometimes neglected clothing, in his generous but sometimes offensively careless manner, etc. Gradually it dawned on his mind that this trait was to a large extent the ruin of his best prospects in life.

Another patient for a long time reported only impromptu thoughts such as "You always wear a collar with turned corners," "You part your hair on the right side," etc. I pointed out to him that those thoughts were not about me personally and that he was merely putting me off in order not to express what he really had in mind. Finally he reported that it had occurred to him that the doctor was essentially a timid man. I explained the principle as in the preceding case and he at once told a long tale of his suffering from intense timidity—a suffering almost beyond belief—that was the ruin of his life. After the resistance had once been broken down the thoughts came freely and the cure proceeded successfully.

Another patient reported, as impromptu thoughts, that the doctor's hair was getting thin and that he was beginning to be stout. The motive for these thoughts was his worry about his own advancing age.

Another patient said: "Your tact and consideration for my feelings are greater than in any one I have ever met." I replied, "It is *you* who are so considerate of other person's feelings." This and similar work led to a picture of the person's mind that was appalling. He was always worrying about what each person thought of him, he lived in constant terror at meeting people, a terror that was unknown to any one but himself. He had never clearly recognized that he alone and not everybody lived in such terror.

Dreams are remarkably effective in revealing unsuspected traits of character. After I had been treating a stutterer for a long time with steady and satisfactory progress, I decided to accelerate the cure by remodeling his character. At the very first treatment he related a dream that occurred while away from home. "I am at home on my farm, and visit the stable. Somehow I get to know that my favorite horse is ill." On arriving home he was told that the horse was actually ill. I asked, "Were you worrying about the horse while away?" He replied, "No." I pointed out that the dream expressed either a wish or a fear that was subconsciously present. He then told me what I had never suspected from two years of acquaintance with him, namely, that he was a chronic worrier. He worried about every trifle in life. He had not consciously worried about the horse but this dominant trait had shown itself even in this simple dream.

Let me now briefly explain some of the well-established laws of dreams.

A little girl eight years old had received a present of some Bantam chickens; she was rather disappointed at their smallness and at the fact that they could not be expected to grow larger. The next morning she related in great glee that she had dreamed she possessed a number of big Cochin China chickens. She had owned some Cochin China chickens the preceding summer. The incidents of the dream were furnished by events of the preceding day (owning the Bantams) and of a time not long before (the Cochin Chinas). The incidents of the dream we will call its "manifest content." The study of thousands of dreams has established as a first principle that the manifest content is derived mainly from events of the day before or of a recent time.

Why should the little girl have a dream substitut-

*Address before the American Neurological Association, Baltimore, 1911.

ing large chickens for small ones? Her pleasure the next morning gives us the answer. The Bantams disappointed her; she would have preferred Cochin Chinas, that is, she really wished for them, although she probably did not recognize that she had a wish. This wish had not been fulfilled in reality, the dream fulfilled it. The study of thousands of dreams establishes the fact that they are largely made up of realization of wishes that have not been fulfilled in reality.

The fact of the wish does not appear to the dreamer. He does not dream that he is wishing something but that he has it. The wish is an element deduced from the incidents of the dream. Such elements established by deduction belong to what is called the "latent content" of the dream.

One patient reported to me that she dreamed I told her not to write out her dreams. She confessed that the duty of writing out her dreams was very irksome; the latent wish not to do so was fulfilled in the dream. Another dreamed that he had lost the paper I had given him for the purpose. When I told him that this meant that he really wished he had lost it, he confessed that every night it had irritated him to think that he must get up and record any dream he might have. Neither of the patients suspected that the dream expressed a wish.

In these and many other cases the latent content of the patient's dream expresses a wish; the manifest content shows what the wish is about.

I have found a whole class of dreams that express fears. A brief dream of a patient represented him as quite bald and much worried about the fact. This expressed a very deep-seated fear that he has. If the dream had made his hair grow out again or if it had suggested some remedy, a wish would have been present. The dream, however, confined itself strictly to the picture of a condition that he feared was approaching.

The latent content of dreams consists of the personal impulses of the dreamer. This is the principle that I would substitute for Freud's statement that a dream is an expression of a wish. My facts show that at least two fundamental impulses—wishing and fearing—are present.

Wishes and fears may both be present, sometimes in the same incident. One patient relates a dream of a journey to his sweetheart: "At the end of the journey I get to know (I don't know how) that she is lost to me, having married another man. I awake crying bitterly." The statement expresses as a fact something he evidently fears. The man was so distracted with this love affair that his health and business were almost ruined. I said to him, "Don't you see that the dream expresses the very best thing that could happen to you? You would be much hurt, but wouldn't you be immensely relieved to find that the girl had accepted some one else and that this worry was finally settled? Down in the bottom of your soul don't you really wish she would do it?" This new aspect of the matter seemed to strike him favorably.

Why do the personal impulses have more effect in dreams than in waking life? In waking life our wishes, fears, other emotions and instincts, our ideas of our own importance, in short, all our feelings and ideas concerning ourselves, are subject to overpowering modification and repression by our surroundings. We do not eat just as we like because custom confines us to meal times. If we see an enticing bunch of grapes in a fruit store, we do not help ourselves because we know that we will get into trouble unless we go through the formality of paying for them. We do not kill the man we hate, or steal the woman we love, because we know the penalty to be too severe. But when we are asleep we are not so forcibly reminded of these restrictions, and we can let our thoughts come far more freely. While awake, the little girl knew that she could not have Cochin Chinas, but there was nothing to hinder her from having them in her dream. Awake we may not take the bunch of grapes or kill the man or steal the woman as our own impulses urge us to, but in dreams we can do so freely.

What is the relation of the manifest content to the latent content? The latent content contains the fundamental impulses of the person, the manifest content expresses them directly or in symbols.

A patient related the following dream: "I am on the train. The conductor comes for my ticket. I have lost it. This annoys me. The conductor insists on payment and I have to buy a new ticket; at this I am very angry. On arriving home I am worried for having forgotten in the train the roll of paper that the doctor had given me to write my dreams on."

When asked if anything relating to a ticket on a railway journey had occurred lately, he replied that it had been previously arranged that he should go on a business journey to Chicago at the expense of the firm. The business had just been settled by mail and he had thus "lost his ticket." He had decided, however, to go at his own expense ("pay his fare") in order to see his sweetheart (the unfulfilled wish) whom he always visits when business takes him to Chicago. The sheet of paper beside his bed for recording his dreams is a constant worry to him. The dream realizes the unconscious wish that it would get lost just like the ticket.

There was nothing in the dream that differed much from ordinary life; the symbolism is very transparent. "Lost his ticket" is symbolic for "lost his journey," "paying again" for "going again." Yet the patient had not the slightest idea of the meaning of the dream.

How does this habit of translation into symbols arise? When we allow ourselves to think freely, a multitude of thoughts arise at each instant. Automatically we select those that are most intimately connected with the main topic of thought. This automatic control extends even to the topics concerning which we allow ourselves to think. From earliest infancy we are taught to control our impulses. In early childhood we learn that there are topics which we must not talk about—and some concerning which it is quite improper even to think. Automatically we learn to shut off all thoughts that arise concerning such topics; we simply do not allow ourselves to think about them. The most important of these topics is that of sex. The natural impulses of children to investigate sex matters are shut off abruptly and it thus becomes a mysterious topic concerning which the child must not allow himself to think.

If, however, we can disguise a topic by putting it into symbols, then it can be thought about. A dream will often present at great length in allegorical form some topic which in its bare-faced form would be inacceptable to the dreamer.

The habit of translating being fixed in our minds, most dreams occur in translations although their content would not offend the automatic censorship. I could relate innumerable dreams carried on in symbols where I am sure that the directly expressed

content would have pleased me just as well or better.

A patient relates the following dream: He observes a series of criminals marching along in line, having their right hands raised with a wisp of straw and hay tied to each. They are marching into a church. The priest begins to deliver a sermon at which all of the women are offended and leave the church. The criminals are condemned to be burned for the crime of free speech. They are taken outside and the sentence is executed.

The patient is a stutterer. His attitude toward the persons condemned for free speech suggested that he had a rather natural envy and resentment toward those who did not stutter. He confessed that this was exactly the case. Envy and revenge are nearly related. In the dream he revenges himself on people who can speak freely by representing them as criminals and having them executed by burning. It is a well-established rule that all the principal figures in a dream represent the dreamer. The priest therefore was the person himself, evidently getting great pleasure in condemning these convicts. The other incident of the dream is explained by a fact that I happened to know concerning the patient. He had made up his mind to say a certain thing in case he should ever contemplate being married. I had told him that such an act would drive any woman away from him, and he replied, "I will never get married then." The dream expressed the fear that this thing would happen.

The symbolism of dreams is exactly that of daily life put into pictures. During the day we speak of "washing the dirty linen"; in dreams we actually see it washed. We speak of a person as being a "bad egg"; in a dream we actually see the bad egg and not the person. School and college boys often talk largely in symbols without realizing it; there is usually a kind of vulgar swaggering humorousness about it. Naturally enough the same style appears in the dream symbols. One patient dreams of himself in his automobile as "putting on speed down hill" after I had scolded him for studying recklessly late into the night. Another man might have dreamed of a candle burning at both ends to represent the same thing. One patient's disappointment in a love affair is represented by a wedding at which he gets only a drink of sarsaparilla. The familiar "to be snowed under" appeared in one man's dream which represented him as trying to escape from a fierce snowstorm; it was a symbol for his depressing financial difficulties.

The translation of the dream back into its original elements may occur by having the patient start with any item of the dream and then relate all the thoughts that occur to him spontaneously. This is the method of "running associations." Sooner or later the patient hits upon some thought that he feels is identical with a fact in the dream.

As the method of running association requires considerable time, I prefer one of the following procedures. I tell the patient to write out the dream and to keep going over it during the day, thinking of what events of the preceding day may have brought about the dream and looking for any wishes or fears that may suggest themselves. He will often come back with the translation worked out.

The results that are obtainable when these methods are applied to the correction of character are surprising. One young man reported his dreams and observations to me almost daily for two months. In the dream he was constantly attending receptions, ceremonials, marriages, etc., and meeting celebrated people. This brought out the fact that he was so sensitive that he suffered extremely in meeting any one, even members of his family. His observations about the doctor referred to his gentleness, kindness, sympathy, and tact; these were qualities that he needed but missed in the world, even in his own family. As the nature of his sensitiveness became clear to him, he experienced relief from the very start.

The principles involved in the formation of character may be sketched as follows: There is first the inherited disposition. The infant arrives with a number of wants such as air, food, etc., to satisfy which he performs certain acts. The satisfaction gives him relief or pleasure. This instinctive feeling of want needs a special name—perhaps we can call it "libido." All things and persons that satisfy these wants—this libido—become objects of love. The infant loves his nurse or his bottle, he loves his own thumb which he can suck.

That portion of the libido directed to others we term "hetero-erotism," that portion directed toward himself "auto-erotism."

Normally the child loves mother, father, brother, and self in varying proportions. Often the mother keeps too close to the child, pets him, lives too intimately with him, etc. In some cases this may produce the self-centered child.

One boy that was brought to me was considered to be mentally and morally defective by several people. The condition was a very simple one of complete egotism. His mother had coaxed or wheedled him always and had never forced him to do anything that he did not wish. He was a perfect tyrant over the household. He would strike anyone that displeased him. When a new governess asked him what he was striking her for, he stated, "To make you afraid of me." She replied, "I am not afraid of you." Thereupon he stood in thought for a while and finally got out a toy sword and ran at her with it, exclaiming "Now I have found something that will make you afraid." On the other hand, in the company of other boys he was himself afraid of them. All his thoughts were centered on himself and other persons were to him either objects that feared him or objects to be feared.

Quite frequently the mother-relation produces not auto-erotism but a maternal-erotism in the child. He loves his mother so abnormally that the passion is as strong as a sexual one. Often these boys become unable to love or marry other women.

Sometimes the child is kept too close to the father; this is often the case with girls. This leads to an unrecognized jealousy on the part of the mother. I have now one case in which the girl's entire life is being sacrificed because the mother thinks she is doing the best for her and is yet driven by an unrecognized jealousy to choose a course of life that is to her detriment.

The original libido which was directed toward bodily wants and satisfactions may be turned into other channels. A most frequent case is the sublimation of the libido into ambition, scientific spirit, or the like. The origin of scientific fervor was very evident in the case of one patient, a college professor. As a young man he had lived an absolutely abstinent sexual life, but had been driven by a wild ambition to achieve distinction in science. His laboratory he had fitted up with care for details of decoration and beauty that reminded one of the way a woman would select her clothes. His account of his laboratory sounded like a lover's en-

thusiastic description. It was evident that his abnormally strong sexual instinct had been sublimated into love for his laboratory and for his science.

I believe we can quite agree with Freud that the permanent traits of character are unaltered continuations of the original infantile instincts, or sublimations of them or reactions against them.

Among the methods of therapy for character defects, psychanalysis is certainly one of the most effective. I have had boys and young men living with me in the closest of intimacy for months and years without ever being able to know them as thoroughly as now after a few weeks of psychanalysis. There are two reasons for this: the psychanalysis brings about an intimacy that cannot be attained in any other way and it reveals the traits of character that would otherwise remain unknown to anyone. The analysis itself is a vital part of the cure; as the patient recognizes his abnormalities in this way he instinctively corrects them. It is most effective to combine psychanalysis with educative treatment.

Various objections have been raised to psychanalysis. The most frequent is that there is too much talk about sexual matters. Such discussion is, however, often entirely unnecessary. When it occurs, it can be done with such delicacy as not to offend the most modest person.

Another criticism of psychanalysis is that it takes a great deal of time. This shows an entire misunderstanding of the case. Psychanalysis is valuable for just the reason that in some cases it achieves results in a far shorter time than they can be attained in any other way, and in other cases it is successful where other methods are hopeless. In character treatment the improvement begins immediately and the results are apparent from the start.

130 West Seventieth Street.

WHY IS THE APEX THE POINT OF ELECTION IN TUBERCULOSIS OF THE LUNGS?

By THOS. G. McCONKEY, M.D.,

San Francisco, Cal.

In order to understand better the nature of tuberculosis, it is imperative to seek the point of view of the naturalist rather than that of the physician called to treat the patient. The naturalist sees two species to study, one of which is the parasite of the other, and he knows that "nature" is as much concerned in the continuance of the parasite as a species as she is in the host as a species. The doctor, whose function it is to strive to suppress the parasite, is very prone to regard it simply as an agent whose sole purpose and effort is to kill his patient. The naturalist knows, on the contrary, that the longer the host lives and comes in contact with his own species and disseminates the parasites or their infecting material the better it is for the parasite as a species. In other words, killing the host has no "survival value" for either the host or the parasite. In fact parasitism is only possible when a mode of *living* together has been evolved through the laws of heredity and adaptation.

There are several views as to the mode of entrance of the bacillus into the human body, but unanimity as to its usual mode of exit. Nature depends upon the lungs for the multiplication and the scattering abroad of the bacilli in such prodigal numbers that the continuance of the species is assured. When it was learned that the bacilli are coughed out through the air in "open" tuberculosis it was naturally but none the less erroneously assumed that the progenitors of these bacilli reached the lungs directly through the air and this mode of entrance was confirmed apparently by the presence in the lungs of minute dust particles in those who had inhaled such dust. So obvious did this mode of entrance seem to be that it was and unfortunately still is accepted without question, speaking generally.

When it was found that tuberculosis of the lungs could be caused by the ingestion of tubercle bacilli or by inoculation even as far distant from the lungs as the end of the tail of a calf, the inhalation theory began to be questioned. Hence arose the two opposing views—the old inhalation and the new ingestion view. The "ingestionists" proved that even the dust particles found in the lungs of those inhaling these particles did not reach the lungs directly through the air, as had always been assumed, but through absorption by the lacteals of the digestive tract and thus reached the lungs *via* the thoracic duct and the veins. When it was proved for all time that pneumonoconiosis in its numerous forms, such as anthracosis, or coal-miners' disease, "steel-grinders' phthisis," and all that genus was due to the *swallowing* of the dust particles, which was proved by the simple experiment of tying the esophagi of the animals, causing them to inhale dust and then feeding them. Normal control animals showed dust in the lungs, while those incapable of swallowing the food were free from dust particles in the lungs, the main prop of the "inhalationists" was removed. The value of this discovery does not lie solely or even mainly in proving that tuberculosis of the lungs may result from the ingestion of tubercle bacilli. The discovery of the circulation by Harvey was incidental to the controversy of the venesectionists (and practically all doctors were venesectionists) as to the best *place* to bleed. Harvey showed that inasmuch as the blood traveled in a circuit it did not matter from which point it was taken. When we all realize fully that the tubercle bacilli reach the lungs through the lymphatic *circulation* we shall be in a better position to understand why in tuberculosis of the lungs the apex is first invaded. It matters little at what point the bacillus enters the lymphatic circulation of those predisposed to phthisis, it will eventually get a lodgment on the pleura, and having penetrated it finds itself in an air vesicle under ideal conditions for its multiplication and for this progeny to reach the outside world and thus continue the species. This aërobic bacterium now finds itself not only in air, but in air filtered of more rapidly growing bacteria. It is in that part of the lung most easily spared by its host and which, through gravity, insures its progeny reaching the larger bronchi. We can imagine a drop of the secretion excited by the presence in the air vesicles of the colony of bacilli reaching a larger bronchiole or bronchus perhaps as a hanging drop, which is converted into spray by the forcible current of air caused by the act of coughing, just as an atomizer causes a spray. We thus see why the apex is the best place from the standpoint of both the host and the parasite—the host is least discommoded and the parasite has the best chance of reaching a new host.

That this is a very live question, awaiting an answer, needs no argument, but the following quotation from McCallum (Osler's "Modern Medicine,"

Vol. III., p. 214) is pertinent not only in showing this, but also in showing that the lung invasion is secondary to the pleural invasion. "Whatever the determining cause be, the frequency of primary development of tuberculosis in the apical portions of the lungs is very great, and at autopsy in almost all cases, no matter how advanced, one can generally find traces of the oldest lesion at that point. . . . The apical lesion may undergo cicatrization or extend to other parts of the lung. Probably cicatrization results in a very great number of individuals in whom tuberculosis has never been recognized and thus permanently cuts short the progress of the disease. Such are the cases in which tight adhesions are found between the pleural layers over the apex of the lung and beneath, a rather thin, flattened scar which extends only a short way into the substance of the lung. In other cases there are no adhesions, but merely a scale-like puckered thickening of the pleura at that point, with much gray and black pigmentation, both in the scar and the immediately adjacent lung substance."

The very latest authority on tuberculosis (Klebs, Appleton) has the following: "Among the reasons assigned for the peculiar predisposition of the apical parts to tuberculous localization are the poorer nourishment of these parts, especially at the time of puberty, because the corresponding part of the chest then takes only a very small part in the respiratory movements; it is also held that at the apex the bronchi branch at such angles that obstruction easily occurs." This is very eloquent, but not in solving the problem. The eloquence lies in the desperate character of the alleged explanations.

When Koch announced his discovery in 1882 he startled the whole world, both lay and medical, by proclaiming tuberculosis an "exquisitely infectious disease." Being exquisitely infectious like measles, scarlet fever, whooping cough, etc., we should expect it to be "caught" in childhood just as they are. And so it is, but it has required nearly a full generation for even those in the forefront to realize that tuberculous infection is a disease of childhood. Prior to Koch's discovery no medical doctrine was more firmly established than the one that consumption is hereditary. The fact that the "consumptive diathesis" began so early in life and ran in families furnished excellent reasons for the belief. Baumgarten was so impressed by the great frequency of the disease in early life and its localization in the lymphnodes that he maintained that the bacillus itself is inherited. Behring was so impressed by this early infection that he drew the inference that it was due to the milk diet and promulgated the erroneous dictum that "the milk fed to infants is the chief cause of consumption." So far from this fact of infection in childhood requiring a special explanation, as Baumgarten and Behring seemed to think, it would be remarkable if it were not so. All widely prevalent infectious or contagious diseases are necessarily diseases of childhood except those due to the sexual relations. Smallpox might seem an exception, but before the days of vaccination it was classified with the children's diseases. Theobald Smith says, "tubercule bacilli do not differ from other infectious agents who find their easiest prey in the young." Why, then, have we been so long realizing the obvious truth that tuberculous infection, both by reason of its "exquisitely infectious" nature and the obiquity of the tubercle bacilli, is and must be a disease of childhood? First, because the name itself, which Schoenlein gave it in 1839, is misleading in implying "no tubercles, no tuberculosis"; and, secondly, because we think of tuberculosis as a disease of the lungs and that the bacilli reach the lungs directly through the air. Now actual infection of the lymphnodes may cause such trivial symptoms as to fail to attract attention, or, if attracting attention, are dismissed as scrofula, as though "scrofula" were something different from infection with Koch's bacillus. So much are we influenced by habit and mere names that we still fail to realize, apparently, that the first stage of "tuberculosis" is a lymphnode "tuberculosis," though it may be very difficult or even impossible to find any tubercles in the diseased node.

The age of the greatest morbidity and mortality from pulmonary tuberculosis is that from 15 to 45, with the maximum about midway between. Is this because it is the age of maximum susceptibility to infection? We know directly to the contrary that childhood is the age of maximum susceptibility to infection. The real reason must be sought and will be found in answer to the question, Why are the bacilli, hitherto latent in the lymphnodes, at about the age of 15 better able to get a lodgment on the pleural surface, usually the apical? So beautifully are the workings of the laws of heredity and adaptation designed for the continuance of the species that it is very much as if the bacillus were endowed with reasoning power. The bacillus reaching the lymphnode of a child is content to remain there because it does not wish, so to speak, to reach the lungs yet, for it serves its species best by providing for the infection of the next generation of its host. If it reached the lungs of the child when infection occurs, *i.e.* in childhood, and caused death in the usual period of about two years after invading the lung, the human race would soon be exterminated. Inasmuch as the child, by reason of its susceptibility, must receive the infection, a latent period to bridge over the time until the child itself has reached the age for having children becomes a logical necessity. We now can see the survival value of this latent lymphnode stage. The period from 15 to 45 is the very time when children are being born to parents and are in most intimate contact with them, and from the standpoint of the parasite the most propitious time to be expelled from the lungs. This view furnishes the clue to the real meaning of Louis' law, which reads: "After the age of 15 tubercles do not present themselves in any organ without being likewise seated in the lungs." Louis came to his conclusion long before there was a science of bacteriology, but his law has been confirmed recently by Harbitz of Christiania, who says: "To draw the line at the fifteenth year, as is perhaps most generally done, seems to me more correct, as in regard to morbid anatomy the behavior of tuberculosis before and after this age varies considerably, though naturally there is no sharp distinction." This critical period, the fifteenth year, happens to coincide with the maturing of the sexual organs and the beginning of sexual life. Is it only a coincidence, or is there a causal relation? Let us see. Physiologists teach that the pleural cavity is a large lymph space and its contained serum is properly designated "lymph." If this lymph stream be contaminated with tubercle bacilli they will eventually reach the pleural surface, and we know from the frequency of tuberculous lesions, especially at the apices, found at autopsy, no matter what caused death, that the tubercle bacillus easily gets a

lodgment there, after the age of puberty especially, but does not always succeed in penetrating the pleura and reaching the air vesicles. In spite of the fact that McCallum was so near the truth (*i.e.* that the invasion of the lung is secondary to the pleurisy instead of *vice versa*) he just missed it, as is shown by this: "In all cases of active tuberculosis of the lungs, when the lesion approaches the surface there is involvement of the pleura. In certain cases, however, there is no very conspicuous lesion in the lung." (P.222, *idem.*) If the fact that tuberculosis of the lungs is secondary to pleural involvement is once appreciated it will not be difficult to understand why such a very large percentage of pneumonia and pleurisy cases eventually terminate in phthisis. The bacilli contaminating the serum or lymph which lubricates the pleural surface are usually phagocyted or prevented from getting a lodgment on the pleura when the phagocytes have a chance to attack them in this thin film of lymph. The apex is peculiar in this: It has only its own scant lymph transudate which is immediately carried below by gravity. This effect of gravity will be more pronounced in those with a "peaked" apex. This theory is not contradicted when applied to tuberculosis in cattle as are the orthodox explanations (?), "insufficient aeration, nutrition, immobility," etc. In cattle it happens to be that the caudal lobe is the one first affected, the lobe most active and making the largest excursion. By reason of the fact that cattle go on all fours, with the head low, the caudal lobe happens to be the *highest* point. When I first read of the causing of tuberculosis of the thin border of the cephalic lobes in rabbits by injecting human bacilli into a vein of the ear (Theobald Smith) I was surprised, thinking that as quadrupeds it should have been the caudal lobe as in cattle. But a little reflection and observation of sick rabbits in cages convinced me that the thin border of the cephalic lobes was likewise the *highest* point in these humped over rabbits.

If we needed any further evidence that the pleural surface is usually the primary seat of phthisis it is furnished by the clinical symptoms. That very superior clinical teacher and compiler of textbooks, Dr. Osler, speaks thus: "Cough is one of the earliest symptoms and is present in the majority of cases from beginning to end. At first dry and hacking" (which describes a pleurisy cough). He also says "A dry pleurisy is a very common accompaniment of the early stages of tuberculosis." This theory not only harmonizes with but actually explains why the "peculiar, flat-formed chest with protruding scapulæ in persons with long bones" which constitutes Hippocrates' *phthisicus habitus* is well named.

Laennec, Louis, and many other sagacious clinicians have called attention to the small heart as a predisposing cause of phthisis. In the light of this view the reason is plain: A small heart means low blood-pressure; low blood-pressure means scant flow of lymph, for the transudation of lymph or serum is comparable to the process of filtration where the rate is commensurate with the pressure. It is this fact that makes sexual activity (by lowering blood-pressure) and more especially sexual over-activity a causal factor. The well recognized tendency to sexual intemperance of the consumptive has the relation of cause rather than effect, I opine. Decreased flow of lymph over the pleura enhances the probability of the bacilli becoming "stranded," so to speak, on the apical pleura. A small heart in relation to body weight seems to be the determining factor in susceptibility to tuberculosis of the lungs in the lower animals. Hutchinson has shown that those species prone to it have hearts whose weight is less than 1/100 of the body weight. Thus the deer is almost insusceptible; its heart is 1/90 its total weight. The antelope is very susceptible; its heart is only 1/250 of the body weight. Sheep are almost immune, 1/100. Cows are very susceptible, 1/250. It is known that mitral stenosis is antagonistic, while pulmonary stenosis predisposes to tuberculosis, and the reason is clear in the light of this view. It seems unnecessary to add other reasons for my contention, but I will ask any reader still unconvinced to examine in the light of this view the plate from Koch's original paper, "Die Aetiologie der Tuberculose," beautifully reproduced in the Reference Handbook of the Medical Sciences, and note in Fig. 5 that the bacilli are seen only in the air vesicles lying in immediate contact with the pleura. If he is still unconvinced, I would classify him with that genus which in Harvey's day "preferred to err with Galen than be right with the circulator."

In the interest of brevity and to avoid distracting the reader's mind I have not always named my authority for the *facts* stated; they can be easily verified in any up-to-date medical library, but I acknowledge special indebtedness to Klebs' work. As for the conclusions or generalizations I assume the responsibility.

1156 Sutter Street.

THE ARC LIGHT IN MEDICINE.

By A. D. ROCKWELL, A.M., M.D.,

NEW YORK.

NEUROLOGIST AND ELECTROTHERAPEUTIST TO THE FLUSHING HOSPITAL.

The therapeutic possibilities and values of physical methods of treatment receive even yet but scant consideration at the hands of the profession at large. Because of this lack of appreciation many a case of acute or subacute congestion—or, as it has been aptly termed, blood stasis—merges into the chronic stage, when by proper physical treatment in the beginning prompt recovery might have followed, and chronic conditions, which active physical methods would resolve in much quicker time, run a tedious course of years or become hopelessly chronic. I propose, therefore, in this paper to discuss briefly physical methods in general and the arc light in particular. It is said that every herb of the field possesses certain therapeutic properties, which if rightly directed may prove of value in the treatment of disease. Be this as it may, there is no question but that every physical energy is capable of playing an important part in the restoration and conservation of physical and mental well being.

Heat, electricity, vibration, light, and indeed not alone light, but every individual constitutent of the solar spectrum, visible and invisible, have each a special physical and physiological activity. How to differentiate between these many manifestations of physical energy and select the one best adapted to the case in hand is one of the most difficult, as it is the most neglected, question of physical therapeutics. One reason for this difficulty is the fact that all these agents or manifestations of force have very much in common in the effects they produce. The broad, fundamental idea first suggested by the writer in conjunction with Dr. Beard many years ago—that electricity is not a mere stimulant, useful only to quicken the activity of paralyzed

muscles, but a powerful aid to nutrition, distinctly affecting the excretory and secretory bodily functions—applies with equal truth to others of nature's forces. Heat and light and the individual actinic rays that go to make up the latter all possess the ability under certain conditions to energize the bodily activities. It is this very similarity of action that enhances the difficulty of differential selection, for every physical force is simply a mode of motion, a form of vibration, and its character and effect depend upon the frequency of these vibrations. A slow rate gives us sound. Increased frequency develops the thermic sense until, with infinite rapidity of vibration, light, the visible spectrum, appears, merging again as the frequencies increase into the invisible, where only chemical means, and not the senses, detect the presence of the ultraviolet and the *x*-rays. One of the most important effects of physical methods of treatment, as all must agree, is the dissipation of local congestion or blood stasis.

Massage does it, and unquestionably much of the success of osteopathy is due to this. There is no form of electricity, faradic, galvanic, static, or high-frequency, that has not time and again given evidence of its power in this direction, and treatment with the ordinary vibratory apparatus does the same thing. It is this power to remove local congestion, to stimulate nerve and muscular fiber, and thus hasten and correct the excretory and secretory processes of the body (constructive metabolism) that gives to well-directed electrical applications their well-known efficiency. I should say, therefore, that electricity, manifesting itself in so many forms, each differing so widely from the other in its physical and physiological effects, has perhaps a wider range of usefulness than any other individual physical agent.

This seems to me a reasonable deduction after many years of study and practice in this department of therapeutics. The secret of success depends upon a thorough knowledge of the differential indications for its use, and a skilled technique in the administration of its various forms. Notwithstanding these many years of fairly satisfactory experience in the use of electrical methods, I am, nevertheless, in these later days, beginning to feel the necessity of emphasizing the superiority of phototheraphy in the treatment of certain bodily aliments. Phototheraphy, strictly interpreted, would apply only to the rays of the visible spectrum, but in a more liberal sense are included the combined luminous, calorific, and actinic rays. It is readily seen, therefore, that the term phototherapy as applied to the far-famed Finsen method is a misnomer, since the ultraviolet rays, isolated and made effective at such infinite trouble and expense, are not included in the visible spectrum.

It may not be inopportune here to correct the persistent misapprehension as to the function and effect of the violet and ultraviolet rays; the first of so little importance as an individual entity, and the latter so valuable and yet so restricted in its therapeutic application. Even among medical men this misapprehension is found, and the laity, not a few of them, speak of the violet rays as of some mysterious agent of magic power. While the ultraviolet rays readily destroy germs with which they come in contact, yet unfortunately the blood and the outer layers of the skin act as barriers to deep penetration, and, therefore, to get his memorable therapeutic effect in the treatment of a certain malignant disease (lupus), Finsen not only filtered his ultraviolet rays, but was compelled to devise a method for completely dehematizing the superficial tissues in order that the rays might penetrate. Light treatment, or phototherapy, is no new thing; it is indeed as old as the history of man, for wherever there was sunlight, there also was the opportunity for treatment. Sunlight, the arc light, and the incandescent light—these are the three methods that are utilized in therapeutics. Sunlight being nature's method, one might say it was the ideal method. And for a long race this is true, sunshine, pure air, and good food being the active trinity for the creation and preservation of health. In another sense, however, it is not true. Sunlight is capricious, often not obtainable when wanted, and is far less controllable than the artificial forms of light, which can instantly be made intense or mild, concentrated or diffused, and even the different rays selected or excluded at will. As between the two forms of artificial light, the arc or the incandescent, I have no hesitation in recommending the former, from the fact that a considerable experience has convinced me that with the former one can accomplish all that is possible with the latter, and more. In the nomenclature, the incandescent light might be called "radiant light," since the arc light is the true "radiant energy," and in this paper will be so designated. This is so because the arc light, like the light of the sun, includes the rays of the spectrum complete, while the incandescent light is deficient in its actinic rays.

This vital principle of light in connection with heat is what differentiates phototherapy, as illustrated both by the incandescent and arc light, from other physical methods, while the arc light, with its chemical rays, stands alone as the actual and complete radiant energy. As radiant energy the arc light possesses advantages over other physical methods. It not only relieves congestion or blood stasis as do these, but in greater degree accelerates natural oxidation as manifested by increased elimination of carbon dioxide. More important still, perhaps, true radiant energy, as is clearly demonstrated, increases the hemoglobin-carrying power of the blood, thus rendering it of great value in all anemic conditions, while its bactericidal properties are pronounced. He who has been permitted to observe the really remarkable effects of radiant energy in certain pyogenic processes needs no other argument to be convinced of its value.

But without attempting laboriously to develop the therapeutic rationale of the arc light, or tire the reader with illustrative cases, a few of which I am sorely tempted to relate, I will simply indicate a few conditions where some of its best results are seen, and offer a few words along the line of the technique of its application. In naming these individual conditions I shall speak not from hearsay, but shall refer to those only in which I have had a sufficient personal experience to enable me to speak with some degree of authority.

Relief of pain is one of the great and paramount objects of medical service, and in radiant energy we have at our command a most efficient aid. In neuritis we have pain in its most severe and obstinate form, and it is in neuritis, perhaps, that the best results of radiant energy are observed. I have seen cases that have suffered for months without relief, excepting the temporary alleviation afforded by drugs or topical applications, relieved of all their sufferings for a considerable length of time by a single sufficient exposure. It is not to be

understood that in the majority of cases such remarkable results are seen, but such cases do occur, and help to illumine the dark path of human suffering. Only recently one unfortunate who had exhausted the resources of medicine and local applications, chanced to experience the almost immediate relief following the light treatment and exclaimed: "Why have I had to suffer so long with such a method available?" In no condition are the beneficial effects of light more pronounced—and here both the arc and incandescent act equally well—than in obstinate forms of lumbago. It produces effects as immediate as any electrical method, and in my experience the results become more quickly permanent.

It would not perhaps occur to the uninitiated that chronic bronchitis might be an inviting field for the action of radiant energy. Reflection, however, should suggest its adaptability, and in a number of cases I have been enabled to satisfactorily demonstrate its value. The results are not rapid, except as temporary comfort is afforded, which is often quite marked, but persistent effort has in several cases been followed by more or less complete recovery. It ought not to be difficult to understand how or why the combined luminous, calorific, and actinic rays of light in concentrated form should be the very best agent for the relief of certain forms of chronic respiratory disease. It has been claimed that this method of treatment has great value even in tuberculosis. I regret that my experience does not extend so far, but I can well believe it, and hope that in some way and some time it may be thoroughly tested.

For the relief of the symptoms of high arterial tension, both radiant energy and the electrical method termed autocondensation are unquestionably of value. I have had experience with both and have frequently witnessed the lowering of pressure and the consequent symptomatic relief afforded by either method. A fact of no little importance in the treatment of arterial sclerosis is that no undesired depression of the heart's action follows. To what extent any curative action may follow the use of these methods in actual arterial sclerosis no opinion is attempted, but their power to control circulatory activity should render them of value in the earlier stages, and their use should go hand in hand with other and accepted methods.

In dermatology, phototherapy, or radiant energy, rather, is a valuable and too neglected remedy. As in the cure of lupus it is the ultraviolet ray that is the efficient agent; so, too, in the more common and nonmalignant forms of skin disease, but fortunately it is not necessary as in the first condition to eliminate the heat rays in order to concentrate a sufficient strength of the ultraviolet. Indeed, the powerful light rays and the heat rays as well, if not too intensely focused, probably add to the efficiency of the treatment. The incandescent light is of far less value, if not practically useless, in the treatment of skin diseases, but the arc light with electrodes made up with a combination of carbon, magnesium, and iron is powerfully germicidal, and its destructive influence over pathogenic bacteria is seen in its power to limit the suppurative process and thus abort the development of abscesses.

While I have had no very large actual experience to confirm the strong theoretical considerations for its use in dermatology, I can yet point to a case of scrotal eczema, several of herpes zoster, one of acne rosacea, and several obstinate and rather suspicious cases of epithelial disease where the results have been good. It is a wonder to me that dermatologists do not evince a more distinct appreciation of their loss in neglecting this method of treatment.

There are a few points in technique in connection with the administration of radiant energy quite essential to success. While the individual frequencies are important, the ultraviolet for superficial action, the blue and others for deeper effects, yet it is the complex of radiant light energy upon which one must depend for all around therapeutic effects. In order that the light should be as rich as possible in chemical rays the electrodes must be of the purest carbon combined with magnesium, potassium, and iron, which give off the maximum of ultraviolet, violet, or blue radiations. As a reflector glass is far better than metal, since the reflecting surface of the latter soon becomes impaired and loses more or less of the concentrating power. The apparatus should be so constructed that the rays can be adjusted at will, giving either an intense convective heat or heat more diffused and milder. An important point in connection with this method of treatment, especially in neuritis and the relief of pain in general, relates to the length of the light exposure.

Time and patience are essential. The brief séances sometimes recommended are inefficient. Exposure should seldom last less than one-half hour, and not infrequently a much longer sitting is desirable. Especially is this the case when the area to be treated is large and irregularly located. While in the administration of the arc light there are no *x*-ray effects to be dreaded, as seems to be the fear of some patients, yet care is to be exercised in its use, particularly in low nutritional conditions. Here it is quite easy by a too liberal use of convective heat, aided by the chemical effects, to produce a local sore. Unlike *x*-ray effects to be sure, healing takes place rapidly enough but it is an unnecessary result and should be avoided.

616 Madison Avenue.

THE ELECTRICAL TREATMENT OF ARTERIAL HYPERTENSION.

By JOHN H. BURCH, M.D.,

SYRACUSE, N. Y.

ELECTROTHERAPEUTIST AND RADIOTHERAPEUTIST TO ST. JOSEPH'S HOSPITAL, THE SYRACUSE HOSPITAL FOR WOMEN AND CHILDREN, AND THE SYRACUSE FREE DISPENSARY.

That a man is as old as his arteries is a trite but true clinical aphorism. Arterial degeneration is the most frequent cause of death. In fact, the contributory or direct cause of the majority of mortalities after fifty years of age results from degenerative changes within the walls of the blood-vessels. As the vast majority of arterial degenerations are accompanied by, and as a rule preceded by, arterial hypertension, we are able by means of the modern blood-pressure apparatus to forewarn ourselves of the impending danger and seek measures to prevent the insidious advance of general arterial fibrosis.

There are three factors that enter into the study of arterial hypertension that are very important from a therapeutic standpoint: (1) the ventricular systole; (2) the peripheral resistance; and (3) the elastic recoil of the arteries. Anything that impedes the current of blood after it leaves the left ventricle offers peripheral resistance. This may

result from contracted kidney, narrowed or obliterated blood-vessels, friction, or gravitation. In the great majority of incipient cases, however, this peripheral resistance is the result of vasomotor constriction due to toxins, various reflexes, and psychic influences that stimulate vasomotor contraction of the peripheral blood-vessels. If the elastic recoil of the arteries is not impaired, it can readily compensate for this increased peripheral resistance, and push the column of blood onward through the contracted vessels with a force almost equal to the ventricular systole. If this power of recoil of the arteries is lost or impaired, as it is in true arterial fibrosis, the walls of the blood-vessels impede rather than help the flow of blood. We have left then the power of the ventricular systole to overcome both of these opposing forces. To accomplish this, the heart muscle becomes hypertrophied to meet the increased demands put upon it. So long as it can compensate for this increased peripheral resistance and deficient arterial recoil a fair standard of health and well-being may be maintained. Sooner or later, however, we may expect myocardial or coronary arterial degeneration that will break also the ventricular compensation. When the cardiac compensation gives way, nature may make one more effort to restore for a time compensation. This is done by vasomotor constriction of the arterioles, thereby increasing peripheral resistance. When this event occurs we are dealing with a latent break in compensation that may not be made manifest. From a therapeutic standpoint this is most important, as great harm may be done in these cases by the forcible reduction of the arterial tension.

From this it will be seen that it is very important to determine the actual state of compensation before attempting to reduce blood-pressure. This may be done in several ways. Normally, there is a difference of from five to thirty millimeters in the blood-pressure when taken in the recumbent and erect posture. If there is vasomotor insufficiency, it will be found that the arterial tension will not be proportionately greater as it should be when taken in a standing position. If this is due, as it generally is, to splanchnic vasomotor ataxia due to enterotoxins, by forcibly supporting the abdominal viscera by traction upward upon the abdomen, it will in a few moments cause the arterial tension to again rise in the standing position.* The same result may be achieved by forcibly concussing the spinous processes of the first, second, and third lumbar vertebræ. This will cause a vasoconstrictor reflex of the splanchnic vessels, thereby augmenting peripheral resistance. If cardiac compensation is broken there will be a rise of arterial tension in the standing position. If the arterial recoil is impaired, there will be but little difference in the standing and recumbent posture.* If we first take the blood-pressure in a sitting posture, and immediately have the patient inhale from a bottle sufficient amyl nitrite to cause a blushing of the face, it will be found that there will be a momentary drop in the blood-pressure to be immediately followed by a rise of systolic pressure of from three to five millimeters. If, in place of an elevation of the blood-pressure, we get a distinct fall, it is pretty certain that we have failing ventricular compensation. If there is no change in the arterial tension after the inhalation of the amyl nitrite, it would prove impaired arterial recoil and probably arteriosclerosis or fibrosis, but it would also indicate that the ventricular compensation was not broken and benefit might be expected from lowering the peripheral resistance. If, on the other hand, after the administration of the amyl nitrite the blood-pressure rapidly falls, causing more or less depression, we may know that it is best not to interfere with the peripheral resistance, that is, trying to compensate for a broken ventricular compensation.

I have of late been utilizing a method that bids fair to be of considerable value not only in the diagnosis of cardiovascular compensation, but also in the treatment of some forms of high arterial tension as well. In studying the effect of electrical currents of high voltage and frequency in the reduction of high blood-pressure, a rather curious phenomenon was observed. If some of these patients with very high arterial tension were subjected to almost any form of electrical discharge from a high voltage source of electrical energy, it was noted that the blood-pressure would rapidly fall from ten to thirty millimeters during a séance of ten minutes. In other cases there would be but a very slight fall, and in a third class of cases there was no change at all. In testing these cases the patient was seated in a chair upon an insulated cushion that was placed upon a plate of metal that was attached to one extremity of a Tesla coil, while the subject held a small hand electrode that was connected to the other extremity of the apparatus. The output of this apparatus was only from twenty to fifty milliampères. If the patients who were not affected by this method were connected to a small d'Arsonval solenoid in the same manner and subjected to a current output of from 200 to 800 milliampères, there was a very appreciable drop in the blood-pressure. If the patients who manifested but a very slight change in the arterial tension when connected to the Tesla coil were subjected to the discharge from the more powerful transformer there would be in almost every instance a very marked fall in the blood-pressure that was at times rather alarming, as it seemed to cause symptoms of collapse that in several instances continued several days. It would seem, therefore, that when the blood-pressure is rapidly reduced by means of a very mild discharge from the terminals of a Tesla coil we are simply dealing with increased peripheral resistance of presumable vasomotor origin.

If, on the contrary, these weaker currents will slightly affect the arterial tension we are dealing with a case of broken cardiac compensation that had better be left alone. In fact, my experience has taught me that it is dangerous to subject these patients to electrical currents of high voltage and ampèrage. Those in the remaining class of cases, that are not at all affected by the discharge from the small output of the Tesla coil, we may safely assume are suffering from imperfect elastic recoil of the blood-vessels and increased peripheral resistance. It is in this class of cases, in which there may, or may not, be true arterial degeneration, that much may be hoped for from electrical treatment. In these cases the cardiac compensation is not impaired, and by relieving peripheral resistance the heart is saved an immense amount of labor and the walls of the blood-vessels are spared the excessive effects of friction. But the effects of these electrical discharges are not confined to the reduction of blood-pressure. The processes of metab-

*Abrams: "Spondylotherapy."

olism are increased as well. There will always be noted an increase in the amount of urea excreted, the quantity of urine voided during the twenty-four hours will be augmented, and there will be also an increased amount of urates excreted. The reduction of high blood-pressure by means of these powerful electrical discharges is also more permanent than by any other method of treatment with which I am conversant. I wish to briefly report two cases that are typical of what may be expected from this method of treatment.

Case I.—Mrs. M. J., aged 54 years, was told by her physician that she was suffering from organic heart disease and high blood-pressure. She had an unstable neurotic temperament and this inadvertent diagnosis plunged her at once into a state of cardiac neurasthenia. An examination revealed an old systolic murmur that was very well compensated for. Her blood-pressure was found to be 200 millimeters with hard and tense arteries. She suffered from insomnia and polyuria. An examination of a twenty-four hours' specimen of urine revealed a total quantity of 60 ounces; no albumin or sugar; specific gravity 1015; urea 2 per cent. In this case we seemed to have only peripheral resistance to contend with. After the first séance of fifteen minutes by means of autocondensation from the terminals of a Tesla coil with a current output of but 60 milliampères, the blood-pressure was reduced thirty millimeters. Three days later it was 180 millimeters. The next treatment reduced it to 160 millimeters, and the next to 150 millimeters, where it remained. She received six treatments. Six months later the patient was examined, the blood-pressure being 150 millimeters. She had ceased to worry about her heart and high blood-pressure, and was able to sleep at night. The question may be raised in this case that the results were largely psychic. This I am willing to admit. It is difficult to eliminate the psychic element from any system of therapy, and I see no just reason why we should.

Case II.—Mr. V., aged 65 years, occupation manufacturer; he is a man of excellent habits, free from syphilis, has never used alcohol, and smokes but three cigars daily, which has been his limit for many years. He has worked very hard during his whole business career and has allowed himself but little recreation. His health has always been excellent. Several years ago he observed that slight annoyances connected with his business disturbed him very much. He suffered from insomnia, became irritable and annoyed over trifles, was compelled to void his urine once or twice during the night, and was particularly annoyed from failing memory. One year before he consulted me he began to experience paroxysmal attacks of pain in his left arm. The pain was very intense, necessitating him to assume a sitting or recumbent posture during the seizure. It was for this pain that he consulted me, as he thought he was suffering from rheumatism. His face was puffy, his lower eyelids edematous, and the arcus senelis well pronounced. An examination revealed an increased area of cardiac dullness, the apex depressed downward, and an accentuated aortic second sound. The lower border of the stomach was on a level with the umbilicus with evidence of general visceroptosis. The pulse was hard and unyielding. The blood pressure was 220 millimeters, Janeway apparatus. An examination of a twenty-four hours' specimen of urine revealed: quantity 60 ounces, specific gravity 1010, urea 1.05 per cent. No albumin or casts were found. In the treatment of this case the usual dietetic and hygienic management was advised. He was first subjected to the secondary discharge from a Tesla coil that had no appreciable effect upon his blood-pressure. From the fact that autocondensation from this source failed to lower his arterial tension, I felt assured that his cardiac compensation was not as yet impaired and that the elasticity of the vessel walls was at fault as the result of degenerative changes. At his next visit he was seated upon an insulated cushion that was placed upon a metal plate. This plate was connected to one extremity of a small d'Arsonval solenoid. The patient held in his hand a small metal electrode that was likewise attached to the spiral. The current was gradually turned on until the meter registered 500 milliampères. Duration of séance was ten minutes. The first treatment reduced the blood-pressure fifteen millimeters. The treatments were continued three times weekly for two months. At the expiration of this period the blood-pressure was 160 millimeters. The amount of urea increased from 1.05 to 1.08 per cent. After the fifth treatment the pain entirely disappeared. I last saw this patient July 12, 1909. He recently wrote to me, however, stating that he had no pains since discontinuing the treatments, and that his physician informed him that his blood-pressure was from 150 to 165 millimeters.

My experience has taught me that these two cases are typical of what may be expected from electrical treatment of arterial hypertension. I have also been impressed in the treatment of these cases by the fact that most of my cases have been active business men of most exemplary habits. Very few of these cases were alcoholics, syphilis was in nearly every instance excluded as an etiological factor, and in only a few cases was tobacco used to excess. It would seem, therefore, that mental anxiety, worry, the strenuous life, the monotonous treadmill existence, together with overindulgence in eating, too little recreation and exercise, were responsible for the great majority of these cases of arterial degeneration.

417 West Genesee Street.

VACCINE THERAPY IN ACUTE RHEUMATIC POLYARTHRITIS.

By W. C. WOLVERTON, M.D.,

LINTON, N. D.

While the specific causative influence of *Streptococcus pyogenes* in acute rheumatic polyarthritis is not universally admitted, many things point to its being at least the predominant factor, either as the true etiological agent or as being present in a mixed infection. From the experience of others, as well as from personal observations, the writer has been led to the conclusion that the streptococcus is the causative agent in at least the majority of cases; and since beginning the use of streptococcus vaccines in the treatment of this disease, the response has in every case been so prompt that it has had the appearance of a "therapeutic test."

Guttmann, Colin, and Sahli[1] have found what appeared to be a staphylococcus in the articular exudate of patients suffering from acute rheumatic arthritis. Netter[1] found the streptococcus in a large number of cases. Singer[1] has examined ninety-two cases, and found streptococci and staphylococci in a large majority of the cases, and also

post-mortem. Triboulet and Coyon[2] have found a Gram-positive diplococcus, sometimes associated with a bacillus, in all cases examined by them. Acute articular rheumatism is named by French[3] as among the complications and sequelæ of erysipelas, itself known beyond peradventure of doubt to be caused by streptococci. Walker and Beaton[3] concluded that the disease is caused by a specific micrococcus, possibly identical with that first described by Popoff.[3] Poynton and Payne[4] inoculated rabbits with the diplococcus obtained from the arthritic exudate from cases of rheumatic polyarthritis, and succeeded in producing polyarthritis, cardiac valvulitis, and choreiform movements. Beattie[5] describes a Gram-positive coccus, occurring in pairs or short chains, either when seen in tissues or in cultures; in milk bouillon chain formation is more pronounced; intravenous injections cause polyarthritis, endocarditis, and chorea; subcutaneous injection, even in large dosage, does not cause suppuration. The streptococcus is always found on the heart valves in ulcerative endocarditis, according to Zapfe,[6] Menzer, and also Singer and Meyer[7] regard the streptococcus as the infective agent and the oral cavity as the portal of entry. Birch-Hirschfeld, Bouchard, and Charrin,[8] Triboulet, Sahli, and J. Sacaze[8] reaptedly found streptococci and staphylococci in the synovial fluid of the articulations, in the pericardial fluid, and on the cardiac valves in cases of acute and subacute polyarthritis.

In many cases, when cultures from cases of polyarthritis have produced cocci of the diplococcic or staphylococcic type, there has been a question as to whether the organisms were not really streptococci, which under unfavorable cultural and environmental conditions thus manifested evidences of pleomorphism. Certainly the severity of the disease would point to streptococci rather than staphylococci as the etiological agent.

Several instances have occurred in the writer's practice which have convinced him of the specific causative influence of the streptococcus in acute rheumatic polyarthritis. Some five years ago he was called to see a German-Russian woman who had a severe case of facial erysipelas. A nephew, visiting his aunt during her illness, contracted a streptococcus lymphangitis of the arm. A little niece of this woman, living in the same house with her aunt, had a very virulent attack of acute polyarthritis, complicated by endocarditis. In another group of cases a German-Russian farmer had an acute polyarthritis of both ankle and wrist joints. His brother visited him and was attacked by the same disease. A child of this brother shortly died of what was apparently peliosis rheumatica. Two young sons of the first man became ill, one with acute osteomyelitis of the lower end of the tibia, in which streptococci and staphylococci were present: the other with a streptococcus infection of the skin of the leg, with vesicles and blebs containing streptococci. The first man and his sons received streptococcus vaccine and promptly recovered. The second man is slowly recovering, after a two months' illness, and his child died; neither of these two latter received the vaccine treatment, but got sodium salicylate.

Dissatisfied with the salicylate treatment, I began in January, 1911, the routine use of streptococcus vaccine in such cases of acute rheumatic polyarthritis as were met with in my practice, with results as found in the following case reports:

Case I.—A. N., æt. 28, male, German-Russian, farmer. First seen January 18, 1911; had then been confined to bed eight days. Both ankles, knees, and wrists affected. Bad mitral valve lesion from previous attack two years before. Coughing considerably and complaining of substernal pain and oppression. I had with me a mixed vaccine containing 20,000,000 streptococci and 30,000,000 pneumococci, with which the patient was inoculated. At the time the vaccine was injected the patient was unable to move a limb, in fact was entirely helpless. When he was again seen, twenty-four hours later, he could toss his arms and legs about with almost no pain at all, and was sitting propped up in bed. In forty-eight hours from the time of the first inoculation the patient, although contrary to orders, sat up in a chair most of the day, and no ill effects followed. Within a week he was walking about, free from pain. On January 23 a second (and last) dose of vaccine, containing 30,000,000 streptococci, was given. This completed the cure, and there has been no recurrence to date. Capsules, each containing aspirin, 0.50 gm., were left for this patient at the time of the first visit, but he took only one or two of them, and promptly vomited them. No other medication was used, except digitalin and strychnine, for the valvular trouble. The results attained here were so striking that I resolved to give the streptococcus vaccine further trial in similar cases.

Case II.—F. W., æt. 27, male, German-Russian, farmer. First seen February 6, 1911. This patient had an involvement of one ankle, both wrists, and one shoulder, and was unable to turn in bed without help. There was no cardiac involvement. When I first saw him the patient had been getting large doses of sodium salicylate for sixteen days, with conditions growing steadily worse. He was inoculated February 6 with 30,000,000 killed streptococci. Internally he received aspirin, 0.50 gm.; *q.* 3 *h.*, and elixir of iron, quinine, and strychnine, 4 c.c., *t.i.d.* Locally a solution of menthol guaiacol, and methyl salicylate was applied to the inflamed joints, which were then wrapped in cotton. The patient was again seen February 9, when he stated that within twenty-four hours after the inoculation he could move about in bed without help, and that the pain had almost completely disappeared. On this date (February 9) 60,000,000 killed streptococci were injected. The patient was seen for the third time on February 12, at which time he was able to walk about, and was practically well; but as a precautionary measure an inoculation with 60,000,000 streptococci was given. No further trouble nor recurrence.

Case III.—L. C., æt. 5, male, American. Seen April 7, 1911, at which time he had been very ill three days. Both ankles badly involved. No cardiac lesion. Inoculated with 30,000,000 killed streptococci. Aspirin, 0.35 gm., *q.* 3 *h.* also ordered, but the order was not faithfully carried out. No change in the patient's condition during the first twenty-four hours; but improvement began at the end of thirty hours, and in forty-eight hours the boy could walk. No relapse or recurrence.

Case IV.—J. O., æt. 30, male, German-Russian, farmer. First seen May 21, 1911, on second day of attack. Ankles and wrist-joints severely involved. No cardiac lesion. Inoculated with 60,000,000 killed streptococci. Internally he was given acetylosalicylic acid, 0.50 gm., *q.* 2 *h.*, and a

single dose of 0.33 gm. phenolphthalein. I told the patient, who lived twelve miles from town, that I would call again on the 24th and administer a second dose of vaccine; but on that date received word that I need not go, as the patient was walking about outdoors. May 29 the patient received a second inoculation at the office as a preventive measure.

Case V.—W. W., æt. 32, male, American, physician. This patient was the writer himself. I was caught out in a heavy shower, and a day or two later the right shoulder and, to a less extent, the right hip were involved. Aspirin, 0.50 gm., *q.* 2 *h.*, was taken, but the trouble grew worse. Next day, July 5, 1911, 60,000,000 killed streptococci were injected at the insertion of the right deltoid. On July 6 I was able to attend to my practice; whereas I had been confined to bed on the 4th and 5th.

Case VI.—L. B., æt. 6, female, German-Russian. Seen July 7, 1911. Both ankles involved for two weeks or more; sometimes could walk, sometimes confined to bed. Inoculated with 30,000,000 killed streptococci. Internally was given aspirin, 0.33 gm., *q.* 3 *h.* Tablets containing reduced iron, mercury bichloride, strychnine, and arsenic trioxide were also given, because of coexisting anemia. This patient was not seen again, but made a recovery within three or four days.

Six cases do not form a large series from which to draw conclusions; but they were all of a very severe character, and the response to the exhibition of *Streptococcus pyogenes* vaccine was in every case so prompt and satisfactory that I have felt impelled to report the cases and to urge others to give the remedy extensive clinical trial. Moreover, in at least four of the six cases, the salicylate treatment was not followed; and in two cases the patients grew worse in spite of faithful adherence to salicylate treatment. So the uniformly good and prompt results must be ascribed to the vaccine. In every case the temperature quickly fell, there was a rapid cessation of pain and disappearance of signs of inflammation. The patients, moreover, remarked a feeling of exhilaration, or stimulation, which came on in from three to forty-eight hours after the inoculation. In no case was there any evidence of a harmful negative phase. In none of the six cases above reported did any cardiac valvular lesion develop subsequent to the employment of the vaccine.

Considering the unsettled nature of the question as to the specific etiological microorganism in this disease, it seems not unwise to the writer to employ a mixed vaccine, containing *Streptococcus pyogenes* and *Staphylococcus aureus et albus*, rather than the streptococcus alone. However, the plain streptococcus vaccine used in the cases reported above left nothing to be desired.

The vaccines employed in the treatment of these cases were all "stock" vaccines, made from several strains (at least six, I believe) of streptococci, obtained from various cases of streptococcic infections.

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THE ALBUMIN REACTION OF THE SPUTUM IN PULMONARY TUBERCULOSIS.

By MAURICE FISHBERG, M.D.,

AND

DAVID FELBERBAUM, M.D.

NEW YORK.

The chemical examination of the sputum in diseases accompanied by expectoration has not been pursued with the same zeal as cytological and bacteriological investigations. Some sixty years ago Biermer published a monograph in which he gave a thorough description of the chemical reactions of the sputum in various pathological conditions. He found that in chronic bronchitis the amount of mucin and sodium chloride is considerable, while extractives are found only in traces, and albumin is not found at all. In pneumonia, in addition to the mucin, there are also albumin and blood pigment. It was Biermer's opinion that the sputum in pulmonary tuberculosis is of about the same character as that of chronic bronchitis, while in cases of pulmonary edema it is rich in albumin and water and poor in mucin. Another paper on the chemistry of the sputum is that of Wanner, who was first to emphasize the diagnostic importance of the albumin reaction in cases of pulmonary tuberculosis, and who showed that it is found in most cases of inflammation of the parts from which the sputum is derived. He insisted that albumin is never found in cases of uncomplicated chronic bronchitis, while in pulmonary tuberculosis an albumin reaction is never absent. Similarly in cases in which there is doubt as to the diagnosis between pneumonia and pulmonary infarction, the presence of albumin in the sputum, provided there is no admixture of blood, speaks in favor of pneumonia.

Besides these two monographs we know of very little of importance in medical literature on the significance of albumin in the sputum until some two years ago Professor H. Roger of Paris again took up the problem and published several papers, in which he arrived at the conclusion that the albumin reaction of sputum, when found, is of great diagnostic importance. From the chemical standpoint, Roger divides sputa into two great groups: The first gives no albumin reaction; it is a secreation more or less abundant in cases of simple bronchitis, acute or chronic, and pulmonary emphysema uncomplicated by dilatation of the heart. The second group of sputa contain albumin and are found in graver pathological processes of the respiratory tract, due either to inflammations or exudations, and never occurring in simple bronchitis. In the large number of cases often met with by every practitioner, in which the differential diagnosis between bronchitis and pulmonary tuberculosis is difficult, the presence of albumin in the sputum decides in favor of tuberculosis. Roger, however, insists that while the absence of albumin in the sputum positively excludes tuberculosis, its presence is no positive indication of the disease, because albumin may also be found in the sputa of cases of pneumonia, pleurisy, edema of the lungs, pulmonary emphysema with dilatation of the heart, etc.

In this communication we submit a report on the results of the chemical examination of the sputum in cases of pulmonary tuberculosis in the wards of the Montefiore Home. Many of the cases have

been in this institution for several years, one even as long as twenty-four years, so that the diagnosis, if made, is quite reliable. They were all in the advanced stage of the disease. One of us (Fishberg) has also examined chemically the sputum in cases of incipient and moderately advanced cases, but their number is as yet not large enough to enable us to include these cases in this communication. These cases will be reported in a subsequent paper. In addition we have also examined for albumin in the wards of the Montefiore Home several other cases which have been placed at our disposal by the medical director, Dr. S. Wachsmann, to whom we take the opportunity to express our gratitude.

Each specimen of sputum was first examined microscopically for the presence of tubercle bacilli by the usual method, *i.e.*, the Ziehl-Nielsen stain. In some cases the antiformin test was used for corroboration. The determination of the presence or absence of albumin was made in the following way: A 3 per cent. solution of acetic acid was added to the sputum with the object of coagulating the mucus, and the mixture was then thoroughly shaken. It was then allowed to stand for ten or fifteen minutes, and then again shaken repeatedly. The contents of the sputum bottle was then filtered and the clear filtrate was collected into a test tube in just sufficient quantity for the test. This clear fluid was boiled over a Bunsen burner, and while boiling a concentrated solution of salt was added drop by drop, or crystals of sodium chloride were thrown into the solution. If albumin is present there results a curdy precipitate which, on standing, settles to the bottom of the tube. The amount of the precipitate depends on the amount of albumin present. Nothing but a curdy precipitate is considered as positive, because the presence of mucus, which the acetic acid does not always coagulate completely, may also give a cloudy precipitate on boiling; but this reaction is not curdy, nor does it settle on standing.

On the whole, our results do not confirm Roger's statements to the effect that in every case of tuberculosis the sputum gives a positive albumin reaction. We found some cases of undoubted tuberculosis in which careful analysis of the sputum gave negative results. In forty-two specimens of sputum showing the presence of tubercle bacilli, the albumin test was also positive. It has been our experience that the number of bacilli present in the field has no relation to the amount of albumin found by the chemical test. Some specimens of sputum showing an enormous number of bacilli had only a faint trace of albumin, which was sometimes so slight as to render it altogether doubtful whether the reaction was positive. One thing, to which we shall again revert, must be mentioned. It appears that the activity of the process has considerable influence on the intensity of the chemical reaction. In active, progressive cases the amount of albumin is greater than in quiescent or healing cases. In fibroid cases the amount is often infinitesimal, or entirely absent, as we shall soon show in detail.

Three cases of tuberculosis, with bacilli in the sputum, which gave negative results at the first examination for albumin, reacted positive at a subsequent one. They were all in the advanced stages of the disease, and one of these has even been a sufferer from chronic nephritis which has troubled him very much. But the lesion in the lungs in all these three cases was rather quiescent, the fibroid changes being quite marked. Seven cases of unquestionable tuberculosis, but in which tubercle bacilli were not found when the sputum was examined, gave a positive albumin reaction, two only faintly. There were three cases of tuberculosis under observation at the institution for some time, so that clinically there was no doubt as to the correctness of the diagnosis, in spite of the negative results both bacteriologically and chemically.

There were also three cases of tuberculosis, with tubercle bacilli in the sputum, and the very specimen giving positive results bacteriologically reacted negatively as regards the albumin reaction. One of these was a case of abdominal malignant growth with general metastases (confirmed by autopsy) and with a complicating pulmonary tuberculosis, as was evident from the large number of tubercle bacilli in the sputum. It may be that the fact that the tuberculous process was rather acute, at the terminal stage of the patient, was the cause; because, as Roger states, the sputum in acute miliary tuberculosis often gives a negative albumin reaction. But the other cases are more interesting and will be given in detail below.

Of the cases of pulmonary emphysema examined, two gave a positive albumin reaction and three were negative. Of five cases of bronchial asthma the sputum was negative in all, while one case of asthma complicated by emphysema and cardiac dilatation reacted positively. The sputum was also positive in two cases of Pott's disease.

Analyzing the results, we find that the albumin reaction is undoubtedly obtained in the vast majority of cases of tuberculosis, but our investigations do not bear out the statement that every case of tuberculosis gives a positive albumin reaction. On the other hand we have found the chemical test of decided value in some doubtful cases, as can be seen from the following details:

Case I.—W. H., aged 54, salesman, was admitted to the institution for severe trifacial neuralgia. His father died of pneumonia; otherwise his family history was of no importance. He had measles and scarlet fever during infancy, pneumonia at the age of 25, and several attacks of influenza. Twenty-nine years ago he sustained a fracture of the lower jaw and has ever since suffered from facial neuralgia. In 1905 he had an attack of grippe and since then has been coughing. He has had no fever, no night sweats, nor any pulmonary hemorrhages, and he has sustained no loss of weight, while his appetite has been fair. Repeated examination of his sputum for tubercle bacilli was negative. But a chemical examination of the sputum made August 3, 1911, gave a positive albumin reaction. Physical examination shows a rachitic chest with kyphoscoliosis, dullness over the right apex, bronchial breathing over the first and second right interspace, but no adventitious sounds.

Case II.—M. P., house painter, aged 40. Family and previous history negative. Had grippe eighteen months ago, followed by weakness, dyspnea on exertion, and cough which was never severe during the daytime. Expectorates daily about 100 c.c. of whitish sputum which is never blood tinged. Sleep greatly disturbed by cough and dyspnea. No fever, no nightsweats. After observation of three months by a competent physician in this city, the patient was declared not tuberculous. But while the sputum has always been negative bacter-

iologically, it has been found to give a positive albumin reaction. Physical examination shows signs of asthma, excepting some dullness over the left apex anteriorly and posteriorly. There are no signs of any active tubercular lesion.

Case III.—M. G., aged 40, tailor. Family and previous history negative. Was operated on one year ago for angioma cavernosa of the liver. While at the hospital he "contracted a cold" and began to cough and expectorate small amounts, blood tinged on one occasion, four months ago. No pain, no fever, no nightsweats; appetite and bowels in fair condition. Was told at the hospital where the operation was performed that his lungs were affected. In this institution he has been improving generally of late. The sputum on repeated examinations was negative bacteriologically, but chemically was found to give a distinct albumin reaction. Physical examination shows dullness over both apices, anteriorly and posteriorly. Bronchial breathing and crepitant râles over the left apex above and below the clavicle and the supraspinous space posteriorly. Along the left border of the sternum there is also harsh bronchial breathing, but there are no adventitious sounds.

Case IV.—Mrs. J., aged 62, seamstress. History that of a typical case of arthritis deformans. No cough, no expectoration, no fever, etc. Her only respiratory complaint is that she is greatly predisposed to "colds"—has had five attacks of bronchitis during the last two years. Sputum has been negative bacteriologically on repeated examinations, but positive as regards the albumin reaction. Physical examination reveals dullness over the left apex anteriorly and a few subcrepitant râles occasionally after cough over the left apex anteriorly and posteriorly.

In these four cases the albumin reaction of the sputum has drawn attention to the lungs and only the future course will show whether these cases are undoubtedly tuberculous. To be sure, many cases showing fewer physical signs, and without being positive bacteriologically, are considered tuberculous and even admitted to sanatoria. But we do not feel justified, for the time being, in deciding that these cases, admitted as they were for distinct diseases, which account for the greater part of their misery, are tuberculous. In a case in private practice which is not included in this series, the albumin reaction was of great service. Three months' observation has shown that the patient is tuberculous, while the physical signs did not warrant a positive diagnosis. It has been our experience that only active cases of tuberculosis give a decided albumin reaction; while quiescent or healed cases give only a faint reaction, often to an extent as to render the test doubtful. We have also found some cases of tuberculosis in which the test was negative at one examination and positive at another. These are mostly cases of fibroid phthisis with or without profuse expectoration. The following may serve as a type of the class of cases in which the albumin reaction is only faint:

Case V.—Mrs. A. K., aged 60. Family history negative. At the age of 21 she married a consumptive who died ten years later. She had four children, two of whom died in infancy, and one, a daughter, died at the age of twenty-five from pulmonary tuberculosis. She had pneumonia twenty-seven years ago and eighteen months later she began to cough, expectorate freely, and have repeated hemorrhages. She was admitted to Montefiore Home, where she remained for fourteen years; she was then transferred to Bedford Sanatorium, where she remained ten years, and now she has been transferred again to Montefiore Home. Physical examination shows dullness over both apices down to the third interspace, anteriorly and posteriorly, on the right side as low as the seventh and on the left as low as the fifth rib. There is bronchial breathing anteriorly and posteriorly corresponding to the areas of dullness, while the breath sounds at the left apex, immediately beneath the clavicle, have an amphoric quality. Over the lower lobes the breath sounds are diminished. Subcrepitant *râles* are heard all over the left side of the chest, and at the spot where the amphoric breathing is heard there are at times also found medium-sized and coarse mucous râles, especially on coughing. At one examination some sibilant and sonorous sounds were found all over the chest, especially over the left side. Her general appearance is rather good. On the whole we consider this a case of fibroid phthisis, running a slow chronic course with occasionaly exacerbations, when the amount of expectoration increases. Generally the quantity brought up is not large and shows no tubercle bacilli, and the albumin reaction is rather faint.

As already stated, we have met with cases of tuberclosis showing tubercle bacilli in the sputum, yet giving a negative albumin reaction. One of these was the case referred to above of cancer complicated by tuberculosis. The others are given here in detail:

Case VI.—M. K., musician, aged 32. Father died at seventy, probably of tuberculosis, otherwise family history is negative. Had typhoid at the age of twenty-five, and also pneumonia. Three years ago began to cough, expectorate, and lose weight and strength. A few months later he was told that he had consumption. He was admitted to Seton Hospital in June, 1910, and to Montefiore Home in August of the same year. Remained here till his death, which occurred July 26, 1911. A careful physical examination about a month before his death showed marked infiltration of the right lung, anteriorly to the sixth and posteriorly to the eighth rib, and also of the left lung down to the fourth interspace. These dull areas showed also bronchial breathing, and large moist râles, and some clics. Clinically there could be no question as to the diagnosis of pulmonary tuberculosis, which was confirmed by the fact that tubercle bacilli were found in the sputum on repeated occasions, and the very specimen examined on August 19, 1911, which gave a negative albumin reaction, revealed tubercle bacilli.

Case VII.—M. W., peddler, aged 53. Family history negative. His first wife died of tuberculosis twenty-seven years ago. He does not remember any diseases of childhood, but knows that he was a sickly child. Nine years ago, after an accident, he became very sick with cough, hemorrhage, chills and fever, losing weight and strength. On careful questioning it is elicited that he had been coughing for a number of years before, had nightsweats, had expectorated considerably, and was short of breath. Physical examination shows a barrel-shaped chest; dullness over both apices anteriorly down to the third rib on the right side and to the second on the left side, and posteriorly down to the seventh rib on the left and the fifth on the right side. There are sibilant and sonorous râles

all over the chest, suggestive of fibroid changes, while the breath sounds are rather feeble. Over the left apex anteriorly bronchial breathing and coarse moist râles are found, suggestive of an active process. There is also to be found a distinct friction sound at the lower part of the left axillary line. Repeated examination of the sputum in 1906 showed that tubercle bacilli were present, but since then several examinations have failed to reveal them. The albumin reaction is also negative.

It is thus evident that we cannot confirm entirely Roger's conclusion to the effect that every case of tuberculosis gives a positive albumin reaction. The three cases just detailed, showing tubercle bacilli in the sputum, and reacting negatively as regards the albumin test, militate against such a conclusion. The source of the albumin in pulmonary tuberculosis is probably the ulceration of the bronchi and pulmonary parenchyma. In advanced cases these ulcers are often healed by the formation of fibrous tissue, and in such cases the sputum secreted is of about the same character as that in simple catarrh of the respiratory tract. The fact that in some cases we found a negative albumin reaction at one examination, and a positive one at another examination, shows that during acute exacerbations, which these cases are known to pass frequently, the albumin may reappear owing to the breaking down of the protective fibrous wall.

The albumin reaction of the sputum, while not infallible, can be considered a valuable addition to our diagnostic aids. A positive albumin reaction in a case accompanied by expectoration is strongly suggestive of tuberculosis. If the patient is found not presenting signs and symptoms of emphysema with cardiac dilatation, the presumption in favor of tuberculosis is stronger. In the advanced stages of this disease a negative reaction does not always prove that we deal with a cured case, because we have met with cases showing tubercle bacilli, yet giving a negative albumin reaction. The test is very simple, any one can perform it as easily as the examination of urine for albumin, and it should, therefore, be applied in all doubtful cases. Very often it will shed some light on a case which may otherwise prove puzzling.

THREE CASES OF BRAIN ABSCESS.

By JACOB FRANK, M.D.,

CHICAGO, ILL.

SURGEON TO COLUMBUS AND GERMAN HOSPITALS, CONSULTING SURGEON TO MICHAEL REES AND COOK COUNTY HOSPITALS,

AND

G. B. HASSIN, M.D.,

CHICAGO, ILL.

HEAD-INSTRUCTOR IN NEUROLOGY, COLLEGE OF MEDICINE, UNIVERSITY OF ILLINOIS.

Brain abscess is always a fatal disease, unless properly diagnosed and timely treated. Spontaneous cure of this morbid condition, as reported in older literature,[1] is so rare that it cannot and should not be relied upon. Therefore, the treatment of brain abscess can be only surgical, provided the diagnosis is made early and correctly. The diagnosis has for its purpose, first, to define if there is in any given case a brain abscess, and if so, to determine in what portion of the brain the abscess is located. In other words, a focal diagnosis is of paramount importance in every case of cerebral abscess. In the following three cases we intend to emphasize the most salient diagnostic features of some forms of abscess of the brain.

Case I.—Mr. T. was seen by one of us (Hassin) about March 6, 1911, when he was complaining of severe headache, buzzing in the left ear, and deafness. The patient was about 45 years of age, of good habits, *i.e.* did not drink, did not smoke, and was leading a regular life in every other respect. At the time of the examination he looked very weak, yellowish-pale, and exhausted (cachectic). He preferred to lie in bed, complaining most of the time of headache, which was particularly severe in the left occipito-temporal region. His temperature was 98°; pulse, 78, full, of good tension. The appetite and sleep were poor; bowels, constipated. There was neither vomiting nor dizziness, but constant buzzing and ringing in the left ear. He comprehended everything, was answering questions rationally, but the answers were laconic. He was not drowsy, *i.e.* did not fall asleep during conversation, but appeared rather apathetic. He constantly talked of his headaches, but showed no speech disorders in the form of anarthria. When showed an object, for instance, a key, and asked to name it, he was unable to do so, but would explain its use and say that "it is a thing used for the door." When the key was put in his hands he would name it correctly. When asked a moment later again to name the same object, the key, he would show the same inability and give the same description of its use and recollect the right name when the key was in his hands. Calculations could not be performed. Thus 5 times 6 was 4, 7 plus 8 was 7. Besides the buzzing in the ears, the peculiar disorders of speech (the inability to name the shown objects right) the patient showed a remarkable depression of spirits. He would occasionally cry and groan, and moan from the severe headache, and repeatedly relate a history of an operation performed on him for ear trouble and claim that the ear operation "killed" him, "crippled" him, made him "hopelessly sick," and that there is no "help" for him. At the same time he showed a remarkable apprehension for his family, begging with tears in his eyes to be "helped" for their sake. Thus, the moral sphere was intact, while the intellectual sphere was considerably impaired (speech disorders and poor memory).

Two weeks previous to the examination he had a severe earache. A drum puncture was done, pus was evacuated, but there was no relief and the patient took to bed at once after the operation. Severe headache set in, accompanied by "fainting" spells, chills, and from this time on the patient started to talk of the operation and to suspect it as the cause of his troubles. Three months previously he had the grippe, but otherwise always was feeling good, never had a discharge from the ears, or any other ear lesion until two weeks previous to the examination for the present complaints. Ten years ago he was jarred by a horse and was on that account laid up in bed for several weeks. Aside from this accident and the grippe the patient always was in good health, intellectually and morally well developed. In two weeks, since the drum puncture, his vigor and health gave away, his countenance changed to that of a yellowish-pale one, mentioned above, with a greatly impaired intellect. There was complete adynamia: the weakness was so great that it was difficult for the patient to talk or sit up sufficiently long so that a more minute examination as for reading, writing, etc., could not be performed. The physical examination showed normal

heart and lungs, pain upon tapping of the occipito-temporal region, loss of bone conduction on the left side, and normal reflexes.

The diagnosis was that between traumatic neurosis and brain abscess. In favor of the former spoke the concentration of the patient's mind on his ear injury caused by the drum puncture, which could have produced a severe shock and thus result in traumatic neurosis. The depressed, melancholic condition was also in favor of the diagnosis of traumatic neurosis, but a closer examination disproved this, because buzzing and strange noises in the left ear, combined with deafness, headache, the previous history of an ear abscess and the peculiar speech disorders (optic asphasia), positively indicated a brain abscess.

I did not deem it advisable or necessary to wait for the results that a possible blood or lumbar puncture examination might have furnished, and I recommended immediate removal of the patient to a hospital for an operation. The facts obtained from the examination sufficiently warranted an operation, and further data that might have been furnished by blood or eye examination or lumbar puncture could have added nothing to the diagnosis. The operation was performed the next day by Dr. Jacob Frank in Columbus Hospital. A large abscess was found in the substance of the left temporal lobe. Unfortunately, the condition of the patient was so bad and the abscess so large that the results were unfavorable and the patient died five days after the operation. The interest of this case lies in the rôle the mental symptoms played in the diagnosis. The most prominent symptom was here the inability by the patient to name a common object when shown, but the ability to name it promptly when the shown object was taken or put in his hands. Such a phenomenon is called optic aphasia or, what is more correct, amnestic-optic aphasia. The latter is considered by Oppenheim the most characteristic, if not the pathognomonic, feature of an abscess of the temporal lobe, provided it is looked for. Indeed, the patient appeared perfectly rational, understood and answered questions, related his previous history, but, when examined more closely, showed deep intellectual defects. Besides the optic aphasia, another mental defect showed itself—in the form of poor memory. The patient would repeat the same story again and again and would forget what had been said to him a few seconds before. The poor memory was in this case as striking as the aphasia, and, what is still more remarkable, was present simultaneously with the latter. "Poor memory," says Oppenheim, "is mentioned in histories, but it seems that the aphasia was taken for memory disorders and as such was interpreted, especially in old casuistry, though even newer observers could not refrain from similar mistakes."[2] Our case disapproves Oppenheim's conclusions, as the facts speak for themselves.

The aphasia, poor memory and other intellectual disorders are liable to escape notice, notwithstanding their characteristic features, and the diagnosis is then rendered impossible. This is why the patient was refused admittance to a hospital where he was sent by an otologist and was turned away with the diagnosis of "neuralgia" and was instructed to come back a week later, when he was dead. If the above mentioned symptoms had been looked for by the hospital physician, such a blunder could have been easily avoided. This case can be considered a classis, a type of a temporal brain abscess, and was easy to diagnose. Unfortunately, not always are the symptoms so grouped as in this case, and the diagnosis, therefore, is sometimes extremely difficult to make. The following case can serve as an illustration.

Case II.—Mr. E. S., aged 40, consulted one of us (Frank) in Columbus Hospital for severe pain in the left leg which seemed to be sciatica. Having left the hospital he took the car for his place of business, a few miles away. Stepping off the car he got a sudden pain in the left ear and whole head. The pain was, according to the patient, "so severe that it took the feeling out of the whole head." He walked to the place of business with eyes closed. The pain gradually subsided and about 11 A. M., *i.e.* a couple of hours later, disappeared entirely, but returned the same night. The patient took to bed and started to complain of severe headache which caused him to groan and interrupted his sleep. The temperature was 102° in the morning, and at 6.45 P. M. it was 100°. The pulse was 70 and 82. On the next day he confused words and on the fifth day this confusion manifested itself in the form of peculiar speech disorders. Thus, pain in the limbs he called medicine; the nurse he called doctor; slippers, medicine; "You" was "I." He was very irritable and restless. When excited he would occasionally pronounce the word correctly, but immediately change it for "medicine." When asked how much was 4 times 5 he would say four medicines times seven medicines will make twenty-eight medicines. The ear examination, performed by an experienced aurist, proved negative; the blood count gave 11,700 white cells; and the Wassermann reaction was negative. A complete neurological examination was absolutely impossible to perform on account of the irrational condition of the patient. The only symptom that indicated a serious brain lesion was the paraphasia, which, in the absence of chronic and acute ear lesion, could not very well be explained. One could think of a serous meningitis, of a circumscribed encephalitis of the left temporal lobe, and then also of a brain abscess. The diagnosis could not be made with certainty and such a serious operation as removal of a brain abscess could not, therefore, be urged. The patient was left at home, was seen by a number of neurologists and surgeons, but the diagnosis could not be decided upon. At the same time the patient was getting gradually worse, became unconscious, and Dr. Jacob Frank decided to operate. An abscess of the temporal lobe was found discharging stinking greenish pus and containing streptococci. There was temporary improvement, but the condition was rapidly getting worse and five days after the operation the patient died. The post mortem showed an abscess of the temporal lobe of the brain that corresponded to the first two temporal convolutions and penetrated 2½ inches deep into the substance of the temporal lobe. The region of the large ganglia (lenticular nucleus, optic thalamus, and part of the caudate nucleus, and the Island of Reil) were destroyed.

Thus, in this remarkable case of a brain abscess, we did not have an optic aphasia, as in the preceding case, but rather a paraphasia. Then we did not have the etiological factor, the acute purulent otitis as in the previous case, and the diagnosis, therefore, could not be made early enough and with certainty. Oppenheim positively states that the diagnosis of brain abscess cannot and should not be made if there is absent or unknown the pri-

mary source of suppuration, as lesion of the ear, nose, throat, etc. The most careful search for a suppuration or other ear lesion in this case, done by a very competent aurist, did not reveal any ear trouble. It is true that the patient complained of a severe earache at the time he took to bed, but then it was so acute, so sudden, and transitory that it is hard to comprehend how an abscess of so large a size could form in such a short time. We must admit that the streptococci found in the pus of the abscess were the cause of the inflammation that originated probably first in the middle ear and then penetrated into the brain. It is certainly to be regretted that only a removal and dissection of the brain could be obtained and that a minute investigation of all parts of the ear were omitted. If we assume that the cause of the temporal abscess in this case was an acute ear lesion, *i.e.* the abscess was of otitic origin, which undoubtedly was the case in the previous patient, then we have two cases of brain abscess in which the cause was an acute otitis. This is rather unusual if we take into consideration the statistics of authorities that in 90 or 91 per cent. of brain abscesses the cause is a chronic otitis, while only in 9 per cent. is the cause an acute otitis. The most careful and repeated interrogation of the patient's relatives, highly intelligent people, failed to reveal any probable or possible source of the abscess. There was absolutely nothing in the previous history, as trauma, infection, etc., that could help in diagnosing the case, and thus we had one certain symptom, the paraphasia, without the other factor that is of very great importance, the knowledge of the primary source of the infection. In 10 per cent. of cases there could be found no etiology (Oppenheim) and Martius thinks it possible for an abscess to form in the brain through direct invasion of microbes of influenza, epidemic cerebrospinal meningitis, pneumococci, etc. Oppenheim accepts this view of Martius, who calls such abscesses, that are not due to a primary focus somewhere else in the body, primary. Probably we had to deal in this case with a primary abscess of the temporal lobe of the brain caused by a streptococcus infection. If we disregard the primary source of brain abscess which sometimes cannot be found, we then must rely on other symptoms of which none is so constant, for the temporal brain abscesses, as the aphasia or paraphasia. The speech disorders are of tremendous significance and, as our second case shows, are alone sufficient to lead to the correct diagnosis and to immediate surgical interference. There is another difference in these two cases, namely, the temperature. In the first case the temperature was before the operation normal, while in the second it was elevated. Some cases of brain abscess run with a normal or subnormal temperature which, according to Macewen,[3] happens especially in uncomplicated cases.

Case III.—In this case we had to deal with a girl 21 years of age. Eight years ago, while crossing the ocean, she was seized with a severe pain in the right ear. The pain was unbearable, lasted two days, and then disappeared. There was neither headache, nor vomiting, onr fever, but she could not sleep for two nights from the earache. There was no discharge from the ear afterwards, she did not have any dizziness or troubles with the eyes, but complained of poor hearing on the right side. For six years she was feeling fine and forgot all about it. Two years ago the earache returned and she was relieved by a drum puncture. She knows that blood showed, but no pus. As there was no relief from the earache she had six weeks later another puncture done, and this second operation was soon followed by headache. The latter was confined to the parietal region, was accompanied by vomiting, buzzing in the left ear, and dizziness. She took to bed, could not sleep, and suffered immensely from headache and buzzing in the ear. The suffering kept on for three days and then one of us (Frank) was consulted. She was immediately sent to Columbus Hospital, where she vomited and became unconscious. The examination showed that the mouth was drawn to the left side, the right eye was widely open, there was paresis of the right arm and right lower limb, she could not hold anything in the right hand, and the right foot was helpless. The operation was performed the next morning by Dr. Jacob Frank, who found a large abscess in the right region of the cerebellum. The patient was unconscious for about two weeks following the operation and on the third week improvement set in, which, in five weeks, was followed by complete recovery. At the present time, two years since the operation, she is feeling perfectly well, is working in an office, but has a discharge from the right ear and shows a paresis of the right facial nerve. She also shows a marked horizontal nystagmus, which is common in cerebellar abscesses but very rare in temporal ones. A noteworthy feature in this case was the presence of a homolateral paralysis of the right half of the body, which again is very peculiar for cerebellar and which does not occur in temporal abscesses of the brain. Macewen explains the paralytic phenomena by pressure of the abscess upon the pyramidal tract. The paralysis will be crossed if the pressure takes place above the crossing of the pyramidal fibers, and homolateral when it occurs below, which was evidently the case in our patient. The presence of paralysis, combined with vertigo, headache, and nystagmus, is as characteristic for cerebellar abscesses as aphasic disorders for temporal ones.

It is difficult to form any conclusion from these three cases in regard to prognosis that surgical treatment of brain abscess gives. The statistics give a better prognosis for temporal abscesses than for those of the cerebellum. The average percentage of recovery is 72 for the former and 45 for the latter. Macewen was even more successful, in fact, the most fortunate and succesful of all that operated for brain abscess. Of 19 cases he obtained excellent results in 18, and among them were most dangerous and desperate cases of brain abscess. Oppenheim and Cassirer think that the percentage of cure given by the statistics is too high, because only favorable cases were, in their opinion, reported, and because the results were too soon published. In our cases the results were rather discouraging, but this was also the case in the hands of the most experienced surgeons, and should not deter us from further attempts in the same direction, as the third case of our series, as well as numerous cases reported in literature, proves beyond doubt that an operation in cerebral abscess may be a life-saving procedure.

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32 North State Street,
and
1139 South Marshfield Avenue.

METHYLENE BLUE TEST IN URINE OF CANCER PATIENTS.

By J. RUSSELL VERBRYCKE, Jr.,

WASHINGTON, D. C.

Any test which will enable us to diagnose carcinoma earlier or which will aid us in the diagnosis will be most welcome. So far no pathognomonic reaction has been discovered, but several more or less valuable means of contributory evidence have been described.

With the purpose of endeavoring to find the real value, if any, of the disappearance of the methylene blue coloration after addition of the dye to the urine of cancer patients, as described by Fuhs and Lintz in the *Journal of the American Medical Association*, June 24, 1911, I have performed the test a number of times. The patients tested have been sufferers from digestive disturbances and I wished particularly to note the frequency of occurrence of a positive reaction in these cases and to ascertain whether we could be helped in determining whether or not malignancy had developed in certain chronic ulcers. I had intended performing the test on one or two hundred non-cancerous patients and the number of malignant cases seen during that time before giving results, but after examinations in 50 cases certainly not malignant, 4 cases of gastric carcinoma and one probable cancer, I have reached such positive conclusions as to render it to my mind a waste of time to continue. The results will be found in the accompanying table.

Diagnosis	Number Examined	Positive	Partially Positive	Negative
Cancer	4	1	2	1
Cancer suspect	1	.	.	1
Spastic constipation	2	.	2	.
Enteroptosis and colitis	2	1	.	1
Hyperacidity and arteriosclerosis	1	.	.	1
Constipation, nervous dyspepsia	3	1	1	1
Colitis	10	3	2	5
Hyperacidity	3	.	.	3
Hyperacidity, intestinal toxemia	3	1	.	2
Enteroptosis, atony	3	1	.	2
Achylia	3	1	1	1
Normal	2	.	1	1
Neurasthenia	4	.	2	2
Intestinal indigestion, chronic nephritis	1	1	.	.
Intestinal toxemia	1	1	.	.
Atonic constipation	2	1	.	1
Hemorrhoids	1	.	.	1
Indicanuria, gallstone suspect	1	1	.	.
Subnutrition	1	.	.	1
Enteroptosis	6	2	2	2
Chronic gastromesenteric ileus	1	.	.	1
	55	15	13	27

I at first thought that though a positive test was not an unvarying indication of malignancy, still that a negative result would have considerable value, but I have been forced to even abandon that hope in view of the fact that three patients with cancer of the stomach, proven at operation, gave negative findings. One was a case of gallstones and chronic gastric ulcer, with well-marked cancerous degeneration and glandular involvement. The patient's urine showed absolutely no change whatever 24 hours after addition of the methylene blue. Patient No. 3 was found to have a widespread scirrhus cancer of the stomach, and yet gave a very incomplete reaction, much less than that obtained in many non-malignant patients. After 24 hours the lower third of the urine was practically completely decolorized, but the rest was from light green at the middle third to blue at the top. Another patient was found at operation to have tremendous inoperable carcinoma of the stomach, and yet the test in this patient also failed. Still a fourth, who has not yet been operated upon has a mass in the gall-bladder region with a hard stony feel of malignancy. If her consent can be obtained to operation she also will probably be found to have cancer, and yet she gives a negative reaction. From the number of positive results in certain nonmalignant cases it is evident that the test cannot even be credited with giving contributory evidence when positive. Again, if the test is of any value it should certainly in cases like the above give positive results. Hence not even a negative reaction is of any worth, and we must still look to the future for more certain laboratory aids to the diagnosis of cancer.

The cause of the reaction I am unable to explain. I have proven that it has nothing to do with acidity or alkalinity, but that it must be due to a definite chemical change induced by the excretion in the urine of either a chemical substance or an enzyme. I should say that it was most likely the latter, since I have found that boiling the urine before adding the methylene blue prevents the decoloration. But, on the other hand, the addition of a few drops of a urine which reacted positively to a test-tube full of a negative urine did not result in decoloration. It would be interesting to know just why some urines do have the property of decolorizing methylene blue while others do not, but it would seem that the test is useless for purposes of diagnosis.

I wish to express my indebtedness to Dr. Wm. Earl Clark for the privilege of making examinations on a number of his patients.

2307 First Street.

Sigmoiditis and Infection of the Internal Genital Organs in the Woman.—Jean Poulain says that the position of the sigmoid free in the small pelvis held in position by its mesentery and coming in contact with the female genital organs allows of the propagation of inflammation from one of these organs to the other. This infection is propagated not by the blood-vessels or lymphatics, but by means of the adhesions produced in the peritoneum. These may be many and close enough to cause a paraintestinal tumor as a point of departure for obstruction. The infections of the sigmoid are primarily caused by constipation and are communicated to the genital organs. If treated early they may be cured, while if left alone they cause irreparable lesions of the genital organs. The germs that cause inflammation to pass from the sigmoid to the adnexa are the colon bacillus primarily, the streptococcus, typhoid bacillus, and ameba of dysentery. The one that most frequently passes from the adnexa is the gonococcus. Besides these are streptococci, staphylococi, and tubercle bacilli. We get suppurative and plastic inflammations, the latter producing adhesions that bind down all of the organs contained in the pelvis. In these cases we should try a long course of irrigations of the intestine with hot water and salt, before we undertake operation.—*Journal des Sciences Médicales de Lille.*

Contribution to the Study of the Ovarian Function by Unilateral Castration.—Francesco Valtorta has attempted to ascertain whether after unilateral castration the remaining ovary will take up successfully the entire ovarian function. To this end he castrated rabbits unilaterally and killed them after various intervals, examining the ovaries histologically. He found that there was a uniform increase in size of the remaining ovary, which was due to an increase in the number of Graafian follicles, with slight increase in the stroma and no evidences of changes in the vessels indicating sclerosis. Hence the author finds that the ovarion function is supplied by increase in size and function of the remaining ovary.—*Annali di Ostetricia et Ginecologia.*

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MALARIA AND MATHEMATICS.

ABOUT ten years ago Ferdinand Hueppe prophesied that the time would come when the methods of mathematics would be applied to the study of disease. Each morbid entity would have its own algebraic equation, whose terms would represent the different etiological factors. The variability of the latter would in no way disturb the constancy of the relationship expressed by the equation. The algebraic formula may be conceived as corresponding to a definite curve, every point of which bears a constant relationship to every other point on the curve. Biometricians have long since appropriated the methods of the calculus in the interpretation of the phenomena of life. The Mendelian doctrine of heredity is the fruit of the application of simple mathematical principles to certain well-known manifestations of inheritance. The charted curves of the statisticians, the life-tables of the actuaries, the calculations of sanitarians all testify to the important rôle of mathematics in the advancement of biological science. That the apparently elusive phenomena of pathology might lend themselves not merely to simple methods of enumeration, but also to expression in the form of unvarying mathematical equations, requires solely that the etiological factors should be definitely known. The variability of these factors would in no way affect the constancy of the equation. In other words, using the language of analytical geometry, disease, in its multitude of forms, is in each instance a function of a number of variables, such as heredity, climate, soil, meteorological conditions, nutrition, intoxication, microbic invasion, etc. As soon as these factors are established in the case of any particular morbid condition, the knowledge of the laws that govern the existence of this condition is elevated to the ranks of an exact science.

Medicine of to-day is remote from being an exact science, but it is slowly moving toward this goal. It is greedily appropriating as its own the conquests in physics, chemistry, and mechanics, and is fully armed with the experimental methods that have placed the latter upon a high plane. The subjugation of disease which future generations will behold will be the outcome of a scientific warfare, in which every plan of battle will be carefully drawn and in which the strength of the enemy will be accurately known. Trained sanitarians will constitute the engineering corps of this conquering army. Does medical science as yet furnish any example of the reduction of disease to the rule of thumb? In answering this question one has but to point to the eradication of yellow fever from Cuba and the Canal Zone, and the control of malaria in many parts of the world. The latter disease, in particular, is one whose cause and manner of propagation are definitely known, together with the laws that govern its prevalence and diffusion.

Ronald Ross has made important researches into the epidemiology of malaria and into the circumstances that govern its diffusion, and has demonstrated mathematically that the laws underlying the prevalence of malaria in any community may be accurately determined. In his book entitled "The Prevention of Malaria," recently reviewed in these columns, Ross discusses the laws which regulate the amount of malaria in a locality and shows how the prevalence of this disease may be measured with mathematical precision. It is impossible in this place to discuss even briefly the various and somewhat intricate steps in the mathematical reasoning that enables Ross to formulate his remarkable conclusions. It may suffice to point out certain striking aspects of this form of deduction in order that the significance of these conclusions may be firmly grasped.

In discussing the conditions required for the production of new infections in a locality, Ross lays down the important principle that few or no new infections will occur unless the persons with gametids (sexual forms) in their blood and the carrying anophelines are sufficiently numerous. It is stated that this proposition is the basis of the public prevention of malaria. As the result of his calculations, Ross shows that the ultimate malaria-ratio (the proportion of malarious to healthy individuals) will vanish if the number of different anophelines to each person is less than about 40 per month. The amount of malaria in a locality tends toward a fixed limit determined by the number of malaria-bearing mosquitos and by other factors. There are numerous laws that regulate the number of anophelines in a locality. The output of mosquitos from marshes may vary within wide limits. The average life of the winged insects must be taken into account. Only about one-third of the carrying anophelines live for ten days—long enough to allow the plasmodia to mature in them. The proportion of mosquitos which succeed in biting human beings is also an important factor: Thus, a quarter of the anophelines may succeed in biting human beings once, a third may live for ten days more, and a quarter may succeed in biting again—that is, only about 1-24 of the females can ever have any chance of carrying malaria. Other factors that must be considered are the number of anophelines in a unit of area and the number in houses; the variation in mosquito-density from place to place (mosquitos tend to diminish with distance from their breeding place); the variation of mosquito-density from time to time; the variation of mosquito-density due to food (mosquitos tend to swarm in crowded and poor habitations); the mosquito-output varies with the extent of breeding surface; there occur flock migrations of mosquitos.

their visitation of and transportation by ships and vehicles; they are transported by rivers and winds, and are also subject to random scatter from a given point. The enumeration of these factors illustrates the extreme complexity of the task of determining the laws governing the prevalence of anophelines in any given locality.

Those who in their college days reveled in the glories of the higher mathematics will have no difficulty in following the formulæ that Ross presents in an imposing array. Of these there stand out two important equations. The first of these is termed the "variation formula" and indicates the manner in which malaria varies in a locality. The formula is as follows:

$$m_1 = m + b^2\ s\ i\ a\ (1—m)\ m—r\ m$$
$$= m + 0.005\ a\ (1—m)\ m—0.2\ m\ \text{(say)}$$

In this equation m is the proportion of infected persons at the beginning of the inquiry; a the proportion of anophelines to each person; r the rate of recovery; b the proportion of anophelines which succeed in biting men; s the proportion of anophelines which succeed in maturing the parasites; i the proportion of patients with gametids in their blood; and m_1 the proportion of infected persons at the end of the period of inquiry. The second formula is named the "static formula" and represents the final or static level M, to which the portion of infected persons falls so long as the proportion of anophelines and the other factors remain about constant. The static formula is as follows:

$$M = 1—r\ /\ b^2\ s\ i\ a$$
$$= 1—200\ r\ /\ a\ \text{(say)}$$

The exact numerical values of b, s, i do not affect the validity of the above equations.

The connection of malaria with marshes is shown by the fact that in the static formula the larger a becomes the more M approaches to unity—that is, the whole population becomes infected. An impermeable soil, with its greater collections of surface water, tends to increase a, the number of anophelines. Abrupt hillsides have little malaria as a rule, while flat plains at the foot of mountains are markedly unhealthy. Increased rainfall not only increases the mosquito output, but also increases relapses, increases the biting factor b, and reduces the recovery factor r. Winter rain may reduce r, but it has but little other effect; much spring rain fills the pools and favors the breeding of mosquitos; malaria inoculation, however, occurs most frequently at the beginning and the end of great summer rains. Increased temperature causes increase of all factors except r, the recovery factory, which tends to decrease. As regards altitude, malaria tends to diminish and cease at an altitude of about 1,600 to 4,900 feet above the sea-level. Malaria abounds less in the center of towns and more in the suburbs. Other things being equal, the malaria ratio is higher among a scattered rural population than in a dense urban one.

Space will not permit the discussion of other important factors that influence the malaria ratio, factors such as region, species of anophelines, the social condition of the people, the possible effect of malaria on the anophelines, seasonal variation, the effect of imported cases, the effect of mass-migrations, slow changes in endemicity, etc. This bare outline may suffice to indicate the extraordinary possibilities which this method of mathematical analysis promises in the elucidation of the manifold problems of disease.

THE ECONOMY AND THE FOOD VALUE OF CHEESE.

In a report by C. F. Doane on "The Digestibility of Cheese"* several varieties, but especially the American or Cheddar cheese, and some European cheeses, are considered under a great diversity of conditions; in the experiments submitted the dairy division of the Department of Agriculture had the cooperation of its office of experiment stations. The common American or Cheddar cheese (the so-called "full cream" of the dealers) is foremost in the quantity made and consumed. Emmental, the so-called Swiss cheese, is perhaps second, while from an economic viewpoint the kinds of cheeses made from skimmed milk, principally cottage cheese, are of great importance. By reason of their condimental value and their high flavor, Camembert and Roquefort might seem entitled to special consideration, but they are expensive and of such a nature that few would care to eat more than a small quantity at a time.

Some heretofore perplexing questions would seem to have been settled in this report. The comparative digestibility of green and cured cheese has been debated, for example. The Cheddar was formerly eaten when it had gone through the "ripening" or "breaking-down" process, in which some evident but not perfectly understood chemical and physical changes take place; there is in this process a gradual change from a rubbery or elastic to a mellow and partially soluble consistency with, *pari passu*, a decided development of flavor. Another debatable belief has been that cheese in any stage of ripening causes constipation. Now, there is a marked difference in the physical characteristics of the green and cured products. The water-soluble material in well-cured cheese is high, whilst in the uncured product it amounts to almost nothing. It is very likely that these evident physical and chemical differences have been largly responsible for the popular misconceptions. The milk solids are very digestible and make an almost perfect food. With the addition of rennet and the development of lactic acid some chemical changes take place; but why should these transform digestible solids in milk into indigestible solids in cheese? Again, why should cheese of any sort, green or otherwise, tend to constipation? This almost universal belief among cheese-makers is probably due to the fact that many people are so fond of the mild-flavored curd as to eat much of it when it is constantly at hand; and the digestive disturbances attributed to peculiarities in the cheese itself are no doubt due merely to overeating.

As to the actual food value of cheese, "people who are sometimes considered as authorities on dietary subjects" are of opinion that cheese is not a

*Doane, C. F., Circular 166, U. S. Department of Agriculture.

staple food product, being valuable only as a luxury or as an appetizer. Yet cheese is an important, indeed an essential, part of the dietary of most European peoples; and, as compared with other highly nitrogenous foods, it is decidedly economical—an important consideration for poor and hard-working folk. Skim-milk cheese should especially engage the attention of the laboring classes. When this cheese is sold for a whole-milk product it is a fraud that is a positive injury to the dairy business; but cheese made from skim-milk and sold as such is worthy of serious consideration by both producer and consumer. No doubt much of this cheese will be a product profitable to the dairyman and a good cheap food. Cottage cheese is another inexpensive and palatable product.

The quantity used in these United States is almost negligible by comparison with some other products of less food value and of inferior palatability. Most of the cheese we do eat is unprepared, while on the Continent it is sprinkled on other food—as vegetables—or cooked with the food. Many European varieties are made exclusively for use in cooking. The Parmesan is a hard cheese made from skim-milk; the sap sago cheese is made from skimmed milk and is highly seasoned with herbs. The Italians have cheese grated and they use it for flavoring as we use salt and pepper; their macaroni with cheese is a famous and very nutritious dish. And what excels the cheese omelet in flavor and nutritious qualities? "People who like a highly-flavored cheese never become tired of it."

Comparing the food value of cheese with that of other highly nitrogenous foods, only dried beef among all meats carries as high a protein percentage; and as dried beef contains a much greater percentage of water, the other food constituents, aside from the protein, are much less than is found in cheese. Fresh beef has, weight for weight, little more than half the food value of cheese in either protein or fat; and the same is true of practically all other fresh meats, which have oftentimes so large a refuse percentage and invariably so large a water percentage that they are notably inferior to cheese in food value. Bacon and fat pork are exceptions, but their food value is mostly in the fat, which can be and is in large measure replaced by the vegetable carbohydrates at a much less cost with greater digestibility. Fish and pork have each a notably large percentage of refuse, while eggs have a high percentage of water. In point of economy cheese compares very favorably indeed with these other foods; practically the only product that rivals cheese in food value and cheapness is dried beans. Our people, especially those who need to be economical in food buying, would indeed do well to attend somewhat to cheese.

SYPHILITIC EYE AFFECTIONS WITHOUT HISTORY OF SYPHILIS.

The recently introduced biological tests are revealing the intimate nature of many affections of obscure etiology, just as the original tuberculin reaction shed light on the character of diseases now known to be either tuberculous or paratuberculous. This is true of the Wassermann reaction for syphilis, especially in reference to ocular diseases, certain of which must be regarded as either syphilitic, metasyphilitic, or occurring by preference in syphilitic persons.

At a meeting of the Berlin Ophthalmological Society last July Glantz reported some statistics of the Wassermann reaction in individuals with ocular affections of nonsyphilitic character and without syphilitic history. Of 239 such cases, 39 gave positive findings. In the tabulated material Glantz does not discriminate between positive reactions, so that we are left to infer the nature of the malady from the relative frequency of positive and negative findings. Thus in diffuse parenchymatous keratitis, an affection practically of syphilitic origin, nearly all the cases reacted positively. The cases with negative results may have been under specific treatment. On the other hand in focal sclerokeratitis, presumably nonsyphilitic, there was a positive reaction in a very small number of cases. This was also true of episcleritis and iridocyclitis. In certain affections considered broadly as entities there was a large contingent of both positive and negative finds, the former predominating. Here belong iritis, scleritis, non-tabetic ocular palsies, affections of the choroid with vascular implication, and optic neuritis.

Virtually positive were the tabetic eye affections, diffuse parenchymatous keratitis, retinitis proliferans, affections of the choroid without vascular implication, and primary retinitis pigmentosa. On the other hand inflammatory affections of the choroid and of the retina in the form of a focus in the macula with persistent scar always gave a negative reaction.

The Climate of California.

In the *Southern California Practitioner* for September, 1911, is an article by Mr. W. J. Ballard, a resident of Los Angeles, eulogizing California generally and Southern California in particular as a desirable country in which to live. From the description it would appear that Southern California is an ideal place of residence for those who require a warm, dry, and equable climate. According to Hilgard, California corresponds in its climatic features to the Mediterranean region of Europe and Africa—a grand Riviera with a partial background of the desert as well, where the date palm and the ostrich find a congenial home and alluvial plains are found equaling in richness the famed delta of the Nile. Allowing for the natural prejudices in favor of the climate of Southern California by an inhabitant, there is little doubt that this region is highly blessed as regards atmospheric conditions. It is particularly, perhaps, to be recommended for those whose nervous system is out of gear and who need an equable, restful temperature.

Artificial Respiration by Mechanical Devices.

According to Roth (*Berliner klinische Wochenschrift*, September 18) an apparatus has for some years been available in Germany and elsewhere, designed to supplant the ordinary manual method of securing artificial respiration. The author has tested it on animals and on the human cadaver, and says that it is ingenious, technically perfect, and works automatically. Oxygen is insufflated into the trachea and lungs and the air contents of

the latter are then aspirated, the resulting thoracic movements of the cadaver being startling in appearance. The oxygen is generated in a bomb and passes through a tube, which is connected with an air-tight mask fitted about the nose and mouth, the tongue having first been drawn strongly forward. Oxygen is prevented from entering the stomach by gentle pressure on the esophagus. The apparatus is portable and may be operated by one person. It has seemingly never been tried on the living subject, so that its utility is as yet merely theoretical.

Treatment of the Dysphagia in Laryngeal Tuberculosis.

Few conditions are more distressing than the dysphagia which nearly always accompanies tubercle of the larynx. The patient is usually able to be about, for the pulmonary lesions need not be far advanced. He often craves solid food and that is what he most needs; yet he is obliged to subsist on liquids. The ordinary method for securing some respite with the possibility of a relative cure consists in cauterizing the ulcers. In many cases, however, relief obtained is of very brief duration. Bearing in mind the great advances along the line of local anesthesia, including anesthetization in the continuity of nerve trunks, the thought asserts itself that some such procedure might be of use in laryngeal tuberculosis; and further recalling the utility of deep alcohol injections in neuralgia, one is moved to test the latter in the same affection. Bouvier, at a local medical meeting held at Giessen last May, reported eight cases in which he anesthetized the internal ramus of the superior laryngeal nerve by a deep injection of alcohol. In only one case was the result negative, but here a second injection two days later secured six weeks of analgesia. In the others the latter promptly appeared—once in two hours, and generally in from ten to twenty-four hours. The average duration of the analgesia was four to six weeks, minimum three weeks. From 1½ to 2 c.c. of 85 per cent. alcohol was injected at a temperature of 45° C. The injections were painful for the time being and in half the cases otalgia was set up. The subsequent relief from suffering and the moral effect on the patient were, however, most striking. It is, of course, not claimed that the lesions themselves are benefited, and the assertion of some writers that abolition of pain is in itself a local therapeutic agent probably cannot hold good in these cases.

News of the Week.

St. Luke's Hospital.—A new pavilion to be used as the Outpatient Department of St. Luke's Hospital, New York, was opened on October 19, St. Luke's Day. The building was provided for by a bequest of $250,000 from the late Mrs. John G. Heckscher, given in memory of her parents, William L. and Maria L. Travers. It fills out the northeast corner of the quadrangular plan on which the hospital is constructed, and will be known as the Travers pavilion. The lower two floors will be used for the dispensary, and the upper two have arrangements for treating patients in the open air. The other floors will be used as dormitories. At the annual meeting of the Board of Managers held after the dedication exercises it was announced that during the year ending September 30, 1911, treatment had been given in the hospital to 17,531 patients, the total number of days of treatment being 110,000. During the same time legacies to the amount of $19,000 were received. Now one of the best equipped and handsomest hospitals in the city, it is interesting to recall that St. Luke's was started with the gift of one dollar made by a sick girl to her rector, the Rev. Dr. Muhlenberg of the Church of the Holy Communion, with the request that it be used to help build a hospital. At the next Sunday service the clergyman showed this money to his congregation and declared that it should found a hospital to be known as St. Luke's The one dollar foundation has grown to several millions.

The New Medical Directory.—The Medical Directory of New York, New Jersey, and Connecticut for the year 1911 has just been issued. The total number of physicians in the three State lists is 17,624, of which 13,641 are in New York State, 2,582 in New Jersey, and 1,401 in Connecticut. Of the 13,641 in New York State, 5,093 are resident in Manhattan and the Bronx, 1,884 in Brooklyn, 205 in Queens, and 67 in Richmond, making a total of 7,249 in New York City.

New York County Medical Society Nominations.—At a meeting of the Medical Society of the County of New York, held on Monday of this week, the following nominations were made: *President,* Dr. Charles Gilmore Kerley; *First Vice-President,* Dr. Brooks H. Mills; *Second Vice-President,* Dr. T. Passmore Bevens; *Secretary,* Dr. John Van Doren Young; *Assistant Secretary,* Dr. J. Milton Mabbott; *Treasurer,* Dr. Charles H. Richardson.

Diphtheria in Indianapolis.—It is reported that diphtheria prevails almost to epidemic extent in Indianapolis. Moving picture shows and similar places of amusement have been counseled not to admit children, and parents have been requested by the health authorities to keep at home all children under 16 years of age.

Two Inebriate Hospitals for New York.—The Inebriety Board is about to build a hospital on Kingston avenue, Brooklyn, on land given to it by the Department of Charities, and another on Blackwell's Island, for the reception of confirmed inebriates in accordance with the new law.

Notification of Industrial Diseases.—A circular has been sent to physicians in this State, calling attention to Chapter 258 of the Laws of 1911 which requires medical practitioners in New York State to give notice to the Commissioner of Labor of every case attended by them of poisoning by lead, phosphorus, arsenic, or mercury and of every case of anthrax or of compressed air illness, if such disease was contracted as a result of the nature of the patient's employment. Failure to give such notice renders a practitioner liable to a fine not exceeding ten dollars. By the specific terms of the law immediate notification of each case coming to the practitioner's attention is required, and the notice must state the name of the patient, his postal address, his place of employment, and the disease from which he is suffering. It is also required by the Commissioner of Labor, in accordance with the law, that the patient's occupation or trade shall be specified. Blank forms for such notification will be supplied by the Bureau on application. Notices must be mailed to the Bureau of Labor Statistics, Capitol, Albany, N. Y. As usual, no provision is made for compensating the physician for the time and labor consumed in procuring and filling out these blanks or even for reimbursing him for the amount paid out in postage.

The Nobel Prize.—Prof. Allvar Gullstrand of the University of Upsala, Sweden, has been awarded the Nobel Prize in medicine for 1911, for his research work in dioptics in connection with his study of the eye.

Monument to Servetus.—A statue of Michel Servetus, the Spanish physician and controversialist, who may have been the discoverer of the circulation of the blood, antedating Harvey by a hundred years, and who was burned at the stake for heresy, was unveiled at Vienne, France, on October 15. This is the third monument erected to Servetus in France. There is also one in Geneva where he suffered martyrdom. Prof. Richet of the Paris Faculty of Medicine paid homage to Servetus as a great physician, and many notables representing the religious world were also present.

Aviation Victims.—With the death of Ely on October 19, the list of persons killed in aeroplane accidents has reached 101, of whom seventeen were Americans. The first person to be killed through an accident to an aeroplane was Lieut. Selfridge, who died in 1908, the only victim that year; but in 1909 there were 4, in 1910, 32, and so far in 1911, 64 deaths. Only one woman, a Frenchwoman, is included in the list.

Quarantine Against Colon.—The ports of Jamaica have been quarantined against vessels from Colon, because of the report of a case of plague at the Ancon Hospital in the Canal Zone.

Surgeons of North America.—The second annual session of the Clinical Congress of Surgeons of North America will be held in Philadelphia on November 7 to 16, 1911, under the presidency of Dr. Albert J. Ochsner. The program includes clinics held by the leading surgeons of Philadelphia each day, and seven evening literary meetings, at which physicians from all over the country will present and discuss papers. Full information can be obtained from the General Secretary of the Congress, Dr. Franklin H. Martin, 1210 Columbus Memorial Building, Chicago.

International Eugenics Congress.—The Eugenics Education Society has arranged for an International Congress to be held in London from July 24 to 30, 1912, under the presidency of Major Leonard Darwin. The papers will be grouped in four sections: The Bearing upon Eugenics of (1) Biological Research, (2) Sociological and Historical Research, (3) Legislation and Social Customs; and (4) Consideration of the Practical Applications of Eugenic Principles.

Harvey Society Lectures.—The Harvey Society announces the following completed list of lectures for 1911-12: *October* 28, "Narcosis," by Professor Max Verworn; *November* 11, "On Freud's Psychoanalysis," by Dr. J. J. Putnam of Harvard University (provisional); *November* 25, "Illuminating Gas and the Public Health," by Professor W. T. Sedgwick of the Massachusetts Institute of Technology; *December* 16, "A Consideration of the Nature of Hunger," by Professor Walter B. Cannon of Harvard University; *January* 20, "Unit Characters in Heredity as They Appear to a Paleontologist," by Professor Henry Fairfield Osborn of Columbia University; *February* 3, "The Relations of Modern Chemistry to Medicine," by Professor T. W. Richards of Harvard University; *February* 17, "Current Views Regarding the Nutrition of Man," by Professor R. H. Chittenden of Yale University; *March* 3, "Old Age, Death, and the Meaning of Conjugation in Lower Animals," by Professor H. S. Jennings of Johns Hopkins University; *March* 24, "Malaria," by Dr. W. S. Thayer of Johns Hopkins University. As previously announced the lectures are given on Saturday evenings at 8.30, at the New York Academy of Medicine, and are open to the public.

Children and Street Accidents.—The principals of the New York City public schools have been requested to instruct their pupils in the dangers of "tagging" onto street cars, wagons, and other vehicles, in the proper way of getting on and off of street cars, and in the safest way of crossing a street. It is pointed out that during the twenty-one months prior to last September there were 46 children killed by automobiles and 140 injured; 29 killed by trolley cars, and 17 injured; and 164 killed by wagons and 23 injured.

Dole for the Blind.—The annual distribution of New York City appropriation for its blind was made recently, when 544 persons received a gratuity of $50 each. All the beneficiaries were adults and dependents.

Value of Blood.—Alleging that three pints of his blood are worth $5,000, a young grocery clerk of Perkinsville, Ind., has brought suit for this amount against a wealthy farmer, who benefited by a transfusion of the blood. The recipient considered $40 ample payment. Hence, the suit.

Tuberculosis in Workhouse.—The exposé by Mr. Upton Sinclair of conditions at the New Castle County workhouse, Delaware, especially in regard to the prevalence of tuberculosis among the inmates, resulted in the appointment of a board of physicians to examine into the conditions, and this board has sustained the charges in many respects, recommending the establishment of an exercise yard and greater control of the negro prisoners. Seven negroes in the institution were found to be hopelessly ill.

Verdict Against a Hospital Reversed.—A verdict of $30,500, received by a bicyclist, who was run down and injured by a St. John's Hospital, Brooklyn, ambulance, has been set aside by the Court of Appeals of New York, which finds that the driver of the ambulance was the servant of the keeper of the livery stable, and not of the hospital, and that the hospital therefore was not liable in spite of the fact that a hospital surgeon was in the ambulance at the time, since the latter was not shown to have participated in the driver's negligence.

Child Hygiene.—The Board of Estimate of New York City has under consideration a plan for extending the work of child hygiene by providing city-paid dentists and oculists to treat children in the public schools. Of the children examined in 1910, 11.2 per cent. were found to have defective vision, and the need for dental treatment has been overwhelmingly demonstrated. Medical inspection, which is now carried on only in the public schools, will probably be extended to the parochial schools, and provision will be made for a systematic re-examination of children to whom treatment has been recommended, in order to determine that the defect has been properly treated.

The New York Physicians' Association is the new name of what was formerly the East Side Physicians' Association. The meetings will be held hereafter at Tuxedo Hall, Madison avenue and Fifty-ninth street.

Mob Crazed Over Cholera.—Inflamed by the

sanitary precautions against cholera, a mob of 300 of the inhabitants of the town of Segni, Italy, marched upon the town hall demanding the release of the detained patients. After sacking and burning the building, they turned their attention to the lazaretto from which they removed the cholera patients, carrying them to their homes on the shoulders of the mob. It was necessary to call out the troops to establish order.

Utah State Medical Association.—The seventeenth annual meeting of this society closed on October 5, with the election of the following officers: *President,* Dr. R. W. Fisher of Salt Lake City; *Vice-Presidents,* Dr. C. E. West of Salina, Dr. E. H. Smith of Ogden, Dr. T. G. Howells of Bountiful; *Secretary,* Dr. W. Brown Ewing of Salt Lake City; *Treasurer,* Dr. H. P. Kirtley of Salt Lake City.

Vermont State Medical Society.—At the ninety-eighth annual meeting held in Burling on October 12 and 13 the following officers were elected: *President,* Dr. Frederick T. Kidder of Woodstock; *Vice-President,* Dr. William Lindsay of Montpelier; *Secretary,* Dr. C. H. Beecher of Burlington; *Treasurer,* Dr. C. F. Dalton of Burlington.

Delaware State Medical Society.—The annual meeting was held at Lewes on October 10, when the following officers were elected: *President,* Dr. Frank L. Springer of Newport; *Vice-Presidents,* Dr. R. G. Paynter of Georgetown, and Dr. J. L. Crossmore of Wyoming; *Councillor,* Dr. James Beebe of Lewes; *Secretary,* Dr. G. W. K. Forrest of Wilmington; *Treasurer,* Dr. Samuel C. Rumford of Wilmington; *Editor of the State Medical Journal,* Dr. A. Robin. The next meeting will be held in Wilmington.

Meeting of Anesthetists.—On October 28 the anesthetists of New York City and vicinity will hold a meeting and dinner at 40 East Forty-first street, New York, preceding Prof. Verworn's lecture on "Narcosis" before the Harvey Society. Details may be obtained from Mr. Harold Sanders, 864 St. John's place, Brooklyn, N. Y.

Removal Notice.—Dr. J. M. Ferrer announces his removal to 24 East Sixtieth Street, New York.

Charitable Gifts.—By the will of the late James Rufus Smith of New York, bequests of $15,000 each are made to the New York Foundling Hospital, the Skin and Cancer Hospital, the Home for Incurables, and St. John's Guild.

By the will of the late Helen M. Stillwell of Whitefield, N. H., formerly of Philadelphia, the sum of $5,000 is bequeathed to the Presbyterian Hospital of Philadelphia to endow a free bed to be known as the Albert H. Stillwell bed.

Obituary Notes.—Dr. Agrippa N. Bell of Brooklyn, N. Y., a graduate of the Jefferson Medical College, Philadelphia, in 1842; a surgeon in the United States Navy during the Mexican War; a member of the national quarantine convention in 1857-60; superintendent of the floating hospital for yellow fever patients in New York Harbor in 1861; inspector of quarantine from 1870-75; in charge of the work of exterminating yellow fever in New Orleans and Memphis in 1879; founder and editor of the *Sanitarian* until 1904; president of the International Congress on Tuberculosis in 1903-04; died at his home from general debility on October 15, aged 92 years.

Dr. Alexander Hugh Ferguson of Chicago, Ill., a graduate of the Toronto University Medical Faculty in 1881, professor of surgery and clinical surgery in the College of Physicians and Surgeons, Chicago; surgeon-in-chief to the Chicago Hospital; a member of the British Medical Association, the American Medical Association, the International Surgical Association, the Academy of Medicine of Chicago, and the Illinois State and Cook County Medical Societies, died at his home of blood poisoning on October 20, aged 58 years.

Dr. George W. Holman of Brooklyn, N. Y., a graduate of the Eclectic Medical College of the City of New York in 1878, died in the Seney Hospital on October 12, aged 85 years.

Dr. Elisha Hopkins of Searsport, Me., a graduate of the Harvard University Medical School in 1854, and a surgeon in the United States Army during the Civil War, died at his home on October 6, aged 82 years.

Dr. Charles B. Wurtz died at Philadelphia on October 8 from heart disease at the age of 52 years. He was graduated from Hahnemann Medical College of Philadelphia in the class of 1880.

Dr. Victor B. Ochiltree of Keokuk, Iowa, a graduate of the College of Physicians and Surgeons of Keokuk in 1883, died at his home on October 11 of cerebral hemorrhage, aged 50 years.

Dr. William H. Malin died at Philadelphia on October 15 at the age of 73 years. He was graduated from the Homeopathic Medical College of Philadelphia in the class of 1858.

Dr. Isaac M. Hightower of Cartersville, Ga., a graduate of the Georgia College of Eclectic Medicine and Surgery, Atlanta, in 1891, died at his home on October 11.

Dr. Harvey Lockwood Finley of Brooklyn, N. Y., a member of the Kings County Medical Society, and of the staff of the Samaritan Hospital, died at his home on October 14.

Obituary.

JOHN HUGHLINGS JACKSON, M.D., LL.D., D.Sc.

LONDON, ENGLAND.

Dr. John Hughlings Jackson, the "father of English neurology," died in London, on October 7, aged seventy-six years. He was born in the County of York and received his early medical education at the York Hospital Medical School. At the age of twenty-four he settled in London, and for the next thirty years engaged in active work at the London Hospital. He was a voluminous writer, and became a pioneer in opening up many unexplored regions in neurology. His work was confined to clinical observation. He was the first to point out the extreme importance of the ophthalmoscope in the diagnosis of diseases of the nervous system. The careful study of convulsive manifestations led him to advance the hypothesis of focal irritation of the Rolandic area, and later of the localization of cerebral functions, an hypothesis that was afterwards confirmed by the experimental investigations of Fritsch and Hitzig, and that received its permanent recognition in the name "Jacksonian epilepsy." In the Croonian Lectures of 1884 he advanced the doctrine of the hierarchy of the nervous centers. He later formulated the modern doctrine of the tonic nature of cerebellar activity. Among the many other contributions which he made to neurology were the definition of apraxia, and the knowledge of temporosphenoidal disease and double hemiplegia.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE SCHOOLS OPEN—INTRODUCTORY ADDRESSES, ETC.—MEDICAL EXHIBITION—INSURANCE BILL AND FRIENDLY SOCIETIES—BUST TO A PHILANTHROPIC DOCTOR—OBITUARY.

London, October 6, 1911.

The schools are open, the prizes have been distributed, the dinners eaten, the addresses given, and the teachers and students have set in to work. A drive round to look again at some of the schools shows that at most of them progress is the order of the day. New laboratories and other buildings at once arrest attention, and it may be added that they are an index to other improvements within. Guy's school looks practically rebuilt, but there is yet more to do and it will hardly be finished this season. The pathological laboratory has a completely new building, and chemistry and physics seem equally favored. At the Middlesex, among other improvements, a sanitary tower runs up the building and each ward has a bathing equipment. This hospital sustained a great loss in the death of its chairman, the late Prince Francis of Teck. He was a man of great energy, with business ability and tact, and with sympathy for the afflicted. In three months he cleared off a debt of £20,000 by his personal work. Prince Alexander of Teck has accepted the chairmanship and was present at the distribution of prizes, as was H. R. H. Princess Alexandra.

Dr. Comyns Berkeley, the obstetric and gynecological surgeon, delivered the introductory address at the Middlesex and gave some notes of its history. It began in 1745 in two houses which soon became crowded. It became the first lying-in hospital in England. In it, too, began the first London dental department. In 1754 land was bought and 2,000 guineas acquired for building, to help raise which David Garrick gave two performances. In 1774 the students formed the first medical society and were allowed to meet in the hospital if they found their own candles. In 1793 a ward was opened for the French exiled clergy. How different sounds the statement that £1,000,000 has been spent in connection with the hospital within the secretary's term of office. A wireless apparatus was fitted up on the platform and by it a message of greeting transmitted to the King, who is patron of the hospital.

At St. George's Hospital we had been promised an address on lucidity by the principal of the university, Dr. Miers. Some curiosity was expressed as to what was in store for the students. They were told that medical men needed the ability to express their meaning in written words—the power of mastery over the pen. The style of letters that appeared in the newspapers was often disgraceful. The present methods of teaching were to blame. The study of great authors, often recommended, was no remedy. People should be taught to express themselves clearly in their own language before they thought about style. A generation was growing up which had never been taught to make its meaning clear to anybody. Our grandfathers and grandmothers could do so, and letter writing was in their time more important than it is thought now. They should cultivate lucid writing, a necessary adjunct to lucid thinking. In the interests of science—medical science in particular—if they wished to acquire habits of exact thought they should have constant care in what they wrote to see that its meaning had the desirable quality of lucidity.

At University College Sir William Ramsay distributed the prizes and gave the introductory address. Speaking of research, he remarked that it was unfortunate that men and women were so refractory to experiments. One man's meat was another man's poison and consequently medicine was restricted to one plan of investigation, observations under different conditions were collected and compared. But the drawback was want of control. The conditions were not all known and hence conclusions could not be certain. In contrast purely experimental science admitted more accurate control of conditions. Experiments could be made on lower animals and most of the advances in our time both in medicine and surgery had been by this method. Doubtless without this aid advance might have been possible, but it would have been very slow. They had left behind the speculations of their ancestors and could now acquire experience from demonstrations and from reading. Having acquired knowledge in that way the students' outlook should always be that of the investigator, for with that preliminary knowledge he could seek to solve problems connected with disease while doing his best for his patients and so contribute to the good of humanity.

At Charing Cross Hospital H. R. H. Princess Louise, Duchess of Argyll, accompanied by the Duke, distributed the prizes. An earnest appeal for funds for the equipment of the laboratories, etc., was made by the Duke, who said also that money was needed to set aside as a fund under the control of trustees for the benefit of the hospital. He said further he thought the medical profession was the most interesting of all pursuits for its interest never ended. The possibility of some fresh contribution toward the saving of human life was the enchantment which kept doctors at their work almost as long as they could do it.

At St. Mary's Hospital, Lord Justice Fletcher Moulton distributed the prizes and gave an address in which he pointed out that a longer curriculum would shortly become necessary. He then plunged into the mysteries of opsonins and vaccine therapy and showed he had got up his subject as well as he so often did puzzling cases during his career at the bar. Vaccine therapy, he declared in closing, will make it possible to treat the early beginnings of tuberculosis however numerous may be the cases.

At the Royal Free Hospital (the Women's School) Sir William Butlin delivered an address dealing with research in relation to medicine and to women. He laid down the qualities women required and possessed for research and asked if they possessed them, replying that he thought so—many even in a higher degree than men. One point he confessed he was not certain about—accuracy of detail regarding experiments, than which nothing was more important. He would be asked whether they would ever be able to do more than carry out researches designed for them and in which they had been diverted. This, he said, he did not know. He would not predict what they would do in the way of research, but he would like to see them try.

The Insurance Bill still attracts attention and the Friendly Societies are growing more discontented with the prospect it holds out. The Ancient Order of Foresters, without wishing to wreck the measure, deplores the action of the House of Commons in taking away their right to appoint doctors and say

unless this is allowed they will agitate for a majority of representatives on the health committees. The Independent Order of Odd Fellows is more angry still, and has been using strong language about Mr. Lloyd George. They declared they were determined to make him answer their charges. If they did not get what they wanted they would have nothing to do with the bill and so on. They repudiated the gross misrepresentations about their treatment of doctors. The societies were above the wiles and tricks of party politics. A resolution pledging the conference to use every effort to secure withdrawal of the bill in its present form was carried unanimously.

There was a full attendance at the opening of the medical exhibition organized by the *British and Colonial Druggist* on Monday. It has remained open during the whole week. It is only intended for medical men, of whom all residing within fifty miles have received an invitation. All sorts of medical and surgical appliances were on view as well as a radium emanatorium.

On Wednesday evening Sir William Collins unveiled a bust of the late Dr. Hanley Bean, who died last year at the age of thirty-six. He was a barrister as well as a doctor, and wrote on medicolegal subjects, but being independent of work he devoted himself to promote the welfare of the poor at the East End of London, and there it was that he was honored. The Mayor of Stepney accepted the bust on behalf of the Borough Council.

The death of Louis Stromeyer Little, F.R.C.S., B.A., has taken place after a long illness at the age of seventy. In early life he was surgeon to the London Hospital and lecturer on anatomy as well as curator of the museum. He was also surgeon to the National Orthopedic Hospital, which was founded by his father, the late Dr. Little, who has been called the father of orthopedy, and of which his younger brother, Muirhead Little, is now senior surgeon. The deceased went to the Schleswig campaign in the early sixties and was at the storming of Duppel, where his surgical help was highly appreciated, for there were more than 2,000 wounded. In 1876 he went to Shanghai and became surgeon to the hospital and practised for some twenty years or thereabouts. He then retired, returned to England, and resided in Surrey.

Dr. Joseph Bell, consulting surgeon to the Royal Infirmary, Edinburgh, the Eye Hospital, and the Royal Hospital for Sick Children, and holder of many other appointments in Edinburgh, where he spent his life, has died at the age of seventy-four, full of honors within and without his profession. He was F.R.S. and deputy lieutenant. He had served as examiner at the Edinburgh Royal College of Surgeons. Of the important societies he was fellow and had been president. At the university and the infirmary he was a far-famed teacher. As a clinical teacher he had impressed generations of students with his exactitude in observation. Many were often amazed at the minuteness of the points he grouped together in a diagnosis and how he explained their indications. The manner, appearance, or some slight deviation from the common he would show them, and perhaps from it suggest more than the disease—say the habits or employment of the patient—and he seemed always right. It was not guessing but precise observation. When Conan Doyle was a student he was greatly impressed by this, and when he took to literature he made Bell the original of his famous romance of Sherlock Holmes. The "Manual of the Operations of Surgery" you will doubtless know as a standard textbook which reached many editions.

Dr. James Andrew of Edinburgh, who died on September 19, had suffered for many years from ill health which led to his retirement from active work about two years ago. He graduated in 1868 and was elected F.R.C.P., Ed., 1870, where he served as examiner. He was a member of various societies, physician to the Royal Hospital for Children, and lecturer on skin diseases in his university.

A fine old medical veteran has passed away in Sir Henry Jules Blanc, I.M.S., who has died in Paris at the age of eighty. He was educated at Montpellier, graduated in both arts and medicine in that university, and entered our Indian medical service in 1859. He was assistant surgeon in the China war of 1860 and took part in the Abyssinian mission in 1864, in which he was taken prisoner and kept in chains at Magdala for nearly two years, but afterward joined the British troops and was present at the storming and capture of Magdala. He was awarded the medal with thanks of the government and compensation. Later he became surgeon, senior surgeon, and professor of surgery in the Grand College, Bombay. He retired with the rank of department surgeon general in 1887, was created K.C.V.S. in 1901, and resided for a time at Cannes. He wrote "A Narrative of Captivity in Abyssinia" and various official reports and medical contributions.

Brigade Surgeon Lieutenant Colonel George Grant, I.M.S. (retired), died on October 2 at the age of seventy-seven. He qualified at the Edinburgh College of Surgeons and graduated M.B. at Aberdeen in 1858.

Surgeon-Major John Raby, I.M.S., who saw service in Abyssinia and retired afterward with the recognition of the government, has died from an overdose of a narcotic taken accidentally at Paignton, where he had lived for some years. He was formerly deputy sanitary commissioner in the Dikkan and held other offices.

Dr. Samuel Mills, who was for a long time surgeon to a division of the London police and to the Corps of Commissionaires, has died suddenly at the age of seventy.

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 12, 1911.

A Simple Diet Card and Its Use. F. W. White. M.D.
Phenolsulphonephthalein as a Test of Renal Function. H. Cabot and E. L. Young.
The Bacteriological Examination of Stools as a Measure of Quarantine Protection Against Asiatic Cholera. A. J. McLaughlin.
The Effect Produced by Some Therapeutic Measures on the Different Forms of Leucocytes in Pulmonary Tuberculosis. M. Solis-Cohen and A. Strickler.
A Case of Cerebral Syphilis in a Child Four and One-Half Years Old Cured by Salvarsan. A. W. Fairbanks.

Diet Card.—F. W. White has devised a simple diet card as an aid in applying one's knowledge of the principles of nutrition in the daily use of foods. Its chief value is its convenience. Extreme accuracy is not possible or necessary, and the aim has been simplicity rather than completeness. Its object is to avoid weighing of food and tedious calculations by giving food values in household measures. The author emphasizes the importance of the amount of food as well as its kind. The use of foods has been much less accurate than the use of drugs, and dietary mistakes have been common through ignorance of food values or difficulty in estimating them. A large part of the difficulty for the busy doctor has

been the amount of work needed to estimate the fuel value of a day's food or the amount of carbohydrate, proteid, or fat in it.

Phenolsulphonephthalein Test.—By H. Cabot and E. L. Young. (See MEDICAL RECORD, October 7, 1911, page 748.)

Protection Against Asiatic Cholera.—A. J. McLaughlin refers to the safeguard imposed by the Public Health and Marine-Hospital Service of requiring a bacteriological examination of the stools of all steerage passengers from infected places. The method employed included the administration to the immigrant of a saline purge; the inoculation of a peptone tube with a specimen of stool; the incubation of this tube for six hours; the examination of smears made from the surface culture of the peptone tube, which smears are stained with carbol-fuchsin; if curved organisms are found subcultures in peptone and plates are made on ordinary nutrient agar neutral to phenolphthalein; colonies which have the characteristics of cholera colonies are next examined with reference to the quantitative agglutinating power of a specific cholera serum. Working with this method, ten bacteriologists examined 1,000 specimens in a single day and the complete examination of 1,200 stools was concluded within 48 hours. The immigrants from infected districts had been examined bacteriologically before leaving Italy so that the chances of finding carriers were small. Quite a number of vibrios were isolated, but none agglutinated with cholera serum, although some were morphologically indistinguishable from true cholera vibrios.

Leucocytes in Pulmonary Tuberculosis.—M. Solis-Cohen and A. Strickler state that in the differential leucocytic count one has a means of studying more exactly than in any other way the effect produced by therapeutic measurts in patients with pulmonary tuberculosis. It is impossible to state definitely, however, whether the changes observed in the leucocytic pictures are produced directly in the blood, or result indirectly from the change in the general condition of the patient caused by the measure employed. It would seem from the few cases studied that: (1) Bier's suction hyperemia in cases suitable for this treatment causes an increase in the proportion of lymphocytes and of polynuclear cells with one and two nuclei. (2) Applying fly blisters every five days and allowing the serum to become absorbed causes an increase in the proportion of polynuclear cells with one and two nuclei and in most instances an increase in the proportion of lymphocytes. (3) Iodine in the form of iodoform administered by the mouth causes an increase in the proportion of polynuclear cells with one and two nuclei. (4) Creosote given in the form of the carbonate as a rule causes an increase in the proportion of lymphocytes and of polynuclear cells with one and two nuclei. (5) Nuclein seems to cause an increase in the proportion of polymorphonuclear neutrophiles. (6) The effect produced in the blood by many therapeutic measures is not as a rule maintained indefinitely, but only for a variable period, averaging about a month.

Salvarsan and Cerebral Syphilis in a Child.—A. W. Fairbanks reports a case of cerebral syphilis in a child aged four and a half years, cured by one injection of 0.3 gram of salvarsan.

New York Medical Journal.

October 14, 1911.

The Treatment of the Portal of Entry of Systemic Diseases. G. Wilson.
A Brief Résumé of the Newer Teaching of Gastrointestinal Diseases. M. I. Knapp.
The Recurrence of Scarlet Fever, with Report of a Case. J. P. Crozer Griffith.
Some of the More Important of the Legal Aspects of the Practice of Medicine. H. M. Friedman.
On the Use of Nuclein Solution in Surgery. H. J. Achard and H. H. Redfield.
Complications Following the Submucous Operation Upon the Nasal Septum. I. H. Alexander.
A Few Suggestive Experiments for a Cutaneous Reaction for the Diagnosis of Syphilis; Preliminary Theoretical Report. M. J. Schoenberg and E. Burchill.
The Rôle of Extensor Toe Reflexes in Neurological Diagnosis. T. B. Throckmorton.

The Portal of Entry of Systemic Diseases.—G. Wilson calls attention to the possibility of good that might result from searching for, and treating, a focus of suppuration that might be a fundamental cause of such diseases as acute articular rheumatism, endocarditis, chorea, and the rheumatic diseases of the eye. It is generally agreed to-day that the first need in the treatment of gonorrheal rheumatism is to cure the urethritis or prostatitis, and the author believes that the portals of entry of other diseases during the acute stages should be cleansed with mild antiseptics.

Gastrointestinal Diseases.—M. I. Knapp believes that gastritis is a relatively rare disease; that mucous colitis and atony of the stomach are meaningless terms; that bronchial asthma is caused by pyloric insufficiency; and that there is a distinct class of diseases characterized by the presence of organic acids in the stomach.

Recurrence of Scarlet Fever.—By J. P. Crozer Griffith. (See MEDICAL RECORD, July 29, 1911, page 249.)

Legal Aspects of Medicine.—H. M. Friedman presents a brief review of this subject.

Nuclein Solution in Surgery.—H. J. Achard and H. H. Redfield report a series of eight cases in which nuclein solution was applied as a dressing to infected wounds. In every instance healing occurred promptly and without suppuration.

Submucous Operation on Nasal Septum.—I. H. Alexander reports as complications of this operation three cases of severe infection, two ending fatally in acute purulent meningitis. The author has also seen many cases of acute catarrhal otitis media and acute purulent otitis media, several cases of acute mastoiditis treated by operation and one case of double mastoiditis. The author believes that, although the benefits of the submucous operation are well recognized, nevertheless conservatism in the selection of our cases should always be the rule; that complications do arise and are sometimes very serious; and that, no matter how simple some cases appear, infection may take place and change the entire subsequent course of the case.

Cutaneous Reaction in the Diagnosis of Syphilis.—M. J. Schoenberg and E. Burchill suggest that, even though their experiments have so far been negative, there may yet be discovered a local reaction of the skin to the syphilitic virus.

Extensor Toe Reflexes.—T. B. Throckmorton concludes that extensor toe reflexes are never found in health and are pathognomonic of pathological change. A tendency for the great toe to extend is usually present by the percussion method even when Babinski's sign is light or indeterminate. Replacement of one reflex by another may sometimes occur.

Journal of the American Medical Association.

October 14, 1911.

An Extraabdominal Multilocular Ovarian Cyst. T. S. Cullen.
Some Apparently Obscure Conditions of the Gastrointestinal Tract and the Practical Application of the Röntgen Ray in Their Diagnosis. G. R. Satterlee and L. T. LeWald.
Cervical Implantation of the Placenta with Rupture of the Uterus. Hysterectomy; Recovery. C. Goodman.
Subparietal Rupture of Solitary Kidney. A. J. Mayer and A. Nelken.
A New Blood-Vessel Forceps. B. M. Bernheim.
Intraperitoneal Cystotomy for Tumor of the Bladder. W. H. Dukeman.
Hemorrhagic Erosions of the Stomach with the Report of Autopsy Findings in a Case of Einborn's Disease. N. W. Jones.
Bubonic Plague with Special Reference to That of Ground-Squirrel Origin. G. W. McCoy.
The Method of Infection in Pneumonic Plague. R. P. Strong and O. Teague.
Report of Committee on Methods of Control of Plague. R. Blue, E. E. Heg, and W. F. Snow.
Methods for the Control of Plague with Special Reference to Administrative Details; Argument Supporting the Committee's Report. R. Blue.

Report of Committee on Methods for the Control of Epidemic Poliomyelitis. W. H. Frost, H. W. Hill, and S. G. Dixon.
Report of Committee on Control of Contagion Through Physicians and Nurses. H. Spalding, I. D. Rawlings, and H. Cohen.
Report of Committee on Methods of Control of Smallpox. 1. Control of Smallpox in a City with a Million Inhabitants. H. Spalding. 2. Control of Smallpox in Rural Districts and Small Municipalities. H. M. Bracken.
Public Health Exhibits for Permanent Installation. F. B. Wynn.
The Psychological Aspect of Refraction. S. L. Ledbetter.
Intrauterine Ophthalmia Neonatorum. W. A. Newman Dorland.
Thrombosis of the Mesentery Causing Gangrene of the Ileum. R. W. Wakefield.
An Avoidable Accident During Lumbar Puncture. W. F. Lorenz.
Opsonotherapy in a Case of Puerperal Sepsis. W. C. Wolverton.

Extraabdominal Multilocular Ovarian Cyst.—T. S. Cullen reports the case of a partly solid, partly cystic tumor of the ovary, lying external to the abdominal muscles, the tumor and its surrounding sac being covered with a small amount of adipose tissue and skin. The pedicle of the tumor passed through a hernial ring to the outer side of the right rectus and obliquely across the lower abdominal cavity to what corresponded to the normal insertion of the right utero-ovarian ligament.

X-Ray Diagnosis of Gastrointestinal Conditions.—By G. R. Satterlee and L. T. Le Wald. (See MEDICAL RECORD, July 8, 1911, page 98.)

Cervical Implantation of the Placenta and Rupture of the Uterus.—C. Goodman reports a case of uterine rupture which he believes was caused by cervical implantation of the placenta.

Rupture of the Kidney.—A. J. Mayer and A. Nelken report a fatal case of subparietal rupture of a solitary kidney.

Blood-Vessel Forceps.—B. M. Bernheim has devised a delicate pair of forceps with a small, polished metal knob about the size of an ordinary pin-head on each end. These knobs enable one to grasp the vessel firmly without doing the slightest damage to the intima.

Tumor of Bladder.—W. H. Dukeman reports a case of vesical epithelioma successfully removed by intraperitoneal cystotomy.

Hemorrhagic Erosions of the Stomach.—(By N. W. Jones. See MEDICAL RECORD, July 1, 1911, page 47).

Bubonic Plague of Ground-Squirrel Origin.—G. W. McCoy gives a history of the experience with rural bubonic plague of ground-squirrel origin in California. There were three clinical types: the severe acute, the mild acute, and the subacute or pyemic. No case of primary pneumonic or primary septicemic plague from ground-squirrel infection has come under observation.

Pneumonic Plague.—R. P. Strong and O. Teague conclude that during normal and dyspneic respiration of primary pneumonic plague patients plague bacilli are not usually expelled by means of the expired air. During the coughing of such patients, even when sputum visible to the naked eye is not expelled, plague bacilli in large numbers may become widely disseminated into the air surrounding the patient. As to the distance from the patient that the air may be infected by droplets containing plague bacilli, this varies with the strength of the cough, the amount of mucous in the throat and larynx at the time, and the currents of air in circulation in the ward. The idea that infection of doctors, nurses, and attendants in plague hospitals is caused entirely by particles of sputum expectorated by the patient and visible to the naked eye is erroneous. The wearing of masks and the proper covering of any surface of the skin where fresh abrasions are present are important personal prophylactic measures in pneumonic plague.

Control of Plague.—R. Blue, E. E. Heg, and W. F. Snow state that, while this disease has been controlled in San Francisco, large sections of the central and coast counties of California are still infected so far as rodents are concerned and several human cases have occurred directly traceable to these animals. The methods for the control of the present situation should include the following measures: (1) The prevention of spread from rural to urban rodents by limiting the chances of contact and interchange of ectoparasites between the two. This suggests (*a*) the maintenance of squirrel-free zones around the centers of population; (*b*) prohibiting the marketing or traffic in rodents; (*c*) general rat destruction in the cities. (2) The prevention of a wider spread among rural rodents and the ultimate invasion of the Eastern States by such means as the following: (*a*) destruction of known enzootic foci in the various countries; (*b*) general rodent extermination throughout California and the nearby States.

Control of Plague.—R. Blue recommends that a general extermination of rodents of the families *Sciuridæ* and *Muridæ* should be systematically carried out in all Pacific and Mississippi Valley States, and he also suggests thorough supervision of foreign commerce to prevent the introduction of plague from without.

Control of Poliomyelitis.—W. H. Frost, H. W. Hill, and S. G. Dixon recommend the isolation and screening of patients known or suspected, the thorough disinfection of their excreta, of articles used by them and their attendants, and of the premises where cases occur. While quarantine of persons in contact with patients does not seem as yet justifiable, it is recommended that members of patients' families be excluded from schools during the period of the patients' isolation and during the possible incubation period of a new case, *i.e.* for two weeks following the end of the last exposure to the presumptively contagious person. The daily administration of hexamethylenamin seems to offer some hope of reducing the susceptibility in persons exposed to the disease.

Control of Contagion.—H. Spalding, I. D. Rawlings, and H. Cohen discuss the methods of controlling contagion through the cooperation of physicians and nurses.

Control of Smallpox.—H. Spalding discusses the control of smallpox in municipalities, and H. M. Bracken discusses its control in rural districts and small municipalities.

Public Health Exhibits.—F. B. Wynn advocates the establishment of permanent health exhibits.

Psychological Aspect of Refraction.—S. L. Ledbetter states that if all persons were alike in their mentality and habits of thought refraction would be reduced, in a measure, to a simple question of accurate observation and correct measurements. Such, however, is not the case. The individual has to be considered with all his eccentricities and idiosyncracies.

Intrauterine Ophthalmia Neonatorum.—W. A. Newman Dorland reports a case the points of interest in which are the early rupture of the amniotic sac one week prior to the onset of the labor pains; the apyretic course of the mother's case in the presence of a virulent vaginal infection; and the infection of the child's eyes during the week subsequent to the rupture of the membranes while the fetus was still *in utero*.

Mesenteric Thrombosis.—R. W. Wakefield reports a case of this condition followed by gangrene of the ileum in a man aged 60 years. Operation was successful.

Breaking of Needle During Lumbar Puncture.—W. F. Lorenz reports a case of this accident, and suggests that this can be avoided if means are taken to prevent a sudden extension on the part of the patient.

Vaccine Treatment of Puerperal Sepsis.—W. C. Wolverton reports a case of puerperal sepsis treated successfully by means of stock vaccines of *Streptococcus pyogenes* and *Staphylococcus pyogenes aureus* and *albus*.

The Lancet.

October 7, 1911.

Research in Medicine and Women in Research. Sir Henry T. Butlin.
Lucidity. H. A. Miers.
The Middlesex Hospital of To-day and Yesterday: a Bird's-Eye View. C. Berkeley.

Consumption and Order of Birth. W. C. Rivers.
Note on Two Cases of Tumor of the Prefrontal Lobe in Criminals; with Remarks on Disorders of Social Conduct in Cases of Cerebral Tumor. W. C. Sullivan.
Strangulation by Volvulus in an Abnormal Sac Lying Within the General Peritoneal Cavity. R. Lawford Knaggs.
True Bradycardia in Association with Uremia. E. E. Laslett.
Open-Ether Anesthesia: Some Improvements. J. Robertson.

Research in Medicine and Women in Research.—Sir H. T. Butlin contrasts the two methods of research, observation and experiment, and discusses the questions of the utilitarian object and the cost of research. The qualities needed in an investigator are personal cleanliness; cleanliness of habit; continued industry; patience, perseverance, and a determination to pursue the research to the end; extreme care in observation and strict attention to detail; careful recording of observations, which should be done at the earliest possible moment; thorough belief in the importance of the particular research, amounting even to enthusiasm; and conscientiousness. Women possess these qualities, but there is one quality in which they are deficient, namely, the ability to make accurate records of observations and experiments.

Lucidity.—H. A. Miers advocates in the interest of medical science the cultivation of the habit of exact thought and of lucid expression.

The Middlesex Hospital.—C. Berkeley presents a bird's-eye view of the history of this hospital since its foundation 166 years ago.

Tuberculosis and the Order of Birth.—By W. C. Rivers. (See page 889.)

Tumor of the Prefontal Lobe in Criminals.—W. C. Sullivan reports two cases of brain tumor in which symptoms of disorder of social conduct appeared to have been among the earliest indications of the impairment of mental function.

Volvulus.—R. Lawford Knaggs reports a case of intestinal strangulation caused by volvulus in an abnormal sac lying within the general peritoneal cavity.

Bradycardia in Association with Uremia.—By E. E. Laslett. (See page 890.)

Ether Anesthesia by the Open Method.—J. Robertson describes his method of administering ether as follows: The patient is given a deep subcutaneous injection of one dose of omnopon an hour previous to operation. When the patient is placed on the operating table he is in a slightly sleepy condition. The mask is placed over the nose and mouth, and in three or four minutes, as a general rule, after the administration of from half to one ounce of ether the patient is snoring comfortably and is absolutely lax. No difficulty is experienced in maintaining this condition with another half-ounce of ether for an hour. The pupils are slightly contracted and react to light. In some cases there is slight and temporary divergent strabismus. The conjunctival reflex is absent. The face is slightly flushed a pink color. The pulse is full and steady. The respirations are slow and deep, perhaps 12 to 15 a minute. There is no mucus production in the throat, and there is neither spasm nor tremor. After a three hours' operation the patient is practically in the same condition as at the start.

British Medical Journal.

October 7, 1911.

Transplantation of a Segment of Small Intestine to Repair the Resected Sigmoid Flexure. W. S. Fenwick.
The Dermatitis Produced by East Indian Satinwood (*Chloroxylon Swietenia*). J. T. Cash.
Cystic Ovary in the Pelvis. E. L. Gowlland.

Transplantation of Segment of Small Intestine.—W. S. Fenwick reports the case of a man aged 51 who suffered from chronic intestinal obstruction caused by a carcinoma of the sigmoid flexure of the colon. The small intestine was greatly hypertrophied and distended, and such was the congestion of the intestinal vessels that the abdominal cavity contained a considerable quantity of blood-stained fluid. The colon above the growth was explored and found to have a very short mesentery not more than 2 inches in length. The patient's condition was too grave to allow of an attempt at resection, and indeed the distension of the intestines rendered it impossible. Accordingly the mid-line wound was closed in layers, an iliac colotomy performed, and a Paul's tube inserted. Owing to the shortness of the mesentery, great difficulty was experienced in bringing the bowel to the anterior abdominal wall. Next day the colotomy acted well, and subsequently three to four times daily. Ten weeks later a second operation was performed. The mass was cut away with a V-shaped portion of mesentery in which enlarged glands could be felt. A loop of ileum fairly low down was taken, clamped off, and divided with a portion of its mesentery, and transplanted into the gap in the colon, the anastomosis being effected with the aid of two Murphy buttons. The operation was successful. Subsequent attempts were made to close the colotomy opening but without complete success. The patient gained rapidly in weight and strength, and recovered the power of normal defecation.

Dermatitis Produced by Satinwood.—J. T. Cash refers to outbreaks of dermatitis in wood-working departments of shipyards on the Clyde which were traced to the irritant action of satinwood. He reports the results of his experimental investigations which show that the alkaloid chloroxylonine, extracted from the wood, is an irritant and is capable of causing dermatitis. Two resins and an oil contained in the wood are capable of arousing dermatitis in those who have been rendered abnormally susceptible by chloroxylonine action.

Cystic Ovary.—E. L. Gowlland reports a case of multilocular cystic ovary in a patient aged 68 years in which the following points of interest are noted: (1) The sudden onset of complete retention of urine. No advice had been sought till three days before the operation. (2) The difficulty of diagnosis due to the extreme hardness of the tumor. On commencing the operation the author expected to have to perform supravaginal amputation for impacted fibroid of the uterus. (3) The denseness of the adhesions. After freeing the tumor, the posterior uterine wall was quite raw and ragged. (4) The contents of the cyst were sterile.

Berliner klinische Wochenschrift.

October 9, 1911.

Anemias of Nurslings.—Finkelstein states that even apparently healthy babies are often pale, with relatively low hemoglobin values. The latter range from 60 to 70 per cent., the red corpuscle count being high in porportion. Pseudoanemia is the term applied to pallid children with normal blood values. Children are often born with deficient iron in their blood; and if the iron at birth is normal or in excess, this slowly disappears from the organism unless food rich in iron is given. Some authorities claim that under normal circumstances the newly-born child is much richer in iron than is the adult because it is destined to subsist for months on milk, which is poor in iron. There is a so-called chlorotic type of anemia in the nursling which responds readily to iron medication. The hemoglobin in these cases may sink below 50 per cent. The author does not like the term chlorotic anemia and would substitute for it oligosideremia, meaning poverty in iron. This type is doubtless due to congenital insufficiency of the spleen and other blood-making organs. Another type of nursling anemia is the so-called anemia pseudoleucemica infantum, a condition described fully in textbooks. In addition to the types just enumerated, which are primary, we have secondary anemias, such as result from syphilis and other constitutional affections, diseases of the gastroenteric organs, etc.

Compounds of Bromides and Urea in Epilepsy.—Fischer and Hoppe have introduced into the therapeutics of epilepsy a combination of calcium bromide with urea. The latter component alone should require attention. It is said to diminish the toxicity of bromine. Calcium is chosen before other metals because as a natural constituent of the body in large quantities it enters largely into metabolic processes. It is necessary for the maintenance of the integrity of the blood and of cardiac activity. Urea administered as a drug may at first sight seem contraindicated in a convulsive disease with possible N retention; but the authors assert that when given intravenously urea promotes the elimination of tissue urea. The claim is made that the combination is especially indicated in defective excretion, weak cardiac action, possibility of autointoxication, and finally when the patient has the spasmophilic diathesis, the latter suggesting calcium starvation.

Treatment of Arteriosclerotic Gangrene by Arteriovenous Anastomosis.—Glasstein cites the recent study of this subject by Monod and Van Verts, who compiled 26 cases, of which 16 were for severe gangrene. Of the series of 10 milder cases in which the gangrene was just beginning two cases resulted favorably (20 per cent.). Of the 16 operations for severe cases but one ended successfully. The author reports in detail a favorable result in a case of beginning gangrene, which makes 3 recoveries in 11 cases. The patient had already lost a leg from amputation for beginning gangrene three years before, so that the operation for anastomosis seemed justifiable, since in case of failure amputation still held out a prospect of cure. The intervention was made in Scarpa's triangle, the peripheral end of the femoral artery being anastomosed with the central end of the femoral vein. The arterial blood was forced into the empty vein, which at once dilated. The limb was placed in a splint. The operation was a complete success, the gangrenous process being arrested. Carrel's technique doubtless contributed to the good results. This investigator now prefers the termino-terminal anastomosis to the latero-lateral method employed in the author's case.

Münchener medizinische Wochenschrift.

October 3, 1911.

Warmed Ether and Chloroform Vapor for Narcosis.—Läwen writes monographically on this subject, giving the history of the principle involved. Among sponsors for the latter are a number of Americans. The author, while far from claiming that warmed vapor can prevent postoperative pneumonia, believes that its tendency is in this direction, and he employs the method both in prolonged intervention in the abdominal cavity, in other localities in which the operative field is large, and finally in all cases in which shock and hemorrhage have already occurred. The warmed narcotic vapor is administered alternately with warmed atmospheric air.

Uzara, a Native African Remedy for Diarrhea.—Gürber describes this new natural resource in great detail. The credit for bringing it to the attention of the profession is due to Hopf, who sent samples to Marburg for study. The pharmacodynamic principles are extracted by alcohol. Two of these appear to be glucosides, while a third is evidently of a different character. The nature of these principles will be discussed in another article. They appear to represent a multifold activity and the ability to control diarrhea and dysentery in a manner suggesting the activity of opium in this direction is but one example. It goes without saying that so valuable a remedy has been promptly commercialized, but there seems no reason why it should not come into the ordinary trade channels.

Steinmann's Nail Extension in the Treatment of Fractures.—According to Koerber this resource was first made public in 1907. The limbs are placed in the extension posture. Nails are introduced into holes made near the break and the broken ends wired together. The nail holes are made in one of three ways, viz., by driving the nails directly into the bones, by a gimlet or auger, or by an electric drill. When the nails are removed an iodoform pencil may be inserted into the holes. The author has tested the method in 70 cases of fracture of the lower extremity. There were all the customary varieties: simple, complicated, compound, etc., and both old and recent fractures were comprised. The breaks were seated in all the ordinary localities, including the neck of the femur. Among the cases were also artificial solutions of continuity—osteotomies. The author has analyzed his results from a variety of standpoints. Pain incidental to inserting and removing the nails was present in nineteen cases but it never became necessary to remove the nails prematurely. These pains would naturally prove a drawback to the method, and the author considers them minutely. In five cases they formed a notable handicap, persisting for months. Usually, but not invariably, was this type of pain associated with local bone infection. The danger of infection is twofold, viz., early and late. The former develops directly after the intervention, and this primary infection was in evidence in but three cases, none of which was serious. Secondary infection occurs after the third week, and is much more serious. Three were one case of fatal sepsis, one of phlegmon, and several of abscesses. The author also lost a patient with delirium tremens and another from fat embolism due to the nature of the fracture. The author naturally pronounces against the method under all ordinary circumstances and only recommends it in extreme cases—old ununited fractures, certain complicated fractures, osteotomies, etc.

Deutsche medizinische Wochenschrift.

October 5, 1911.

Exhibition of Tuberculin per Os.—Möllers and Heinemann reach the following conclusions after extensive investigations into this subject: It is practicable to administer tuberculin in capsules, provided the latter escape the destructive action of the gastric juice. *In vitro* pepsin and trypsin can so damage tuberculin that it no longer can produce its characteristic results in the animal organism. The patients who are most sensitive to the action of tuberculin do not in most cases show any reaction, febrile, general, or focal, when the drug is given by the mouth. Even when given per os in high doses there is no evidence of the formation of antibodies in the blood serum. It therefore follows that while some tuberculin may be absorbed in the intestine the method of administration per os cannot be compared at all with the subcutaneous method; and that neither for diagnosis nor treatment does it hold out any material hope when given in the first-named manner.

Inflammatory Tumors of the Abdominal Wall.—Heymann refers to an apparently new surgical affection described by Schloffer at the Surgical Congress of 1908. This was a chronic inflammatory tumor developing in the scar of a hernia operation. It was invariably found by the discoverer that the tumor had formed about a nucleus of a piece of sublimate silk. The appearance and mode of growth of these tumors had suggested malignancy. Other surgeons had noted the occurrence of the same growths after appendicitis operations. It also appeared that other growths pathologically and clinically similar to the preceding could arise after operations involving laparotomy, yet without a foreign body as a nucleus; while in other cases the growths originated without a preceding operation. The author describes a case which appeared to have an embryonal origin. It must be assumed that all these inflammatory, pseudomalignant growths were due to infection of a mild degree of virulence, which had it been more severe would have produced an abscess.

Insurance Medicine.

Remarks Upon the Medico-Actuarial Investigation.—Arthur Hunter says that the chief reason for making a medico-actuarial investigation are probably: (1) that the insurance companies desire a more uniform practice in the selection of certain types of risks; (2) that actuarial and medical directors desire more information on borderline and semi-hazardous or hazardous risks than has been derived from the specialized investigation. With regard to the other reasons for the medico-actuarial investigation, the shortcomings of the specialized investigation were principally the following: (*a*) a lack of homogeneity in certain of the groups of occupations; (*b*) a lack of essential information regarding certain of the classes involving medical impairments. Under (*a*) might be mentioned the grouping of distillers and employees in the same class; also the great diversity of the risks in the class consisting of those "exposed in occupation to electricity." Class (*b*) might be taken as including those who had taken the cure for or had recovered from intemperance. No information was required regarding the time elapsed since the cure was taken or with regard to subsequent habits. Another class might be mentioned, those who had had syphilis. In the new investigation all these defects have been borne in mind.

All the companies invited to take part in the investigation will furnish their data on the twenty-six medical impairments, while many of them will include the optional impairments. Sufficient information ought to be obtained to enable the companies to have a more uniform standard of medical selection. As to occupations, the results of the investigation will enable the actuaries to prepare plans for treating people engaged in hazardous occupations more in accordance with the circumstances than has been possible in the past. One of the most important results which it is hoped to achieve is the determination of the influence of build upon longevity, especially among overweights. Another important result will be the more equitable treatment of applications from women.

There will be many difficulties in gaining these results. The expected deaths present the first and simplest difficulty. So much labor would be spent in procuring exact data that the committee decided to experiment with a view to grouping the ages. After making use of the statistics of the Mutual and the New York Life, the Committee decided to employ quinquennial age-groups from 15 to 49, a quadrennial age-group from 50 to 53, and triennial age-groups thereafter. The next problem to be solved was the division of the occupations and medical impairments with respect to the nine build groups. The committee decided that the occupations should be divided into three groups, underweights, normal weights, and overweights. Medical impairment was another difficult question. The medical directors of the committee felt that the types involving tuberculosis in the family record or in the personal history should be treated with great discretion. They especially desired to study the effect of lightweight combined with a family record of tuberculosis. It was decided to have subdivisions for each underweight-build group and to divide the overweights into two classes only. Other medical impairments were divided into three groups of overweights, normal weights, and underweights. As to the further grouping of medical impairments necessarily very large, the committee endeavored to combine the lesser groups and to consider the matter. The four groups of syphilis will be divided into three build groups and subdivided into the nine groups covering number of attacks and time elapsed since the attack, making 108 groups in all.

Two more questions to be solved are the relation of abdominal girth to chest expansion and the grouping of those who have two or more impairments. In the specialized investigation when a man had two or more impairments the experience on his life was put into two or more corresponding groups. In the new investigation it is hoped that means will be found to simplify that method.—Proceedings of the Twenty-first Annual Meeting of the Association of Life Insurance Directors.

The Interpretation of Murmurs.—J. F. Halls Dally states that diastolic murmurs, and by these he means the aortic and early mitral varieties, are almost invariably persistent and organic. Presystolic murmurs, however, are not pathognomonic of mitral disease, and, except when they occur in aortic disease, are a sign, rather, of compensation than of failing compensation. The rule is that murmurs resulting from stenosis of any orifice are best heard with the patient standing; if the result of insufficiency, they are best heard when the patient lies down. But one must bear in mind that, on lying down, stenotic murmurs may diminish in intensity when the heart muscle is failing badly. With an apex-beat in the normal situation and regular in rhythm, the auscultatory phenomena may be practically disregarded.—*The Practitioner*, September, 1911.

Pathology of the Order of Birth with Special Reference to Tuberculosis.—W. C. Rivers presents an important study of this subject, based upon his own observations and upon a review of the literature. He had noticed in examining the case histories of a large number of patients at a sanatorium that a considerable proportion of these were eldest-born children. The material was subjected to mathematical analysis by Karl Pearson, who concluded from the figures that both first and second-born offspring appear subject to consumption at a very much higher rate than younger members of a family. Similar analysis of 500 cases of tuberculosis reported by Brehmer revealed the same results and also the fact that there is an excess of tuberculosis among the sixth-born. Records of several generations of the populations of South German villages revealed to Riffel that first-born children show a larger proportion of tuberculosis than any of the rest. The author's own material included 353 cases. In reviewing the literature of what may be called the pathological aspect of primogeniture he gleans the following observations: Sir A. Mitchell found among 443 idiots and imbeciles that 31.1 per cent. were first-born. This observer concluded that idiocy is more likely to occur among first and latest pregnancies than among others. Matthews Duncan found that first-born children in Scotland are shorter and lighter than others, but traces this to the influence of early age of the mother. Carman after examining 1,507 Michigan school children found that in general sensitiveness to pain decreases in order of birth. Wells, studying data furnished by trained observers and by teachers of school children in California, gives curves showing, with minor sex differences, first-born children superior to others in weight, height, association time, discrimination, voluntary motor ability, natural mental ability, neatness, and deportment. Macdonald stated that of fifty-three university students the first-born were more sensitive to pain than the second-born. Dugdale is quoted by Havelock Ellis as finding that criminality favors the first-born child. Beeton and Pearson in a paper on the inheritance of the duration of life studied the pedigree records of Quakers. The authors found that the elder adult sister and adult brother live on an average four years longer than the younger adult sister or brother. Heron's study of Urquhart's 331 family trees of lunatic asylum patients showed excess of insanity among the four eldest, and deficiency in the remainder. Pearson in his Boyle lecture quoted the following findings, namely, that the elder-born are more liable to pulmonary tuberculosis and insanity—and, on the authority of Goring, added

a third, criminality. There remain two more medical observations: that of Davidson, who found ten out of nineteen cases of congenital pyloric stenosis to be eldest children; and that of Hunter, who among idiots and their parents described specially heavy incidence at either end of the family. In summing up his study of this subject Rivers concluded that an innate tendency to consumption, a soil intrinsically suitable to the tubercle bacillus, and not the result of weakening by other disease, is an idea which has always had support. Bacteriological work may have limited the influence to be properly assigned to this predisposition; nevertheless, the theories of the *habitus phthisicus*, as stenosis of the upper thoracic aperature, the frequency of a small heart, of a condition of underweight, of supernumerary nipples and of nasal defects have never been confuted. Eldest-born incidence might unite all these as coordinate degenerative manifestations; and eldest-born incidence apparently disposes of the objection, first advanced by Cohnheim, that the *habitus phthisicus* is the result of an already existing tuberculous infection. These facts have an obvious bearing upon prophylaxis and upon life and sickness assurance.—*The Lancet,* October 7, 1911.

Bradycardia.—E. E. Laslett reports a case of uremia in which an extremely slow pulse was a prominent symptom. He notes that an infrequent pulse is occasionally associated with some forms of toxemia, particularly those which accompany catarrhal jaundice and chronic nephritis. An infrequent pulse may be due to three different causes: (1) the regular occurrence of extra-systoles not perceptible to the finger on the pulse (coupled rhythm); (2) heart block, partial or complete; and (3) slowing of the whole heart. It is only since the introduction of the graphic method of studying heart affections that it has become possible to distinguish certainly between these distinct conditions. It has been ascertained that the slow pulse of jaundice is most often due to a coupled rhythm, much less commonly to a slowing of the whole heart. As regards the pulse in nephritis, little is at present known either as to its nature or its cause. It is not yet considered as proved to be due to uremic poisoning, and Vaquez and Esmein, in their report on bradycardia to the French Medical Congress last year, stated that the question needed further research.—*The Lancet,* October 7, 1911.

The Life Insurance Examiner's Responsibility.—A paper with this title was read before the American Association of Medical Examiners, at Los Angeles, Cal., June 1911, by Dr. Allison Maxwell of Indianapolis, Medical Director State Life Insurance Company. The necessity for medical examiners in life insurance companies is pointed out, and attention is also drawn to the fact that the life insurance companies are dependent upon their examiners, largely, to keep down the mortality and preserve their very life. This is the strongest argument for the need and careful selection of medical examiners of integrity and professional ability. His indeed is a position of great responsibility. In dealing with candidates for insurance, while he is compelled to be frank, at the same time he must exhibit courtesy and tact. Although the medical examiner must be loyal to the company he should be mindful of the agent and prompt to assist him in completing the examination. The examination itself should be careful in all its details. Of course, it is well known that there are other points to be looked after besides those asked on the blank. There may be something in the candidate's gait; his breath, as the odor of the diabetic; his furtive glance, something that suggests fast living and burning the candle at both ends. Over and above the physical examination the medical examiner can frequently give important information to the company under what may be termed the moral hazard. There are many things which emphasize the moral hazard about which the examiner may privately write to the home office. For instance: an applicant may lead a notoriously immoral life, which means a short life, or a man may lead an indolent life, without any legitimate business or means of support; or the opposite, a man may work eighteen hours out of the twenty-four and tax his mental and physical powers to their limit to gain wealth, or fame, or both. The various hazardous occupations on many occasions are not given as the real vocation of the applicant, and where the medical examiner knows that the latter is engaged in two occupations, one of which may be dangerous, of course he will give this information to the medical department. Maxwell states his belief that, as a rule, medical examiners for life insurance companies are the most honorable and best educated men in the community. As a proof of this he points to the decrease of tuberculosis as due to better examiners and better preventive treatment.—*Lancet-Clinic,* September 9, 1911.

Tuberculosis and Insurance.—Victor C. Vaughan, Jr., says that tuberculosis is primarily a contagious disease, but probably it takes rather a long exposure before an individual becomes infected. This is why family history is so important in this connection. Yet applicants who are not underweight and who have attained an age of 40 or over are frequently insurable as standard risks in spite of a family history of tuberculosis. Applicants closely associated with consumptives may be worse risks than those giving a family history of the disease; for example, a husband, whose wife is consumptive. Such refinements of diagnosis as the *x*-ray or the tuberculin tests are impracticable in routine insurance work, but an accurate record of the temperature and pulse should be made by every examiner. Applicants with tuberculous family history should be examined in the afternoon, so that slight rise in temperature and pulse may not be missed. *Proceedings of the Medical Section, American Life Convention, New Orleans,* February, 1911.

Rating of Hazardous Occupations.—W. S. Kendrick said that the general public thinks that the life insurance companies have formulated fixed and uniform standards for selection of their risks. Yet reliable and comprehensive medical data on the subject of medical selection are quite lacking. Such a table has been produced in reference to one hundred and forty-four hazardous occupations, the data being obtained from twenty-six different companies. In only one case, the occupation of house carpenter and joiner, did these companies agree unanimously. A "Bureau of Research" should be established by the insurance companies to gather all such data, by which all may benefit. Such investigation lies in the scope of the medical departments.—*Proceedings of the Medical Section, American Life Convention, New Orleans,* February, 1911.

Pneumonoconiosis in Stonecutters.—Among marble workers and stone cutters the death-rate from consumption is nearly five times greater than it is among farmers, planters and farm laborers. The excessive mortality among the stone and marble workers is due to the dangerous character of these occupations. Men who work at these trades must necessarily inhale considerable quantities of dust that is especially irritating and injurious to the lungs and respiratory tract. It is also extremely difficult to provide protective devices outside of the moistened sponge respirator worn over the mouth and nose. Few workers, however, will wear them on account of the discomfort they cause, even though they are fully aware of the danger to which they are exposed. In many of the dust-producing industries methods are employed to arrest and remove the dust at the points of origin and carry it away from the operators. And while much has been accomplished along the lines of dust removal in industrial establishments, the conditions in many of the trades are still deplorably bad. In fact, it may be safely asserted that in most of the States in the Union factory sanitation is yet a long way below the standard that should prevail were it to be carefully considered from both the economic and health standards.—*Bulletin Chicago School of Sanitary Instruction.*

Book Reviews.

Laboratory Studies in Tropical Medicine. By C. W. Daniels, M.B. Camb., M.R.C.P. Lond., Lecturer on Tropical Diseases at the London Hospital; formerly Director of the London School of Tropical Medicine; Director of the Institute for Medical Research, Federated Malay States; Member of the Royal Society Malaria Commission in India and Africa, and in the Medical Service of the Colonies of Fiji and British Guiana; and H. B. Newham, M.R.C.S. Eng., L.R.C.P. Lond., D.P.H. Camb., D.T.M. & H. Camb., Director, formerly Demonstrator, London School of Tropical Medicine. Third edition, thoroughly revised, with many new and additional illustrations. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co., 1911.

The various improvements which have been introduced into the third edition of "Daniel's" serve to keep this volume on a very high level. It is still the best short practical guide for laboratory work in tropical medicine. A great variety of subjects are fully treated. Especially good chapters will be found on the staining and examination of the blood, on the various blood parasites and on the identification of parasitic insects, such as mosquitoes and flies. Elaborate directions are given for breeding and transporting mosquitoes for experimental purposes. Recent discoveries as to the transmission of plague and similar diseases have necessitated the introduction of a good deal of material concerning the different species of fleas. An excellent diagnostic chapter is that on the examination of feces for parasites and the classification of the parasites themselves. A short chapter contains the elements of bacteriology and another portion is devoted to water analyses. The colored plates are extraordinarily valuable, not only on account of their careful drawing, but because of the beautiful manner in which the color of the stains employed has been reproduced.

The Bellevue Hospital Nomenclature of Diseases and Conditions, with Rules for the Recording and Filing of Histories. Compiled by the Committee on Clinical Records, composed of Robert J. Carlisle, M.D., Warren Coleman, M.D., Thomas A. Smith, M.D., Edmund L. Dow, M.D. Adopted by the Board of Trustees, 1903. Revised and made to conform to the International Classification, 1911. New York: Copyright by the Board of Trustees of Bellevue and Allied Hospitals, 1911.

Medical nomenclature of the present day, in the absence of any authoritative international classification, is in such a chaotic state that any serious attempt to bring order out of the confusion is to be welcomed. The recognition of the need of such classification is shown by the remarkable progress of what is known as the "International Classification of Diseases and Causes of Death," a manual of which will shortly be published by the U. S. Census Bureau. The present work, the first edition of which was published eight years ago, is primarily a guide for the clinical recorders in Bellevue Hospital in this city, but will serve as well in all other hospitals. This edition has been collated with the "International Classification" adopted in 1909. The orthography has been made to conform to that of the Basle Anatomical Nomenclature, but in the spelling of diseases it needs further revision in the matter of consistency. For example, it employs the ugly, if etymologically correct, term *leuchæmia*, but writes *lipæmia*, which consistently should be *liphæmia;* we find also *leucodermia* and *leukoma;* either the former should be *leukodermia* or the latter *leucoma;* according to the rules of etymology *leucodermia* and *leucoma* are the correct terms. In spite of these few inconsistencies and of the adherence to the nearly obsolete digraphs æ and œ, this list of diseases marks an advance toward a satisfactory nomenclature and is a work which will be of material assistance in the formation of an authoritative and definitive international classification of diseases.

A Text-Book of Medical Chemistry and Toxicology. By James W. Holland, A.M., M.D., Professor of Medical Chemistry and Toxicology and Dean Jefferson Medical College, Philadelphia. Fully Illustrated. Fifth Edition, Thoroughly Revised. Price $3.00. Philadelphia and London: W. W. Saunders Company, 1911.

That this work filled a want is obvious from the fact that it has gone through two editions in a comparatively short time. It is essentially a book for the medical student. As is pointed out in the preface, when a student is admitted to a medical college he is expected to have some knowledge of physics. Even when he has some knowledge of chemical matters having toxicological and therapeutical interest this needs to be refreshed and enlarged. But it not infrequently happens that beginners in medicine have not had adequate preparation in elementary chemistry. This being so, the ground must be prepared for the consideration of the practical application of physiological chemistry and toxicology by the elucidation of chemical philosophy. Hence this volume, which fulfills its stated object in an eminently satisfactory way. Indeed, it may be said that if the student masters the salient points of the book he will possess a sufficiently good working knowledge of medical chemistry and toxicology in so far as reading will help him. The illustrations are numerous and graphically interpret the text. The volume is well printed and in all respects may be recommended to medical students as a useful and comprehensive textbook.

Manual of the Diseases of the Eye. For Students and General Practitioners. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890-1903; Attending Ophthalmic Surgeon to the Mt. Sinai Hospital, New York; Consulting Ophthalmologist to Bellevue Hospital, to the French Hospital, to the Red Cross Hospital, and to the Italian Hospital, New York. Seventh Edition, Revised. With 362 original illustrations, including 22 plates, with 62 colored figures. Price $2.00 net. New York: William Wood & Company, 1911.

In the seventh edition of this work a new chapter has been added on "The Ocular Manifestations of General Diseases." Paragraphs have been inserted on subjects such as Larange's Operation for Glaucoma, The Use of Salvarsan in Syphilitic Ocular Affections, Krönlein's Operation, etc. Like the previous editions of this work, this book will be found extremely useful to the general practitioner and student, as it presents the fundamentals of the diseases of the eye in a concise and comprehensive manner. As a typographical criticism we would note that two successive pages are numbered 78—the subject matter of only one page being included in the table of contents.

Die Syphilis im Lichte der modernen Forschung. Mit besonderer Berücksichtigung ihres Einflusses auf Geburtshülfe und Gynäkologie. Von Dr. Franz Weber, Assistent an der Kgl. Univ.-Frauenklinik und Privatdozent für Geburtshülfe und Gynäkologie an der Universtät in München. Mit 8 Abbildungen im Text. Berlin: Verlag von S. Karger, 1911.

So much history has been made in the last decade so far as our knowledge of syphilis is concerned that old textbooks treating of the disease have rapidly become antiquated. Moreover, it is not the symptomatology of the disease, but its diagnosis and treatment that are of the greatest interest now. It is this aspect of the disease that Dr. Weber covers in his book on syphilis. He gives a short review of our historical knowledge of the "great plague" and then informs the reader of the results of animal experiments which have contributed so much to our knowledge of its causation. The *Spirochæta pallida* is discussed in the next chapter, the technique of searching for it being fully given. Many pages are devoted to discussion of the Wassermann reaction, technique, modifications, specificity, and occurrence in various stages of syphilis being fully considered. This chapter is a valuable one for the busy doctor who has not had a chance to read many of the original papers on the subject. The rôle of syphilis in diseases of women and children—"syphilis of the innocent" and inherited taint of the disease—form the subject of the next chapters. The therapy, with some consideration of salvarsan, is the last subject considered. The book is not in any sense original, but it is one of the many useful compilations which appear so frequently in Germany. Its perusal should prove profitable to all physicians.

Diät und Küche. By Dr. Wilhelm Sternberg. Price $1.25. Würzburg: Verlag von Curt Kabitzsch, 1911.

In this monograph, "Diet and Kitchen," Sternberg lays stress on the importance of diet with regard to the different foods and also their preparation in the treatment of disease. He maintains that the new results obtained experimentally on animals with regard to diet cannot be taken over into human pathology. The taste of the civilized man cannot be compared with that of a dog.

Hygiène de l'Alimentation dans l'état de santé et de maladie. Par le Dr. J. Laumonier. Fourth Edition. Price 80 cents. Paris: Felix Alcan, 1911.

The present book of Laumonier contains a minute description of the diet in health and disease. The author lays much stress on the right preparation of foods. The culinary art is useful not only to increase the enjoyment of the meals in health, but also in disease. Laumonier's work deserves high commendation.

Die Pathologie und Therapie der Enteroptose. Von Dr. Walter Zweig. Price mark 1.50. Halle a. S.: Carl Marhold, 1911.

Zweig considers enteroptosis mostly as a congenital condition, agreeing in this with Stiller's views. Stiller believes that he found a definite diagnostic point of the asthenic habitus in a floating tenth rib. An entire literature has developed about the significance of this free tenth rib. About ten years ago the author wrote an article on this question, the conclusions of which he still adheres to. The prevailing number of persons suffering from a floating tenth rib are also afflicted with enteroptosis. There is, however, a considerable minority of cases in which we meet with a floating tenth rib without ptosis of the digestive organs, and, on the other hand, there are persons with purely organic troubles, without any nervous dyspeptic symptoms, that show a floating tenth rib. When enteroptosis is accompanied by constipation the latter cannot be looked upon as secondary to the former, but is caused by the general depression of the nervous system. Just as we find in the stomach disturbances of the motor functions caused by a disturbance of the vegetative nervous system, so the bowel also may be the seat of neuroses of a depressive or excitative character. We meet, therefore, frequently with constipation caused by a depression neurosis of the bowel or more rarely with diarrhea as the expression of an excitation neurosis. Neither condition has anything to do with the malposition, but is frequently encountered in enteroptosis associated with nervous dyspepsia. As to the operative treatment of enteroptosis the author thinks that, in view of the congenital nature of the relaxation of all the tissues, it is unlikely that an operative correction of the position of any organ will be of any permanent value. If we stitch up the kidney, stomach, or even colon, the symptom complex of the visceral neurosis will not be changed or improved in the least.

Diseases of the Stomach. By Charles D. Aaron, Sc.D., M.D. Price $4.75. Philadelphia and New York: Lea & Febiger, 1911.

The author has written a very practical and useful book on diseases of the stomach. Theoretical discussions have been briefly given where absolutely necessary. The indications for surgical intervention have been minutely described and the author takes rather a conservative view with regard to this new field. "Indiscriminate operation has done more harm to the advancement of gastric surgery than can well be realized. It is the internist who has to deal with the case after the surgeon has discharged the patient as cured. Some of these patients are sorry-looking individuals, and yet many an internist acquiesces without a word of condemnation of this sacrifice to experimentation. How absurd to accept unchallenged the assertion that most of the stomach cases coming into the hands of the internist are cases of incipient carcinoma and should be subjected to an exploratory operation! When surgical intervention is truly indicated there is no class of cases in which success is so gratifying; but, taken as a whole, less than 2 per cent. of stomach cases require surgery. The most frequent condition demanding surgery is obstruction of the pylorus, in which condition gastric retention is extreme. In severe cases food is found in the morning in the fasting stomach, often as much as three or four quarts, some of which was taken one or more days before. The stomach endeavors to compensate for the pyloric obstruction by increased muscular effort. This brings about hypertrophy of the organ, which is soon followed by dilatation. Dilatation is almost invariably present when there is stenosis of the pylorus."

Surgeons demand an exploratory laparotomy in every case in which the diagnosis is in the least doubtful and in cases which do not yield immediately to internal treatment. The number of cases which we should have to subject to laparotomy to no purpose would be very large were we to satisfy the demands of surgeons to perform an exploratory laparotomy in all doubtful cases. Moreover, this is much easier said than done. Patients complain of comparatively little trouble, which may be occasioned by an incipient carcinoma or equally as well by a neurosis, gastritis, erosion, ulcer, gastroptosis, cholelithiasis, or by disturbed gastric function originating in disorders of remote organs. When it is considered that two-thirds of all chronic diseases of the stomach belong to the type of neuroses or functional disorders, we can readily understand why the internist hesitates when the surgeon demands exploratory incision.

It must be admitted further that, while exploratory laparotomy is no longer a serious operation, it is not entirely free from danger. If we advise exploratory laparotomy when the manifestations of disease are slight the majority of patients will not submit, and if after such refusal a course of internal treatment is instituted and the patients recover we shall subject ourselves to many unjust reproaches. An important point to remember is that upon examining an opened stomach it may be very difficult for the surgeon to interpret correctly the traces of a possible old ulcer or other finding. What he may judge to be benign frequently proves to be malignant, and what seems to him malignant may be benign.

The author has brought the book up to the very last development in literature, giving the latest improvements and means of diagnosis and treatment, as the treatment of gastric ulcer by means of bacterial vaccines and duodenal alimentation, the bead test, mechanical dilatation of the pylorus, etc.

The book can be highly recommended to the general practitioner, who will find in it a most accurate and clear description of the present state of our knowledge of diagnosis and treatment of diseases of the stomach.

A System of Medicine by Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.C., F.I.C., F.C.A., Regent Professor of Physic in the University of Cambridge, Fellow of Gonville and Caine College, and Humphry Davy Rolleston, M.A., M.D., F.R.C.P., Senior Physician St. George's Hospital, Physician to the Victoria Hospital for Children, sometime Fellow of St. John's College, Cambridge. Volume IX: Diseases of the Skin, General Index. Price $6.00. New York: The Macmillan Company, Limited, 1911.

This, the last, volume of the second edition of the System of Medicine deals with diseases of the skin. In the present edition of this work diseases of a special character are discussed separately. Perhaps few branches of medicine have exhibited more progress than that of diseases of the skin, old views during recent years having been continually giving way to more modern conceptions. Thus the editors have found it necessary not only to revise but practically to cause to be rewritten this part of the system. The writers of the various monographs are all British authorities, and indeed with but one exception attached to London hospitals. It goes without saying that there are few if any cities with a greater wealth of material, even so far as skin affections are concerned, than London, and the result of this volume shows that the authors have made good use of this material. One of the most prominent authorities on skin diseases, some of whose contributions are in this work, Dr. H. R. Crocker, died while it was in press, while the articles contributed to the first edition by the late Dr. J. F. Rayne have been rewritten for the most part by Dr. T. Colcott Fox, who has also provided a number of new articles. In discussing or reviewing a series of papers treating solely of skin diseases, so thoroughly and at such length as the papers contained in this book, one is confronted with an embarrassment of riches. An interesting fact is pointed out in the article on Lichen, written by H. G. Brooke and revised by I. M. H. MacLeod, that by a laborious process of elimination which it has taken a century to accomplish dermatologists have come to see that it is better to cease to apply the name "lichen" to an anomalous crowd of more or less papular affections and to restrict it to one specific form of disease, lichen planus, of which Hebra's lichen tuber is a rare and aberrant acute manifestation. One of the most notable examples of progress is that with regard to the fungi of so-called ringworm and favus, a subject discussed in a masterful way by Sir Malcolm Morris. Dr. G. W. Goodall has a very instructive and commendably brief paper on rashes due to the administration of animal sera. Concerning what is known as anaphylaxis Dr. Goodall confesses that the causes are very obscure and that the matter so far as explanation is concerned is still in the hypothetical stage. Mr. Jonathan Hutchinson, son of that great authority on syphilis, Sir Jonathan Hutchinson, writes a chapter on the eruptions of syphilis and states that the sheet anchor of treatment for these affections is the prolonged administration of mercury. Referring to "606" he says that the striking effects of hypodermic injection of dioxydiamidoarsenobenzol on the various cutaneous manifestations of syphilis are now accumulating. Dr. James Galloway contributes an instructive article on diseases of occupation and refers to the large number of cases of scabies and other contagious diseases which occur in individuals after a vacation and puts much of this down to crowded hotels and sleeping cars. The volume throughout is well written, the subjects are excellently arranged, the illustrations are good and sufficiently numerous to serve their purpose, and the last book of the second edition of Allbutt's System of Medicine is in keeping with the high standard maintained in all the former volumes. As a work of reference the second edition can be strongly recommended.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Sixty-first Annual Meeting at Harrisburg, September 25 to 28, 1911.

GENERAL SESSION.

Tuesday, September 26—First Day.

THE PRESIDENT, DR. JOHN B. DONALDSON, OF CANONSBURG, IN THE CHAIR.

The Care of Advanced Cases of Tuberculosis.—Dr. W. F. WILLCOX of Ithaca, N. Y., presented this communication in which he stated that the effective segregation of an increasing proportion of the advanced cases of pulmonary tuberculosis was attended by a decrease in the death rate from that disease, no matter what other influences, favorable or unfavorable, were present. The failure to segregate an increasing proportion of the advanced cases of pulmonary tuberculosis was attended by a stationary or increasing death rate from that disease, no matter what other influences, favorable or unfavorable, were present. The rate at which the segregation of tuberculous patients increased in any community uniformly agreed with the rate at which pulmonary tuberculosis decreased. If it were granted that the death rate from tuberculosis varied regularly with the effective segregation of advanced cases, it followed that in combating the disease the main effort of public health workers should be directed towards the extension of hospital accommodations for advanced cases and the increased segregation of such cases.

DR. W. C. WHITE of Pittsburgh said that there were certain peculiar features of advanced cases of tuberculosis which were often lost sight of and which it was essential to consider before any scheme for their care could be adopted. Advanced consumptives were sick, and provision had to be made for their continuous stay in bed with adequate nursing. Our ordinary institutions for the sick refused them, sanatoria for the tuberculous refused them, private practitioners wanted to get rid of them, and boarding houses and homes discharged them without compunction. Few of them could ever be put in such shape as to return to their former occupation, and many of them under the proper care lived for many years unable to work. Those cases were sources of infection if they were the least bit careless and submitted to the scrutiny and remarks of acquaintances, they were very apt to become careless. Advanced cases had in most countries the rights of citizenship and could and did refuse daily to accept the opportunity open to them for institutional care for even a few weeks or months, thus making the large institutions far from centers of population of much less value than they would otherwise be. While much evidence could be adduced to show that a marked reduction in mortality in tuberculosis was obtained without care of advanced cases, the efficient and practical care of advanced cases was one of the important elements, if not the most important element, in our endeavor to control this disease. All patients carried danger with them to be spread when their habits were careless and no provision could be perfect which neglected any single class. No single type of institution would handle all cases. No voluntary power could handle more than a small percentage of any class. The law must eventually be the means by which this infection would be controlled. He could but feel that the first move to secure the desired results in this work must be the return of the care of these cases to the general hospital. Only in this way could doctors and nurses be efficiently trained, and, furthermore, advanced cases of tuberculosis properly cared for as such would not subject other inmates of such hospital to anything like the danger to which they were now daily being subjected by inadvertently admitted advanced cases of tuberculosis because of some other disease with which they happened to be suffering. Proper provision should also be made for tuberculous cases in asylums, jails, poor houses, orphanages, homes, etc. A third necessity, and he considered this easily third in importance, was the provision of separate institutions for the care of advanced cases. Finally, proper provision must be made for the care of advanced cases in their homes.

DR. WILMER R. BATT of Harrisburg said he was unable to accept the conclusions of Professor Willcox because the statistics which he had submitted in regard to the reduction of mortality in England and other European countries referred to the general institutional care of tuberculosis and not to advanced cases alone; owing to the migratory tendencies of tuberculous sufferers the mortality rates in any single American city were not sufficient evidence upon which to base accurate estimates of the decline of the disease from any particular item of prevention; considering the average duration of tuberculosis it was impossible to estimate the value of preventive measures which had not yet reached their full development. To provide principally for advanced cases of tuberculosis and minimize the opportunity for those suffering from the disease in the early stages could be excused only on the assumption that it was the hopeless and dying cases that were dangerously infected. The bacilli of incipient or moderately advanced cases were as dangerously infective as those of advanced cases and infinitely more widely distributed.

DR. T. B. APPEL of Lancaster said that speaking from the point of view of the general practitioner the conclusions drawn by Professor Willcox seemed to him to be most timely and most important. As the terminal stages of tuberculosis seemed to present the greatest danger of contagion, more effectual precautions should be taken in such cases if we hoped to combat the spread of consumption. We as general practitioners knew that patients came back from sanatoria educated in the proper care of themselves, but they came back to the same unsanitary surroundings, and in his experience in time became careless, lost ground, and in the end succumbed to septic phthisis. Therefore, if better means of segregation of those poor, ignorant, hopeless cases could be obtained their care would be much more effectual.

DR. WILLCOX, in closing, said he had been specifically asked to speak on the care of advanced cases. It was natural therefore that he should say nothing on the care of early cases or upon any other topic besides that. It was possible, however, that in avoiding those topics that he might have laid himself open to a misinterpretation that he regarded the care of advanced cases as the only thing that should be done. He would not be so interpreted. The main factor in the decrease in death rate from tuberculosis had been and probably would continue to be the efficiency of segregation for advanced cases.

The Bearing of Pneumonia, Considered as a Secondary Malady, Upon Treatment.—Dr. H. A. HARE of Philadelphia called attention to a previous communication made by him a year ago on this subject in which he reported his experience as to the importance of studying the relative ratio of pulse rate and blood pressure in the course of croupous pneumonia, and expressed the belief that such observations were of the greatest value in the application of correct treatment. Since then increasing experience with this plan had served to convince him still more that it was practically an essential factor not only in treatment but in prognosis as well. The favorable ratio in croupous pneumonia was one in which the pulse rate per minute was less than the number of millimeters of mercury

as shown by the sphygmomanometer. In other words, if the pulse rate was 90 and the blood pressure 120 the patient was doing very well. If the pulse rate was 100 and the blood pressure 110 he was not doing as well as before. If the pulse rate was 110 and the pressure 110 something must be done to bring back the normal difference already referred to, and if the pulse rate was 120 and the pressure 110, the patient was in grave danger and would probably die unless very active treatment caused him to rally before this abnormal ratio had lasted for any length of time. The fall of pressure might be considered to be the result of the toxemia which directly affected the vasomotor centers of the walls of the vessels themselves, or it might be due to a direct effect on the heart muscle, whereby this organ was unable to pump strongly enough to maintain pressure. It was of some importance to determine, if possible, whether this fall of pressure was due to one cause or the other, for, if it was vasomotor, or vascular, direct cardiac stimulation was not needful, although it was true that most vascular stimulants were also stimulants to the heart. On the other hand, if the heart was at fault attention must be chiefly directed to the organ. If the vessels were at fault the difference between diastolic and systolic pressure would be marked, the heart, if strong, sending out a forcible wave of blood in an endeavor to fill the blood paths. If the pressure was low from a failing heart there would be little difference between diastolic and systolic pressure for obvious reasons. There was no treatment of pneumonia but there was treatment of the patient who had pneumonia, and this would vary in every case. Nor should any physician plume himself on great skill if his patient got well or go into the slough of despond if his patient died, if, on the one hand, a frank pneumococcic infection recovered or, on the other, an insidious infection caused death. It was only when recovery took place in the face of a small factor of safety that great credit was due the physician.

The Ehrlich Remedy in the Treatment of Syphilis.—Dr. Judson Daland of Philadelphia said that experience gained during the past 14 months made evident that salvarsan was not only an important and permanent addition to our means of combating syphilis, but in certain cases produced results most brillant and not otherwise attainable. The drug was now almost always given intravenously and complete sterility was absolutely necessary. Injection was best given in a hospital with the aid of two assistants and a nurse. All patients should remain in bed the first 24 hours after injection, and in case of syphilis of the nervous system or internal viscera the patient remained in his room in bed or in a chair the second day, and on the third day was permitted to move quietly about the hospital and afterward returned home but did no important work for four days. The hope of Professor Ehrlich that salvarsan would sterilize the syphilitic in one dose was no longer entertained, although this was possible in certain cases of primary syphilis. In most cases the dose should be repeated in one week. If the Wassermann reaction remained persistently negative for a period of three or three or more years the patient was viewed as free from disease, but, if it became strongly positive, other injections were given. Tertiary and congenital syphilis as well as syphilis of the nervous system required several injections and the patient should simultaneously receive the benefit of the mercury and the iodides. The contraindications to the use of salvarsan were advanced syphilitic myocarditis; advanced syphilitic disease of the aorta or coronary arteries or aneurysm; syphilitic aortic insufficiency; hemiplegia from ruptured syphilitic artery; advanced general paresis; advanced disseminated sclerosis; advanced tabes dorsalis; extreme debility or emaciation. A number of deaths had followed the administration of Ehrlich's remedy; it was therefore evident that in the long-standing cases of syphilis a thorough physical and general examination should be made before the injection was given. The indications for the use of the Ehrlich remedy in syphilis were: cases refractory to mercury, cases but partially improved by mercury, cases showing an idiosyncrasy to mercury, whereby therapeutically inefficient doses produced mercurialism; infective lesions occurring in prostitutes or the ignorant and careless.

The Care of the Insane.—Dr. T. H. Weisenburg of Philadelphia said that of all the problems which were now before the profession there was none more pertinent than the care of the insane. It seemed to the alienist almost nonsense that general hospitals throughout the state should take care of the medical and surgical cases and refuse to take care of the insane, thus making it necessary to send them to an asylum or a private sanatorium. The time had come when it was necessary that all general hospitals should have separate wards for the care of the member afflicted. A bill would be introduced in the next Legislature providing for the placing of all the insane of the state in state institutions with proper provision for the criminal insane, the feeble-minded and epileptic. In this way the care of the insane by the various counties will be abolished. There were to be established two laboratories for the study of the causes of insanity. A State Commission with an alienist of recognized ability at its head, to have absolute charge of all the State hospitals, was to be established. This bill should be actively supported by the members of the State Medical Society.

Wednesday, September 27—Second Day.

Lodge Practice.—Dr. Horace M. Alleman of Hanover asked whether there were any economic conditions justifying lodge practice, and said that in discussing this question the difference between legitimate contract practice and lodge practice should be remembered. The effect on the physician so engaged, he considered detrimental to good work and a hindrance to his advancement in his profession. He stated that the membership in these lodges was increased by openly advertising free medical treatment.

Dr. George E. Holtzapple of York believed that the question of checking this pernicious, evil, iniquitous practice would resolve itself into a personal effort on the part of every physician to help create and establish a proper sentiment against it.

Dr. Charles J. Cummings of Williamsport thought that the State Society should have a constitutional provision that no county society should be a component part of it unless said county society barred lodge practice.

Dr. Israel Cleaver of Reading remarked that until very recently he had thought that the Code of Ethics provided for that completely, but that he had found that it did not. He thought, however, that in the Berks County Society there was enough popular opinion to bar a man indulging in lodge practice from entering it. He suggested that the lodges should put the money paid by their members for medical advice into a fund from which to pay any physician that the member might choose to employ his regular fee.

Dr. Sterling D. Shimer of Easton said that in his County Society they had adopted a rule that no member should accept any contract work for less than his regular fee. His own contract work was paid in this way, though he got nothing extra for night calls.

Dr. Alleman, in closing the discussion, said that at Hanover there were two physicians doing lodge practice, one for the Moose, and one for the Elks. Both got their regular fees, but they accepted a forty per cent. reduction when they got their pay at the end of the quarter.

Need Business Qualities Interfere with the Successful Practice of Medicine?—Dr. Charles J. Cummings of Williamsport, in illustration of this point, cited the

careers of Dr. A. and Dr. B., located on opposite sides of the same street, who had begun life's battles on an equal footing. Dr. A., large-hearted, kindly natuured, over charitable, and easy in charges and collections, did not distinguish the sham from the genuine. Dr. B. possessed business tact. While appreciating true charity and responding thereto, he charged well for his services and was strenuous in his collections. The straw and chaff drifted to Dr. A.; the grain to Dr. B.

The Value of a Library to a County Medical Society.—Dr. James M. Anders of Philadelphia mentioned the importance of public libraries in American life, and emphasized the advantages of a medical library for each county medical society. He considered the working library a great factor in medical progress, and said that reference books and medical periodicals were indispensable to the young physician as a source of knowledge and inspiration. Dr. Anders stated his belief that the responsibility for the establishment of such libraries devolved upon the members of the county societies. He thought that a special committee of each society, cooperating with its secretary, who should also be the librarian, could raise a fund for the purpose with the aid of a small assessment. A part of this sum could be devoted to the purchase of new books, in order to keep the library up to date; but there would be many donations in response to an appeal for contributions of books and periodicals, as three-quarters of the books in existing libraries have been donated. In every county a suitable, centrally located room could be found, which could be readily reached by the members with the present means of transportation. The library might be made the meeting place of the society, so that reading matter might be returned and taken out at the time of the meeting.

Dr. Thomas A. James of Ashley stated that the Luzerne County Medical Society, which had started with a very small library, had over six thousand volumes, most of which had been given to it. Duplicates had been traded with other societies. Each member paid ten dollars a year, and a key was given him, admitting him to the library at any time, whether the librarian was there or not.

Dr. James Tyson of Philadelphia thought that the journals should be allowed to circulate by mail or otherwise from one member to another without obliging a man to go several miles to a center in order to return them.

Dr. John B. Carrell of Hatboro asked how a member in a remote corner of a county forty miles long and twenty miles wide could have access to a library situated at its center. He suggested having a library section of the society and requiring each man who wished to belong to it to contribute a certain amount of money.

Dr. Anders thought that all that would be necessary in order to commence such a library would be to set aside a small sum for the purchase of about a dozen books. Many other books and journals would soon be donated. He stated that many physicians in rural districts and the smaller towns did not publish rare cases that they came across for the reason that they were unfamiliar with the literature of the subject.

Municipal Milk Supply.—Dr. Ernest J. Lederle, Health Commissioner of New York City, stated in his paper that in New York they had come to believe that the only way to guarantee the safety of the milk supply was to require pasteurization of all but certain grades of high-priced milk. They had adopted a plan for the official grading of all milk into three classes, according to whether it was to be used for infants, for adults, or for cooking or manufacturing. A rigid inspection was established.

Milk and Its Relation to the Public Health.—Dr. Percival J. Eaton of Pittsburgh remarked that the public was being educated as to the value of good, wholesome milk, the experts' standards being constantly raised. He considered clean, raw milk to be better as a food than either pasteurized or sterilized milk, and said that when modified to suit the individual infant, it formed the best of the substitute foods. Because of the possibility of the infection of man by the bovine tubercle bacillus, tuberculosis among cattle should be eradicated. On account of its known rôle as a disease carrier, the production of all milk should be constantly watched by competent inspectors. Dr. Eaton further stated that the great value of milk depots was their relation to the morbidity and mortality of infants and young children. He made a plea for the more general recognition of the economic rights of the producer, and for the education of the masses to the belief that a good product deserved and should obtain a good price, the best being none too good for the children.

Dr. John B. Carrell of Hatboro said that it might as well be understood by the residents of cities that the price of such milk as was desirable, not only for infants, but also for adults, must be advanced; as it was an impossibility for the farmer to produce with profit the kind of milk that should be used unless the distributor and his profit were done away with. Dr. Carroll suggested that the municipality might attend to the distribution.

Dr. James M. Anders of Philadelphia did not believe that there would be a good milk supply until a prolonged campaign of education was carried on among the farmers and dairymen. He suggested a plant whereby milk could be produced with comparative cheapness, as follows: The farmer should take advantage of the Cow-Testing Associations in order to separate the profitable from the unprofitable cows and get rid of the latter, of which Dr. Anders stated most farmers carried a large percentage. He also considered it of importance for the farmers to learn the proper time and the best method for cooling the milk, as well as the best manner of straining it.

Dr. David P. Rettew of Coatesville believed in raising the price of milk, but not a great deal. He thought that one cent a quart added to the present price would make its production profitable. He doubted whether doing away with the distributor and putting the distribution in the hands of the municipality would work in certain cities, but he admitted that better business methods ought to be introduced in the distribution.

Dr. Henson F. Tomb of Johnstown stated that the farmers already had a good deal of education, and were not going to produce milk at the present price. They would sell their cows and take to raising hogs and horses. He thought it queer that the newspapers should say so little about the high price of butter or cheese, but should say so much about any proposal to increase the price of milk.

Dr. John C. DeVenney of Harrisburg stated that in Cumberland County cows that formerly cost but thirty dollars sold for seventy to ninety. The price of grain had also advanced, because the mills that formerly ground the grain in that county were idle, and it had to be transported. He had known of cows being killed for tuberculosis that really were suffering from having eaten nails with this grain. One cow had a nail in her lung.

Dr. Henry C. Westervelt of Pittsburgh said that milk had very materially improved in quality and cleanliness without any tremendous increase in its price. The farmer was not using more men, but making them do their work better. He believed in a campaign of enlightenment, but not that of the farmer or dairyman. He would enlighten the mothers, who would soon enlighten in turn the men who supplied the milk. In Pittsburgh the mothers could take samples of the milk to the municipal laboratory and get a report on it without the knowledge of the dealer.

Dr. Thomas Benton Hall of Waynesburg thought that the matter of cow-testing should be emphasized, and stated that the difference of two quarts of milk a day ex-

isting between a cow producing twenty-three and one producing twenty-five quarts was just the difference between a profitable and unprofitable cow.

Thursday, September 28—Third Day.

The Prescribing of Glasses by the Family Physician.—Dr. James Thorington of Philadelphia said that knowledge of optics together with a medical training were the prerequisites for those who would prescribe in any way for the eye. The time was opportune that at least one family physician for every 1000 of the population should devote at least part of his time to prescribing glasses. The people would much rather have their eyes cared for by physicians than go to the opticians, and one knew that the examination of the eyes and selection of glasses for them with or without the use of drugs was a part of the practice of medicine and it required the skill of one who was a graduate in medicine.

Dr. L. Webster Fox of Philadelphia emphasized the facts that it was important that medical students should be given instruction in refraction and that medical men were more capable of giving aid in cases of defective vision than were laymen. It was his conviction that the business of supplying the community with spectacles was of profound importance and that this business was shamelessly prostituted to money making. The optician should be placed upon precisely the same legal standing as a druggist.

Dr. W. W. Blair of Pittsburgh said that it had been argued that if all the work in refraction were to be handed over to the physician there would not be a sufficient number of physicians to do the work. This might have been true in the past, but the time was rapidly coming, now that courses in refraction have been introduced into our medical colleges, when more and more physicians will be doing refraction work.

Some Considerations of the Cancer Problem.—Dr. Christian B. Longenecker of Philadelphia said that the distinction between malignancy and non-malignancy could be made only by examining all suspected growths critically and impartially, confirming this by the microscope and regarding all suspicious enlargements as malignant until demonstrated to be otherwise. The physician seldom saw the patient in the early stage, therefore he was not in the majority of cases to blame for the failure of an early diagnosis. If there was any doubt as to malignancy the physician should snip off a portion of the growth under cocaine, being very particular to include a portion of the base and the limiting side wall and to submit it to a competent pathologist for an opinion. A differential diagnosis between cancer, tuberculosis, and syphilis was often very difficult without resort to a microscope. The diagnosis having once been made, early and radical operation was the only thing to be considered. If the patient absolutely refused the knife then cataphoresis, *x*-rays, radium, and carbonic acid snow, all of which had given good results in certain cases, might well be resorted to.

The Diagnosis of Carcinoma of the Stomach (Lantern and Cinematographic Demonstration of Peristaltic Movements).—Dr. George E. Pfahler of Philadelphia said that the importance of an early diagnosis of carcinoma of the stomach was recognized by all physicians since it was only in the cases diagnosed early that anything but temporary relief could be offered. The surgeon still advised exploratory operation, but patients frequently refused this operation until their symptoms became very serious or until too long a time had elapsed to offer them a cure. One could not say that such an operation was without danger, but an *x*-ray examination was accurate, painless, and harmless. At present very few cases presented themselves for examination until the disease was well advanced, but even in this late stage examination was valuable to determine the exact state of the disease. When a patient past 40 years of age had loss of appetite without any change of habits, distaste for meats, inability to digest solid foods, pain in the region of the stomach, he believed that a positive diagnosis could be made in nearly case in which an indurating carcinoma was present. In some cases in which good peristaltic waves were present a negative diagnosis could be made. Other physical and chemical examinations should not be neglected.

A New Sign in the Diagnosis and Treatment of Ulcer and Carcinoma of the Stomach.—Dr. Edwin Zugsmith of Pittsburgh read this paper, in which he said that a sign of gastric ulcer and carcinoma, which he believed had not heretofore been described, was an abnormal dulness to percussion in the second interspace extending for a variable distance on both sides of the sternum. In observations extending over a period of a year he had noted the presence of this sign in cases of gastric ulcer and much more positively in cases of gastric cancer. Unless the percussion stroke was very delicate the sign would not be found, for the dulness would be obscured by lung resonance. Upon the healing of the ulcer the dulness disappeared. As he had not been able to make any postmortem observations he was compelled to rely upon surmise in explaining the presence of this dulness, his conception being that it was directly due to enlargement of the lymphatic glands lying along the sternum.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

FIRST DISTRICT BRANCH.

Fifth Annual Meeting, Held at Yonkers, October 12, 1911.

(Special Report to the Medical Record.)

The President, Dr. W. S. Gleason of Newburgh, in the Chair.

State Movement for the Suppression of Tuberculosis.—The following resolutions endorsing the State movement for the suppression of tuberculosis now being carried on by the Charities Aid Association in cooperation with the State Department of Health were unanimously adopted.

Whereas: One-third of those who die between the ages of fifteen and fifty, at a time when they have assumed their greatest responsibility to society by becoming producers and supporters of familites, die of tuberculosis, a disease which is declared by scientists to be curable, preventable, and communicable, for the control of which hospital, dispensary, and public nursing provision is absolutely necessary, and

Whereas: It is a well-recognized duty of government to protect the people from communicable diseases, and seventeen counties in this State have either established or have voted to establish county hospitals, eight cities have established hospitals for the treatment of this disease, six cities have outdoor camps, twenty-five cities have free dispensaries, thirty-four cities have visiting nurses, nine cities have special relief agencies, and

Whereas: The New York State Grange, the Catholic Mutual Benefit Association, the Ladies' Catholic Benevolent Association, the Knights of Pythias, the State Workingmen's Federation, the State Railway Clerks' Association, and the County Medical Societies of thirty-two counties have given unqualified endorsement to the movement for the establishment of county hospitals for tuberculosis; therefore be it

Resolved: That the First District Branch of the Medical Society of the State of New York endorse the program for "No Uncared-for Tuberculosis in New York State in 1915," now being prosecuted in this commonwealth by the

State Charities Aid Association in cooperation with the State Department of Health, and that all county and local medical societies in the First District be requested to take similar action and to call upon the Board of Supervisors in their respective counties to furnish hospital provision for all classes of cases; and petition the Boards of Aldermen in their respective cities to provide facilities for free clinical diagnosis and for the instruction by nurses of the tuberculous sick in their homes; and be it further

Resolved: That the secretary of the First District Branch be instructed to send copies of these resolutions to all county and local medical societies affiliated in this district.

President's Address.—Dr. W. S. Gleason of Newburgh made an urgent plea for a larger attendance at the meetings of this branch of the State Society. He said that its membership was larger than that of the other district branches and they should not be satisfied with an average attendance. The need was not so much an increased membership as an awakening of the inactive members. The educational feature of the society was a strong one and could not be attained by a desultory attendance; they could not afford to slight this opportunity any more than they could hope for progress in their work and thought by slighting medical literature. The county societies should announce the branch meetings at least four months beforehand and should use every effort to bring out the members. The programs should be prepared long enough beforehand so that the members could know what features of interest there would be. They all had a responsibility, and by honestly and faithfully assuming it they could maintain a standard of excellence in their society work and arouse the dormant element into action.

Double Dislocation of the Hip—Exhibition of Patient.—Dr. A. E. Chase of Tarrytown said that double dislocations of the hip had been reported but thirty-nine times in one hundred years. Of those 39 cases 5 were indefinitely reported or merely mentioned. Therefore there were only 34 cases reported so far, and the case he wished to record and present made 35 cases that were definitely reported. So far the mortality had been 8 per cent. Of the causative factors a blow upon the lower part of the back by some heavy blunt instrument was usually the cause. Another cause might be a fall from a height with the legs wide apart. This usually resulted in a double obturator dislocation. But the usual cause was the heavy blow upon the back. There had been reported 6 cases of double iliac dislocation. The patient he presented was standing upon both feet, bending over, with his hands close to the ground. A steel beam weighing about 1,000 pounds struck him in the back on a line with the crest of the ilium. The shock was not great, and he did not lose consciousness. The double ischiatic dislocation was easily made out. The patient was shown two and a half weeks after the accident. He was a man, twenty-nine years old. His history was entirely negative. In none of the 35 cases reported was there any history of bone disease or any lesions of the hip joint. The patient presented was perfectly developed. This was the first case of double ischiatic dislocation of hip ever reported.

The Etiology of Arterial Sclerosis.—Dr. Henry Lyle Winter of Cornwall said that he presented this paper because in his work, that of a neurologist, there was no other one thing which presented itself for consideration so often as the condition of the arteries. As arterial sclerosis was due to causes acting in the blood current or on the arterial walls, etiological injury might be confined to those conditions which might exert an influence on these. Inherited tendencies to arterial sclerosis, to family presenility, and probably to the ordinary infections and autoinfections were due to the faulty functioning of some organ normally protecting metabolism through the blood current. The organ referred to meant the adrenals. It had been demonstrated that adrenal feeding would produce arterial sclerosis. If the adrenals were protective organs and if their activity was increased and disease was thereby produced which was due to the failure of their function, it was conceivable that with a blood pressure maintained at a point of harmony with metabolism the addition of a quantity of adrenalin sufficient to raise that blood pressure might so far disturb metabolism that toxins would be produced at an increased rate. If this toxin production were sufficient the effect would be the same as though the production were normal and the protective activity of the glands lowered. In considering the high blood-pressure present early in arterial sclerosis as due to the overactivity of the adrenals they must agree that overactivity of a functioning tissue could only be called for by the presence of an unusual task. The only thing which could call for an overactivity of the adrenals was the presence in increased quantities of those substances in the blood against which the gland afforded protection. The progress of arterial sclerosis was accompanied by progressive changes in the adrenals. Whatever part the adrenals might have played in the beginning was continued, but, as the disease progressed, became a secondary factor in the persisting high blood pressure. As long as the heart action continued forceful enough it was that organ in concert with the over-full arterioles which maintained the blood pressure. When the heart muscle began to fail blood pressure was lowered. This coincided with the findings of Mott, who reported atrophic adrenals in the late stages of arterial sclerosis. Had the adrenals remained active the blood pressure should have remained up. Dr. Winter called attention to the fact that in the final stages of arterial sclerosis toxemias were common, and it might not be straying far afield to connect these toxemias with the cessation of adrenal function, and also that he had often seen these advanced cases kept comfortable and perhaps alive for several years by regularly administered small doses of strychnine. While this drug was supposed to be contraindicated in arterial sclerosis it would be found to be of advantage in these terminal cases. The theory of the writer was that strychnine took the place of the missing adrenal action by maintaining the blood pressure, through the heart perhaps. He had tried out this theory by administering adrenal glands to two cases who had been on strychnia. In one case the results were satisfactory, while in the other there was an appreciable increase in blood pressure and the patient was uncomfortable. The author felt convinced that the adrenals were directly concerned in the pathological processes discussed, and further inquiry might prove that other ductless glands joined with them in affording protection to the circulation. Dr. Winters was of the opinion that the explanation of the etiology of arterial sclerosis could be reached only through these channels.

Dr. W. Travis Gibb of New York said that in his capacity as visiting surgeon to the Home of the Aged and Infirm (the old Almshouse), on the island, he saw many cases of arteriosclerosis. While he did not feel competent to discuss the disease along scientific lines, it had always interested him to note that those cases of arteriosclerosis that came under his care did so contrary to the cases seen in private practice. The people met with in private practice loved to live, to eat and drink, and do as they pleased, and they died comparatively early. Whereas in the city home they were on a strict diet (meals cost about 12½ cents a day) and these patients apparently never died; they lived indefinitely. Dr. Gibb had seen cases of arteriosclerosis in which the arteries were hard enough to break. This was a practical part of the subject, why did these paupers live so long? They must go to bed early because they have no light after

a certain hour. Why these paupers should live indefinitely while the patients seen in private practice died so early was an important question.

Dr. William Benham Snow of New York said that Dr. Gibb had touched upon an etiological factor of the greatest importance. It seemed to him that that one point in the family history had not been sufficiently emphasized by Dr. Winter, the habits of the family, especially the habits of gormandizing, overeating. Dr. Gibb had brought out a very important point in the treatment of these cases, the placing them under restraint. That was the custom of most of them who were handling such patients. To prolong the life of these patients attention should be paid to their food, to their exercise, and to the correction of any faulty conditions existing in the alimentary canal. Dr. Snow was much interested in Dr. Winter's delineation of the relation of the adrenals to this disease and he fully agreed with what he had stated. These patients with arteriosclerosis could be made more comfortable by lowering the blood pressure and correcting the diet and habits of the individuals. Remarkable results followed the regulation of the diet and an occasional treatment with the high frequency current, say, once in two weeks.

Dr. Winter said he was as interested as anyone in having his patients live; if they did not live, how could he? With regard to the habits of the patient, that was just what he wanted to get away from, because two individuals with the same habits differed so; one would develop arteriosclerosis, the other would not. They had worked the tobacco, the alcohol, and the overeating causes until now there was nothing to do any more. There was some reason why alcohol would break down one man and not another; there was some weakness in the defenses. He believed that it was the activity of the adrenal glands that acted by way of protection. In the later stages of arteriosclerosis it had been his experience that the blood pressure was apt to be low. They knew that the condition of the arteries had little to do with maintaining the blood pressure; it was the condition of the heart; when this organ began to flag and tire strychnine was valuable because it acted through the vasomotor system, as did the high frequency current. The blood pressure was maintained in this way. Whether adrenalin acted that way or not Dr. Winter did not know.

The Present Status of our Knowledge of Poliomyelitis.—Dr. Simon Flexner of New York said that the State of New York had suffered severely from this new disease. The disease was so severe, and all concerning it was so mysterious in its aspects, that it was highly important that as much attention as possible should be given it. There were two ways to approach the consideration of this disease; first, the way it appeared among human beings and, secondly, the way it developed in the laboratory where it was produced experimentally. It was a remarkable circumstance that the human disease had in a short time come to be illuminated through the laboratory work concerned with the experimental production of it in animals and their study. As a rule the process was reversed. They knew the human disease. Then they tried to get light upon the human disease here and there by recourse to animals. In those cases the human disease was obscured until it was transmitted to animals. Then as point after point concerning the pathology was worked out in animals, they were able to correlate facts with the instances observed in human beings and their attention was directed to certain features of the disease which might occur and which actually were found to exist. It seemed to Dr. Flexner that a question of chief moment was this: What was the nature of the prevalence of the disease? What were its features as compared clinically either recognizable as poliomyelitis, or probably being examples of poliomyelitis, but with the absence of the characteristic signs of the disease and which might not early be determined to be due to the disease? There was no longer any discussion as to whether the disease was infectious or not; there was, however, a discussion as to whether it was contagious or not. If the disease was contagious, what was the manner in which the contagion was transmitted? Having determined that point, what were the means to be employed to limit the spread of the disease? The consideration of this question was a most important one because, evidently, as they were all aware, there was no remedy for the disease in the real sense. They could do nothing to arrest its progress once the disease was started. Evidently it was a disease that did not have a very high mortality, although the mortality was considerable. Fortunately, furthermore, it was a disease which had a tendency toward spontaneous recovery. The question of the prevention of poliomyelitis was closely associated with the nature of the cause and the manner of the distribution of the cause. Since there was no specific means of attacking the disease once it had shown itself, attention should be directed toward its prevention. The disease was a very characteristic one once it was fully developed; it expressed itself by paralysis of the motor system, but it was a mistake to suppose that the lesions were confined to the motor system, for the sensory system was also involved. Many physicians had been impressed with the amount of pain attending it. The reason that pain was not more frequently observed and did not appear more intense was because the motor effects of the disease obscured the sensory ones. It was commonly supposed that this disease was one that affected chiefly the nerve cells in the anterior nerve horns in the cord and spoken of as anterior poliomyelitis. As a matter of fact the disease was never confined to the anterior horn of the spinal cord; it always affected to a certain extent the posterior horn. Very often there were lesions in the white matter of the cord and very frequently there were lesions which extended throughout the length of the cord, involving the bulb and often the brain. It was a diffuse pathological process affecting the entire central nervous system. Sometimes they found foci here and there. But in a study of the disease in those cases that came to autopsy practically always there were found lesions more extensive than were supposed from a study of the effects of the disease, that was, the motor paralysis. Therefore, it was not a systemic disease; it was due to a poison that picked out certain specified portions of the central nervous system upon which to exert its activities. As a matter of fact the pathology of the disease indicated that the chief effects were exerted primarily not upon the nerve cells but upon the meninges and those parts of the meninges which followed the blood-vessels into the spinal cord and affected portions of the brain. The lesions there developed considerably before paralysis appeared at all and there was reason to believe that the disease might be confined to the meninges and prolongations of the meninges following the vessels into the spinal cord and affecting portions of the brain. In those cases the nerve cells were little or not at all injured. The disease would run its course without producing obvious, or any, paralysis whatever. It would be an accident if such cases were diagnosed as epidemic poliomyelitis at all. It was because there were these cases without the paralysis that the distribution of the disease was often difficult to determine. It was also for that reason that the connection between cases of frank paralysis and those that were not frank paralysis, or no paralysis, was difficult to determine. Therefore, when the statement was made that isolated instances of epidemic poliomyelitis had appeared in a community, it was subject to doubt whether they had not arisen or prevailed at the same time that other cases of the same disease which had not gone on to paralysis, and which had not been recognized

because the signs were so indefinite, but which might be still centers of distribution of the paralytic cases. Dr. Flexner wished particularly to emphasize the fact that there might exist a large number of these cases which did not terminate in paralysis at all. At present it was the custom to speak of them as examples of the abortive type of the disease. One could surmise what would happen if they accepted the contagious character of the disease. For example, if the so-called abortive type appeared and was not recognized a patient was allowed to mingle in the community, after which examples of the paralytic disease would appear, and no efforts would be made to trace them. He thought they could accept as established the existence of unmarked so-called abortive examples of this infection. Just as they came to learn in the distribution of measles, scarlet fever, diphtheria, and, generally speaking, the highly contagious diseases, the danger was greatest from the unrecognized examples. Therefore, the effort at prevention, the stamping out of the disease, must to a large extent be directed toward a better recognition of these unstriking examples of the affection which should be dealt with in the most effective manner possible. The particular cause of the disease was known, as well as anything could be known that you could not see. It was a microorganism. It could be handled with ease and with precision. It was so exceedingly small that not only had it not been seen but the probabilities were that with their present optical apparatus it is incapable of ever being seen. The evidence was that there was a particular germ that caused this disease. It was conceivable that some apparatus might be constructed which would enable them to see these exceedingly microscopic forms of germs. But it was only indirectly by means of magnification or some photographic methods that they could be brought to a size to affect the human retina. They were now in a position to say that any person who recovered from the disease, as animals who recovered from the experimeneal disease, developed a high degree of immunity to the germ which produced it. This immunity was associated with the appearance in the blood of the patient or animal of definite principles which had the power of destroying the activity of the virus of the disease. That fact made it possible to determine with accuracy whether the person had or had not passed through an attack of the disease. There was no difficulty in identifying the disease when it was frankly marked; the difficulty was in discovering the nature of the disease when it was not frankly marked. If the blood of a person who had passed through an indefinite attack of illness was mixed with the virus of the disease obtained from a human being who had succumbed to it and the two were allowed to remain together for a few hours and then inoculation practised, if the disease had occurred in this individual there would be no effect of the inoculation. This test was unmistakable. One could tell unmistakably whether this disease had existed or had not existed. This fact made it possible in doubtful instances to determine whether the disease had actually existed or not. The contagious character of poliomyelitis was one which had been a field for much dispute. That the disease could spread there was no doubt; the disease had arisen from previous sources of infection. The mystery simply involved the difficulty of determining whether a previous case or cases existed from which the infection arose. In order to explain that particular feature of the disease, a number of different hypotheses had been advanced. First, the disease was, strictly speaking, an animal disease and human beings only occasionally were infected from such a source. They frequently observed that domestic animals were subject to paralytic diseases, but it had not been possible to correlate the paralytic disease of the lower animals and the paralytic disease occurring in man and which was considered to be epidemic poliomyelitis. The other hypothesis attempted to explain the irregular distribution of the disease as possibly due to an insect carrier of infection. This would be a satisfactory solution if it could once be proven that insects actually carried the disease. It had been proven experimentally that the contamination of the insect made it possible for the virus to be carried a considerable distance. They survived forty-eight hours or longer, and they could survive in the viscera. This, however, was only laboratory experimentation. The point was significant. If one studied the manner of the distribution of the disease it would be found that it always followed the lines of human travel. The disease went from village to village, from place to place, from country to country, along the lines of human intercourse. There was something about the cause of the disease that attached itself closely to the human agencies. Insects which infested human beings could explain that if they could be shown to be the actual carriers of the disease. But in the absence of that, attention should be focused upon the possibility of human beings themselves being directly the carriers of it. There were certain facts concerning the pathology as studied in animals and found to be true in human beings that supported the belief that human beings themselves were the active carriers. If one inoculated the brain of a monkey the virus would be found to pass from the brain along the filaments of the olfactory nerve through the cribriform plate of the ethmoid plate into the nasal mucosa. It could be found in the nasal mucosa not only during the acute disease but afterwards; it was also found in the mucosa lining the pharynx, the larynx, the buccal cavity, and in the nose generally. Therefore, there was at least the possibility of a direct communication between the cerebrospinal membrane and the nasal mucosa through the perineural lymphatics. If this could be proven to be true perhaps there would be an infection of the secretions of the nose and mouth and these secretions could readily gain access to the external parts of the body and so serve to infect others. In the fatal cases studied last summer it was possible to find the germs of the disease in the mucous membrane of the nose and throat. The secretions in fatal cases examined were never free from them. The virus had a very high degree of resistance, especially when dried in secretions such as mucus. This explained why they could survive many days. Dr. Flexner believed, therefore, that at present the indications were that the human agency itself was the chief one to be viewed as responsible for the transmission of the infection. Clinical evidence had shown, furthermore, that not only a sick person with an abortive attack of the disease could transmit the disease but also a healthy person who had come in contact with an infected person might become its carrier. It was extraordinary that in a disease in which the contagion was so difficult to follow the secondary carrier, a healthy human being who had come into contact with the disease, was as much a source of contagion as one exposed to measles, scarlet fever, etc. The literature was unmistakable on that fact. The virus was capable of surviving outside the body much longer in the dried condition. Dr. Flexner said that what he had offered them was given with confidence and he wished to emphasize the fact that they must endeavor to control a disease of such a highly serious character: it had a fatality of 10 or more per cent. and crippled 75 per cent. of those infected. Quarantine measures that limited the spread to a certain extent, perhaps to a large extent, were possible and limited the spread of the disease through direct human agencies. In any community in which poliomyelitis appeared, in which also at about the same time there were appearing either in members of the same families cases of frank paralysis or other forms of the disease, especially in children, the indefinite febrile character not easily or at all readily correlated with the known forms of febrile

disease, suspicion should be aroused that it might be a case of abortive poliomyelitis and action should be taken to deal with such cases by some effective method of isolation and quarantine for the protection of the community.

Dr. Wisner R. Townsend said that all recognized the work that Dr. Flexner had done in teaching them the nature of the disease, but more should be done in teaching them how to prevent it, and what were the proper quarantine measures to take. What had interested him most since the epidemic of 1907 was the prevention of the deformities. The general mass of the profession should realize that in many of these cases the paralytic symptoms appeared late in the disease. He recently saw a child who preferred to lie on his stomach. Poliomyelitis was not suspected. The reason for this was that the back muscles were weak and this position afforded a gratifying state of tonus. He eventually made a good recovery. The large part of the work of the orthopedic surgeon was in correcting the deformities which were allowed to occur. They knew that if the muscles on the fore part of the foot became paralyzed the muscles on the posterior aspect would contract and cause an equinus, etc. These feet should be put up in braces early. Some men, however, did not advocate this. It was certainly gratifying to see a number of cases of beginning deformity that to-day had no deformity. He could show a number of patients who earlier could not walk, braces were applied, and to-day they walked well, some with and some without help.

Dr. H. L. Winter of Cornwall said that the abortive type was of interest clinically. They had a disease which they frequently saw referred to as a meningomyelitis. During the epidemics of poliomyelitis seen during the last few years he saw a number of cases where the meningeal symptoms, especially pain, were the only ones that indicated an involvement of the nervous system. Sometimes these cases went on to paralysis. Some would get well. This indicated a general pathological invasion rather than what was usually considered the pathology of poliomyelitis with confinement to the anterior horn cells. In reference to the mortality which had occurred in these cases which did not develop paralytic conditions, he said he had seen two or three cases which developed pneumonia, for example, and associated with the pneumonia more or less pain was referable to the spine and the extremities; in these patients death ensued but without sufficient pneumonic process to account for them. This led him to believe that death might be due to a general involvement of the meninges and spinal cord. With regard to the deformities, he thought it was the custom to put a time limit on the treatment, or a time when the treatment would be beneficial in paralytic conditions following an anterior poliomyelitis. So long as there was an electrical response in the disease when seen late, and the reaction of degeneration was not specially marked in those muscles, there would be hope for improvement by the electrical treatment. He had seen a number of cases given up too early by general practitioners and when the electrical treatment was followed out systematically, even after the lapse of two or three years, there would result an improvement. A great many of these cases could be kept out of the hands of the orthopedist if the general practitioner kept up the electrical treatment long enough.

Dr. William Benham Snow of New York asked whether the disease was confined to the meninges, producing paralysis by pressure, or whether in cases of paralysis it always extended into the cord. This he believed to be an important question. They should endeavor to keep these patients from the surgeon's hands. In the early cases that had come under his observation he had seen uniformly most excellent results. Here was one of the dangers of quarantine; they did not receive the treatment they should have if they were quarantined. The static machine was a bulky apparatus to take to the home of a patient, yet there was no treatment so effective as this. It was very energetic in relieving pressure and the metabolic conditions following the lesions. He had seen cases as late as the seventh or tenth week make almost complete recoveries following this treatment in his hands. The effect of this current was far more energetic than most had any idea of. It was due to the incoming and outgoing electrons. The best results were seen in the early cases.

Dr. Flexner said that the cerebral lesions were usually exhibited by paralysis of the face muscles and this might be considered precisely analogous to those cases in which the spinal cord lesion affected the spinal muscles. That was a perfectly definite and unmistakable group which had now come to be recognized. Many cases were recognized simply as meningitis; many went through their entire course as cases of meningitis only. These should be recognized readily but were differentiated with difficulty from other forms of meningitis. The only means of differentiation was in the fact that they sometimes got well spontaneously, or by means of lumbar puncture and noting the characteristic changes which always occurred in the cerebrospinal fluid. The use of the lumbar puncture was a means of determining in a large percentage of the cases (almost 100 per cent.) whether or not the disease was or was not poliomyelitis. Lumbar puncture was an operation that was not carried out by every physician, nor should it be. But if lumbar puncture was performed in doubtful cases, the question could be decided in all instances for or against poliomyelitis, because in all instances, whether associated with paresis or not, with meningeal symptoms or not, if the case was one of poliomyelitis certain characteristic changes would be found in the fluid, such as an increase in the number of cells, chiefly in the lymphocytes and protein matter. That was the only method available at present by which a certain diagnosis could be arrived at in the absence of definite symptoms. This was essentially a laboratory test, and was used to establish beyond peradventure the cases of this disease. The general practitioner was in a hard way to differentiate between the typical and the abortive types of the disease. The community should have the benefit of any doubt; if there appeared a suspicious case, one with an indefinite symptomatology, it should be at once quarantined. There was another fact concerning the disease which might be misleading; at the onset the paralysis might be very extensive and at the termination there might be little or none at all. About 25 per cent. he believed, judging from the statistics, of the paralyzed cases which survived would come out of the disease at the end of two or three years without any paralysis at all. There were a few cases which at the onset of the disease did not have much more paralysis than at the end of one, two, or three months. The disease was a communicable one, and how long to hold these patients in quarantine they did not know. He said there was good reason to believe that, under ordinary conditions, a quarantine period of four weeks was long enough. He was referring to those cases which ran an ordinary course with but a few days of fever. They had learned that the nasopharynx was a dangerous place from animal experimentation; in animals it was rare that one could find any virus in the nasopharynx at the end of three weeks. They had found, however, that the virus would remain there longer in some cases, and it meant this—in a period of three weeks the infection would clear up in all but a small per cent. In this small per cent. carriers of the disease would be produced. They had all kinds of carriers now, such as the typhoid carrier. The social conditions of to-day were such that they could not legislate against everybody. Therefore Dr. Flexner suggested that four weeks be the period of quarantine except

in those cases in which the febrile course had been prolonged, when there should be a corresponding prolongation of the quarantine.

Lactic Acid Cultures—Some Clinical Observations.—Dr. E. T. Harrington of Yonkers read this paper, in which he recorded the results of his observation on the use of lactic acid cultures in different forms of intestinal disease. For babies he had employed three or four teaspoonfuls daily and for adults three or four teaspoonfuls two or three times daily, depending upon the severity of the case. The writer subdivided that form of indigestion known as the putrefactive into two classes. The first class were the very marked putrefactive type with odorous stools and indican in the urine. In this class of cases indolactic acid would be absent, or present in small amount. This form of infection showed the presence of various anaërobic bacilli, most of which required an alkaline medium for active growth. In this form of indigestion the use of the lactic acid cultures was most effective and, in the author's experience, almost always curative. The diet in these cases was a most important factor. It should be low in proteids and high in carbohydrates. The second class of cases were those in which the colon bacilli and those of allied type were predominant. Here the urine showed indolactic acid, but seldom indican, and the stools were inoffensive. The treatment of this class of cases with the lactic cultures had not given results so radical and effective as in the former class. The diet was similar except that the sugars and sweet fruits were limited. The cases treated were mostly of these two types. In an experience of three years the writer had found that the lactic cultures would almost invariably cure the enterocolitis of infants. The cultures could not, of course, be expected to save a child who was within twenty-four hours of death when they were administered, because they were slow in their action, taking from two to three days before the stools became normal and the other symptoms subsided. No other medication was employed except lime water or a little calcium carbonate. The best diet during the administration of the cultures was whey or pure milk, but not milk containing preservatives as the cultures were prevented from growing by the preservative. For the first day or two barley water or other cereal water with lime water and milk sugar was given, and as the patient improved condensed milk was added. A peptone or hydrated albumin must be present with the sugar in order to produce a good growth of the bacilli. In administering this remedy they should remember that they were giving a thing of life and it was absolutely essential that it should be viable and capable of reproduction in a favorable medium.

Dr. Henry Moffat of Yonkers emphasized the importance of using the live cultures, especially in those cases in which the use of the dried tablets failed to produce the desired results. If one met with disappointing results in the use of the dried tablets in cases of intestinal indigestion, and especially in enterocolitis occurring in infants, one should turn to the live cultures made by some competent person in some laboratory and often surprising results would follow. The rapidity with which the green stools in cases of enterocolitis in a child changed to the normal color under the use of the live culture was encouraging.

Dr. George Swan Mooney of Yonkers said that in those instances in which there was a very disagreeable odor the use of the live culture caused it to clear up within twenty-four to thirty-six hours. He had not had the success, however, that Dr. Moffat had in stopping the green passages so quickly; this change did occur in from three to four days. While a great deal of credit was due to the use of the live cultures the regulation of the diet was a very important factor in the treatment of the enteric diseases, especially in children.

Dr. W. Stanton Gleason of Newburgh said he had become convinced that in ileocolitis by the use of the *Bacillus bulgaricus*, as outlined by Metchnikoff, and under whose guidance they followed out the line of treatment, they did get splendid results. However, no individual should allow his judgment to be guided too strongly in the consideration of something that was new. The adjustment of the feeding, the surroundings, and the change of air and other things would work out fully as much as would treatment by pure cultures of the lactic acid bacilli. But where one was obliged to keep the patient under the same environment, where he could not get the change of air, etc., the use of the pure cultures would be productive of the best results. In the fermentation in typhoid fever the defensive barriers were down; the system was relaxed, and the intestinal tract was filled with germs of the putrefactive type. These germs should be combated by something introduced into the intestinal tract to combat the putrefactive germs. In his experiments, carried out some nine years ago, he found that when the lactic acid bacilli were used there was no tympanic distension, the odor of the stools was never offensive, and the general course of the disease from the beginning was modified. This he believed was due to the lessening of the absorption of the toxins from the fermentative conditions which were present in typhoid fever.

Dr. Harrington said he had treated several cases of typhoid fever with the fresh cultures and his results had been more favorable than they had been hithertofore.

The Cesarean Operation.—Dr. J. W. Poucher of Poughkeepsie read this paper. He stated that the conditions requiring this operation and the safety attending it made it no longer the last resort of the obstetrician, but one that the experienced accoucheur should consider early. Cesarean section must be considered in cases of deformed or contracted pelves or where the outlet was occluded by exostosis, tumor, malignant growth, or where there was an outlet of less than 8 or 8½ cm. Craniotomy was justifiable only when there was positive evidence that the child was dead and that there was a pelvic diameter of three inches or more. Dr. Norris formulated the rule that when the true conjugate was less than 7½ cm. in simple flat, and 8 cm. in generally contracted pelves, cesarean section at or before the onset of labor should be the elective operation. At the beginning of labor cesarean section was an easy and practically safe procedure, but where all other methods of delivery had failed and where sepsis had very likely already taken place and the mother was in an exhausted condition the result was very doubtful by any method that might be chosen. The physician should know at least three months before confinement whether he had a normal pelvis or whether any condition existed that might complicate labor. When called to a case of labor he should prepare himself aseptically as though preparing to perform a laparotomy. Dr. Poucher reported six cases and described his operation, which was the one known as the high cesarean operation, where the incision was made from the umbilicus upward and downward. The incision was usually about six inches in length and the distance above and below the umbilicus was regulated so as to bring the opening well up over the fundus. He had not found the use of a rubber band slipped over the uterus to control hemorrhage necessary. He had also found that the fear of cutting the placenta was unfounded, as that accident had happened to him in his first operation and the bleeding had not been as free as one would have expected. None of Dr. Poucher's patients had suffered from surgical shock and convalescence was less eventful than in ordinary abdominal operations. He had never used undue haste and none of his operations had taken over half an hour. The advantages of the high incision were that it gave the best access to the cavity of the

uterus, that it was through a part of the uterine wall that would be less likely to subsequent rupture, and that it was through a part of the uterus furthest from large branches of the uterine arteries. There was at present a trend of opinion against the sterilization of women on whom this operation had been necessary, and there were on record a number of instances where a second and even a third cesarean section had been performed. In the six cases reported there was a mortality of 33⅓ per cent., but one was due to outside manipulation and the other to eclampsia, both having been operated upon as a last resort.

Dr. James E. Sadlier of Poughkeepsie, referring to those cases of contracted pelvis where the conjugata vera was shortened, said that it was very necessary that this class of cases should be determined beforehand. He was afraid that in these cases they had never considered the life of the unborn child, nor had they taken into consideration the morbidity of the mother or child following certain obstetric operations. He referred to the statistics read by Dr. Porter of Ft. Wayne, Ind., before the Southern Surgical Society two years ago. He reported 126 elective cesarean sections with a maternal mortality of 1.58 per cent. and a fetal mortality of zero; a maternal morbidity of 12.69 per cent. and a fetal morbidity of zero. From another source he collected a set of statistics of the same type in which obstetric operations had been performed. He found a maternal mortality of 1.14 per cent. and fetal mortality of 17.3 per cent.; a maternal morbidity of 42 per cent. and a fetal morbidity of 12 per cent. These figures spoke for themselves. The gynecological wards in hospitals throughout the country were filled with cases demanding operation of an obstetrical nature and they were left perhaps with a live patient but with a morbidity that was something terrific. They should stop and think over these cases which involved so much mortality and morbidity; would it not be better to do an elective cesarean section at the proper time and before the woman became infected? It was not alone the question of saving a life, but the question of the subsequent life of the patient. It was not so much the question of the childless mother or the motherless child; it was the question of invalid mothers and idiotic and epileptic children.

Danger Signals in Gynecology.—Dr. W. Travis Gibb of New York presented this paper. He stated that the actual number of gynecological danger signals was not very great, nor did they always point unerringly to the exact condition present; frequently they were dim, partially obscured, or irregularly combined, making a correct interpretation difficult, but they served the same purpose as the red lights along the railroad track, to draw the attention of the patient or physician to some impending or existing trouble, and were fulfilling the purpose for which danger signals were designed. Dr. Gibb cited a number of instances illustrating how ignorant was the average woman of the functions and anatomical conformation of her genital organs and how seemingly indifferent she was to conditions that were apparently intolerable when these organs were involved. A pimple the size of a pinhead on her nose would cause her the greatest anxiety, but a malignant growth on her vulva would often be ignored until it was too late. If women were ignorant of, or indifferent to, such obvious genital abnormalities as complete procidentia and external cancer, as the example cited showed they were in certain instances, it was not surprising to find them ignorant of many of the ordinary symptoms of gynecological diseases and indifferent for an indefinite time to a train of symptoms which ought to have compelled them to consult a doctor long before they considered such a step necessary. One of the most important gynecological danger signals was some interference with the normal periodic uterine hemorrhage known as menstruation. It was surprising how little the average woman knew about this important function. Normally the menstrual flow occurred at regular intervals of about twenty-eight days, lasting from three to five days, produced a loss of blood of from six to eight ounces, and was accompanied by slight discomfort to the individual. Any marked departure from this standard and all loss of blood not in relation to this period should be considered abnormal and in the majority of cases should be regarded as a danger signal by the patient or her physician. The absolute absence of this periodical bleeding during the period when menstruation was to be expected, except for the physiological cause of pregnancy or lactation, was abnormal and frequently a danger signal of great importance, for it might mean the absence or complete atrophy of one or more of the internal genital organs connected with the function, atresia of the uterus or vagina, chronic metritis or endometritis, the presence of some nervous disease, or of some organic or general disease as tuberculosis, syphilis, cancerous cachexia, leukemia, or nephritis. It was frequently one of the first indications of a general infective disease such as myxedema, diabetes, acromegaly, exophthalmic goiter, Addison's disease, or chlorosis. The administration of large doses of morphine, opium, mercury, acetphenetidin, alcohol, arsenic, and phosphorus might produce the same results. Excessive bleeding, whether at the menstrual period or during the intermenstrual period, might be regarded as a danger signal of the greatest import, for such irregularities might be symptomatic of subinvolution, incomplete abortion, ectopic gestation, submucous fibroids, malignant disease of the uterus and its contents, hydatid mole, hemophilia, purpura, or some specific infective disease, any of which left unrecognized and untreated would eventually result in disaster. Excessively painful menstruation might be regarded as a danger signal due to cervical and uterine stenosis, uterine flexion, obstruction by fibroids, salpingitis, ovaritis, uterine hyperemia, imperfectly developed uterus, endometritis, and neurasthenia. Post-climacteric hemorrhage was a danger signal of particular significance and demanded immediate and careful investigation. Unfortunately, it was the popular impression among women that increased and irregular bleeding was a necessary accompaniment of "change of life" or menopause. One of the most serious gynecological conditions which displayed few but very characteristic danger signals which were too frequently disregarded by the patient and often overlooked by her family doctor was ectopic gestation. The frequency with which these cases were seen by the gynecologist too late for successful operative interference ought to emphasize the fact that the danger signals of this serious condition were not sufficiently well understood to be readily recognized. The gynecological danger signal most frequently encountered was vaginal discharge or leucorrhea. Not that all leucorrheas were indicative of serious gynecological lesions, but all discharges from the female genital organs should be regarded with suspicion until it was proven by physical and microscopical examination that they were benign. When it was known that a discharge not necessarily profuse, offensive, or painful accompanied such diseases as gonorrhea, malignant disease of the genital tract, uterine fibromata, decomposing material in the uterus, endometritis, metritis, pyosalpinx, and a dozen other serious conditions, the necessity for the careful determination of the origin of the discharge was apparent. Dr. Gibb said that in his work as surgeon to the New York Society for the Prevention of Cruelty to Children he had examined 1,500 girls under the age of sixteen years upon whom it was alleged the crime of rape had been committed. Of this number about 12 per cent. had some form of venereal disease and 90 per cent. of this disease was gonorrhea. Many of these infections were no doubt due to the superstition that obstinate venereal disease would be cured by

intercourse with a virgin. It was their routine practice in these cases in which leucorrhea existed to make a microscopical examination. The presence of gonorrhea in a child, however young, was as much a real danger as in an adult. Among the gynecological danger signals displayed as the result of physical examination were loss of normal motility; points of excessive tenderness; irregularities in contour, size, and texture of the cervix; while an enlargement of the body of the uterus, if not due to pregnancy, might be caused by fibroid, cancer, or retained menstrual fluid. Any laceration of the cervix might well be regarded as a danger signal. Lesions of the external genitals indicative of danger to the patient's life or health might be the result of tuberculosis, gonorrhea, syphilis, malignance, or elephantiasis. The presence of any of these danger signals ought to be the indication for making an exhaustive examination in the effort to make an early diagnosis.

Some Modern Surgical Principles in the Treatment of Surface Wounds.—Dr. E. C. Thompson of Newburgh presented this paper. He said that he would offer no apology for a presentation of fundamental principles; such apology should come from the medical schools, where too often the curriculum was more suited to post-graduate work than to the preparation of the general practitioner. The tendency had been toward a more rational treatment of wounds based on increased knowledge and the elimination of an overzealousness or overactivity which had been due to a lack of knowledge of fundamental principles. This overactivity had found its expression in the too free use of germicides, too much scrubbing and handling of wounds, which led in many instances to the spread of the infection which they were endeavoring to check. Many powerful germicides coagulated albumin, even when in solutions too weak to be effective as germ destroyers. A better procedure was to gently separate the edges of the wound, apply a weak solution of iodine, which was powerfully germicidal even in 1 per cent. solution and not injurious to the tissues, then paint the surrounding edges of the wound with a stronger solution of iodine, which would have a very positive germicidal effect upon the epidermis near the wound, and then apply a sterile dressing, and, what was always important but often forgotten, put the part at rest. Moist hyperemia should be used in infected wounds, and by that was meant cases where infection had taken place in the surrounding tissues. The purpose of the wet dressing was primarily to increase the resistance of the tissues and secondarily to facilitate drainage. The tendency to use wet dressings on all surface wounds came from the same meddlesome activity before referred to. Nature quickly threw out a coagulum over a wound, which was her way of preventing infection. This coagulum was easily soluble in plain water; thus nature's barriers were broken down and an easy portal of entry for infection established. For these reasons the dry treatment was preferable for all wounds not infected. In an infected wound the question was not one of germicides, but one of the resistance of the tissues. The object was to increase the nutrient elements in the blood plasma which tissues. Moist, warm hyperemia accomplished this end by combat infection and help toward the revitalization of increasing the number of polymorphonuclear neutrophiles and leucocytes. The moist dressing had additional advantages in that it required the minimum of handling and manipulation of the parts, and drainage was facilitated along the moist fibers of the gauze. To accomplish the physiological action the moist dressing should be a copious one, the whole forearm being covered in the event of an injury to a finger or thumb. The dressing should be moistened from time to time with some bland sterile solution. In granulating wounds with sluggish granulation such astringent and stimulating agents as red wash and balsam of Peru occasionally were useful. If these fundamental principles were followed there would be fewer permanently impaired hands, amputations, cases of pyemia, septicemia, and death following surface wounds of the body.

Dr. Parker Syms of New York outlined the way they treated wounds in the Lebanon Hospital. The preparations adopted for deliberate operations were practically the same as for emergency preparation of wounds. They began to use iodine preparation on the operation field and they still followed this plan. The skin surrounding the wound was gently swabbed with a solution of iodine in benzine; this was for the purpose of removing the dirty grease. Then the area involved was painted with tincture of iodine, or tincture of iodine in alcohol. The use of water should be avoided, as well as fluid soap or anything else within twenty-four hours of the time the iodine preparation was used. Water would swell the epidermal cells and prevent the infiltration of the superficial layers of the skin by the iodine and so prevent their attempts to disinfect the superficial skin by the use of the iodine. If iodine was used on a skin which had been macerated by water, or water and soap, there would be produced an annoying dermatitis. The solution used was tincture of iodine diluted one-half with alcohol. When Dr. Syms was house surgeon in Bellevue Hospital in 1881 he was fortunate enough to see a great evolution in surgery. In Dr. James Wood's ward the typical surgery of those old days was done. In amputations, for instance, the wounds were left absolutely open, no sutures being used, but a sufficient cuff of skin and tissues was left to cover; the resulting hole was filled with gauze saturated in balsam of Peru. That was the style in those early days. Those patients recovered with the loss of a limb and they lived in a fair proportion of cases. At the same time in Dr. Robert F. Weir's wards was introduced listerism. The dressing of a wound required no end of trouble and disaster to the patients. The method was carried out in a faulty manner. The wounds were dressed only when the discharge appeared outside the dressings, and the dressings were applied so that the discharge could not get out. During the six months Dr. Syms was junior they had to treat sixteen compound fractures, mostly of the leg; they were able to save one, possibly two. That was a frightful condition. It represented the most meddlesome kind of antiseptic surgery. Soon a surgeon from Esmarch's clinic introduced there the most successful method of antiseptic surgery. They then began to really disinfect the tissues. To-day the nearest they came to disinfecting the tissues was with the use of iodine; this not only disinfected the skin but also prevented reinfection of the wound. The healing of a wound depended upon physiological processes, and not on chemicals.

Some Popular Misconceptions Regarding Ophthalmia Neonatorum.—Dr. Ellice M. Alger of New York read this paper. After calling attention to the very prevalent neglect to make use of the simple remedies recommended for the prevention of ophthalmia neonatorum, he said that he did not believe this neglect was due to ignorance or carelessness, but proceeded from causes much less discreditable to head and heart. Every case of conjunctival discharge beginning during the puerperal period was at once regarded by the physician, the mother, and the friends as a certain proof of an antecedent infection of the mother, received, of course, through a delinquent husband. Now this was distinctly only about half true, and, like many other half truths, it had done a tremendous amount of harm. The gonococcus was only one of a number of germs that might cause ophthalmia. Everyone who had had smears made regularly from discharges in the eyes of new-born babies had probably been surprised by the failure to find the gonococcus in apparently typical

cases. On an average at least one case in every three was not of gonococcal origin at all. The venereal theory was one of the greatest obstacles to universal prophylaxis. The physician could not be handled like the midwife and told to obey orders simply because they were orders. He insisted upon using his powers of discrimination in individual cases. Sceptic though he often was of human virtue, he could not suspect all prospective mothers of harboring a latent gonorrhea, and that being the case he saw no logical need of a prophylactic instillation. Physicians often felt that in most cases of their patients and friends prophylaxis against a venereal disease was almost insulting and would certainly be so regarded if they were consulted. If they taught the absolute truth that ophthalmia was not necessarily a disgraceful occurrence and might be the result of any of the various pus germs, then physicians would at once see the advisability of prophylaxis in every case, while parents would no longer feel insulted at the suggestion of such a precaution. The gonococcus theory was also responsible for unfortunate misconceptions as to the severity and danger of the disease when it did occur, and led to serious errors in treatment. In the treatment of ophthalmia every precaution should be taken to preserve the integrity of the corneal epithelium; as a matter of fact the usual program of meddlesome interference would soon abrade the cornea of a perfectly healthy eye. Strong solutions of all sorts should be avoided, and likewise compresses and poultices which increased the pressure of the lids on the cornea. A clumsy or heavy-handed nurse might abrade the cornea in the frequent efforts to open the eyes and irrigate them. Even the advisability of hospital treatment was open to serious question. It should not be advised unless the child was certain to be neglected at home. The prognosis of any case depended upon the vitality and nutrition of the child more than upon any other factor. Physicians were taught to lay altogether too much stress upon the hospital, the oculist, and the bacteriologist. When a case occurred the main thing was to get the treatment started at once. Dr. Alger was accustomed to have the child brought to him every day, at which time, if it could be done without too much struggling, he tried to get a glimpse of the cornea and drop a drop of silver nitrate into the eye. The mother or nurse was instructed to cleanse the eye by sponging the closed eye with pledgets of cotton and boric acid as fast as notable secretions accumulated and the lids were prevented from sticking by applications of oil and vaseline. Every three hours a drop of 20 per cent. argyrol solution was instilled. Under treatment of this kind most cases improved from the beginning. One could not possibly disinfect an ulcer which was bathed in pus by carbolic acid, or iodine, or a caustic, but the destruction of an eye could easily be hastened by such means. The conservative treatment was best. The presence of corneal complications, while they made the prognosis worse, made no change in the treatment except that they called for the additional use of atropine.

A Talk on the Care and Training of the Feeble-Minded.—Dr. C. S. Little, Superintendent Letchworth Village, Thiells, said that the State of New York had purchased two thousand acres of land for the care and training of the feeble-minded. This was made necessary because soon they expected to have 3,000 inmates to care for. The plan of development was nearly completed. The patients were divided into six groups, three male and three female; there was one group for the improvable cases, one for the adult cases, and another for the infirm cases. Each group was in separate dormitories situated far apart, so that each dormitory might be considered an institution by itself. Each dormitory was arranged for the accommodation of fifteen to seventeen inmates. A careful classification of the cases was made. As to the care and training of the feeble-minded in the institution, he looked upon the institution as having four periods, as follows: (1) The home. They tried to supply, so far as was possible, the privileges the normal child was assumed to have in a normal home. Games were indulged in such as baseball, tennis, and other outdoor sports, and checkers, etc., indoors. (2) The school. This was the most important function of the institution and the schools were arranged according to the intellect of the individual. They had the kindergarten; they trained the use of the eyes, etc. Again, they had a group for school work, such as the study of geography, arithmetic, writing, and reading. One of the most important things was that these individuals should be doing something they were interested in. It did not matter so much if a feeble-minded child played baseball or did carpenter work so long as he was interested in it. (3) The workshop. They had an abundance of land where the boys could work outdoors and raise crops, dig ditches, and clear off the ground. They had industrial work in the laundry, in the sewing rooms, basket work, etc. (4) The laboratory. This feature was very important. An institution of that kind should be a place of science, where careful study could be made of the cases; just along what exact lines the speaker could not at present say. Many interesting studies had already been worked out with astonishing results. The education of the public was a very important matter. The families of the feeble-minded for five and six generations were found to have hundreds who had been supported by the State, who had committed crimes, and what not. This was especially an interesting study. This class of cases should be segregated permanently. If they really were going to do anything worth while it settled itself down to the movement similar to what was instituted in tuberculosis. This class of cases must be segregated and kept away from the community.

Election of Officers.—*President,* Dr. Daniel Bailey Harderberge of Middletown; *Vice-President,* Dr. John Calhoun Otis of Poughkeepsie; *Secretary,* Dr. Charles Ellery Denison of New York; *Treasurer,* Dr. George Swan Mooney of Yonkers.

AMERICAN NEUROLOGICAL ASSOCIATION.

Thirty-seventh Annual Meeting, Held at Baltimore, Md.

The President, Dr. H. M. Thomas of Baltimore, in the Chair.

(*Concluded from page 650.*)

Acute Chorea Characterized by Motor, Physical, and Mental Symptoms.—Dr. Allen Ross Diefendorf of New Haven, Conn., read this paper, saying that in chorea the mental symptoms might be classified as mild forms and as choreic psychoses of chorea insaniens. The mild forms predominated and affected principally the emotional sphere. Their intensity was usually proportional to the severity of the motor signs, and their prognosis was good. The choreic psychoses were rare and the predominating form was a state of delirium occasionally terminating in fatal stupor, and less often in a paranoid condition. A stuporous state was another less frequent and more grave form. These groups were not to be confounded with chorea complicating dementia paralytica, senile dementia, dementia præcox, or manic-depressive psychoses.

A Case of Pseudo- or Diffuse Sclerosis.—Drs. Theodore Diller and George J. Wright of Pittsburg, Pa., read this paper. Westphal described in 1883 an affection which he called "pseudosclerosis," which bore a close resemblance clinically to disseminated sclerosis, but differed from it chiefly in that it was characterized by progressive dementia. Rebizzi had studied clinically and anatomically

a classical case of pseudosclerosis. He concluded that pseudosclerosis and diffuse sclerosis were manifestations of the same disease process and should be considered as one disease, due to a diffuse primary affection of the nervous elements, with secondary increase of the glia cells. Their own case was that of a boy, aged 13, who had developed normally up to the age of 9, when his present illness began, and had steadily and slowly progressed up to the present time. It was characterized by gradually progressive mental deterioration, and during the last three years by change in his speech. For the past two years there had been progressive muscular weakness so that now the boy frequently fell in attempting to walk. At present he was dull and apathetic and unable to count up to twenty or to write his name. He exhibited marked speech defect and tremor of peculiar character, suggesting intention tremor of disseminated sclerosis. The knee-jerks were exaggerated; Babinski toe reflex present on both sides; eyegrounds normal; no ocular palsies; no nystagmus; spinal fluid normal. From a diagnostic point of view the case was to be differentiated from juvenile paresis and disseminated sclerosis.

Dr. William G. Spiller of Philadelphia had once examined the brain in this disease. The condition was so striking that he did not think anyone could make a mistake in recognizing the disease when he had the brain before him. The brain felt as hard as if placed in some hardening fluid like formalin. One could not exclude in Dr. Diller's case a possibility of nodular gliosis. It was possible that there was some form of encephalitis of a chronic type or degeneration going on which would also give the symptoms reported. It was even possible that it was a multiple sclerosis.

Saturday, May 15—Third Day.

The Temporal Lobe Detour of the Optic Radiations and Its Importance for the Diagnosis of Temporal Lobe Lesions.—Dr. Adolf Meyer of Baltimore, Md., demonstrated a further case of division of the optic radiations into isolated bundles furnishing proof that the external sagittal marrow of the occipitotemporal lobe consisted essentially of geniculocalcarine fibers and that its ventral part alone formed a detour toward the uncinate region within the temporal lobe. Lesions of the anterior part of the temporal lobe if sufficiently deep, therefore involved the most ventral bundle of the optic radiation, and implied a defect in the upper quadrant of the visual field. As clinical evidence he would refer to a case of Dr. Cushing's of an old bullet wound through the orbit in which the bullet was lodged upon the petrous bone and in which this defect of the upper quadrant was clearly established, but so close to the median line that it could easily have been overlooked in a hasty perimeter examination. It was expected that the facts reported should, once for all, refute the opposition of the von Monakow school concerning the existence of the detour, and added a valuable help to the diagnosis of the temporal lobe lesions.

Remarks on States of Experimental and Clinical Dyspituitarism.—Dr. Harvey Cushing of Baltimore, Md., read this paper, stating that he would illustrate his remarks with a series of lantern slides and trace the steps of recent advances in the knowledge of the function of the pituitary gland. The structure as a whole was essential to the maintenance of life. The relationship of the pars anterior to body growth was indicated by the infantilism persisting in animals after partial removal of the gland early in life. Experimentally produced glandular deficiency (hypopituitarism), furthermore, led to an abeyance of the sexual function, to hypotrichosis, a tendency to a subnormal temperature, adiposity, and an increased tolerance for carbohydrates. The condition, in other words, indicated a lowered oxidizing or metabolizing capacity on the part of the organism. Practically normal metabolic conditions could be restored by administering glandular extracts. Studies, in conjunction with Emil Goetsch, had shown that the posterior lobe secreted into the cerebrospinal fluid concentrated solutions of the normal fluids, exhibiting all the properties of extracts of the posterior lobe itself. Hence studies of the cerebrospinal fluid from this standpoint would indicate, he hoped, the degree of posterior lobe over and under-activity in the individual case. The fluids obtained from the abattoir might indeed prove to be of therapeutic value. These experimental findings had shed light on many hitherto obscure clinical conditions, particularly in so far as they related to states of hypophyseal underactivity. He showed lantern slides of 40 cases of pituitary disease under observation during the past two years, and in all probability recognizable clinical states of altered hypophyseal activity were just as common, if not more common, than those of altered thyroid activity. In the past only a small group of outspoken cases received clinical recognition. He classified the cases into groups, according to the presence or absence of (1) neighborhood symptoms, (2) general pressure symptoms, and, (3) marked glandular symptoms 1. *Neighborhood Symptoms*—Except in the presence of outspoken acromegaly or gigantism few ventured to make a diagnosis of hypophyseal disease unless an interpeduncular or hypophyseal tumor was obviously present. The tumor, however, were it a primary adenoma (hyperplasia) of the gland associated with a state of hypersecretion or, on the other hand, an interpeduncular growth which compressed the gland and obstructed its secretory activity, or a primary hypophyseal growth which had finally destroyed the gland's secretory powers—the tumor, to repeat, was merely a fortuitous association, without which in all probability the syndrome of Marie (acromegaly) and that of Frölich (dystrophia adiposogenitalis) would never have come to be attributed to a functional disturbance of the pituitary body. The neighborhood symptoms of chief moment were primary optic atrophy with a tendency to either a bitemporal or homonymous hemianopsia (more often the latter), oculomotor palsies, exophthalmos, possibly uncinate fits, epistaxis, and the like. The *x*-ray would often show an absorption or enlargement of the sella turcica, it being necessary to take stereoscopic plates if an accurate estimate of the sellar configuration was to be obtained. 2. *General Pressure Symptoms*—These might occur when the growth or glandular hyperplasia burst through the confines of the gland's dural envelope or when a primary interpeduncular growth, usually arising from a congenital anlage, enlarged sufficiently to obstruct the foramina of Monro. They were similar to the pressure phenomena of other intracranial tumors. A choked disc became superimposed on the primary atrophy. These matters relating to local and general intracranial pressure might be helpful in making a diagnosis; but far more important, inasmuch as they occurred in the absence of recognizable tumor or enlargement, were the next group. 3. *Glandular Symptoms*—The 40 cases were presented on the basis of clinical states brought about by over and under-activity of the anterior lobe and by over and under-activity of the posterior lobe. Furthermore, it must be realized that a different clinical picture resulted when the malady originated before or after adolescence. Hence there were eight fairly definite types which would probably be recognizable, though they would overlap to a greater or less extent. Thus the syndromes of acromegaly and gigantism were presumably occasioned by a condition of over-activity of the pars anterior. Coincident with this condition, however, there might be a state of over-activity or of under-activity of the posterior lobe. Hence mixed types were to be met

with. The investigation of the sugar tolerance of these individuals had shown that in time they acquired an extraordinarily high assimilation limit, indicating an ultimate posterior lobe insufficiency. It had long been known that spontaneous glycosuria was a frequent accompaniment of the acromegalic syndrome, but it appeared that this was only true of the early stages of the disease, the tendency in all cases being toward an ultimate over-tolerance for carbohydrates. Far more common apparently were the cases which showed, from the onset, evidences of glandular hypoplasia and gave symptoms comparable to the experimental states following partial extirpation. Some of the more striking of these symptoms were amenorrhea or impotence, a subnormal temperature, a low blood-pressure, polyuria, loss of hair, a dry skin, and a generalized adiposity which was presumably coupled with the acquirement of a high assimilation limit for sugars. When the process started early in life the secondary sexual characteristics were imperfectly acquired and there was a persistence of infantilism. In the adult there was a tendency to revert to the condition with atrophy of the gonads. A feminine type of body configuration occurred. It could not be too strongly emphasized that any functional alteration of the hypophysis led to changes in all of the other ductless glands. This was true of the experimental as well as the clinical states. It was true also for primary alterations in other glands—thyroid, adrenal, and so on. The syndrome therefore was a polyglandular one, in the sense of the French writers, in every case of ductless gland disease, no matter which of the glands was primarily affected. There was, however, a dominant clinical picture which accompanied a state of over- and of under-activity of each individual member of the series. These states of hypopituitarism were brought about by (1) a primary glandular hypoplasia from developmental failure or early disease; (2) a condition of hypoplasia due to destruction of the gland from an advancing primary tumor; (3) the direct pressure upon the gland from a superimposed interpeduncular tumor; and (4) distant lesions which produced an internal hydrocephalus and thus dammed back the cerebrospinal fluid, which had been shown to be the medium holding posterior lobe secretion. The therapeutic indications were simple: A large tumor producing neighborhood symptoms called for surgical decompression or partial removal for preservation of vision and relief of discomfort. (Complete enucleation of a tumor which had burst the bounds of the sella was, of course, impossible, and complete emptying of the sella was unsafe, for there might be some viable and normally functionating anterior lobe remaining.) All cases of glandular insufficiency, recognizable on the basis of adiposity and increased sugar tolerance, called for glandular administration. The dosage should be regulated on amounts of the extract sufficient to produce hyperglycemia with a dosage of sugar which should represent the assimilation limit of a normal individual of the same ago and body weight. Three recent operative cases still resident in the hospital were shown, two of them cases in which merely a sellar decompression had been performed by a sublabial route; in the third the large portion of a tumor had been removed. In all of them supplementary glandular feeding was indicated, as they were all in states of hypopituitarism.

Leontiasis Ossea, Acromegaly, and Sexual Infantilism.—Dr. Herman H. Hoppe of Cincinnati, Ohio, read this paper, stating that acromegaly had an undoubted relation to disturbances of the hypophysis that the many cases on record of tumor and disease of the hypophysis clearly showed, and was so universally accepted that they always expected a tumor of the hypophysis when they diagnosed the condition clinically. But the fact that hypophysis tumor often occurred without causing acromegaly seemed to indicate that whatever disturbance was caused in the functions of the hypophysis might be vicariously neutralized by some of the other ductless glands. Moreover, cases like theirs seemed to indicate that either excessive actions of the hypophysis could exist without marked increase in structure, or that the normal action of the gland could be inhibited by the action of some other ductless glands and that the clinical picture, as they had it in their case, was one of hyposecretion. One fact, however, stood out prominently in this discussion: There were few cases of acromegaly on record in which some changes were not found in the hypophysis. On the other hand, changes in the other ductless glands were not at all constant, and hence the line of investigation would continue in the direction of pathological changes in the hypophysis. From a standpoint of therapeutics their case offered very little instruction. The only remedy for hyperactivity was to remove the gland. If they held the theory of defective activity, they might feel that some results could be obtained in beginning cases by administering the extract of the anterior lobe. There was at least one series of experiments of this kind in which good results were obtained. He referred to the article of Kuh. On the other hand, the experiences of Salmon, Magnus-Levy, Schiff, and Franchini, in feeding large quantities of pituitary tablets, either in health or disease, were negative.

Dr. C. K. Mills of Philadelphia said that he had under observation for one to two or more years three cases in which he had made the diagnosis of tumor of the uncinate region, which he thought had a distinct bearing on two or three points brought out by Dr. Cushing in his admirable presentation. Each of his three cases had the classical syndrome of Hughlings Jackson, namely, the presence of taste aura with the occasional occurrence of conditions of automatism and a more or less dream state. In only one instance had the patient any visual symptoms. In one of those cases there had been a temporary partial homonymous hemianopsia. In none of the cases had there been any papilledema, and in two of the cases headache had been well marked.

Remarks on Methods of Curing Idiopathic Epilepsy.—Dr. L. Pierce Clark of New York read this paper, saying that he could find but a few scanty notes of actual reported cases of cured idiopathic epilepsy. Statistics and percentages of cures were of no value unless backed by actual data. The time limit which constituted a cure must be invariably supported by physical and mental changes to constitute a criterion of arrest or cure. The patient should be self-regulative, there should be a disappearance of the physical anomaly of metabolic defect and an absence of the psychical stigma of the disease. The word *cure* should be dropped and *arrest* substituted instead. So-called spontaneous cures were almost invariably brought about by the self-reliance of the patient upon a hygienic system more or less adequately adhered to. Special drug therapy, especially the sedative, was thoroughly discouraged in treating idiopathic epilepsy. Neither had the bromides improved the prognosis. These should be limited to a therapeutic determination of the severity of the disease and in intractable hopeless cases. He had presented in detail his method of hygienic treatment in an illustrative case which covered a form of intensive study and training-treatment along the lines of diet, rest, occupation, and exercises. He believed that 75 per cent. of all idiopathic epilepsies showed some metabolic defect. No case had recovered showing real mental deterioration. The rather frequently reported cures at four or five years of age were probably but reflex convulsions, but many such might in time develop into genuine epilepsy if they were not checked. Spontaneous cures rarely occurred between five or six and twenty years of age. The chances

of spontaneous cures improved greatly with advancing years, between 20 and 40 especially. Relapses in cured cases were not common even after 15 or 20 years of arrest. The cause for relapses was a breaking away from the hygienic regimen, emotional and mental stress. Restoration to a second arrest was very difficult of accomplishment.

Dr. James J. Putnam of Boston, Mass., said he had tried the hygienic treatment without bromides in several instances and had been very well satisfied with the results and meant to continue it. He had begun already to include in lectures to students that if they were going to rely on hygiene they must carry it to the point of adoption, something equivalent to the careful training of a person to enter on some sort of athletic contest.

Psychanalysis and Correction of Character.—Dr. E. W. Scripture of New York read this paper. (See page 859.)

Dr. Philip Coombs Knapp of Boston, Mass., said that the entire question of psychanalysis had, in spite of all one had heard about it, hardly reached the stage from which one could draw definite scientific deductions. Their technique was by no means perfected in regard to all these points. They had not yet very definite data on which to analyze the mind. In the second place, they had not yet enough data in regard to the occurrence of various symptoms. He was perfectly willing to confess that much of this psychanalysis seemed to him exceedingly vague and speculative, exceedingly untrustworthy, and anything but scientific.

Dr. Ernest Jones of Toronto, Canada, said the subject was so very large that it was difficult to discuss it without formulating some particular concrete point upon which inquiry was to be raised.

Sudden Loss of Weight and Pneumonia.—N. Berend has observed that infants who, as the result of diet, are subject to a sudden loss of weight are particularly liable to develop pneumonia, even in the absence of any exposure to infection.—*Monatsschrift für Kinderheilkunde.*

Surgical Treatment of Adenoid Vegetations and Hypertrophy of the Tonsils.—Aristide Malherbe and Robert Jouet think that medical treatment of adenoids and hypertrophied tonsils is illusory; as soon as the diagnosis of adenoids is made they should be removed, unles there is present an attack of adenoiditis or of an infectious disease. Anesthesia should be employed always if we desire to make a complete operation. The best is chloride of ethyl; this produces rapid narcosis and a sound and quiet sleep. There are no disagreeable after effects, no nausea or vomiting and kidney troubles. The anesthetic is better controlled when used with a simple compress than with a cone. The child should be placed in the Rose position, on his back, with his head extended below the level of the table. This position avoids the passage of blood and of debris from the vegetations into the windpipe. A special apparatus constructed for the author consists of a ring of steel screwed to the table, with two loops so placed that the head may be controlled by a napkin folded and passed through them, there being a concave crosspiece behind the head. A sharply curved curette is used for the removal of the adenoids. After the first inspiration of the anesthetic there is no further resistance; anesthesia is complete after four or five inspirations and resolution is rapid. The removal of the tonsils may be done with a tonsilotome, in cases of projecting tonsils, and after loosening them from the pillars of the fauces when they are flat and adherent. The two operations should not occupy more than three minutes; the child remains in bed for twenty-four hours and in the house for a week.—*Le Bulletin Médical.*

Medicolegal Notes.

General Alopecia Caused by Fright or Nervousness.—In an action for personal injuries to a girl of fourteen years of age whose dress was caught in a machine near which she was standing, the lever attachment of which struck her in the face with sufficient force to cause a slight abrasion, it appeared that she was nervous and hysterical for several days and at intervals thereafter for several weeks. About ten days after the accident her hair began to fall out very rapidly and within three weeks after the accident her body was devoid of hair and substantially remained so for four years, up to the time of trial. The medical testimony on the trial was to the effect that alopecia universalis, or general baldness, is a mysterious trouble, and the theory of its origin is obscure and conjectural; that medical authorites generally agree, however, that sometimes the trouble has a neuropathic origin, such as nervous shock, fright, or grief; sometimes, and in the larger percentage of cases, it is due to parasitic or germ disease, and sometimes it is attributable to heredity. From this evidence, together with the evidence concerning this particular case, it was held that the jury were warranted in finding as a fact that fright and nervous shock are an adequate cause for a condition of general baldness. The relation of cause and effect may be established, though the theory of such relationship is not understood. It is a matter of general information that the causes of morbid processes are still unknown in many diseases. Yet it does not follow that medical science is always unable to ascribe the development of such diseases to the existence of certain conditions. The testimony in this case was that by a general consensus of opinion of medical authorities it was recognized and established that this trouble did have its origin in fright and nervous shock. A court cannot assume, either, that this conclusion is not well founded, because the morbid processes involved are not understood, or that this conclusion of medical experts is based on insufficient data, because the experience and observation of laymen do not furnish sufficient data to establish such conclusion.—Oninsky v. Chas. Weinhagan & Co., Minnesota Supreme Court, 129 N. W. 845.

Opinion as to Continuance of Pain from Injury.—In an action for damages for personal injuries the plaintiff had testified that she had suffered a constant pain in her left side as a result of the fall. The accident occurred on March 2, 1907. A physician called as a witness on her behalf testified that he performed an operation upon her for fixation of the kidney and removal of the right ovary in August, 1906, but that she had recovered from the operation. It was held that he might give his opinion in reply to a hypothetical question, assuming that she had not any pain in her left side prior to the accident, as to how long the pain she suffered from the injury would continue, as against the objection that his opinion was speculative; but he might not give his opinion as to future apprehended conditions.—Cross v. City of Syracuse, New York Court of Appeals, 200 N. Y., 393, 94 N. E. 184.

Nebraska Rule as to Privileged Communications.—The Nebraska court holds that in a contest over the probate of a will between the person therein named as an executor or a legatee and the heirs at law of the decedent Section 333 of the Nebraska Code of Civil Procedure, forbidding the disclosure of privileged communications, does not prevent a physician from testifying on behalf of either side of the controversy to the mental condition of the testatrix, though the information which enables him to do so was acquired solely in his professional capacity while attending her during her last illness.—In re Gray's Estate, Nebraska Supreme Court, 130 N. W. 746.

Presumption of Continuance of Insanity.—In a will contest an instruction that all persons are of sound mind who are neither idiots, nor lunatics, nor affected with insanity, was held not erroneous as measuring the mental capacity to make a will. But an instruction that, where the testator is shown to have been insane before and after executing a will, the proponent is bound to show that it was executed when the testator was of sound mind, was held to be erroneous as fixing the burden of proof on the proponent.

Under Montana Rev. Codes, Sec. 7062, subd. 32, providing that a thing once proved to exist is presumed to continue as long as is usual with things of that nature, lunacy, or insanity, if of a general, habitual, or permanent nature, once shown to exist, is presumed to continue until the presumption is overturned by countervailing evidence. That rule is recognized by the courts gen-

erally. But to cases of intermittent or occasional insanity the rule can have no application because in the very nature of things the idea of continuity is excluded. So that when this is the condition proof of its existence at one time raises no presumption that it existed either at an antecedent or subsequent time.

If a testator was of sound mind at the time his will was executed his precedent and subsequent condition is immaterial.—*In re* Murphy's Estate, Montana Supreme Court, 116 Pac. 1004.

Evidence of Insanity—Prior Acts—Family Taint.—Where the issue to be determined by the jury is the mental condition of a person at a certain time, it is always competent to show previous acts of insanity, delusion, or mental derangement, unless the previous conditions are excluded because they appear to be disconnected and remote. Where insanity is continuing or permanent in character, or where the cause of the disorder is continuing or permanent, the objection of remoteness will not apply. In Kansas it is well settled that a non-expert witness may be permitted to give his judgment as to the sane or insane state of another's mind after having detailed to the jury the extent of his opportunities to deduce a correct opinion and judgment thereon.

Proof of a taint of insanity in the family of a person is generally held admissible on the recognized principle of the hereditary character of insanity, but only in corroboration of proof that a particular person is, or was, insane. But such proof without actual evidence of insanity in the person himself will never be allowed to overcome the presumption of his sanity. It is competent only when there is other proof tending to establish the insanity of the person in question.—Fish v. Poorman, Kansas Supreme Court, 116 Pac. 898.

Competency as Medical Expert.—In an action for damages for the death of a daughter, alleged to have been caused by breathing the poisoned atmosphere from the defendant's hide-curing establishment in the same block, it was charged in the petition that hides were hung up by the defendant in the open air in a decaying condition; that the air was impregnated with it; that it produced disease, was ruinous to health, and poisonous to the human system. It was held proper to allow a physician to state the effect of decaying meat upon the surrounding air and upon any one breathing it.—A. Cohen & Co. v. Rittimann, Texas Civil Appeals, 139 S. W. 59.

Expert Opinion as to Mental Condition.—An exception to the general rule as to the opinion evidence of experts is admitted in the case of medical experts testifying to the mental condition of a party where the particular facts upon which the opinion is based need not be disclosed in the first instance.—Weibert v. Hanan, New York Court of Appeals, 95 N. E. 688.

Father's Right of Action for Injuries to Minor Son in Setting Arm.—An action was brought by the father of a boy five years of age against a physician and surgeon alleging unskillful treatment in attempting to set the boy's arm resulting in permanent crippling and uselessness of the forearm and hand. The plaintiff sued for expense incurred and which must be incurred to partially save the forearm and hand and also for the loss of his son's services until he should come of age. It was held, against demurrer, that the father had a right of action.—Otey v. Bradley, Washington Supreme Court, 115 Pac. 1045.

Father's Duty to Furnish Medical Attendance to Children.—In a prosecution against a parent for wilfully omitting, without lawful excuse, to furnish medical attendance to his minor child, it appeared that the child was afflicted with typhoid fever, and the county health officers had endeavored to induce the defendant to permit the child to be attended to by physicians and nurses, but he had refused, although the medical attendance was offered without expense. Under the Oklahoma statutes it is the duty of a parent having the custody of a minor child to support and educate the child; and such "support" includes necessary medical attendance to preserve the health and life of such child. A reasonable construction of the statutes would require the furnishing of medical treatment in such a manner and on such occasions as an ordinarily prudent person solicitous for the welfare of his child and anxious to promote his recovery, would provide. In a case for a violation of a statute which provides that "every parent of any child who willfully omits, without lawful excuse, to perform any duty imposed upon him by law to furnish necessary food, clothing, shelter, or medical attendance, for such child, is guilty of a misdemeanor" the question of the necessity for medical treatment is one of fact for the jury under proper instruction of the court.—Owens v. State, Oklahoma Criminal Court of Appeals, 116 Pac. 345.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended October 21, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	384	153
Diphtheria	196	13
Measles	96	2
Scarlet Fever	122	1
Smallpox	—	1
Varicella	30	—
Typhoid Fever	133	11
Whooping Cough	38	7
Cerebrospinal Meningitis	2	3
Malarial Fever	—	
Totals	1001	191

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended October 20, 1911:

CHOLERA.

Places.	Date.	Cases.	Deaths.
Austria-Hungary: Budafok	Sept. 9-16	1	..
Budapest	Sept. 9-16	5	..
Draga	Sept. 7	1	..
Krimeja	Sept. 7	1	..
Nagykeszi	Sept. 9-16	3	..
Ujpest	Sept. 9-16	13	..
Vukovar	Sept. 8-9	2	2
Bulgaria: Bourgas	Aug. 30-Sept. 6	3	*2
Dutch East Indies			†
India: Calcutta	Aug. 20-Sept. 2	..	26
Madras	Sept. 3-16	2	1
Indo-China: Saigon	Aug. 21-27	3	3
Italy		..	‡..
Provinces—			
Catania	Sept. 10-16	64	28
Catania	Sept. 10-16	20	5
Genoa	Sept. 10-16	23	4
Genoa	Sept. 10-16	14	2
Naples	Sept. 10-16	21	8
Naples	Sept. 10-16	12	2
Palermo	Sept. 10-16	19	10
Palermo	Sept. 10-16	34	10
Rome	Sept. 10-16	5	2
Rome	Sept. 10-16	6	3
Thirty-one other Provinces	Sept. 10-16	741	254
Japan: Kobe	Aug. 31-Sept. 10	2	1
Osaka	Aug. 31-Sept. 16	3	..
Java: Batavia	Aug. 27-Sept. 2	10	5
Persia: Abadan	July 29-Aug. 4	19	*b*8
Ahwaz	Aug. 13-Sept. 2	128	*b*115
Mohammerah	Aug. 13-Sept. 9	120	*b*101
Roumania		..	**..
Servia: Ravta	Aug. 30-Sept. 12	..	Present
Straits Settlements: Singapore	Aug. 20-Sept. 2	4	8
Tripoli: Tripoli	Oct. 13	4	..
Tunis Regency		..	††..
Bizerta	Sept. 20	25	9
Tunis	Sept. 17-20	74	34
Turkey: Constantinople	Sept. 12-25	387	231
Salonica	Sept. 11-24	54	39
Turkey in Asia: Basra	Sept. 10-23	69	50
Damascus	Aug. 14-Sept. 15	22	17
Jiddah	Sept. 21	1	..
Kerrasunde	Sept. 10-23	10	5
Kharput	Sept. 9-16	18	15
Medina	Sept. 7-22	53	29
Mekka	Sept. 11-24	121	116
Trebizond	Sept. 21	..	‡‡1
Smyrna	Sept. 11-24	70	39
Zongouldac	Sept. 11-24	24	20

*Cases, Sept. 1, from the sailing vessel Ephtisia from Asia Minor.
†*a*June 10-July 9: Cases, 442; deaths, 362.
‡Total for Italy Sept. 10-16: Cases, 959; deaths, 328. Sept. 17-23: cases, 664; deaths, 280.
*a*Bulletin Quarantenaire d'Egypte, Sept. 14, 1911.
*b*From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Sept. 6-Oct. 4.
**Total to Sept. 21: Cases, 18; deaths, 13.
††Total Sept. 17-20: Cases, 217; deaths, 123.
‡‡From Constantinople.

YELLOW FEVER.

Brazil: Manaos	Sept. 11-23	..	5

PLAGUE.

British East Africa: Kismayu	Aug. 6-16	3	..
Brazil: Pernambuco	Aug. 16-31	..	3
Chile: Iquique	Aug. 6-Sept. 9	16	10
China: Hongkong	Aug. 27-Sept. 2	2	1
India: Bombay	Sept. 3-16	36	28
Calcutta	Aug. 20-Sept. 2	..	12
Karachi	Sept. 3-9	4	4
Indo-China: Saigon	Aug. 21-27	9	4
Java: Pasoeroean Residency	Aug. 27-Sept. 2	26	8
Madras	Sept. 3-16	9	6
Straits Settlements: Singapore	Aug. 27-Sept. 2	1	1

SMALLPOX.

Arabia: Aden	Aug. 22-28	1	..
Brazil: Pernambuco	Aug. 16-31	..	140
Canada: Ottawa	Oct. 1-7	2	..
Ceylon: Colombo	Aug. 20-Sept. 2	2	1
China: Hongkong	Aug. 27-Sept. 2	4	4
India: Bombay	Sept. 3-16	9	7

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Original Articles.

SURGERY OF THE COMMON BILE DUCT.*

By JOHN B. DEAVER, M.D., LL.D.,

PHILADELPHIA, PA.

THE common bile duct may well be called the crucial point of the whole biliary system. It furnishes the one outlet for the biliary secretion and by the anatomical relations of its terminus wields an important influence over the pancreatic function.

The surgery of the duct not only presents difficulties entirely foreign to procedures upon other portions of the biliary apparatus, but is a subdivision of upper abdominal surgery which may tax the surgeon's patience, skill, and knowledge to the fullest extent.

First a word regarding the relational anatomy of the common bile duct. The common duct is formed by the junction of the cystic and hepatic ducts. The first portion of the common duct runs between the two layers of the right free border of the gastrohepatic omentum with the hepatic artery to the left and the portal vein behind and between the duct and the artery.

The duct may be divided into three portions: (1) the supraduodenal, the largest portion lying as described above; (2) the retroduodenal or pancreatic portion, which courses behind the duodenum and in one-third of the cases lies in a groove upon the surface of the head of the pancreas, between the head and the descending duodenum, and in two-thirds of all cases is, for at least a portion of its extent, entirely surrounded by pancreatic tissue; and (3) the intraparietal or interstitial portion, which is that portion of the duct contained in the thickness of the wall of the duodenum.

The terminal portion of the duct dilates within the duodenal wall into a little pouch called the ampulla of Vater and into this the duct of Wirsung also empties. The normal average of the ampulla is one-sixth of an inch, although it may be as large as two-fifths of an inch in diameter, or again, may be absent altogether. Besides the usual arrangement of both the common bile duct and the main pancreatic duct entering the ampulla in the manner described, the ducts may join some distance from the duodenal wall, or they may separately pass through the duodenal wall; in either instance the ampulla of Vater being absent. The average diameter of the common bile duct is given as that of a goose quill and its average length 2 2/5 to 3½ inches. The narrowest portion of the duct is at the orifice of the papilla in the duodenal wall which furnishes the outlet to the ampulla of Vater.

There are three anatomical features not often mentioned in the text-books with regard to the common duct which I have found to be of considerable importance. The portal vein occasionally lies immediately behind and slightly to the right of the duct and sometimes projects upward far enough to partly cover it. It is my practise, when in doubt, to use a hypodermic syringe to determine by aspiration whether the presenting structure is the bile duct or the portal vein. Puncture of the vein by a hypodermic needle is of no moment, but without this careful precautionary measure incision may bring disaster.

The point of junction of the common and hepatic ducts varies considerably. In the classical arrangement a Y junction is formed and we have the supraduodenal portion of the duct running alone as the final biliary passage. In a considerable number of instances, however, I have found the junction of the cysticus and hepaticus much nearer the duodenum, with the hepatic opening situated posteriorly in such a manner that it appeared more like a tributary of the common duct rather than as one of the main constituent branches. This arrangement of the ducts must be kept in mind. Ordinarily it is easy after opening the common duct to explore by probe the hepatic duct, but with the arrangement just mentioned it may become a matter of difficulty to locate the hepatic duct if this arrangement is not borne in mind.

In intimate relation with the common duct are lymphatic vessels and glands, the latter varying in number from three to a half-dozen or more. This arrangement provides a lymphatic connection between the gall-bladder and under surface of the liver and the head of the pancreas. The clinical importance of these relations I shall later point out.

This brief discussion of the relations of the common duct to the other upper abdominal structures will, I trust, make it clear that he who would attempt to deal with this structure should be entirely familiar with its anatomy. Even under normal conditions the dissection of the common duct may be difficult—how much more difficult will it be in a patient in whom pathological conditions have supplanted the normal!

The pathological abnormalities of the duct which require operative interference, excluding traumatic lesions, may be grouped generally as those in which there is either a complete or a partial obstruction to the flow of bile through the duct with the consequent train of symptoms due to this condition acting alone or in conjunction with the underlying lesion. And since obstruction of the biliary discharge causes jaundice and its accompanying phenomena we may briefly describe the conditions demanding operative interference upon the common duct as those in which there is jaundice, constant or intermittent, due to common bile duct obstruction.

Practically all of the cases of common duct ob-

*Read before the Hudson County Medical Society, Jersey City, N. J., October 3, 1911.

struction are due to one or more of the following causes: (1) Gallstones; (2) pancreatitis, whether by the tumefaction of acute inflammation or by the stenosing cicatrization of a chronic process; (3) cancer of the duct, its papilla, or the adjacent duodenum; (4) cancer of the head of the pancreas; (5) cicatricial stenosis of the papilla due to duodenal ulcer; (6) stricture of the duct due to ulceration associated with the presence of a stone, or occasionally following operation necessitating incision or drainage of the duct; (7) pressure from adjacent structures; (8) hydatid cyst or membrane.

It is manifest that groups 1, 2, and 4, *i.e.* gallstones, pancreatitis, and cancer of the pancreas furnish us with most of the cases requiring surgery of the common duct. And in cholelithiasis, with or without the association of a pancreatitis, we have so far found the commonest cause for surgery of the common duct.

In a consideration of cholelithiasis of the common duct there are several factors which we must take into consideration.

The first is the comparative frequency of stone in the common duct to gallstone cases of all kinds. In 626 cases of gallstones operated upon at the German Hospital, stones were found in the common duct in 139 cases, or 22 per cent. plus, of all the cases. Of these the distribution of the stones was as follows: Gall-bladder and common duct, 68 (48 per cent.); gall-bladder, cystic, and common duct, 5 (3.5 per cent.); gall-bladder, common, and hepatic ducts, 5 (3.5 per cent.); cystic and common duct, 1 (0.7 per cent.); common duct alone, 44 (31 per cent.); gall-bladder, cystic, common, and hepatic ducts, 5 (3.5 per cent.); common and hepatic ducts, 11 (7.8 per cent.). These figures make it evident that anyone attempting to do gall-bladder surgery must be fully prepared to do any necessary procedure upon the common bile duct as well.

At the present time it is a rarity for an experienced surgeon to overlook the presence of gallstones in any portion of the biliary tract at the time of operation, yet a number of instances have been recorded in which this has occurred, and I have encountered them personally. Particularly is a stone likely to be overlooked in the second portion of the common duct if it be enveloped by pancreatic tissue or in the terminal part of the duct near the papilla unless to our sense of touch we add also thorough probing of the duct.

Common-duct cholelithiasis is always a sequel of gall-bladder lithiasis. That is to say, we have no evidence which would tend to show that stones are formed within the common bile duct itself, or, for that matter, in any of the other ducts. Stones found in the normal common duct are formed within the gall-bladder and pass, while comparatively small, down into the cystic and thence into the common duct. There has been some question of the possibility of the formation of gallstones within the hepaticus or within the smaller intrahepatic passages, but it is probable that most intrahepatic stones are passed from the gall-bladder into the cystic and common ducts and then pushed back into the hepatic. There is, however, no doubt that a stone once lodged in the common duct may there increase very greatly in size. Cases of very large stones within the common duct and removed at operation have been reported of late by H. R. Wharton[1], and J. M. Deacon[2] who reports a stone 2¼ inches long by 4 inches in circumference found in the common duct, and Carwardine[3] who reports a stone 3½ inches long and 4 inches in circumference.

The distensibility of the common duct may well excite surprise; under the influence of a constant distending force the dilatation may be enormous, as in a case of cystic enlargement reported by Weiss[4] occurring in a boy six years old. Rupture does not occur unless the duct wall is weakened by ulceration, necrosis, or the force is suddenly and violently applied as in direct traumatism.

As a relatively common condition the symptomatology of stone in the common duct has often been depicted. Mr. Mayo Robson has well summarized the cardinal symptoms as follows: (1) Jaundice of varying intensity, deepening after each paroxysm, which may persist for months or years; (2) ague-like paroxysms, characterized by chill, sweating, and fever and followed by deepening of a persisting jaundice; (3) at the time of the paroxysms pain in the region of the liver with epigastric distress.

These are exactly the symptoms as furnished by Osler and in practically the same words. The febrile disturbance is also sometimes called the hepatic intermittent fever of Charcot. Naunyn, many years ago, also noted these symptoms, and adds the more valuable one of normal size or only slight distension of the liver and enlargement of the spleen.

These symptoms require some discussion and cannot be accepted as a set form of rules suitable for the diagnosis of every case.

The jaundice in stone in the common duct is in some cases a very slight symptom, in others a most noticeable one. But while there are a considerable number of gallstone cases which never show jaundice, it is rare for a case of common-duct stone to be entirely free of this condition. Even this may occur, however, as pointed out by Kehr. In most of the instances jaundice is an early and persistent symptom. There can, however, be no doubt of the variability of the jaundice in common-duct cases, and here we have an important diagnostic feature. In jaundice due to malignant disease of the head of the pancreas or even marked interstitial pancreatitis, the condition is constant and progressive. Malignant pancreatic conditions usually show a peculiar and characteristic greenish tinge. Associated with severe jaundice we, of course, have the presence of bile in the urine and its absence in the feces.

The pain in common-duct stone is said to be less severe than in other forms of gallstone disease, being more pronounced in the epigastric region; the pain is referred to the back and not to the right subscapular region. The tenderness felt, if there be a tender point, is in the epigastrium rather than in the right hypochondrium.

The intermittent attacks of fever and chills often occurring with great regularity are a valuable sign of stone in the common duct, yet by no means so constant or typical as they have been pictured. Of all the symptoms, I should class pain as by far the most constant and as a distinguishing feature of common-duct stone remittent and severe jaundice.

Mayo Robson and Cammidge state that the pancreatic or so-called Cammidge reaction was found by them in 60 per cent. of their common-duct cases. This reaction in my experience, embracing now about 400 cases in which the reaction was tried, has not yet shown itself to be sufficiently valuable to have much weight in the diagnosis of common-duct obstruction of gallstones.

The diagnosis of gallstones is by no means easy in all instances, since, as Moynihan has well remarked, there is no symptom or group of symptoms due to gallstones which may not be exactly simulated by some other condition. Granted, however, that gallstone disease may fairly be established, the differentiation of common-duct stone from other varieties can usually be made. That which gives the greatest trouble is to differentiate stone in the common duct from other non-calculous conditions which may more or less accurately reproduce its symptomatology. The chief conditions of this sort which require careful distinction are cancer of the pancreas and chronic pancreatitis.

The main differences presented by the latter conditions in their usual manifestations are: (1) The absence of pain, or if present its lack of prominence as a symptom; (2) the progressive and ultimately deep character of the jaundice; (3) the demonstrable enlargement of the gall-bladder as stated in the well-known law of Courvoisier.

It is well to know, however, that the most typical course of common duct stone may be simulated by chronic pancreatitis. I have reported elsewhere a case operated upon within the past year in which following a cholecystostomy for gallstones the patient had been subject for five years to intermittent attacks of epigastric pain accompanied by chill, fever, sweating, and sometimes vomiting, followed by a deepening of the slight icteric tinge which was almost constantly present. Our diagnosis was stone in the common duct, but at operation no stones were found but merely a pancreas, the head of which was enlarged almost to the size of a man's fist. Cholecystostomy with prolonged drainage relieved the condition and up to the present this patient has remained well.

The diagnosis of common duct cholelithiasis having been made, the question of treatment at once presents itself. There is no medical treatment for the condition unless we include under this heading such measures as may be taken to prepare the patient for operation. Paroxysms of pain must be controlled by morphine and hot fomentations, with a careful regulation of the diet and bowels. It must be remembered that a stone rarely causes complete occlusion of a biliary duct, except it be the cystic, unless we have in addition inflammatory congestion of the mucosa of the duct to complete the closure.

I have always contended that operative treatment includes a thorough study of the case and a proper preparation of the patient for operation. The surgeon should endeavor to discover whether there be any organic disease of the heart, kidneys, or lungs so grave as to preclude operation. I believe that with a carefully given anesthesia, or when this is impossible the use of stovain intraspinally, there are but few truly inoperable conditions of the biliary tract which are made so by the patient's general condition.

Should the pulse be weak the careful use of digitalis prior to operation will often save much anxiety afterward. If the kidney excretion be either deficient in quantity or altered in quality attention should be given to this phase of the patient's condition before operation so that he be not handicapped by kidney insufficiency in his recovery. I cannot lay too much stress upon the latter point. If the copious ingestion of water does not give rise to free diuresis and the passage of approximately normal urine I often supplement this by hypodermoclysis or saline enemas or at times by continuous proctoclysis. The quality of the urine is not of as much importance by any means as is the quantity. Practically all cases of common duct obstruction, if at all sick, have more or less toxic nephritis, the urine showing hyaline and granular casts; this matters but little from the standpoint of operation if the kidneys are functioning freely, therefore why the great importance of determining this before operation?

But the gravest obstacle to the success of the surgeon is deep jaundice with its accompanying cholemic state. This is detrimental to the patient at and after operation in several ways. In the first place jaundiced patients are prone to hemorrhage. The cause of the hemorrhage tendency is obscure. It may be shown that chronic jaundice often delays the coagulation time of the blood. This undoubtedly favors hemorrhage. On the other hand the danger of bleeding bears no constant relation to the coagulation time. I have repeatedly observed intractable oozing in cases where the coagulation time as measured previous to operation was practically normal, and per contra I have much more often seen the most satisfactory freedom from hemorrhage in cases whose coagulation time was much delayed and our apprehension greatly increased thereby. It seems likely that some condition of the vessels themselves must be responsible in a degree for the increased hemorrhage in such cases. Certainly some factor is present which we do not understand and I am free to state we are unable to control, for in my experience calcium lactate and the administration of foreign sera are alike powerless to stay this disastrous complication. Fortunately it is of rare occurrence and appears only in cases who have postponed operation to an indefinite extent. Rudolf and Cole[5] state that experimentally they are unable to observe any appreciable effect upon the coagulation time of the blood under the free exhibition of calcium lactate.

If operation has been decided upon the patient is prepared in the usual way followed by iodine disinfection of the skin after it has become dry. I prefer ether anesthesia to any other. It is important to have the patient in correct position on the table, which is accomplished by the use of a firm sand bag under the back, beneath the lower thoracic and not the lumbar vertebræ, which not only pushes the spine with liver and bile ducts forward, but also opens up the costal angle. Special attachments to operating tables for this purpose are less satisfactory than the use of the sand bag. A free incision is necessary if any surgical procedure is to be undertaken upon the common duct or in its neighborhood. The field of operation is to be thoroughly walled off with gauze and the gall-bladder first palpated and treated according to conditions found. In every instance in which I open the gall-bladder for stone I examine the cystic and common ducts for the presence of stones.

When, however, exploration of the common duct from above is not possible the problem may become a more difficult one. It is often no easy matter to identify the common duct as it may be so thick that it looks more like a cord than a duct. Just as, to reach the appendix, we use as guides the cecum, and the anterior longitudinal band to the base of the appendix, so to reach the common duct we may pass down the gall-bladder, to the cystic duct and thence to the common duct. If the duct cannot be differentiated from the portal vein hypodermic puncture

will determine whether we have the common duct or the portal vein with but few exceptions as already mentioned.

The common duct having been located and the presence of stone made certain, we must look for the quickest and safest method of its removal. If the gall-bladder has been opened it is at times possible to push the stone up into it and thus avoid opening the choledochus. This, however, is rarely the case, and is, of course, entirely out of the question if the stone be impacted.

When the stone is in the supraduodenal portion of the duct or can be carried there, the proper course of action is to make an incision over the stone, remove it and drain with a fish-tailed rubber tube, previously carrying the index finger through the foramen of Winslow by which the duct is lifted upward and made prominent. The stone having been removed, the duct is to be palpated for further obstruction. It is also my practice to carry the flexible olive-pointed gallstone explorer through the duct into the duodenum by way of the opening made for the extraction of the stone; I never feel satisfied unless I do this. Very frequently I bend the gallstone scoop, giving it the proper curve and pass it.

It is also advisable to explore the hepatic duct. When the opening of the hepatic duct is abnormally low it will be necessary to incise the common duct (rather the elongated cystic duct) the distance necessary to expose the opening.

When it is necessary to remove the gall-bladder and also to incise the common duct, the latter is easily located and identified by passing a probe through the amputated cystic duct into the common duct.

When the stone is in the retroduodenal or pancreatic portion of the duct every effort should be made to dislodge it into the supraduodenal portion, or failing this, either to scoop it out entirely or reducing it with the spoon of the scoop and removing it piecemeal, or push it through into the duodenum. Should its size or other conditions make this impossible it may be necessary to approach the stone by Kocher's retroduodenal method. This essentially consists in dividing the peritoneum along the right margin of the duodenum, carrying the loosened bowel up from its bed to expose the duct behind it. I have found this operation but rarely necessary and Mayo considers it as having a very small field of usefulness. Still more restricted are transduodenal choledochostomy or duodenocholedochostomy. These operations, which involve traversing the duodenum in order to approach the stone in the ampulla of Vater or the terminal portion of the common duct, I have fortunately been called upon to employ but once. I have never failed to dislodge a stone so located, either upward or downward, with the one exception. I consider the use of such an operation unjustifiable and dangerous except under the most unusual conditions—conditions which, in an extensive experience with gallstone surgery, I have, as I said, been obligated to do but once.

As Mayo so well says, "free drainage of the bile to the surface contributes more to the safety of the patient than any one other feature of the operation." Drainage is established by direct drainage of the common duct by a rubber tube, supplemented by a split-rubber or gauze drain to the site of the choledochostomy opening.

In suppurative cholangitis, which may follow infection of the gall-bladder, it becomes necessary to drain the common duct by a choledochotomy. Drainage of the gall-bladder alone in the presence of pus in the hepatic ducts and their radicles will not suffice. I have a patient under my care at the present time in which I made both a cholecystostomy and a choledochostomy introducing rubber drainage into both the gall-bladder and common duct. Immediately following the free drainage the chills and fever ceased and improvement at once took place.

In a badly infected gall-bladder with great enlargement of the liver in addition to cholecystostomy or cholecystectomy, as the case may be, I frequently drain the common duct. Lavage of the common and hepatic duct as recommended by Kehr may be of avail, yet I have never practised it.

The common-duct and gall-bladder drains are left in until they fall out, they having been sewed to the walls of the duct or gall-bladder opening by chromic catgut. When cicatricial contraction of the duct has occurred or is feared a T rubber tube is useful, its short arms projecting upward and downward into the duct, while the long arm is brought out of the incision for drainage. This permits the formation of a duct of sufficient lumen, much as occurs in the urethra when a catheter is used in the same manner after a perineal section for stricture. The accessory drains are removed in two or three days.

The treatment of the accompanying gall-bladder condition in common-duct cases varies. If the gall-bladder is diseased and useless a cholecystectomy plus common-duct drainage furnishes the operation of choice if sufficient of the cystic duct cannot be retained for drainage. If the gall-bladder be damaged beyond repair, choledochostomy plus the usual cholecystectomy is indicated.

A feature of interest in connection with cholecystic disease particularly, and stone in the common duct, is the frequent hardening of the head of the pancreas noted at operation with or without symptoms of pancreatic disturbance having been detected before the operation. This hardening may be interstitial pancreatitis or pancreatic lymphangitis. In many instances it is no doubt a true interstitial pancreatitis with deposits of fibrous tissue, but in others is is merely a lymphangitis pancreatica in which the swelling is due to edema and, perhaps, cellular infiltration and not to a true interstitial process. There are many small aggregations of lymph tissue about the head of the pancreas. It is also demonstrated that the lymph vessels along the course of the common duct communicate with the head of the pancreas. By this mechanism inflammation readily makes its way from the region of the gall-bladder to the pancreas, marking its path as it goes by means of the enlarged lymph glands commonly found along the course of the common duct in this condition. Pancreatic lymphangitis, as a rule, affects only the head of the organ, owing to the fact that the lymphatics of the head and those of the body are not intimately connected. This differs from the state of affairs found in the ordinary form of diffuse chronic interstitial pancreatitis in which the entire gland is involved and sclerotic. The treatment of pancreatic lymphangitis is comprised under the operations which are necessary to restore the biliary system, particularly the gall-bladder to a state of health. When the pancreas is much affected cholecystostomy will not suffice and cholecystenterostomy

must be done. This must be borne in mind since the pancreatic complication of gallstone disease is important and furnishes a good percentage of the failures of end results after operation. Recurrence of the inflammation in the gall-bladder after operation will again give rise to pancreatitis. Only a gall-bladder which has every appearance of being able to return speedily to normal should, therefore, be entrusted to the curative effects of a few weeks' drainage as afforded by simple cholecystostomy. The operation of choice is cholecystenterostomy to provide for permanent drainage. Such operations as choledochoduodenostomy I never perform except as a last resort.

Besides gallstones there are certain other conditions in which we are compelled to perform operations upon the common duct. Stricture due to old injuries or ulcerations, malignant growths of the duct or ampulla or old cicatrices in the duodenum blocking the ampulla may necessitate plastic operations upon the duct, resections or reimplantation. These belong to the rarities of surgery and must be met individually according to the exact nature of the case.

Of the after treatment in common-duct operations there is but little to say. The use of stimulation, saline by continuous enteroclysis, lavage of the stomach if there is persistent nausea or vomiting and restriction of food at first, follow the course pursued in all other grave abdominal operations.

Patients after common-duct operations who have been jaundiced for any length of time must be watched for hemorrhage. This is the most frequent cause of death and depends, not so much upon deficiencies in technique, as upon the patient's condition. Peritonitis practically never occurs and seldom uremia if the kidneys and the circulation are given the proper attention before and after operation.

The technique of common-duct operations has been highly perfected; if it should be possible to secure in some way an avoidance of the operative dangers due to jaundice the mortality would be reduced almost to that of any other gallstone operation.

Cholemia so closely resembles uremia that they are often confounded. In either event it is a toxemia and one is as bad as the other.

Myocarditis is so frequently present in gallstone disease that particular attention must be given to the heart and circulation. I defer operation much oftener on this account than because of the presence of jaundice.

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1634 Walnut Street.

Lymphatic Infection from Appendicitis Without Peritonitis.—A. E. Barker states that infection from a damaged vermiform appendix or epityphlon may run a very serious course without any obvious local or general peritonitis. He has seen several cases in which the infection had spread along the lymphatics of the organ and produced very grave conditions in the glands and areolar tissue behind the abdominal peritoneum without any local or general peritonitis.—*The Practitioner.*

PEDIATRIC MEMORANDA.

PRIMARY SPLENOHEPATOMEGALY IN BROTHER AND SISTER.

By HERMAN B. SHEFFIELD, M.D.,

NEW YORK.

The family history in the cases under consideration is negative. The parents had four children. The first child was born at full term and is now perfectly well. The same is true of the third child. The second child (see Figs. 1 and 3*) was apparently normal at birth. During infancy she suffered from gastrointestinal disease which left her delicate and subject to rachitis up to about two years of age. When about two and a half years old she was afflicted with bilateral submaxillary adenitis which terminated in suppuration, requiring free incision and drainage, and healed with difficulty. Her abdomen was always large. As she grew older the abdominal enlargement assumed greater dimen-

Fig. 1.

sions. Figure 1 shows the size of the spleen and liver when the child was about four years of age. When the girl came under my observation she was about eight and a half years old. The abdominal contour (see Fig. 3) resembled that of a pregnant woman approaching delivery. Palpation revealed a uniform hard mass occupying almost the entire abdominal cavity. The spleen could be mapped out spreading across the abdomen to the right inguinal region, taking a sort of semicircular course, while the liver extended downward and forward, almost filling the area left vacant by the spleen (see Fig. 3). Firm compression of the abdomen produced slight dyspnea, undoubtedly by indirect upward pressure upon the thoracic contents. Otherwise the child was free from discom-

*A few of the photographs reproduced in these Pediatric Memoranda have also been used for illustration in the author's "Modern Diagnosis and Treatment of Diseases of Children"; F. A. Davis Co., 1911.

fort. Her general appearance was excellent. She was quite stout, always happy, and, notwithstanding the heavy encumbrance, well able to roam about with celerity. Examination of the heart and kidneys proved negative. Careful examination of the blood at the New York Postgraduate Laboratory

Fig. 2.

disclosed the following: Hemoglobin, 75; red blood cells, 4,400,000; white blood cells, 17,500; polynuclears, 57½ per cent.; lymphocytes, 25 per cent.; large mononuclears, 15½ per cent.; transitionals, 2 per cent.; eosinophiles, 0.

The blood count thus eliminating any grave primary blood disease, there were only two other conditions to which the peculiar spleen and liver enlargements could have been attributed, viz., syphilis or amyloid degeneration. As at that time the Wassermann reaction was but little thought of and not within easy reach, the equally efficient therapeutic test was promptly resorted to instead. Antisyphilitic treatment was vigorously employed for two months without the slightest improvement in the child's condition, and, hence, given up. The history of marasmus, gastroenteritis, and the presence of suppurative foci all seemed to warrant the assumption that amyloid degeneration was here dealt with, and it was, therefore, decided to place the patient upon general tonic treatment and to await further developments. The patient never returned thereafter, but I have learned about six months ago, when the second child was brought to me, that she died suddenly two years later with symptoms of rupture of the spleen and intestines (profuse intestinal hemorrhage) and collapse.

Her three-year-old brother came under my observation last April. According to the mother he was apparently perfectly well at birth and remained so up to three years of age, though for some time previously the mother had noticed that his abdomen was unusually large. A few days before consulting me the child suffered from an attack of indigestion and was taken to Dr. J. Gutfreund for treatment. The doctor, recognizing the seriousness of the case in question, kindly referred it to me for diagnosis. As can readily be seen from the accompanying illustrations (Figs. 2 and 4) the topography of the liver and spleen resembles closely that of his sister (see Fig. 1). He was generally well developed and, like his sister, was free from any discomfort. Medicine having since the first case become enriched by two pathognomonic tests, *i.e.* the Wassermann and tuberculin reactions, my anticipation of soon lifting the veil of diagnostic mystery in the second as well as first case rose to the highest pitch of enthusiasm, and so much greater was my disappointment when I found the next day that the patient failed to respond to the von Pirquet test, and learned a few days later, from Dr. I. J. Levy, that the Wassermann reaction proved negative. Examination of the blood by Dr. N. Kruskal brought forth the following information: Hemoglobin, 65 per cent.; red blood cells, 3,100,000; white blood cells, 8,900; polymorphonuclears, 69.8 per cent.; lymphocytes, 24.4 per cent.; large mononuclears, 2.5 per cent.; eosinophiles, 2.8 per cent.; mast cells, 0.3 per cent.; myelocytes, 0 per cent.; no plasmodia.

While the blood picture differed considerably from that of his sister, yet it showed nothing tan-

Fig. 3.

gible to elucidate the diagnosis. Armed with all the scientific data obtained I took the patient over to our "grand old man," Dr. A. Jacobi, for consultation. After going over the case very carefully the doctor humorously remarked that it was one of the cases of large spleen and liver that every author

describes under a different name. He suggested the administration of large, rapidly increased, doses of arsenic until its full physiological effect had been obtained. The treatment was continued for about two months (reaching a dosage of 20 drops of Fowler's solution three times a day) without the

Fig. 4.

slightest beneficial influence upon the splenic and hepatic enlargement. I next referred the case to Dr. S. Flexner. He was unable to suggest any particular mode of treatment but very kindly called my attention to Drs. Brill and Libman's paper on two cases of "Primary Splenomegaly" (Gauchet) which bear a close resemblance to those under consideration.

Disappointed in the diagnosis as well as treatment, I directed the mother to go with the child to the country.

127 West Eighty-seventh Street.

THE HEALED TUBERCULOUS LESION FROM A LIFE INSURANCE STANDPOINT.*

By GEORGE PARKER, M.D.,

PEORIA, ILL.,

MEDICAL DIRECTOR, PEORIA LIFE INSURANCE COMPANY.

The question of tuberculosis has been a serious one to insurance companies from their incipiency. The prevalence of this disease and the mortality resulting therefrom is the reason. The U. S. Census Reports give tuberculosis as a cause of more than 10 per cent. of the death rate, and about 150,000 persons die yearly in the United States from this disease. The occurrence of tuberculosis is, however, much more frequent than these figures show.

We gain our most comprehensive knowledge of it from post-mortem statistics. Naegli of Zurich found tuberculosis present in 90 per cent. of bodies examined. Burkhardt of Dresden found about the same percentage. Beitzke of Berlin, who examined 1100 bodies at the Charité, gave 58.2 per cent. in persons over fifteen years of age, but he omitted puckered scars of pleural adhesions at the apex and miniature fibrous nodules 2 or 3 millimeters in diameter found in the lungs and pleura. Naegli and others hold that these are tubercular. Prof. Harbitz of Norway says it is generally conceded that it is possible to demonstrate tuberculosis or traces of it in from 40 to 60 per cent. of cases. An anaylsis of 1,000 consecutive autopsies by Adami and McCrae gives a comprehensive idea of the incidence of the disease, its localization and its tendency to heal. They found evidences of past or present tuberculosis in 417 bodies, or 41.7 per cent.

(1) Healed lesions were found in 151 cases, or 36 per cent. Calcification and fibrosis with no caseous material or other evidence of latent or active disease. Average age, 46.2 years. Most frequent site: Lungs, 100 cases; thoracic glands, 45 cases; peribronchial, 38 cases.

(2) Latent, 93 cases. Show caseous or calcariocaseous foci; apparently quiescent and localized. Average age, 38.7 years. Most frequent site: Lungs.

(3) Early active tuberculosis, 22 cases. Evidence of disease becoming active from a latent site. Progress at time of death was inconsiderable. Death due to other causes. No average age given.

(4) Generalized, 43 cases. Diffuse infection of many organs. Average age, 19.3 years. Most frequent site: Lungs, 95 per cent.

(5) Pulmonary, 85 cases. Actual cases of phthisis, although it may terminally be in many other organs. Average age, 36.6 years.

(6) Tuberculosis of bones, 13 cases. Primarily in bones or joints, whatever be the final dissemination of it. In 8 cases lungs affected, in 3 cases pleura affected, in 6 cases thoracic glands involved. Average age, 26 years.

(7) Genitourinary, 10 cases. Tuberculosis manifest elsewhere in every case, but the genitourinary system the most advanced and important lesions. Average age, 31.9 years.

This short review teaches the following: (1) That the majority of all applicants applying for insurance have either active or healed or latent tuberculosis. (2) The post-mortem findings prove conclusively that tuberculosis can heal. (3) That the average age of the healed lesions in Adami and McCrae's 1,000 autopsies was 46.2 years and of latent cases 38.7 years, and that the average age of the active cases was less than that of the latent.

Bearing in mind these facts, let us pass to a discussion of the different forms of tuberculosis that will interest us from a life insurance standpoint.

I would make the following classification: 1. Pulmonary. 2. Bone and joint lesions. 3. Glandular. 4. Genitourinary. 5. Skin. 6. Fistula.

Under pulmonary, pleurisy, bronchitis, hoarseness, hemoptysis and such tuberculous vagaries as malaria, neurasthenia, overwork, indigestion, fever, anemia, subject to colds, etc., claim our attention. In deciding upon the acceptance of a case giving a history of pleurisy, the first question

*Read at the semi-annual meeting of the Medical Section of the American Life Convention at Pittsburgh, Pa., September 20, 1911.

that enters our mind is, Was it a tubercular pleurisy? The majority of all cases are tuberculous—witness the following five points in proof:

(1) Post-mortem evidence shows unmistakable proof and tubercles have even been found in acute cases thought to be rheumatic.

(2) Animal experimentation: Aschoff—68 per cent. of animals inoculated from cases of serous pleurisy succumb to tuberculosis. Le Damany—86 to 96 per cent.

(3) Cytodiagnosis. Mononuclear leucocytes predominate.

(4) Positive tuberculin reactions.

(5) Subsequent history. (a) H. I. Bowditch—Of 90 cases followed 30 years, 32 developed tuberculosis. (b) Hedges—130 cases, with effusion, followed 7 years, 40 per cent. became tuberculous. (*c*) R. C. Cabot—221 cases, followed 5 years, 117 developed or died from phthisis. (*d*) Hamman—562 cases; 167 of these, or 29.7 per cent., became tuberculous. We thus have definite proof of the tuberculous origin of pleurisy.

The next question of importance is that of a primary or secondary pleurisy. In exceptional cases it is primary, but it is most frequently an extension from a tuberculous lung or from peribronchial glands. That pleurisy heals is shown by the large number of pleural adhesions at autopsy. In considering a former pleurisy, we are asked to pass upon a case which is clinically well and may have been well for a number of years, but in view of the pathology it should be passed upon as an applicant having had tuberculosis of the lungs or peribronchial glands at the time of the pleurisy, unless it can be definitely proven otherwise. When a history of bronchitis or "cold on the chest," pneumonia, or hoarseness, is obtained, it must not be forgotten that these may be symptomatic of a pulmonary tuberculosis and suspicion must be aroused by (1) duration of the attack, (2) frequency of the attack, (3) family history, (4) weight, (5) other symptoms of tuberculosis.

A previous tuberculosis may come in on an examination blank as malaria, neurasthenia, overwork, indigestion, fever, anemia, grief, etc. These terms are of especial interest in light weight subjects.

The symptom of hemoptysis is closely linked with tuberculosis of the lung. It is diagnostic in a large number of cases, as shown by the following statistics: (1) Ware—Private practice. Of 386 cases, 324 showed pulmonary tuberculosis. (2) Franz Stricker—Prussian army. (*a*) Of 480 cases coming on without recognizable cause, 417 or 86 per cent. were tuberculous. (*b*) Of 213 cases coming on during military exercise, 75 were tuberculous. (*c*) Of 24 cases following trauma, 7 were positively tubercular and 6 very probably.

That hemoptysis can occur without other evidences of the disease is a positive clinical fact, and the following statistics show its frequency as an initial symptom: (1) Galbraith—*Practitioner*, 1907. Of 150 cases, 26 per cent. showed hemoptysis with no physical signs. (2) Coffman, *New York Medical Journal*, Feb. 2, 1907. Of 256 cases, hemoptysis 8 per cent. (3) Anders—Report at last International Congress for Tuberculosis. Of 3,010 cases an initial symptom in 9.1 per cent. As an early symptom, Anders states that of 2,084 cases, 1,439 of 68 per cent. showed hemoptysis in the first stage and early part of the second, or that of softening and ulceration.

The mortality of previous cases of hemoptysis is shown by the following: (1) Combined experience of Washington and National Life—69 cases: 27 deaths from consumption, 39.13 per cent.

(2) Actuarial Societies—Percentage of actual to expected deaths: Years 15-28, 136.6; 29-42, 110.6; 43-56, 105.2; 57-70, 84.8; 15-70, 107.7.

(3) Experience of a large old line company as given to me in a personal letter from the Medical Director: Of somewhat less than 500 cases—exact number not stated—insured between 1897 and 1908, there was a mortality of 14 points above the general average of the company on all its business for the same period. Cases accepted after at least a seven-year interval. A higher mortality was shown in the younger ages.

In regard to bone and joint tuberculosis, if we had in these lesions a primary localization to the bones and joints it would be much easier to handle them from an insurance standpoint, but pathological lesions teach us that in a great majority of cases it is a secondary lesion. Köenig is perhaps the greatest authority on this subject, and he states from his experience in post-mortem work that 79 per cent. of bone and joint tuberculosis is one of multiple foci. From our point of view, then, it is proper to consider bone and joint tuberculosis as a single manifestation of a multiple infection.

It has also been proven (Carless) that articular tuberculosis is more likely to be associated with pulmonary complications. That tuberculosis of bones and joints heals clinically is well known. Pathologically, the process may become encapsulated with fibrous tissue and eburnated bone, but Köenig has never observed complete disappearance of the tuberculous tissue. For this reason recurrences after clinical healing are frequent, especially after trauma. In fact, in no other disease is apparent healing more frequent than in tuberculosis of the bones and joints. The latent life or vitality of the tubercle bacillus in an encysted focus is well known, *e.g.* a woman at age 10 gave a history of a tubercular ankle, with apparent perfect healing, a free interval of 60 years, and then practically at the end of life, and after a slight injury all symptoms returned, and so rapidly that the foot had to be amputated, and in the lower end of the tibia an old tubercular focus with sequestra was found.

Köenig does not deny that healing with scar formation is possible, but if the tubercular process in the bone has produced a caseous sequestrum, this healing will always be apparent only, and recurrence is possible at any later interval after slight trauma. These facts make the ultimate prognosis in these cases unfavorable. Some authorities claim that in such cases there will be a recurrence within fifteen years, others before the age of 45. Billroth, after 16 years of observation, states that 27 per cent. of all cases of tuberculosis of joints die of tuberculosis. Köenig found a mortality in four years of 16 per cent. of 117 cases operated upon.

In 1903, 34 companies examined a number of applications where the applicant had suffered from hip joint disease, and the mortality was 28 points above the fair average risk. The percentage of actual to expected deaths, as given by the actuarial societies, in the case of hip joint disease, averages 127.9. The percentage was higher below 42 years of age, being 132.3.

Under the head of glandular tuberculosis we have to deal mostly with that of the cervical lymph glands. This localization of tuberculosis is most

common between the ages of 3 and 10 years, so that at the insurable age a number of years will have elapsed since the disease was active. Tuberculosis of the cervical glands differs from that of the bones and joints in that at first it is frequently the only tuberculous lesion in the body, being a direct infection from the mouth and throat. While local at first, however, it does not necessarily follow that it remains so, for it has been estimated that pulmonary and other tuberculous infections follow it in more than 25 per cent of the cases. As the course of tuberculous cervical glands is usually a prolonged one, it follows that the sooner they are removed by radical operation the less probable it is that multiple body foci will develop, and the more favorable is the future prognosis.

It is difficult to estimate the number of complete and permanent cures following radical operations. Dowd of New York, at the last Tuberculosis Congress, reported 275 cases. Among 54 cases observed for periods of from five to thirteen and a half years, 53, or 98 per cent., were apparently cured, in vigorous health, having either no palpable glands in the neck or only such small hard ones as were believed to be hyperplastic and not tuberculous. They were also free from evidences of tuberculosis in any other part of the body. A second group, 42 cases, followed 3 to 5 years—37 apparent cures, or 88 per cent. A third group, 87 cases, followed 1 to 3 years—83.8 per cent. apparent cures. A fourth group, 92 cases, followed less than a year, 85 per cent. cured. These statistics would indicate that those who have passed five years in good health since their operation need have little fear of serious recurrence.

Wohlgemuth claims 70 per cent. of cures after radical operation; Hobel, 68 per cent.; Van Norden, 62.4 per cent.—an average, then, of 65 per cent. in 309 cases. The prognosis after operation is more favorable in children than adults. It would seem from the above records that cases giving a history of early radical operation by a competent surgeon, before the infection became localized in other regions, as the lung, would give better results as to mortality than those that have healed without operation.

In discussing tuberculosis of the genitourinary system, I wish only to mention tuberculosis of the kidney and testicle. They are nearly always secondary to some other focus of infection. Cases of tuberculosis of the kidney in which nephrectomy has been done have no insurance value, but some of them recover and remain well for a number of years. Kröenlein has recorded health 18 years, and Israel 15 years, after nephrectomy for tuberculosis. Concerning tuberculosis of the testicle, apparent cures are recorded. Keyes in Annals of Surgery, June, 1907, says in 14 per cent. of cases. Relapse, however, takes place in the opposite testicle within a few years in 8 or 9 out of 10 cases. This large percentage of relapses would exclude the apparently healed lesions from an insurance standpoint.

In regard to skin tuberculosis: Here, as in other tuberculous lesions, systemic infection is liable to occur. In lupus, recurrences after apparent cure are frequent. Besnier states that 2 per cent. of his lupus patients died of consumption. Bender found that in 159 cases of cutaneous tuberculosis 62.3 per cent. showed present or past evidences of tuberculosis. Hereditary predisposition was noted in 33.3 per cent.

Fistula *in ano* is definitely known to be tuberculous in 40 to 50 per cent. of all cases. Bacilli have been demonstrated in the scrapings and in the tissue removed. Whether it is primary or secondary is the point of doubt. There is a much more general agreement as to the percentage of fistula occurring in the tuberculous, viz., 1 to 5 per cent. The fact that the presence of the bacilli in a fistula is so much more frequent than the occurrence of fistula in tubercular subjects makes it very probable that primary tuberculosis does occur in fistula. Steinthal states that 10 to 14 per cent. of those having tubercular fistula suffer from tuberculosis of the lungs. That tuberculous fistulæ remain cured after operation is certain, but the number in previous years is not so large. Tuttle says that a large percentage, if not a majority, of the cases of fistula operated upon in hospitals and treated by general surgeons are failures so far as cure is concerned. Of 2,196 cases less than 45 per cent. are claimed to have been cured.

One of our largest companies stated to me in a personal communication that in somewhat less than 500 cases insured between 1893 and 1908, they had a mortality of fourteen points above the general average of the company on all its business for the same period. I believe, however, that these results are especially unfavorable. If the fistula appears to be primary, and if the fistulous tract is thoroughly excised, and not simply slit open and curetted, it should heal permanently in almost all cases. C. U. Collins of Peoria gave me the records of 19 cases which he was able to trace. These were all cases in which the fistulous tract was excised, except two. They all reported no recurrence and that their present health was good. Eleven of the cases were operated upon more than four years ago. The series dates from 1896 to 1911.

At present there is a lack of statistical material from which to construct clear and definite rules for the acceptance of lives impaired by a previous tuberculosis. Some 42 companies are now engaged in preparing a combined statistical report which will include healed tuberculous lesions. The number of cases here will be large enough to be of value.

It is hard to know just how long healed tuberculous patients live, because it is almost impossible to follow them to the end of their lives. The most exact figures we now have are those coming from the well organized sanatoriums of the country. There is no doubt that the most favorable results in tuberculosis to-day are obtained from sanatorium treatment, and the end results in their incipient cases will give us a good idea as to the prognosis of healed tuberculosis.

N. D. Bardswell, Medical Superintendent of the King Edward VII Sanitarium, gives the condition in 1909 of 241 cases under treatment during the years 1901 to 1905. Of this number 62 were incipient cases, of which there were: Well, 46, or 74 per cent; alive, 1, or 1.6 per cent; dead, 11, or 17.6 per cent; lost sight of, 4, or 6.4 per cent. By well, he means so far as patient can tell he is in very good health and able to do normal daily work. Such a condition, however, is compatible with arrested tuberculosis. Bardswell, from his sanatorium experience, states that "pulmonary tuberculosis is a disease with a strong tendency to relapse, and the only true test of cure or arrest is the test of time."

Prof. Karl Pearsons worked out the mortality

experienced by the above 241 patients treated in Bardswell's Sanitarium. The following is a synopsis of the results in which the number of deaths expected has been calculated from the latest census tables after making proper allowance for age incidents:

	Actual No. of Deaths.	Expected No. of Deaths.
Incipient Cases—		
Males	8	1.9
Females	3	0.8
Moderately Advanced Cases—		
Males	24	3.4
Females	10	1.1
Far Advanced Cases—		
Males	46	1.1
Females	29	0.9
All Cases—		
Males	78	6.5
Females	42	6.2
Cases Apparently Cured or Arrested—		
Males	14	4.3
Females	4	1.2

From these figures you see the actual number of deaths was far greater than the expected number.

Lawrason Brown, at the last International Congress on Tuberculosis, presented some interesting figures from his experience at Saranac Lake. Taking the general population as a measure of what should be expected, he found for those discharged apparently cured that at the end of 5 years 94 per cent. of the expected are alive; at the end of 10 years 86 per cent. are alive; at the end of 15 years 89 per cent. are alive. The patients have a death rate at first twice, later about three, times that of the general population, a figure which is reduced after 8 or 10 years. In fact, from 11 to 20 years, inclusive, after discharge, the average death rate for these patients is 5.9 per 1,000, or only one-third to one-half of the expected death rate among the general population. The data, however, upon which this latter rate rests are too small to afford any considerable degree of approximation.

The Winyah Sanitarium, Asheville, N. C., gives the final results in 602 cases of pulmonary tuberculosis discharged 2 to 10 years ago, the results being concluded on December 31, 1906. Of these 171 were early or incipient. Of those cases discharged from the years 1897 to 1898, 14 cases were traced. Of these, 12 were living and in good health, the permanent result percentage being 85.7.

From 1899 to 1900, 37 traced, and all living and in good health, 100 per cent. From 1901-1902, 40 traced, 38 in good health, 88.4 per cent. From 1903-1904, 44 traced, 40 in good health, 88.9 per cent. A total of 132 cases traced, and of these 127 living and in good health, 91.4 per cent. The results for the moderately advanced and advanced cases are given in the Sanitarium Report for 1905 and 1906. The above results are based upon the patients' statements that they are in good health, and not upon critical examinations. Specific medication was used in all cases.

Dr. Carl von Ruck of the Winyah Sanitarium, in a personal communication to me, has applied his experience to the question of life insurance. He would accept:

(1) Early cases having had sanatorium and specific treatment combined that have recovered at least two years prior to applying for insurance, and that have the following conditions present: (*a*) They must have had no signs or symptoms for past two years, and none at present. (*b*) Normal weight. (*c*) An examination of the blood by a competent observer must still show the presence of antibodies, at least twice in amount of what is found in the serum of such who were not treated with specific remedies, *i.e.* specific agglutinins 1:100 and ambocepter 1:20.

(2) Early cases, after 3 to 5 years, in whom the blood shows only about one-half the degree of specific resistance as shown for enduring results after two years—and in whom the same conditions as in the first group were present.

(3) Early cases without blood examination after five years of apparent permanency.

(4) As fair risks cases who have apparently recovered from a further advanced stage, in which destructive changes were present, and which have obtained healing and cicatrization, the results of which may have led to retraction and fibrosis in one or both apices. In such cases he would limit the risk not to exceed two or three thousand dollars, and this only after an apparent permanency of from three to five years. He rates these as fair because there are not infrequently encapsulated caseous foci which may become active under the influence of non-tuberculous incidental inflammatory diseases of the air passages.

He closes his communication by saying: "In complete recovery, as shown in early stage cases, by absence of all physical signs, and after two years, with good nutrition and continued specific resistance, I really believe the case would be unconditionally a good risk, for you can then eliminate the probability of an outbreak of a possibly overlooked latent focus and the prospect of a loss from phthisis at a later period."

Dr. Lawrason Brown, resident physician at the Adirondack Cottage Sanatorium, Saranac Lake, has also expressed his views to me. His experience leads him to believe that when a man once has tuberculosis he is never in the same condition that he was before. He thinks some rates might be made for patients who have fully recovered from tuberculosis and have been well, living under the ordinary conditions of life for a period of five years. He does not believe that the tuberculin tests, agglutination, etc., will prove of any value whatsoever in determining the advisability of granting insurance. The opsonic index taken before and after exercise may prove of some value. It may be sufficient to know what a person's temperature is before and after the exercise test.

He is of the opinion that it is a foolish thing for companies to refuse insurance to a man who has had tuberculosis and lives in a good climate, while they accept applicants who live in ordinary climates which may or may not be suitable. His experience teaches him that the patients who recover and live in the so-called health resorts remain well, while those who return home are more or less uncertain. He thinks the prognosis in tuberculosis is notoriously uncertain and that time is the only true test as to the efficiency of permanent arrest. He believes in the cases permanently arrested the patients must take the greatest care of themselves, and for this reason he thinks that a patient makes a much better arrest who is stolid and careful than one who is quick, impulsive, or neurotic to an extreme degree.

F. M. Pottenger, Monrovia, Cal., expressed the following views at the last International Con-

gress for Tuberculosis: (1) Patients may regain their weight and still have active tuberculosis. (2) Absence of all symptoms with signs of a healed process on auscultation affords strong presumptive evidence of cure, but is not absolute. (3) The only reliable test is the tuberculin test. If there are no symptoms or physical signs, and no reaction to ten mg. of tuberculin, one is safe in calling the case cured. If case has been treated with tuberculin, the test is not reliable until six months has elapsed since the last injection. (4) All cured patients should be careful not to subject themselves to any unnecessary strain.

Thus we have the views from three of the leading sanatoriums of America in different parts of the country,—views which represent the best thought of men who have made a special study of the disease and watched their cases closely.

There is no doubt that the advent of up-to-date sanatorium treatment, tuberculin, Bier's treatment, Beck's bismuth paste, and the increasing skill in diagnosis and surgery, will increase the number of cures and make them more permanent; but past tuberculosis at present still falls in the class of substandard risks and must be dealt with accordingly. One of our weakest points, and the one which increases our mortality most, is the incompetent examination of the applicant. This is conclusively proven when we stop to think that tuberculosis costs American Life Insurance Companies nearly $50,000,000 each year. This also means that present day examination requirements are not sufficiently exacting. The substandard risk can be handled with more impunity than the average applicant. He will submit to a stricter examination and more inconvenience than the ordinary applicant.

If such present ultra-insurance methods as tuberculin and the opsonic index tests be used—as well as *x*-ray chest examinations—we may then be able to accept these cases as standard risks. The value of an *x*-ray photograph in a case of previous blood spitting or pleurisy would be of inestimable value, and the time is not far distant when the applicant would not travel far to find a competent radiographer. I present a number of plates taken by Geo. H. Weber of Peoria, showing that it is possible by this method to detect very early changes in the lungs. Even small tubercles can be seen. Larger areas of consolidation are also visible, as well as cavity formation. Healed calcified areas stand out very prominently. It is better to take the radiographs stereoptically, as in single plates shadows are apt to be superimposed. There is no question but what the radiograph shows changes that cannot be detected by physical examination. Without the use of special tests and investigations we must still follow the course we have been pursuing.

In deciding upon the acceptance of an applicant with a past tuberculous history, these points of importance are to be considered: (1) The length of time since the lesion was active. This will vary from 5 to 15 or more years. (2) Freedom from all tuberculous symptoms during this time, with the usual capacity for work. (3) Best weight—weight at time the lesion was active and present weight. (4) Family history and personal association with tuberculosis since that time. (5) Occupation and station in life. (6) Age. (7) Temperature test—evening temperature, temperature after exercise. (8) Pulse rate. (9) Present condition of health as determined by a careful physical examination.

THE ROLE AND METHODS OF PSYCHOTHERAPY IN THE CARE OF THE PSYCHASTHENIA PREDISPOSING TO INEBRIETY.

THE FUNCTIONS OF THE GENERAL PRACTITIONER APART FROM THOSE OF THE SPECIALIST AND THE SANATORIUM.*

By TOM A. WILLIAMS, M.B., C.M. (Edin.),

WASHINGTON, D. C.,

CORRESPONDING MEMBER OF THE NEUROLOGICAL AND THE PSYCHOLOGICAL SOCIETIES OF PARIS; MEMBER OF THE AMERICAN PSYCHOPATHOLOGICAL ASSOCIATION; NEUROLOGIST TO THE EPIPHANY FREE DISPENSARY.

When a person is sodden with alcohol or other drug, and has been so for several months, treatment in a sanatorium is, I believe, more economical, efficacious and rapid than is treatment in his own home. No more need be said here of treatment in the sanatorium. When a patient is in a state of profound mental and physical depression or excitement from chronic imbibition of narcotics, and there is a suspicion of further physical or mental derangement, the need of exact differentiation may demand the services of a neurological specialist. I need not expand this admitted principle. Like the foregoing, it is well known. In neither case would a general practitioner assume responsibility. But a diagnosis is seldom long delayed; and stay in a sanatorium is comparatively short. In each case, however, the after-care of the patient may be long. In the vast majority of cases it should be in the hands of a general practitioner.

It is a pity that few are yet equipped to help the poor sick souls who have taken to drink. If they are not helped, the majority will relapse; and, as a very little help suffices in most cases, it behooves practitioners to become acquainted with the principles with which to guide such patients in their struggles. A few of these I shall try to set down.

The Pathogenesis of Inebriety.—Drunkenness is not an individual disease. Not even are all addicts neurotics; though they generally are.[1] Those who drink from habit, convention, or conviction and could cease if they wished are not subjects for medical care, and do not concern us here. Of the remainder, the largest number, I believe, are persons suffering from feelings of inadequacy for the duties they have to perform. They are "psyschasthenics" potentially, if not as regards active symtoms.[2] Like every one else, these persons have ups and downs; but the downs are often prolonged. The inconvenience, discomfort, and even suffering of their depressions make them seek relief. The means they take depends upon circumstances. If the environment has provided ready access to alcohol, this means may be used to suppress their painful feelings. If, during sickness, opiates have been administered too long to such a person, he may become addicted to their use in order to obtain the exhilaration which again makes life seem worth living. The temporary removal of cravings is only one step toward that which these persons require. It is our duty to ascertain the cause of their addiction, and to remove that. The psychasthenia which is at the root of it must be met.

Of the physical factors in the causation of this I shall not speak at length. Their removal is comprised in the resources of medical art. The most conspicuous part in the physical treatment should

*Read at a meeting of the Mississippi Valley Medical Association, October 17-19, 1911.

be played by the physiological measures concerned in diet, bathing, exercise, and rest.[3] Second in importance to these are perhaps the measures concerned with the internal secretions, in which unfortunately our knowledge is at present deficient.

Psychic Factors in the Treatment of Psychasthenia.—But it is psychic measures which are our mainstay in the reconstitution of these patients' powers. It is true that in very severe cases the giving way to their desolating feeling of inadequacy and obsessions and fears is almost imperative But these cases are less common than those in which the giving way to the feeling has become a habit which has occurred from lack of the proper training in inhibition which most normal people acquire accidentally, perhaps, by force of circumstance. In these patients the physician must do by deliberate intention what has failed to be effected fortuitously. The patient must be reeducated.

The first step must consist in the physician's conveying to the patient the fact that he understands* his mental constitution and demonstrating the nature of his defect and that he is in need of reëducation for its removal. This task is easy to a physician who is trained in psychopathology. But the average man at present would be likely to confuse the patient, and make him sceptical of the powers of medical science in his case. Hence, it is better if the psychodiagnosis and plan of treatment are both made by a pyschopathological expert in consultation. From him the general practitioner ascertains the pathogenesis and the principles and means to be used in reeducating the patient toward the removal of his psychasthenia.[4]

While, therapeutically speaking, every man's impulse or craving to drink or debauch can be destroyed by denudation and attrition, yet, sociologically speaking, it is not always worth while, and the effort needed may be more fruitfully expended otherwise. But in a majority of psychasthenics, when they are otherwise estimable, a reeducation of their perverse craving is both practicable and profitable in the making of contentment out of unhappiness and usefulness to others from a burden to friends.

The Principles (1).—Acquisition of tolerance of the feeling of insufficiency through not being at one's best and highest mental level. (2) Acquirement of the poise which does not hurry, fuss, and bustle in face of heavy work or responsibilities.

A true philosophy of life is here an enormous help, a sentiment of the relative littleness of one's own task and importance. The dread of failure must be eliminated by minimizing to the patient the consequences of temporary lapses into discouragement and inadequacy. He must be shown their inevitableness unless mental gymnastics have strengthened him beyond them.

Isolation is usually detrimental rather than beneficial in psychasthenics. Forced feeding, electricity, baths, massage demand efforts which the physician had better utilize in real therapeutics instead of these shams of helps. These preliminary objects are attained by instruction, persuasion, knowledge. The patient must be taught himself, his psychology, his limitations. His expectations regarding his powers must be corrected. He must know himself biologically, *i.e.* understand his place in the cosmos, his mental machinery as a function of ontogenetic and phylogenetic adaptation.

The relics of false notions, the atavisms of metaphysics and superstition must be eliminated from his creed of life. In other words, he must acquire the rudiments of functional and genetic psychophysiology as we know it to-day.

But all this will often fail to remove suffering or develop self-control, unless further assistance is given in application of methods to overcome vicious mental habits. Fear, worry, anxiety, doubt, moral cowardice, craving or uplift are not removed in all cases by mere philosophical conviction. Practical exercises are required. Thus, the knowledge that a sniffing tic arose from a former crust in the nose would not help a patient to abolish the desire to sniff unless, by organized and systematic exercises to control the desire by inhibiting the act, he put himself to succeed. So a knowledge of why he craves alcohol does not remove the craving. Exercises in control are needed to abolish the psychic state of which the craving is only one expression.

The principle of this is the same as in that of the psychomotor discipline which is used in curing tic. It consists in the frequent concentration for short periods upon simple, easy tasks, which are made more complex and difficult gradually. It is merely a mental and moral gymnastic.

It is in the choosing and adapting of these exercises to the individual that the physician will need judgment. But far more exacting is the maintaining of the patient's attention strictly upon the task. It is so easy in itself that automatic performance is a constant temptation. This is worse than useless of course; but it is most difficult to obviate. The work is really a pathopedagogy.

The Method.—The following exercises give some idea of the method to use. They are in the main taken from the work of Vittoz, who has been very successful in teaching self-control to psychasthenics who have lost it. The exercises can be modified and supplemented at the wish of the physician. But the important matter is not the exercises themselves, but the way in which they are done. The greatest care must be taken that the maximum of attention is paid by the patient to the particular exercise he is doing, in order that the power of concentration may be practised. When this is attained a powerful suggestion is furnished to counteract the suggestion of failure which is dominant in the mental attitude of these patients, who have so often succumbed to the play of depressed feeling. This, however, is only a subsidiary factor; for the real essential is the actually increased power of self-control.

EXERCISES IN CONCENTRATION FOR OBTAINING MENTAL CONTROL.

Each must be done with the greatest intentness and exclusive attention while quiet and alone. About ten minutes every two hours during the day should be devoted to the work.

First Day—(1) For concentration in the con-

*It is taken for granted that the various psychoanalytical methods for discovering the genesis of psychological perturbations are at the clinician's command, and that he understands the significance of the ideogenetic affects which so often determine conduct unrealized by the patient. The mechanism of some of these is discussed by the author in "Notion and Emotion in Traumatic Neurosis," *Journal of Abnormal Psychology*, June, 1910. "Genesis of Hysterical Status in Childhood," etc., MEDICAL RECORD, August 6, 1910. Also by Morton Prince, *Journal of Abnormal Psychology*, and by Freud and his followers, whose methods and data are of great value except when they are vitiated by fantastical interpretations or rendered misleading by observations colored beyond reliability through a forced comformity to a cherished theory as to pathogenesis.

trol of movement: Bend the left arm very slowly with full consciousness of each movement and by willing the act very clearly. (2) For concentration upon impressions of touch: Take in hand a marble, eyes closed. Think of it; (a) size, (b) contour, (c) smoothness, (d) consistency; each separately. (3) For concentration upon impressions of hearing: Listen to the tick of a watch for thirty seconds as to—(a) loudness, (b) musical note, (c) regularity, (d) grouping of sound into series. (4) For concentration upon impressions of sight: Look at a marble, thinking of the various properties ascertained by touch, as well as its color.

Second Day—(1) Bend the right arm very slowly with full consciousness of each movement and by willing the act very clearly. (2) the same as (2) above, substituting a cotton reel for the marble. (3) Listen to the street car as to the same qualities. (4) as (4) above, substituting a cotton reel for the marble.

Third Day—(1) Same as (1 above) with left leg. (2) Same as (2) above with a pencil. (3) Repeat (3) above in imagination. (4) A stating as to the preceding character as well as its esthetic.

Fourth Day—(1) Same as (1) above with right leg. (2) The same as (2 above) with a small bottle. (3) Repeat in imagination. (4) Same as (4) above, substituting a picture.

Fifth Day—(1) Bending the trunk forward. (2) Repeat (2) without the objects. (3) Repeat (3) in imagination. (4) Repeat (4) from memory.

Sixth Day—(1) Bending the trunk to the right. (2) Repeat (2) without the object. (3) Repeat (3) in imagination. (4) Repeat (4) from memory.

Seventh Day—(1) Bend trunk to the left. (2) Repeat (2) without the objects. (3) Repeat (3) in imagination. (4) Repeat (4) from memory.

When perfected, each exercise can be done in imagination by intense concentration.

From the indifferent matter which forms the exercises, the patient proceeds to attempt control in matters of the daily life. The physician first selects matters into which the least feeling enters, and gradually imposes more and more difficult exercises, until finally temptations are deliberately chosen, in order that practice in their conquest may be given.* Until this stage is reached, the patient must be protected from temptations at least during the period when his mental level falls.

To do this, I have found it sufficient that the patient be imbued with the need of immediately communicating with his physician when the psychasthenic phase occurs. It is then usually easy to carry him through this until he recovers from his depression. He is only longing for moral support; and his lack of will at these times is satisfactorily compensated by that of the physician, by whom his occupation during the next few hours should be directed. It is not necessary that the physician do this in person; but he must know, by a study of his patient, what is most suitable under the conditions of each case.* The patient usually leaves buoyed up with the will to undertake what he has been directed to perform; and, in the performance, his aboulia and feeling of insufficiency generally vanish quickly.

*Of course the method here outlined is only one of the applications by which can be carried out the principle of invoking the attention toward concentrating the mind in a desired direction. Others, each successful in certain situations, are: (1) A reorientation of ideas, as by religious conversion; (2) the learning to ignore one's physical sensations, as by adopting Christian Science or other convenient nepenthe; (3) the emotional appeal of a great affection or the desire for respect of others; (4) the leaning upon another will, as in hypnosis or other so-called suggestive therapeusis. Of these methods, the second and fourth are obviously undesirable, while the availability of the others is not at therapeutic command.

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1758 K STREET.

THE RECOGNITION AND TREATMENT OF GONORRHEAL CERVICITIS AND ENDOMETRITIS.†

BY WALTER T. DANNREUTHER, M.D.

NEW YORK.

IN gonorrheal infections of the cervical canal and endometrium the diagnostic difficulties, tendency to chronicity, danger of complications, and resistance to treatment are far greater than in gonococcal invasions of the female urethra. Notwithstanding the common acceptation that the urethra is the most frequent site of primary infection, personal experience has demonstrated that where either the urethra or uterus alone is affected the latter is diseased three times as often as the former. These conclusions are deduced from microscopical examination of the specimens obtained from every gynecological case encountered in dispensary, hospital, and private practice during the past six years. Another surprising result of these routine microscopical examinations is the frequency with which gonococci were discovered in individuals in whom their presence was unsuspected and would otherwise have been overlooked. Apparently the gonococcus does not discriminate between the lowly and wealthy, young and aged, or dissolute and respectable. Gram negative, intracellular gonococci were disclosed in the uteri of little girls, young women before marriage, married women, and spinsters past the menopause. The method of infection may be traced to a variety of sources. These may be conveniently divided into: 1. Direct, (a) immediate infection by coitus with a male suffering from an active gonorrhea, or (b) delayed transmission by intercourse with a male with a previous acute gonorrhea, existing as an uncured gonorrhea, or recrudescence of a latent posterior urethritis or prostatitis, due either to carelessness or to neglect on the part of the physician. 2. Indirect, (a) unclean and infected towels and bed linen, (b) toilet seats, or (c) dirty and borrowed fountain syringes or douche nozzles. Those infections contracted immediately by a single coitus require no explanation. It frequently happens, however, that a married woman will successfully resist gonococcal invasion for some time and later become infected. Assuming that the husband has a chronic gonorrheal urethritis or prostatitis, this may be due to a renewed activity of the quiescent micro-

*The advantage of the physician seeing the patient is that he can then detect any metabolic or other physical disturbance which may be the source of the patient's craving, in which case physical measures supplant psychiatric.

†Read before the Jersey City Hospital Alumni Association, Jersey City, N. J., September 18, 1911.

organisms or to the lowered resistance of the patient herself, incident to the first puerperium, pelvic circulatory disturbances, etc. Whilst many cases of chronic gonorrhea exist in men because of their own ignorance or neglect, many others are undoubtedly due to the errors or carelessness of their physicians. Thus, the physician who informs his patient that his gonorrhea is cured, without proving the statement by careful and thorough clinical and microscopical examinations, fails to fulfill his duties. Unfortunately there are practitioners who assure their patients that a morning drop is insignificant and will cease spontaneously, or the physician may neglect to strip the prostate and seminal vesicles and submit the secretion to microscopic examination.

Gonorrhea is undoubtedly acquired by innocent women at times by means of soiled linen which has been in contact with the genitals of another infected individual. Neither is infection from a toilet seat exclusively a theoretical possibility. A number of cases have been observed recently in which the infection was undoubtedly transmitted by the seat of a public toilet which had been smeared with the discharge or menstrual blood of a gonorrheic. The logical remedy for this evil is the removal of a V-shaped section from the front of the seat, as is now customary in the toilets of modern department stores and hotels. A woman should be most careful regarding the nozzle of her douche apparatus. It should always be thoroughly cleansed after using and put away so that it cannot be temporarily appropriated by visitors and friends. The physician is accustomed to regard the source of a patient's gonorrheal infection as a matter of indifference, although this is of great importance, if innocent women are to be protected.

The positive diagnosis of a gonorrheal infection depends upon the microscope. The term "leucorrhea," as commonly used, may indicate anything from a slight increase in the normal mucoid secretion to a virulent pyogenic process, and has no significance as a symptom, because of the variety of conditions from which it may arise. When a patient has a vaginal discharge its true character and source must be ascertained, if it is to be of any service as a diagnostic aid. The annoyance of a leucorrhea may be relieved by the use of suitable washes and douches, yet without removing or destroying the origin of the discharge, little will be gained other than a temporary decrease in its quantity. Although the history and symptoms in a given case may be strongly suggestive of an acute gonorrheal infection, the acute cases are not the ones most frequently observed. Even here the diagnosis must always be verified by the microscope, since much the same condition may be produced by the streptococcus, staphylococcus, or a mixed infection. Many women, particularly those newly married, regard a vaginal discharge without other manifestations of trouble as a matter of no consequence and unworthy of medical attention. Acute urethral symptoms will usually cause the patient to consult her physician immediately, but these cases are in the minority, and he is therefore seldom afforded the opportunity of instituting treatment early.* A diagnosis of gonorrheal cervicitis and endometritis should be based upon (1) the history, (2) symptoms, (3) appearance of the cervix and cervical discharge, and (4) microscopical examination of the discharge.

*The Recognition of Gonorrheal Urethritis and Cystitis in Women. MEDICAL RECORD, February 2, 1911.

The history may or may not suggest the probability of infection. Many women will not hesitate to evade or deny the issue, if possible. When the patient acknowledges a previous coitus, followed perhaps by acute symptoms, it may be considered of importance, but the physician's judgment should not be influenced by a negative history.

Since gonorrhea may exist in women as an acute, subacute, or chronic condition, the intensity of the symptoms will vary accordingly. The most prominent sign in all cases is a sudden or gradual increase in vaginal moisture. This may amount to a profuse discharge of thick greenish or yellowish pus, to a constant white discharge, or to what appears to be but an indefinite slight excess of vaginal mucus. Many cases being subacute or chronic primarily, without a preexisting acute process and causing no discomfort, may escape the notice of the patient until accidentally discovered by the physician. A persistent mucopurulent discharge may excoriate the vulva, giving rise to irritation, itching, and a mild dermatitis. Dyspareunia occurs occasionally. The burning on urination in early gonorrheal cases is not usually due to urethral irritation, as in men, but is more often the result of the urine dribbling over the excoriated mucous membrane of the vulva. The peracute cases may be accompanied by severe pelvic discomfort and lumbosacral pain, but these are infrequent. Reflex systemic disturbances are not uncommon manifestations of chronic endocervicitis. Abortion or sterility often follows.

The appearance of the cervix and external os may indicate an infection. In acute cases the cervix may be so diseased as to resemble a cauliflower, covered with offensive pus. In those less acute the mucosa may be swollen, everted, and hypersecreting. In chronic cases erosions of the surface about the external os and distended Nabothian glands are usually found. Hemorrhagic oozing follows slight traumatism.

Irrespective of the presence or absence of a suggestive history, the symptoms and physical signs, the diagnosis of a gonorrheal infection can and must be made by microscopic examinations of specimens of the mucus or discharge. Specimens are best obtained in a little sterile cotton, wound on an applicator. One is taken from within the meatus urinarius, one from the vaginal orifice, and one from the cervical canal. The urethral specimen has been discussed in the paper previously mentioned and will be disregarded here. Occasionally the physician will be mystified by the presence of gonococci in the specimen taken from the vaginal orifice, when none can be detected in the cervical specimen. This is due to gonococcal invasion of Bartholin's glands without infection of the endometrium. Identification of the gonococcus is often difficult and the services of a trained and competent pathologist should be sought whenever available. A single examination may determine the presence of the microorganisms, but should never be deemed sufficient evidence when negative. To promote glandular secretion stimulation by means of the negative pole of the galvanic current applied within the cervical canal, as advocated by Goelet, will prove efficient. The physician should be satisfied only after repeated failures to demonstrate gonococci. The pathological report should mention all the features of the specimen.

Infections of the adnexa and peritoneum are frequent complications of the uterine disease. Not

only may the patient's pelvic organs be partially or completely destroyed, but even her life may be jeopardized. Efforts must therefore be made to prevent extension of the uterine infection. These conditions will be considered separately in a future paper.

The acute cases must be confined to bed and treated like all other pyogenic infections. The emunctories should be kept active and the diet limited. The vagina should be frequently cleansed with large quantities of hot water. Saline solution, boric acid, and weak iodine solutions are suitable for this purpose. The nozzle of the irrigator or syringe should have a single aperture and project a straight, forcible stream. If the mucous membrane surrounding the introitus is gently pinched around the neck of the nozzle, the vagina will be completely distended and satisfactorily flushed. When fully ballooned, the pressure may be relaxed and the fluid permitted to escape. These maneuvers should be repeated until three or four quarts have been used. The ordinary female douche nozzle, with several lateral pin-point holes, is of no practical value, as it fails to wash out the retained pus and secretions from the folds and wrinkles in the vaginal mucous membrane. Intrauterine measures and pelvic operative intervention are absolutely contraindicated, particularly routine intrauterine douching, curettage, and hysterectomy. When the acute process has subsided the case may be considered subacute or chronic.

The subacute cases are more conveniently treated in the physician's office. The cervix is softened and dilated by means of Goelet's uterine electrodes and the galvanic current. When sufficiently dilated the uterine cavity should be flushed through an intrauterine irrigator with a hot watery solution of iodine, one dram of the tincture to a quart of water, or silver nitrate, 1-5000. As the condition improves daily intrauterine injections of iodized phenol (equal parts of tincture of iodine and carbolic acid) or silver nitrate, 1 per cent., are substituted. For this purpose an instrument similar to the Ultzmann syringe is selected, except that the nozzle is longer and pliable and has several lateral holes near the tip. After filling the syringe this is wrapped with cotton and introduced into the uterine cavity. The fluid is injected into the cotton and the syringe withdrawn, leaving the saturated cotton within the cavity and protruding from the internal os. An iodine-glycerin tampon (one dram to four ounces) is inserted to favor depletion and drainage; this the patient is instructed to remove the next morning. The medicated cotton within the uterus is extracted at the next office visit.

In chronic cases diseased Nabothian glands must be punctured, evacuated, and sterilized. This is also an important preliminary to all plastic cervical operations, often unrecognized or neglected. The opened glands and erosions about the os are touched with pure tincture of iodine. The intrauterine irrigations and injections, advised for subacute conditions, given three times a week, may also prove useful in chronic cases. Curettage of the uterus is a much abused and misapplied operation in gonorrheal cases and will seldom effect a cure unaided. To effect a complete cure, it should be followed by swabbing with tincture of iodine and appropriate after-treatment. When curetting for gonorrheal endometritis, the cavity should be curetted with a semisharp and not a sharp instrument. This will express the glandular contents, but will not strip off sections of endometrium indiscriminately. The internal os and cervical canal, however, should be thoroughly scraped with a slender, sharp curette. The freshened surface is then flushed and generously painted with iodine.

It must be ever remembered that absence of discharge is no criterion or evidence of cure, any more than it is in the male under the same circumstances. The patient should not be dismissed until a number of consecutive specimens have all proven negative.

The efficiency of iodine as a germicide was bacteriologically demonstrated by Sternberg in 1883, who found that a 1-4000 solution completely destroyed gonococci in thirty seconds. These findings have been recently substantiated in the laboratory by Post and Nicoll, and amply verified by clinical experience. The writer first reported the results of his experience with iodine as an antiseptic and germicide in surgical, obstetrical, and gynecological practice in 1907. The results obtained in gonorrheal infections in women from the treatment herein outlined have been extremely satisfactory and encouraging. My friend, Dr. Terry M. Townsend, informs me that iodine has proven an utter failure in the treatment of gonorrhea in the male. Why this discrepancy between the effects in gynecological and genitourinary practice should exist I am unable to explain. Suffice it to say that the laboratory observations are fully confirmed by the rapidity with which gonococci are destroyed by this agent in the female.

Gonorrheal cases require as much, if not more, study and attention to detail as do other gynecological conditions. It is a serious error to prescribe a douche and dismiss a patient without determining the source of the trouble and the absence of a specific infection. The streptococcus and staphylococcus are only slightly less harmful than the gonococcus.

It may not be amiss to remind the reader that the subject of gonorrheal urethritis in women has been entirely omitted in the present paper, it having been considered in a previous one.

2030 Broadway.

USE OF IPECAC TO ABORT TYPHOID FEVER.

By WM. LAWRENCE FRAZIER, M.D.,

MOUNTAIN HOME, IDAHO.

Several recent reports have clearly shown the efficiency of ipecac in the treatment of tropical dysentery, when the drug is properly employed. I took the ipecac treatment for tropical dysentery one year ago with results that were entirely satisfactory, and after a number of other proposed treatments had proven non-effective in my case. It appeared to me that it should be equally as efficient in typhoid fever. The following shows the results in six cases treated.

Case I.—Woman 44 years of age. She was seen first on the third day after becoming confined to her bed; the case was diagnosed as typhoid fever on the sixth day of her illness, Widal test being positive. At 8 P. M. of the sixth day she was given fifteen minims of tincture of opium; thirty minutes later she was given thirty grains of pulverized ipecac in salol-coated capsules; the room was made dark and she was required to lie on her right side for two hours, so that the capsules might pass out of the stomach as quickly as possible. In this way vomiting was prevented by getting the ipecac past the stom-

ach without coming in contact with the stomach wall. On the seventh, eighth and ninth days ipecac was given in the same manner, the dose being decreased five grains each day; on the ninth day the dose being ten grains. On the tenth, eleventh and twelfth days the dose was ten grains each day. The highest temperature recorded was 103.8° on the seventh day. The highest recorded on the eighth day was 103.2°. The highest on the ninth day was 99.6°. There was no elevation of temperature after the ninth day. (Note that the ninth day of her illness was the fourth day she was given ipecac.)

Case II.—Man 32 years of age. He was confined to his bed on the third day of his illness. The diagnosis of typhoid fever was declared positive on the sixth day. On the same day ipecac treatment was begun and carried out as in Case I., except that the ipecac was continued until the fourteenth day. The highest temperature recorded was 102.5°, which was on the sixth and also on the seventh day. On the eighth day the highest temperature was 102.3°; on the ninth day, 102.1°; on the tenth day, 102°; on the eleventh, 100.7°; on the twelfth day, 100.6°; there was no fever recorded after the twelfth day, which was the seventh day ipecac was administered.

Case III.—Boy 12 years of age. Five days after he became confined to his bed the ipecac treatment was begun. The treatment was the same as in previous cases except that only five drops of the tincture of opium were given and the ipecac was begun in fifteen grain doses and gradually decreased to five grains and continued in five grain doses until the thirteenth day. On the seventh day his temperature was 103.8°, which was the highest temperature recorded. On the morning of the ninth day he had no fever, this being the fourth day ipecac was given.

Case IV.—Boy 6 years of age. The treatment in this case was a little different from that of the previous cases. Tincture of opium was left out of the treatment and instead of giving one dose of ipecac at night the dose was divided and eight grains were given at night and eight grains in the morning. This dosage was given without reducing the dose from the fifth until the eleventh day. His temperature on the fifth day reached 104.2°. On the sixth day it reached 104.5°. On the seventh day the maximum was 102.4°. On the eighth day at 2 P. M., 99.5°. On the same day, at 9 P. M. it was 98.1°. He had no more fever and the ipecac was given once a day from the twelfth until the fifteenth day in eight grain doses. It will be noticed that in this case the ipecac was begun on the fifth day and that there was no elevation of temperature after the eighth day.

Case V.—Woman 27 years of age. The ipecac treatment was begun on the seventh day that she was confined to her bed. In this case the opium was not given. As in Case IV., the ipecac was given morning and evening; in this case, in ten grain doses from the seventh until the thirteenth day; on the fourteenth, fifteenth and sixteenth days it was given in ten grain doses once each day. The highest temperature recorded was on the sixth day, when it was 104.6°; on the seventh day it was 104.4°; on the eighth day, 104.4°; on the ninth day, 103.9°; on the tenth day, at 8 A. M., 99.1°; at 9 P. M., 97.4°. It will be noticed that in this case the temperature became normal in about seventy-two hours after the ipecac treatment was begun.

Case VI.—Man 28 years of age. The administration of ipecac was begun on the fourth day of his confinement to bed, which was the seventh day of his illness. Ipecac was administered in twelve-grain doses every six hours. At the end of sixty hours he had no fever; ten grains were then given twice each day for a period of three days. The highest temperature reached was on the fourth day of his confinement to bed, when it was 104.3°. On the fifth day it reached 103.6°; on the sixth at 9 A. M., 101.2°, and at 9 P. M., 99.3°. On the seventh day the temperature was normal. The tincture of opium was given in order to prevent vomiting. But it will not always do so when the salol coat becomes broken, as is shown by the occurrence of vomiting in Case II.

It is necessary that each fecal discharge be carefully examined to find whether or not any of the capsules pass without being dissolved. In order to coat the capsules the salol should be heated in a small vessel until it is nearly all melted, the vessel should then be removed from the fire. A long pin should be stuck in one end of the capsule and dipped into the salol; by removing and rotating the capsule the salol may coat it uniformly; this should be repeated until a coat about three times the thickness of the wall of an ordinary capsule is obtained; the capsule is then removed from the pin and dipped in order to coat the point where the pin was inserted.

TRANSILLUMINATION IN LOCATING FOREIGN BODIES IN THE EXTREMITIES.

By MORRIS H. KAHN, M.D.,

NEW YORK.

INTERNE, MOUNT SINAI HOSPITAL.

Transillumination, as an aid in the diagnosis of diseases of the upper respiratory tract, has been extensively employed since its introduction by Voltolini, and its later development by Heryng. In minor surgery and in general medical diagnosis it has a quite untouched and widely applicable field. Especially is it of value in locating foreign bodies in the extremities.

The technique of transillumination of the extremities is simple. A small concealed electric lamp of ½ to 2 candlepower, such as the ordinary pocket lamp, is all that is necessary. A Coakley lamp is serviceable, and a monauricular stethoscope may be used as is done in the examination for hydrocele. The examining room should be totally dark and the eyes accustomed to the darkness before the examination is made. The lamp is then applied to the part to be examined, and the findings carefully interpreted. The light is transmitted through the soft tissues and also the fingers and toes. The web of the hands and feet is readily made translucent, and the palms may also be made translucent either by direct ventrodorsal or by lateral transmission. In adults a little light may be transmitted in the region of the wrist. In children the forearms and even the arms may be transilluminated to a degree depending on their adipose development.

In examining for a foreign body, the latter must be situated between the eye and the source of light, and it must be nearer to the eye than any obstacle in the field. Thus the shafts of the long bones are not translucent. When a foreign body is situated near the surface of a phalanx, that surface should face the examiner, or transillumination must be

made from side to side. Dark markings upon the skin, such as dirt on the fingers, ink stains, iodine or silver nitrate marks, and scabs or secretions become prominently apparent in these examinations. The superficial veins also become visible, but after compression they transmit the light. Folds of skin must be smoothed to admit of uniform translucency.

Because of obvious difficulties, the fluoroscope or the .r-rays are often not available in private practice. Even in hospitals and dispensaries the routine use of these for locating foreign bodies is expensive. Again, time elapses, and a needle fragment may be displaced within a few hours from its original position. Transillumination is, therefore, a ready aid. Splinters of wood are not revealed by the .r-ray, or they may break and large pieces may be left in the tissues unrecognized and form a pus focus. In these cases transillumination is valuable. In examining through an incision, tense connective tissue strands or fascia may impart through the examining probe "the feel" of a foreign body. With the foreign body visibly before one, however, no probing is necessary. The following cases are illustrative:

Case I.—Mrs. E. K., aged 24 years, had never received any injuries to her hands. One hour before she presented herself, while washing clothes, a needle, which had been left in the clothes, stuck into the palm of the right hand, and the point broke. The remaining portion was 2 cm. long. On examination, there was in the palm, just in front of the anterior transverse crease, one inch from the ulnar border, a black pinhead spot, slightly elevated, tender only on deep pressure, and surrounded by an areola one-quarter of an inch wide; no fragment was felt. Transillumination from the dorsum showed a dark line in the palm, 2 mm. long, shown also by illumination laterally from the ulnar border. The needle fragment then extracted was found lying slightly inclined in the antero-posterior axis of the palm. The length was 13 mm., and it was undoubtedly the perspective foreshortening that gave the measurement of 2 mm.

Case II.—Mrs. L. K., aged 40 years. Two hours before, while she was sewing at a machine, the needle pierced the right index finger through the nail toward the ball of the finger. The larger part of the needle was extracted from the back. Examination: Point of entry seen in middle of nail, and point of exit seen on outer aspect of the ball of the right index finger. Transillumination showed a linear shadow extending for 4 mm. backwards from anterior puncture. Under transilluminating light the needle was then extracted by making a small incision and grasping the point with an artery clamp. The fragment was 5 mm. long. In this case, transillumination served a purpose in addition to that of diagnosis. It was under guidance of transillumination that the needle was extracted. This method has two advantages over reflected lighting: First, the object sought for is always in view; secondly, blood is transilluminated and does not obscure the field. Even when no definite history is obtained, there is the possible presence of a foreign body. Moreover, the history is sometimes misleading, but transillumination is a simple means of verification. This is illustrated in the following case:

Case III.—Mrs. G. S., aged 33 years. No injuries to feet previously. About six hours before, while walking barefoot, the patient felt a sharp object stick into the ball of the right foot, and then extracted a needle fragment 2.5 cm. long, which had been submerged about one-quarter of an inch. Examination: Tenderness about the ball of the big toe, but no definite localization; no bleeding; no swelling. A small, dark point was seen where the needle was supposed to have entered. No foreign body was to be felt subcutaneously. Transillumination through the tissues of the ball and the outer portion of the foot showed the entire region clearly; no foreign body was seen. The diagnosis then made was that the eye end of the needle stuck into the foot, and the point broke against the floor. A radiographic examination subsequently made confirmed this diagnosis.

Case IV.—Miss E. M., aged 21 years. When she was six years old a piece of graphite was accidentally introduced into the right middle finger in front of the metacarpophalangeal crease. A subcutaneous nodule was to be felt. Dorsoventral illumination revealed this clearly.

Case V.—Miss J. L., aged 17 years. Twelve hours before, while she was sewing, the eye end of the needle stuck into the radial side of the nail groove of the right middle finger, and broke. The patient believed that a fragment was in the finger. Examination: Slight swelling, tenderness, and redness of inner side of first middle phalanx. Transillumination and subsequent fluoroscopy revealed no fragment.

Transillumination is also of value in general medical diagnosis. It is of use in certain cases of ascites, in hydrocephalus, prepatellar bursitis, in the early diagnosis of capillary venous thrombosis, in the discovery of the tender nodes in the fingertips in infective endocarditis, etc. Its application in detail is apparently unlimited, as will be shown in a future communication.

The Reaction of Agglutination and Precipitation in the Early Diagnosis of Pulmonary Tuberculosis.—Filippo Felici defines agglutination as a loss of mobility and grouping of masses of bacteria free and suspended in a culture medium. Agglutination occurs only with an acute infection and persists for a certain period. From the experiences of the author and other observers it appears that in tuberculosis the power of agglutination may be of importance, not appearing at all in healthy persons. If agglutination occurs in suspicious cases it has positive value as a diagnostic aid. Chronic cases should always be tested by this means. In apparently healthy persons, if it is found positive, it may indicate the presence of a tuberculous process that has lately healed.—*Gazzetta Medica di Roma.*

Physical Demonstration of the Thymus.—Basch and Rohn deal extensively with this subject, appending a bibliography. Their conclusions are as follows: Through the combination of accurate percussion in the mediastinal region, as carried out by a new instrument devised by the authors, and auscultation-percussion and auscultation for friction sounds, it was possible to ascertain the size and quality of the thymus in the child. The author investigated systematically 140 cases, learning thereby that the area of thymus dullness varies according to the age and state of nutrition of the child, and further with the presence of certain pathological conditions. Normally the area of thymus dullness has a rhomboid form. It extends from the throat above to the second or third rib below. Its lateral limits extend through the sternal and parasternal lines. These finds were checked up by autopsy cases.—*Deutsche medizinische Wochenschrift.*

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE NATURE OF NARCOSIS.

THE solution of the problem of narcosis is closely bound up with that of the problem of life itself. The veil behind which is shrouded the mystery of consciousness also hides from the penetrating eyes of science the mechanism that results in the abolition of this most important phenomenon of human life. To the philosopher and psychologist, but no more than to the physician, the problem is a fascinating one, and has led to a veritable maelstrom of speculation. By many investigators narcosis has been identified with inhibition, as to the nature of which a multitude of theories have been proposed. Inhibition has been regarded by Hering as a phase of anabolism; by Gaskell, as an expression of the checking of catabolism; by Lauder Brunton, as the result of interference phenomena in the vibrations in the nerve cells, analogous to similar phenomena in light and sound; by McDougall, as the result of a transference of nerve energy from one channel to another; by Schleich, as the consequence of a "short-circuiting" of the nerve current by the neuroglia; and by Wedensky, as a part and parcel of normal physiological life, usually latent, but frequently made manifest by numerous physical or chemical agents.

In an address before the Harvey Society, October 28, 1911, Max Verworn, the distinguished professor of physiology in the University of Bonn, pointed out that the subject of narcosis has been approached along two different lines of attack. The first of these culminated in a theory which has gained greatest acceptance among physiologists, namely, the theory elaborated independently by Hans Meyer and E. Overton, who found that the narcotic power of a substance depended upon its greater solubility in fats, as compared to its solubility in water, which would explain its ability to penetrate into the cell whose wall is rich in lipoids. But the Overton-Meyer theory, while it may explain how the narcotics gain entrance into the intricate recesses of the cells, fails to throw light upon the most obscure of all physiological phenomena, the inhibition of vital activity.

The explanation must be sought in the second line of attack. Cláude Bernard attributed narcosis to the coagulation or semicoagulation of the protoplasm. This was later demonstrated by Binz in unicellular organisms subjected to the influence of narcotic drugs. The speaker pointed out that narcosis is characterized by a stage of depression or retardation of vital activity. This retardation may be the result of heat or of cold, of fatigue, suffocation, intoxication, an osmotic pressure that is too low, and restriction of food. Not all the forms of depression are the same, but there is a tendency toward one type, namely, the depression caused by the poverty in oxygen. Fatigue is a manifestation of relative oxygen-starvation, while in heat depression the supply of oxygen can not keep pace with its consumption. In hydrocyanic acid poisoning it is the suppression of oxygen that produces death in the aerobic organism.

If narcosis is related to the internal respiration of the tissues, then the investigation of the methods in which the latter is accomplished would aid in throwing light upon the former. Attention is centered in the oxidases, or oxygen carriers, which activate the oxygen, drawing it from the complex molecules in which it is stored, and making it available for instant use. Oxidative catabolism of the cells proceeds, in the shutting off of the external oxygen supply, until the stored up oxygen is exhausted, and is succeeded by nonoxidative catabolism. Verworn advances the hypothesis that narcosis is similar to an interference with the oxidative processes. He has been able to show experimentally that fatigue in the spinal cord of the frog may be removed by irrigating the cord with arterial blood of the ox, in this way providing a fresh supply of oxygen. During the process of narcosis the cells are not able to utilize the oxygen that may be within their reach. Destructive metabolism may still go on in the nonoxidative form just as it does in the case of asphyxia. The entire symptom-complex of narcosis is identical with that of asphyxia. There is only one point of difference, and that is the time relation. In narcosis the irritability of the cell is suppressed in a few minutes, while in asphyxia this suppression may take as many hours. In asphyxia the power to carry on oxidation is not diminished; the irritability diminishes gradually, depending upon the amount of oxygen stored up in the cell. Narcosis is a form of acute asphyxia, caused by depriving the cell of the power of carrying on oxidation.

The question now arises: In what way does the narcotic act? The explanation must be sought in some stage of the utilization of molecular oxygen. There are four alternatives in this working hypothesis. First, it may be advanced that the narcotic prevents the entrance of molecular oxygen into the cell. This hypothesis can be readily dismissed; for, if the cellular depression were due to the nonpenetration of oxygen, then one would expect the same time relations as in ordinary asphyxia, which is not the case. Second, it may be suggested that the narcotic appropriates the oxygen for its own use. Although it has been shown that narcotics may be oxidized, it is doubtful whether this occurs to any considerable extent. Third, the hypothesis has been advanced, but without proof, that the narcotic blocks the molecules of the cell, preventing the oxygen from reaching them. Fourth, the narcotic may render the oxidases unable to do their work.

This is the most plausible hypothesis, and appears to be supported by the weight of experimental evidence.

As part of this evidence it has been shown that the colloidal metals which act as oxidases lose this property when subjected to the influence of various substances, such as hydrogen sulphide, corrosive sublimate, and hydrochloric acid. The solubility of the narcotics in the cellular lipoids may in some manner deprive the oxidases of their oxygen-carrying powers. This hypothesis would harmonize with the Overton-Meyer theory. Another important point to be considered is the fact that the ganglion cells of the cerebral cortex are the first to succumb to narcosis and are at the same time most sensitive to asphyxia. Thus Mosso, by means of compression of the carotid artery, was able to produce unconsciousness in a few minutes.

The phenomenon of narcosis has been identified with sleep. But the analogy is only a superficial one. Both phenomena are attended by a loss of consciousness, but not every loss of consciousness is sleep. In narcosis the process of oxidation is inhibited, while in sleep this process continues. In fact, the purpose of sleep is to enable the cells to recover from the state of fatigue by the utilization of oxygen—in other words, sleep is a phase of restitution. Verworn's conception of the nature of narcosis is a most ingenious one, furnishing evidence of that clear insight into fundamental cellular processes for which the author of "General Physiology" is so well known. The practical deduction from this hypothesis is obvious: it indicates that narcosis is associated with an interruption in the normal activity of the cells, with a suspension in the process of oxidation upon which the manifestation of life depends. Narcosis verges close on to death.

CARDIOMYOPATHIES.

Myopathies of the heart may be divided into athletic heart so called, constitutionally weak heart, myodegeneration, and fatty heart of the obese, while in the same connection should be considered reflex cardiac disturbances and cardiac neuroses. Myodegeneration is an extensive subdivision which is concerned with both infections and intoxications (tobacco heart, etc.), as well as traumatism. Constitutionally weak heart is a theoretical affection which is in evidence, if at all, in rapidly growing youths.

In the *Berliner klinische Wochenschrift* for October 9 Dr. Hirsch, a woman physician connected with Charité Hospital, Berlin, gives a digest of the literature of cardiomyopathies which has appeared during the past four years. Writers on athletic heart are very largely American or British, although on the continent of Europe considerable research has been made into the heart of the bicycle rider, wrestler, and swimmer. In some sports the prolonged training for an event, rather than the contest itself, is at fault. Predisposition must play an important rôle, as is shown in the case of the girl who died suddenly with a heart hypertrophied from playing basketball. The so-called "cadet heart," which is believed to result from the custom of drilling and marching in closely fitting, heavy, and inelastic uniforms, is not here mentioned by Dr. Hirsch. The belief in an acute dilatation of the heart as a result of overexertion seems to have been dispelled by orthodiagraphic researches. An athletic heart represents a simple hypertrophy from overwork. Weston's recent feats appear to point to the fact that walking in the open air entails none of the perils of athletic heart. That one athlete is active and robust at an advanced age while another is short lived appears to be due both to individual predisposition and to the character of the exercise. A man "made of poor goods" may train himself gradually to feats of strength and endurance, and his early demise cannot altogether be set down to athletic heart.

Under the general management of myodegeneration it is to be noted that morphine is regarded by some authorities as the best heart tonic. Heroine also has advocates. Both these drugs relieve cardiac dyspnea. Rest is much less indicated in a primary myopathy than in myopathy secondary to valvular disease. The discovery made some years ago that an acute dilatation of the heart is very commonly present in acute infectious diseases has been amply verified. Twenty years' study of the pandemic of influenza has shown the influence of the latter in the causation and aggravation of cardiopathies. It must not be assumed that these diseases necessarily set up a myocarditis. True inflammation of the myocardium is due perhaps more frequently to syphilis than to any other infectious diseases. The disease toxins do set up acute dilatation, and while this is usually self-limited, exceptions are not uncommon. The so-called rheumatic nodules which form in the myocardium and prejudice the normal heart action may perhaps occur after other infectious diseases, although this is in dispute. Of myodegeneration from intoxications the principal endogenous type is the thyreotoxic. Of exogenous types those due to alcohol, tobacco, and chloroform (narcosis) are best known. Functional affections of the heart comprise those due to upward pressure of an unnaturally high placed diaphragm, of a stomach distended by gas, etc. The symptoms do not differ materially from those of cardiac neuroses. The heart of the corpulent subject should not be regarded as a necessarily diseased organ.

BABINSKI'S PHENOMENON IN PREUREMIA.

Uremia and preuremia are not usually reckoned among nervous affections despite the presence of well marked symptoms of cortical origin. This is not surprising, because epileptiform convulsions and other evidences of disturbance in the higher nerve centers occur as incidental or terminal phenomena under the most varied circumstances. This is especially the case in severe types of intoxication of any sort, in which the nervous system is involved with other organs of vital importance, some poisons being naturally more neurotropic than others. As our knowledge of uremia increases, however, it presents more and more evidence of a neuropathic character. These cases are usually treated by the general practitioner, who seldom summons a neurologist

in consultation. An expert neurological examination, however, made at a period when uremia is only a possibility, would doubtless often reveal impending symptoms of this condition. The mental faculties are tested as to the degree of attention, perception, memory, etc., and the mental state as to cheerfulness and the reverse. As the sensorium becomes clouded in uremia, these tests in possible preuremia often shed light on what may follow. The field of vision, acuteness of vision, and color and form perception are also investigated. All the well known diagnostic tests of reflexes may be applied, with especial reference to the Jacobssohn finger flexor reflex, the tendon and periosteum reflexes, the cremaster reflex, the phenomena of Kernig and of Babinski, etc.

In the *Münchener medizinische Wochenschrift* of September 26 Curschmann attributes the greatest importance to a positive Babinski phenomenon in preuremia. Considerably before the likelihood of uremia is heralded by increased reflexes, clouded sensorium, etc., he has found a preliminary depression of reflexes, which he discovers to be more constant and characteristic than the increased reflex excitability which may follow it, and along with the extinction of the patellar reflex and other tendon reflexes he finds associated the Babinski phenomenon. Moreover the latter may occur quite alone in preuremia. While the author nowhere uses the word pathognomonic in this connection he clearly believes that the phenomenon possesses the greatest diagnostic value.

Investigation of Sprue.

The suggestion is said to have been made recently by some British observers that there was sufficient resemblance between sprue and pellagra to warrant the surmise that they might be one and the same disease. It is very unlikely that there will be found to be more than a superficial resemblance between the two affections. Nevertheless the report from Great Britain that a thorough investigation of sprue is to be undertaken arouses the hope that our knowledge of this disease will be enlarged. Sprue, or psilosis, is a troublesome and serious affection which may last for years, producing great emaciation and weakness from the persistent diarrhea which is nearly always an accompanying feature. Manson describes it as an "insidious, chronic, remitting inflammation of the whole or part of the mucous membrane of the alimentary canal. It occurs principally in adult Europeans who have resided in warm climates, and is chiefly met with in Ceylon, the Straits Settlements, Java, parts of China, Manila, and occasionally elsewhere. Its origin is unknown, although believed to be bacterial. The Ceylon government has offered the London School of Tropical Medicine a sum of $3,750 to investigate, and it is expected that a further sum of $1,250 will be provided by the Ceylon Tea Planters' Association. Definite arrangements have not yet been made as to who will conduct this investigation, but the mere fact that the investigation is to be undertaken by a member of the London School of Tropical Medicine is in itself an earnest that faithful work will be done. Perhaps the etiology of yet another of the diseases which render tropical climates so harmful to the health of the white man will be discovered and a means of treatment or prevention evolved which will nullify its potentialities for evil.

Constitutional Remedies in Affections of the Eye.

The benefits derived, even in certain nonsyphilitic diseases of the eye, from mercurials and iodides, and the favorable action of tuberculin in ocular tuberculosis suggests the possibility that other substances of general local action may also possess some curative power when given subcutaneously or by the mouth. Antistaphylococcic and antipneumococcic sera have been tried with favorable result in cases of sepsis in the eye tunics and chambers after a bacterial diagnosis has been made. Thiosinamine and stypticin have been tested in injuries of the eye from foreign bodies, with the view of facilitating healing and preventing hemorrhage. The former has been injected into the buttocks, while stypticin has been given by the mouth. The efficacy or non-efficacy of these remedies thus given cannot, however, readily be determined. At a meeting of the Aerztlicher Verein of Frankfurt (*Münchener medizinische Wochenschrift*, September 26) Emanuel considers the entire subject of the effects of constitutional remedies in ocular diseases. The most striking feature of his article is the great field for mercurials in these affections. These are used freely in traumatic affections, including foreign bodies, in sympathetic ophthalmia, as adjuvants to tuberculin, and generally speaking, in all affections in which there is any suspicion of lues. Perhaps in any obscure chronic or subacute affection of the eyes, even in the absence of positive biological tests for syphilis and tubercle, it is wise to submit the patient to a mercurial and tuberculin treatment, for the mechanism of the action of these substances is by no means fully understood and the latter may transcend a merely antidotal function.

News of the Week.

Food Inspection in New York City.—The Department of Health, as a result of inspections and arrests made through the Division of Food Inspection, has brought proceedings against twenty-seven individuals for violation of various sections of the Sanitary Code. It is apt to be thought that all proceedings begun, and convictions obtained, for violations in connection with the sale of food and drugs are the result of prosecutions by the Federal authorities under the Federal Pure Food and Drug Law. While this misapprehension is, perhaps, not unnatural, it sometimes results in failure to appreciate the fact that the local health authorities have full jurisdiction over the matter of foodstuffs offered for sale in the city of New York. Numerous provisions of the Sanitary Code of the Board of Health forbid the sale of food which is adulterated, or in any way unfit for human consumption. These cases, like those which are regularly brought in this court every two weeks at the instigation of the Department of Health, charge violations of these provisions in a large variety of cases where eggs, candy, ice cream, milk, pies, meat, vegetables, frankfurters, and fish have been condemned by the inspectors of the Department.

Conference of Municipal Health Officers.—The eighth annual conference of health officers in the State of New York was held in this city on

Wednesday, Thursday, and Friday of last week. Dr. Eugene Porter, State Commissioner of Health, presided, and the address of welcome was made by Dr. Ernest G. Lederle, Health Commissioner of New York City. The subjects discussed in the first day's session were The Registration of Communicable Diseases, Quarantine in Cities and Rural Communities, Disinfection, and the Control of Syphilis and Gonorrhea. In discussing quarantine Dr. H. S. Swain of Corning scored those physicians, who were still in existence, who would visit a person with contagious disease and go immediately to other patients without taking any precautions in the way of disinfection of self or clothing. Dr. William D. Perkham argued against hard and fast rules governing the manner and length of quarantine in case of a person with contagious disease. Dr. Frederick B. Willard of Buffalo regarded street cars as perhaps the most effective means of the dissemination of contagious disease. They were seldom properly cleaned, he said, and were practically never disinfected. On the program for the discussion of the control of venereal diseases were Drs. Prince A. Morrow, Abram Jakobi, and Edward L. Keyes. On Thursday there was a conference on "Interstate Health Problems," which included the subjects of stream pollution, pure food, and cold storage. In the matter of stream pollution, the enactment of a national law against this practice was urged, and this suggestion was supplemented by Dr. Laurence McCullough of the Ontario Health Department, who advocated the creation of an International Waterway Commission, to prevent the present careless dumping of sewage into the rivers and lakes between this country and Canada. As to cold storage, the recommendation was made that a dated label should be attached to every package of cold storage food. Speaking on the topic of "A Clearing House of Health Departments," Mr. Robert Lynn Cox, counsel for the Association of Life Insurance Presidents, declared that a majority of Health Departments throughout the country were not properly equipped. Hundreds, he said, to whom he had written for copies of their reports, had replied that they were not allowed sufficient money to print reports. In order that the Health Departments might get together for the discussion of general health measures throughout the country, he urged the establishment of such a clearing house. Dr. William H. Guilfoy, Registrar of the New York City Department of Health, read a paper on "Vital Statistics and How to Get Them," and Dr. Charles E. Walton of Cincinnati spoke on the topic of "The Doctor and the Health Officer as Colaborers." On Friday Dr. Simon Flexner spoke on "Research in Public and Private Laboratories," taking as his text the work of the Rockefeller Laboratory and his discovery of a curative serum for epidemic cerebrospinal meningitis. Dr. W. S. Magill, director of the State Hygienic Laboratory, made a plea for the more general and the earlier use of antitoxin in diphtheria. In France, he said, where diphtheria antitoxin was very widely used, the diphtheria mortality was 3 in 100,000, whereas in this country it was 16 in 100,000. On Wednesday afternoon the delegates visited the Budget Exhibit of the New York City Department of Health. On Thursday afternoon the program provided for an inspection of the Quarantine Station on Staten Island, and on Friday afternoon the visiting health officers were conducted through the Rockefeller Institute.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize will be made on July 14, 1912, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and if written in a language other than English should be accompanied by an English translation, and must be received by the secretary of the college on or before May 1, 1912. The prize for 1911 has been awarded to Dr. Francis D. Patterson of Philadelphia, Pa., for his essay entitled, "The Parathyroid Glandules."

Civil Service Examination.—A number of civil service examinations for medical positions have been held in this city during the past week. One of the positions was that of medical inspector of the Board of Health; the salary attached is $1,200, and there was 396 applications. The next most sought for appointments are those of surgeon to the Police and Fire Departments; the salary of the first is $3,500, that of the second $3,300; one examination applies to the two appointments, and the applicants numbered 315. The coroner's physicians have a salary of $3,000 in three of the boroughs and $1,500 in two; there were 118 applicants. The examination for positions of general medical superintendent and medical superintendent of public hospitals, the former having a salary of $5,000, the latter of $3,000 to $4,000, attracted but 25 applicants; and that for deputy medical superintendent of hospitals and farm colony, with a salary of $1,000, was attended by 9 candidates. Candidates for these public hospital positions were not required to be residents of the State of New York, but it was demanded that they be licensed to practise in the State. A curious condition, and one that would bar most applicants, was that the candidates must have been in practice ten years and during that period must have had five years' hospital experience. The conditions for deputy superintendent were five years of practice including three years' hospital experience.

Hospital Distribution.—At the October meeting of the Medical Society of the County of New York a protest was presented on behalf of the Polyclinic Hospital against the removal of the New York Hospital to the river front in close proximity to the former. The Polyclinic Hospital, it was urged, had decided to build on West Fiftieth street because Roosevelt Hospital had given up its ambulance service, leaving the neighborhood poorly provided for. The contention was that the medical and surgical service of that vicinity should be left to the firstcomer and that the New York Hospital should go to the Bronx, where such an institution was badly needed. On the other hand it was asserted that that part of the city is rapidly growing and that its needs would not be met by the 300 beds of the Polyclinic Hospital. A resolution was introduced embodying the protest of the Polyclinic, but was referred to the Committee on Hospitals and Budget.

A Memorial Hospital in Lakewood.—It is announced that a hospital will soon be built in Lakewood, N. J., in memory of Dr. Paul T. Kimball, for nearly forty years a practitioner in that town, who died about a year ago.

Special Study of Pellagra.—The Department of Tropical Medicine of the New York Post-

Graduate Medical School is organizing an expedition to investigate pellagra in the Southern States. The work will start in the spring and is made possible by the gift to the institution for this purpose of $150,000 by Col. Robert M. Thompson and Mr. J. H. McFadden.

The Chicago Surgical Society.—At the annual meeting of this society on October 20 the following officers were elected: *President,* Dr. Frederick A. Beasley; *Vice-President,* Dr. Samuel C. Plummer; *Secretary,* Dr. Allan B. Kanavel; *Treasurer,* Dr. Dean Lewis.

Mississippi Valley Medical Association.—At the annual meeting of this society, held in Nashville, Tenn., October 17-19, the following officers were elected: *President,* Dr. Louis Frank of Louisville; *First Vice-President,* Dr. Albert E. Sterne of Indianapolis; *Second Vice-President,* Dr. F. W. Werner of Joliet, Ill.; *Secretary,* Dr. Henry Enos Tuley of Louisville; *Treasurer,* Dr. Samuel C. Stanton of Chicago. The meeting in 1912 will be held in Chicago.

The Seaboard Airline Railway Surgeons met in annual session in Washington, D. C., on October 17 and 18. The following officers were elected: *President,* Dr. S. C. Benedict of Athens, Ga.; *First Vice-President,* Dr. H. J. Buckey of Portsmouth, Va.; *Second Vice-President,* Dr. R. L. Harris of Jacksonville, Fla.; *Third Vice-President,* Dr. J. H. Miller of Cross Hills, S. C.; *Secretary and Treasurer,* Dr. J. M. Palmer, of Ailey, Ga. The next meeting will be held in Tampa, Fla.

Brookfield, Mass., Medical Club.—At the annual meeting of this society, held October 18, the following officers were elected: *President,* Dr. E. W. Norwood, Spencer; *Vice-President,* Dr. Homer V. Leach, Gilbertville; *Secretary-Treasurer,* Dr. Hyde L. Edmunds, North Brookfield; *Executive Committee,* Drs. E. A. Ludden, Mary Sherman, and L. T. Newhall.

Anson County, N. C., Medical Society.—This society was organized at a meeting held October 16, at Wadsboro, N. C. The following officers were elected: *President,* Dr. J. H. Bennett; *Vice-Presidents,* Drs. Ashe and Ross; *Secretary-Treasurer,* Dr. J. E. Hart.

Wyoming County, N. Y., Medical Society.—At the annual meeting of this society, held at Warsaw October 9, the following officers were elected: *President,* Dr. Martin of Cowlesville; *Vice-President,* Dr. Peddle of Perry; *Secretary and Treasurer,* Dr. Humphrey of Silver Springs.

Vermont State Medical Association.—At the 98th annual meeting of this society, held in Burlington the second week in October, the following officers were elected: *President,* Dr. F. T. Kidder, Woodstock; *Vice-President,* William Lindsay, Montpelier; *Secretary,* C. H. Beecher, Burlington; *Treasurer,* C. F. Dalton, Burlington; *Auditor,* A. M. Norton, Bristol. The next annual meeting will be held in Montpelier in October, 1912.

Cornell University Medical College opened on Wednesday, September 27, with an enrolment as follows: First year, 32; second year, 23; third year, 20; fourth year, 11; special students (work not leading to the degree), 19; doctors of medicine engaged in research, 9; total, 114. There is a loss in numbers as compared with the preceding year which is due to the fact that all matriculants for the degree of M.D. now registered are admitted under the advanced requirements necessitating the prsentation of a bachelor's degree in science or arts, together with something more than one year's work in physics, chemistry, and biology.

The Medical School of Maine, the medical department of Bowdoin College, opened Thursday, October 19, for registration of students. This year marks the 92nd course of lectures given by this school. Two members of the faculty, Dean Alfred Mitchell and Dr. Frederick H. Gerrish, have resigned. The registration is expected to show considerable increase over that of last year, which was 67.

Report from Canal Zone.—During the month of August the deaths from all causes among employees numbered 38, of which 26 were due to disease and 12 to violence, giving an annual average per thousand of 6.27 and 2.90 respectively. The annual average death rate among employees for the month of August of each year is as follows:

1904	13.93
1905	19.97
1906	62.12
1907	27.59
1908	11.39
1909	10.28
1910	13.04
1911	9.17

Among the population of Panama, Colon, and the Canal Zone the rate during August in the previous years is given as follows:

1905	51.05
1906	64.12
1907	33.75
1908	26.65
1909	16.20
1910	19.85
1911	20.31

Among employees the deaths from the principal diseases were: Chronic nephritis, 3; hemoglobinuric fever, 4; lobar pneumonia, 4; malarial fever, 1; tuberculosis, 4; typhoid fever, 1. During the month 19 cases of diphtheria were reported, 14 from the Canal Zone, 3 from Panama, and 2 from Colon, with 1 death. The type of the disease was mild. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

Southwestern Medical Association.—At the sixth annual meeting held in Oklahoma City, Okla., on October 9 and 10, the following officers were elected: *President,* Dr. A. L. Blesh of Oklahoma City; *Secretary,* Dr. F. H. Clark of El Reno.

Westbrook (Me.) Medical Club.—The following officers were elected at the annual meeting held on October 10: *President,* Dr. Charles Haynes of Gorham; *Vice-President,* Dr. Felix Barrett of Westbrook; *Secretary-Treasurer,* Dr. F. L. Ferren.

Lane County (Ore.) Medical Society.—The following officers have been elected for the ensuing year: *President,* Dr. Charles W. Southworth; *Secretary-Treasurer,* Dr. G. L. Beardsley.

Fairfield County (Conn.) Medical Association.—At the 119th semi-annual meeting on October 3 the election of officers resulted as follows: *President,* Dr. William L. Griswold of Greenwich; *Vice-President,* Dr. James P. Gold of Bridgeport; *Secretary,* Dr. Frank W. Stevens of Bridgeport; *Treasurer,* Dr. Philip W. Bill of Bridgeport.

New Bedford (Mass.) Medical Society.—The election of officers at the annual meeting on October 9 resulted as follows: *President,* Dr. Charles Bonney; *Vice-Presidents,* Dr. C. J. Leary and Dr. Edmund F. Cody; *Recording Secretary,* Dr. David D.

Pratt; *Corresponding Secretary,* Dr. Eric St. John Johnson; *Treasurer,* Dr. E. E. Foster.

Second District (Ia.) Medical Society.—The election held at Davenport on October 10 resulted as follows: *President,* Dr. E. H. King of Muscatine; *Vice-Presidents,* Dr. E. B. Henderson of Marengo and Dr. H. G. Reynolds of Clinton; *Secretary-Treasurer,* Dr. John V. Littig of Davenport.

Southern Medical Association.—The annual meeting of the association will be held in Hattiesburg, Miss., on November 14 to 16, 1911.

Obituary Notes.—Dr. Helene Knabe of Indianapolis was found murdered in her apartment on October 24. She was born thirty-five years ago in Germany and came to this country early in life, working her way until she was graduated from the Indiana Medical College in 1904. Before graduation she was appointed instructor in bacteriology at the college, and later was appointed assistant pathologist in the Hygienic Laboratory of the Indiana State Board of Health. She was professor of parasitology and hematology in the Indiana Veterinary College. She was a member of the Indianapolis Medical Society, the Indiana State Medical Society, and the American Medical Association.

Dr. Forrest B. Seymour of Beeville, Texas, a graduate of the Medical College of Ohio, the Medical Department of the University of Cincinnati, in 1889, died at his home on October 7 after a long illness, aged 45 years.

Dr. William H. H. Hagey of Norfolk, Neb., a graduate of the Rush Medical College, Chicago, in 1868, and a member of the Nebraska State and Madison County Medical Societies, died at his home on October 8 of apoplexy, aged 70 years.

Dr. George W. Hogeboom of Topeka, Kan., a graduate of the Boston University School of Medicine, Boston, in 1852, a member of the Kansas State and Shawnee County Medical Societies, died at his home on October 8, aged 79 years.

Dr. George Frederick Jelly, for thirty years State Examiner of the Insane for Massachusetts, died October 24 at his home in Wakefield, aged 68. Dr. Jelly had been in failing health for several months and indications of a nervous breakdown had caused him to resign his office in July. He was graduated from Brown University in 1864, and in medicine from the Harvard Medical School in 1867. He at once began practice in Springfield, making a specialty of nervous and mental diseases. In 1869 he was called to the Waverly asylum as assistant physician and in 1871 became superintendent, relinquishing the position in 1879 to take up private practice in Boston. When the State Board of Insanity was organized in 1898, Dr. Jelly was made its first chairman.

Dr. Samuel A. Helfer of Hoboken died October 24 at his home in that city, in his 68th year. He was born at Budapest, Austria, and was educated at the University of Vienna. He came to America in 1874 and opened an office in Hoboken. He held the office of city physician and acted as physician for steamship companies for many years. Dr. Helfer was decorated by the French Government with the cross of the Legion of Honor and by the Emperor of Austria with the Order of Merit.

Dr. John A. Warner, a graduate of the Albany Medical College of the class of 1847, died in Saratoga October 23. He was 88 years old. Dr. Warner practised medicine in New York for fifty years and retired several years ago.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent)

SOCIETIES OPEN—INSURANCE BILL, CONFERENCE WITH LLOYD GEORGE, FRIENDLY SOCIETIES' MEETING, ETC.—SIR T. OLIVER ON PLUMBISM—ITEMS—OBITUARY.

London, October 13, 1911.

The societies are settling down to the work of the new session. On Monday the Medical Society of London had an interesting presidential address from Dr. Mitchell Bruce, after which Dr. Leonard Guthrie read a paper on recurrent jaundice with pyrexia occurring in a girl 11 years of age in which there was marked anemia with splenomegaly and pigmentation of the skin. In his address the president pointed out that the society and medicine in general would profit if a larger number of general practitioners would take part in the proceedings. As often before has been remarked, some aspects of disease can only be studied by general practitioners since they only have the opportunity of seeing them in all their stages.

On Wednesday at the Hunterian Society Dr. T. B. Hyslop delivered the first of his Hunterian lectures, taking for subject, intracranial murmurs and their relation to tinnitus aurium.

The same evening at the United Services Medical Society the presidential address was delivered by Major E. M. Pilcher, D.S.O. He devoted it to the new bullet, a subject no doubt specially interesting to army officers.

The West London Medico-Chi. opened on the 6th inst. when the new president, Mr. McAdam Eccles gave an address on the "Future of Surgery." Remarking that surgery had had a great past he asked what is to be its future? To estimate its progress he referred to the advances made in the last 25 years at St. Bartholomew's Hospital, to which he is one of the surgeons. He then asked further whither is it all tending, and answered that medicine has let the surgeon enter where she alone previously stood, the result being that both in hospital and private practice the surgeon has more cases first hand than formerly. All that surgery can achieve was rendered possible by Lister, who proved that the removal of, and the exclusion from a wound, of organisms is the one essential for success, and the first lesson for nurse or dresser to thoroughly master. Passing on to the factors contributing to the advance, he mentioned: (1) Improved methods of diagnosis, particularly by new instruments, which enable us to see areas of the body previously invisible. (2) Investigation by *x*-rays, especially in fractures. The old plan of leaving a closed fracture alone, for if the true position of the bones can be seen by the rays the surgeon can cut down and unite the fragments. (3) The better training and higher skill of surgical nurses. Mr. Eccles declared himself a strong advocate of thorough training. Many nursing homes had been unfit for surgical work. They must be fully and properly equipped and need not be too costly or elaborate. The problem as to middle class patients might be profitably discussed by their society, said the president. In the country he looked for improvements, as the local surgeons would be better equipped for emergencies. There was a danger, continued the speaker, of neglecting the non-operative side of their art, and the day was near when the teaching of our out-

patient departments must be remodeled. The number of accidents has greatly increased and will increase still more and will greatly change the work of the general practitioner. The clauses of the National Insurance Bill were sadly defective of provisions for operative surgery. In conclusion the president urged the importance of recording the after process of cases from the point of view of the practitioner in charge as sure to be of considerable value.

The promised conference between Mr. Lloyd George, the Friendly Societies and the Medical Association opened at the Treasury on Monday. The subject was assumed to be to consider the objections raised by the societies to certain provisions of the Insurance bill and some points raised by the B. M. A. For the societies their views as to the health committees, which I have in former letters stated, were represented and somewhat enlarged. Their spokesman held that arrangements ought to be made for chronic invalids, and those over 65 should continue to receive such medical benefits as they now enjoy—that insured persons should have the personal care of the doctor chosen and no substitute or assistant. Farther when certain new societies were formed the other local doctors should not be allowed to ostracise those who attended them. You will see by these demands what very strange opinions are held about the profession by some officials of the clubs. Dr. Whittaker commented on the points put forward, and a general discussion followed which, I am told, tended to narrow down the differences and that probably the doctors and societies will come to a settlement. The conference adjourned until next Monday, when the representations of the B. M. A. will be taken up.

Another conference was also held on Monday—on one of the smaller societies. They demand that the limit of the number of approved societies shall not be more than 5,000 instead of 10,000 of the bill. A reputation was appointed to wait on the Chancellor of the Exchequer on this question.

Yesterday the annual conference of Friendly Societies was opened and the bill fully discussed. The minimum demands which those societies were willing to accept were formulated and agreed to. They comprise, so far as the medical ones are involved, those which I have previously reported to you. There seems a distinct division among members as to the bill. One party is for killing it outright; the other for accepting if the government will embody their amendments. It was asked at the meeting what would be done if the demands were not conceded. The supporters of conditional acceptance declined at first to commit themselves, but as the meeting insisted on an understanding, it was eventually said that on the government refusing those terms, the committee would recommend all societies throughout the country to strenuously oppose the bill. An amendment was proposed, on account of the far-reaching nature of the scheme and its complexity, that more time was needed for the country to consider it, and that therefore it should be held over for next year—especially as so far the Chancellor had granted only six out of fifty requests made by the societies. The amendment was lost. During the week there has been a rumor that Mr. Lloyd George was determined to pass his bill this year and to do so, would on parliament meeting put in force the closure by paragraphs. He might as well declare himself an autocrat and dismiss parliament as a useless machine.

Among the subjects set down for discussion at the late Church Congress was "Industrial Employments and Their Dangers." Sir T. Oliver attended the meeting to testify as a medical man to the value of recent regulations issued by the Home office as to pottery. He urged that manufacturers ought to utilize every resource of science and asked if it was too much to expect them to keep an open mind as to the possibilities of leadless glaze. Workpeople should be encouraged to tell the doctor without delay of any derangement in their health, as it was so much easier to deal with lead poisoning in the early than the late stages. Sir Ernest Hatch afterwards said the public would do much by insisting on leadless earthenware when purchasing. He added that the inhalation of dust in pottery works was at times more injurious than exposure in the glazing departments. Progress towards stricter supervision might be more rapid and the staff of factory inspectors should be largely increased.

The King has formally approved the election of Sir T. B. Crosby as Lord Mayor for the coming year, and he will take up the duty on November 9. The outgoing Lord Mayor, Sir T. Vezey Strong, has issued as usual an appeal on behalf of the Hospital Saturday Fund. The income for 1910 exceeded that of the previous year by over £4,000, and his Lordship hopes for a still better collection this week.

Dr. George Saunders, C.B., is president of the London Medical Mission and has this week kept his 88th birthday. He works at the Mission and enjoys excellent health, although he has had a most eventful career. He entered the army medical service as a young man, went to the Crimea, where he endured the hardships of that terrible war, was in most of the battles, and after that was in China, Japan, South Africa, and indeed seems always to have been where there was hardship, and always trying to set the authorities to alleviate it—often in vain. Once he secured his object by becoming personally responsible for the cost up to £2,000. He is a Dr. Inspector-General—a civilian might think that not enough for such a life devoted to his country, and surely his C.B. might have gone a step or so further.

The Anti-Vaccine League is nursing a grievance against the Asylums Board for refusing access to the registers on the ground that the league is not a sanitary authority. The act authorizes only such authority to examine and copy the registers. The league appealed to the local government board, but its hospitals committee did not see their way to interfere. A motion was made at the Asylums Board to permit the league to examine the register in the manager's office, and a member thought it would be courteous to do so and undignified not. But his proposal was rejected by a large majority.

Another of our veterans has passed away. Dr. Hughling Jackson died on the 7th inst., aged 76, and his loss will be felt wherever clinical medicine is studied. It has been said that his work produced order in neurology where confusion previously reigned. He was apprenticed a practitioner in York as customary in those days, and qualified at College and Hall in 1856. He filled his curriculum at the York school, but also attended for a session at St. Bartholomew's Hospital, where Sir Joseph Paget was teaching. In 1860 he took the M. D. St. Andrews and the M. R. C. P. Lond.

and entered on practice. Two years later he was on the staff of the hospital for epilepsy and paralysis, where he worked until 1902 when he became consulting physician. A little later he was on the staff of the London Hospital, to which also he became consulting physician. In 1868 the College of Physicians elected him a fellow and Gulstonian lecturer. By this time his work on aphasia and other nervous diseases was widely known, and although his conclusions were not generally accepted the conviction that they were correct was widespread and extending. In fact his reputation as an exact clinical observer and accurate reasoner has been growing ever since. In the Croonian lectures in 1884 he stated his views on the evolution and dissolution of the nervous system, which he had been brought to after long observation. In the Lumleian lectures in 1890 he detailed the conclusions to which he had been brought. In the meantime he had served the college as councillor and censor. He was elected F.R.S. in 1878, and honors were showered upon him by various societies, academies and universities in various countries. British politicians did not know how to honor one of the most scientific investigators of medical problems. The Neurological Society, founded in 1885, elected him first president and established a lectureship called by his name, which has been devoted to the illustration of his work and the commemoration of its ever extending results. His writings are too numerous to mention—you know the most important. While all the medical world is thinking of his researches and their effects, it seems to me that those who knew him are most admiring the patient observation with which he pursued his clinical studies and research.

Dr. William Richard Huggard died on the 9th inst. He has been British Consul at Davos for the last 25 years. He was a graduate in Arts and Medicine of the Royal University, Ireland, 1875-9, F.R.C.P. Lond. 1898. He wrote a "Handbook of Climatic Treatment," and contributed to the medical societies and journals on insanity, on phthisis, etc. At the tuberculosis congress in 1902 he had a paper on the use of drugs in pulmonary tuberculosis.

Brigade-Surgeon Alexander Dugald Campbell, late of H. M. Bengal Medical Service, died on the 8th inst., aged 77.

Dr. John Highet, medical health officer for Workington for the past 20 years, died on Monday night after a long illness, at the age of 60. He was a Glasgow graduate and wrote a work on "State Obligations in Matters of Public Health." He was a magistrate for his county (Cumberland).

OUR LETTER FROM COPENHAGEN.

(From Our Regular Correspondent.)

TREATMENT OF LUPUS OF THE NASAL MUCOUS MEMBRANE BY THE PFANNENSTILL METHOD.

COPENHAGEN, September 28, 1911

At the first congress of Scandinavian oto-laryngologists held in Copenhagen a short time ago, Dr. Ove Strandberg read an important and interesting paper on the Pfannenstill treatment of lupus of the nasal mucous membrane, the technique of which he had worked out on the rich material of the Finsen light-institute of Copenhagen. As mentioned in a former letter of mine to the MEDICAL RECORD (July 30, 1910), the Pfannenstill method claims to derive its therapeutical effect from the development of iodine in *statu nascendi* in the tissues, a development brought about by the administration of sodium iodide per os and the local application on the affected parts of hydrogen peroxide or of ozone.

Dr. Strandberg's modification of the method for treatment of lupus of the nasal mucous membrane is as follows: As soon as the diagnosis is secured the patient begins taking six daily doses of sodium iodide 3 grains, increasing in four to five days to six daily doses of 9 grains. Meanwhile the interior of the nose is cleansed from scabs by the application of cotton wool swabs with 1 to 2 per cent. alsol-dermofil. The swabs are left in the nose during night time. Thereafter the specific treatment begins, consisting in the packing twice daily of the nasal cavities with swabs of boiled gauze (free from starch) moistened with a solution of 3 per cent. hydrogen peroxide, to which is added ferric chloride (Fe Cl3) and hydrochloric acid in order to increase the oxidizing power of the solution. A bottle of this solution is also given to the patient, who is obliged to participate very actively in the treatment, instilling every ten minutes a quantity of the solution on to the nasal packing, until he feels the solution entering the nasopharynx. Meanwhile the internal administration of sodium iodide is continued. After some days of this treatment the nasal mucous membrane is seen to be more ulcerated and hyperemic than before the beginning of the treatment. If this is not the case, or if some of the ulcerations have already healed up, then either the doses of natrium iodide have been too small or the hydrogen peroxide has not been applied in sufficient quantities to the nasal packing. In the last-mentioned cases it is therefore necessary to increase the doses of natrium iodide and to instruct the patient about the necessity of instilling the hydrogen peroxide solution assiduously on to the nasal packing. If, however, the ulcerated state of the interior of the nose is accentuated, a new phase of the treatment sets in. The nasal packing, changed twice daily, is now moistened with a solution of hydrogen peroxide 3 per cent. and acetic acid 1 per cent.; the solution given to the patient for self-application is weaker, hydrogen peroxide 1 per cent. with acetic acid ½ per cent.

After six or eight weeks' treatment the granulations disappear and the ulcerations heal up; sometimes, however, an ulceration may not become covered with epithelium in spite of prolonged treatment. The reason seems to be that the ulceration is continuously irritated by the excretion of iodine, as upon the lessening or discontinuing of the doses of natrium iodide the ulceration may heal up in twenty-four hours. The treatment ought not to be discontinued before the infiltration of the tissues has totally disappeared. An after treatment is then begun, consisting of the application of alsodermofil 1 per cent. to 1½ per cent., when after a short time the mucous membrane assumes first a normal, subsequently a somewhat paler coloring. If this point has been reached a relapse is improbable. It is essential to the success of the treatment that it be the medical man who changes the packing of the nose twice daily, as the packing must be in actual contact with all affected parts of the mucous membrane, and neither too firmly nor too loosely applied. The packing must remain in the nose during the night, as otherwise scabs are sure to form and the treatment will become with-

out effect until the scabs are removed. That is also why it is contraindicated to use the galvanocautery or chemical caustics during the treatment. The duration of the treatment can be estimated as between two and three months. If this time is not available it is certainly preferable not to begin the treatment.

The number of patients treated by Dr. Strandberg is 104, among whom many inveterate cases, *e. g.* one of twenty years' standing. Without going into details, the results may be said to be surprisingly good, considering what has hitherto been obtained by the usual methods. Cases of lupus of the palate and the tongue have also been successfully treated by suitable modifications of the method.

It is well known that equally favorable results have been obtained by other Scandinavian physicians in cases of lupus of the mucous membrane. On the other hand it seems as yet uncertain whether the Pfannenstill method will prove of similar efficiency in the treatment of laryngeal tuberculosis, which was looked forward to after the publication of the first cases of this disease treated by Dr. Pfannenstill.

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 19, 1911.

Some Considerations of Ether Anesthesia. D. F. Mahoney.
Remarks on Local, Spinal, and General Anesthesia. F. Allen.
Nitrous Oxide and Oxygen Anesthesia. A. H. Mandell.
Intratracheal Insufflation as an Anesthetic Method. W. C. Quinby.
An Apparatus for the Administration of Ether by Intrathoracic Insufflation. A. Ehrenfried.
Hints on General Anesthesia. R. W. Hornabrook.
Anesthesia. W. M. Boothby.
The Management of Spinal Curves. E. H. Bradford.
Coexistent Epidemic Cerebrospinal Meningitis and Malaria. W. J. Collins.

Ether Anesthesia.—D. F. Mahoney describes his method of administering ether. The active purging of patients before operation is discouraged. Twenty minutes before the administration of the anesthetic the patient is given subcutaneously ⅛ of a grain of morphine and 1/120 of a grain of atropine. In the case of children atropine in doses of 1/240 to 1/150 of a grain is administered alone. The drop method of administering ether is satisfactory in many cases, but in alcoholic and highly nervous patients, in athletes, and in patients of large stature the use of the cone is preferable. If there is asphyxia due to nasal obstruction, the author recommends the use of two pieces of soft rubber tubing, each six inches long, which are lubricated and introduced into the nostrils along the floor of the nose.

Anesthesia.—F. Allen states that all operations that can be so performed should be done under local anesthesia. It is desirable to more or less thoroughly narcotize a patient who is about to receive a general anesthetic. Spinal anesthesia by means of tropacocaine and adrenalin is an exceedingly safe procedure. Gas and oxygen form a very valuable and in some cases almost ideal anesthetic, but they should always be administered by an expert anesthetist.

Nitrous Oxide and Oxygen Anesthesia.—A. H. Mandell maintains that the advantages of nitrous oxide over ether are distinct, and may be clearly evidenced by the following facts: the patient loses consciousness in three or four breaths; he has no strangling or choking; he recovers consciousness immediately when the anesthetic is stopped; he has little, usually no, nausea or vomiting; he can take liquids much sooner after operation; his ultimate recovery is hastened.

Intratracheal Insufflation Anesthesia.—W. C. Quinby notes that the essential features in which this method differs from ordinary anesthesia with a cone are that by means of a tube passed into the trachea, and fitting it loosely, ether-laden air is delivered at or just above the bifurcation of the trachea in a nearly constant stream from a bellows or other source. When this is done there follows a very important phenomenon. The to-and-fro respiratory movements become markedly fewer in number, until, with a sufficiently large volume of air sent through the tube, respiratory movement ceases entirely. The heart-beat and blood-pressure, however, continue in a perfectly normal manner, practically unaltered. In other words, a condition has been produced in which the usual to-and-fro respiratory movements are no longer necessary for maintenance of life, and in which the surgical entrance to either one or both sides of the thorax is possible, without the occurrence of any ill-effects from the ensuing pneumothorax. The first and most important advantage of intratracheal insufflation is found in its use during surgical operations which open the chest cavity, for, in contradistinction to all other methods yet used, this is the only one in which proper oxygenation of the blood is performed independently of any respiratory effort on the part of the patient.

Apparatus for Intrathoracic Insufflation.—A. Ehrenfried describes an apparatus that he has devised for the administration of ether by the intrathoracic insufflation method.

Hints on General Anesthesia.—R. W. Hornabrook states that any class of case can be put under with open ethyl chloride and ether and the state of anesthesia can be regulated if necessary by chloroform, but the mask must be of an open nature, must fit well, and the patient must breathe through it. Of the different masks, Murray's is the best and fits nearly all cases; should it not fit, then one may use a towel of open character, fairly heavy in material.

Anesthesia.—W. M. Boothby presents a brief account of the history of anesthesia.

The Management of Spinal Curves.—E. H. Bradford describes the various preventive, gymnastic, and corrective measures to be used in the treatment of spinal curvature.

Meningitis and Malaria.—W. J. Collins reports three cases of epidemic cerebrospinal meningitis, one of tertian malaria, and one of cerebrospinal meningitis coexisting with tertian malaria. The five cases came from the same locality in Lamia, Greece.

New York Medical Journal.

October 21, 1911.

Experimental Poliomyelitis, Produced in Monkeys from the Dust of the Sick Room. M. Neustaedter and C. Thro.
A Brief on the Salvarsan Treatment of Syphilis. G. F. Lydston.
Syphilis of the Anorectal Region. L. H. Adler.
A Comparison of the Results Obtained by the Intravenous Administration of Acid and Alkaline Solutions of Salvarsan. G. M. MacKee.
"606": Its Action on the Eye and Ear. F. P. Hoover.
The Aural Complications of the Exanthemata T. L. Saunders.
Tuberculosis of Both Ears Cured by Tuberculin. J. S. Cipes.
Treatment of Fracture of the Shaft of the Femur. J. Douglas and J. N. Drury.
Report of a Case of Aneurysm of the Thoracic Aorta Treated by Abram's Method. L. C. Boyd.

Experimental Poliomyelitis Transmitted by Dust.—M. Neustaedler and W. C. Thro present a further contribution on this subject and conclude that poliomyelitis is propagated by dust, that the nasopharynx is probably the point of entry, and that acute poliomyelitis is both infectious and contagious.

Salvarsan.—G. F. Lydston is convinced of the great value of salvarsan in meeting the following indications: (1) Prompt removal of severe genital lesions, thus lessening, first, the danger of infecting others; second, the danger of detection; third, local discomfort; fourth, the danger of serious local complications of a destructive character. (2) The prevention or prompt removal of disfiguring skin lesions. (3) Precocious or malignant syphilis and obstinate destructive bone and cartilage lesions, especially of the face and nose. (4) Cases resistant to or intolerant

of mercury. In this class of cases salvarsan is often of inestimable service. (5) Early nerve and brain and all visceral lesions, with the exception of renal syphilis, in which salvarsan is especially dangerous. In late lesions of the nervous system its use may occasionally be justifiable. (6) Cases of syphilitic cachexia or anemia, which often consist of a combination of overtreatment and syphilis. (7) Severe and rapidly destructive lesions of the throat and obstinate lesions of the tongue. (8) Syphilis involving the organs of special sense, excepting lesions involving the retina. (9) Early tabes or exceptionally in late—not terminal—cases in the hope of relieving severe pain or involvement of the sphincters. (10) Infantile syphilis.

Syphilis of Anorectal Region.—L. H. Adler emphasizes the fact that cases of primary and secondary syphilis are frequently found, showing no visible evidences of the disease, except at the anus, and in rare instances within the rectum. In order, therefore, to clear up any doubtful case, an inspection of the anorectal region should be made. The result of such investigation will often surprise the uninitiated.

Acid and Alkaline Salvarsan Solutions.—G. M. MacKee states that the use of concentrated acid solutions of salvarsan will almost surely cause death. Weak (0.1 per cent.) acid solutions of salvarsan can be given apparently with absolute safety in individuals who present no contraindications to salvarsan. With the exception of the absence of a local reaction, when some of the fluid enters the subcutaneous tissue, it is doubtful if there is any advantage in the administration of the acid solution.

Salvarsan and the Eye and Ear.—F. P. Hoover believes that injections of salvarsan will produce not only a neuritis of the optic and auditory nerves, but will also produce or augment labyrinthine disease. He reports a case presenting labyrinthine disease, which was not developed sufficiently to be noticed by the patient and which was augmented by the use of the salvarsan.

Aural Complications of the Exanthemata.—T. L. Saunders states that the keynote to the true conservative management of the aural complications of these diseases rests on two points: first, the recognition of their too frequently insidious onset by daily aural examinations, and, second, the necessity for their prompt and energetic treatment by early incision of the drum membrane, followed, when indicated, by an early mastoid operation.

Tuberculosis of Ears.—J. S. Cipes reports a case of tuberculosis of both ears cured by tuberculin.

Fracture of the Femur.—J. Douglas and J. N. Drury describe a new traction splint for the treatment of fracture of the shaft of the femur.

Aortic Aneurysm.—L. C. Boyd reports a case of this condition apparently successfully treated by means of Abram's method of concussion of the seventh cervical vertebra.

Journal of the American Medical Association.

October 21, 1911.

The Treatment of the Arthritides. L. Litchfield.
Experimental Intestinal Obstruction. Report of Further Physiological, Cytological, and Clinical Studies. J. W. Draper.
The Use of Calcium Carbonate in Solid Media for the Differentiation of Sugar-Fermenting Bacteria, Especially of the Colon-Typhoid Group. A. J. Bendick.
Pinning Fractures Through a Cannula with the Aid of the Fluoroscopic Screen. R. T. Morris.
Experimental and Clinical Work to Determine the Value of Lane's Bone Plating. W. Bartlett and W. R. Hewitt.
Thirty Years' Experience with Fractures at Minnequa Hospital; Treatment and Results. R. W. Corwin.
The Open Treatment of Fractures of the Shafts of the Long Bones. E. Martin.
The Clinical Thermometer as a Possible Disseminator of Some Communicable Diseases. E. B. Beasley.
Empiricism and Pharmacology in the Management of Postoperative Cases. S. T. Pope.
A Clinical Study of Mobility of the Heart. Dudley Fulton.
The Bacteriology of the Ear. J. G. Hudson.

Treatment of the Arthritides.—L. Litchfield notes that, exclusive of trophic, hemophilic, traumatic, and certain septic cases, the arthritides may be divided into three classes—rheumatic fever, gout, and hypotrophic and hypertrophic arthritis. Gout is due to the abnormal accumulation of uric acid in the system, and this acid is not now regarded as a stage in the production of urea, but as a natural end product of purin metabolism and resulting about equally from endogenous and exogenous sources. What is called rheumatic fever or rheumatism, etc., is a general infection and the diseases commonly called arthritis deformans and rheumatoid arthritis, whether regarded as different diseases or as manifestation of the same one, are not closely related physiologically either to gout or rheumatic fever. The only agent that has been scientifically proved to increase materially the elimination of uric acid, without correspondingly increasing its production, is radioactivity. There is no such thing as an antirheumatic diet, but all patients except the gouty should be nourished as generously as their digestion will permit. Many cases of arthritis are unfavorably affected by septic foci, such as pyorrhea, antral and sinus disease, etc., and in certain cases these may be the points of entry of the disease germs or toxins causing the disorder. There is abundant evidence that salicylic acid is specific for rheumatic fever, and for that alone. The combination of alkalies with salicylic acid is supported by statistical evidence and is not contraindicated. In chronic arthritis or arthritis deformans the chief indication is to give the best possible nutrition, to prescribe outdoor life, and rest, and to build up the bodily reserve forces.

Experimental Intestinal Obstruction.—By J. W. Draper. (See MEDICAL RECORD, July 8, 1911, page 97.)

Solid Culture Media.—A. J. Bendick describes a formula for the preparation of solid media in which by the addition of calcium carbonate the differentiation of sugar-fermenting bacteria, especially of the colon-typhoid type, is facilitated.

Pinning Fractures.—By R. T. Morris. (See MEDICAL RECORD, July 8, 1911, page 101.)

Lane's Plates in Treatment of Fractures.—By W. Bartlett and W. R. Hewitt. (See MEDICAL RECORD, July 8, 1911, page 101.)

Thirty Years' Experience with Fractures.—By R. W. Corwin. (See MEDICAL RECORD, July 8, 1911, page 101.)

Open Treatment of Fractures.—By E. Martin. (See MEDICAL RECORD, July 8, 1911, page 101.)

Clinical Thermometers and Infection.—E. B. Beasley has performed a series of experiments to test the power of the clinical thermometer in carrying infection. The results showed that this power is a real one. A thermometer may retain live bacteria—capable of being recovered—after the thermometer is fairly well washed, dried and then placed in the case for three hours. It would seem necessary that physicians should keep their thermometers immersed in a true disinfectant if they would eliminate this source of danger to their patients. Formaldehyde solution would be the best as, like carbolic acid, it does not damage the etchings of the thermometer.

Postoperative Treatment.—S. T. Pope criticises certain traditions in the treatment of postoperative cases, such as the food withdrawal before operation, the withholding of water after operation, postoperative purgation, etc. The starvation has often developed a fatal acidosis and beef tea or malted milk has been given when one should have used carbohydrates and alkalies. After all general anesthesias it is a good procedure to let the patient drink repeatedly, at intervals, a glass of water containing a dram of sodium bicarbonate. If this is vomited it is a good gastric lavage; if retained it tends to forestall acid intoxication. The author ridicules the fear of constipation after operation and the use of depressant cathartics. The colon tube should be abandoned as of no use; a simple rectal enema will suffice. Morphine does not favor the production of ileus. Conservative measures, such as constriction

of the extremities, are better than flooding the system with water. In simple collapse no drugs are indicated and moderate hemorrhage causing fall of blood-pressure is probably conservative as tending to produce hemostasis and coagulation. The vasomotor system will readjust its physiological balance itself if given time. In every case demanding catheterization hexamethylenamine should be given in sufficient doses to prevent an ascending infection from cystitis and the value of the remedy in infections of the meninges, gall-bladder, and serous cavities in general should be sufficient to prompt the employment of this drug.

Mobility of the Heart.—By D. Fulton. (See MEDICAL RECORD, July 8, 1911, page 98.)

Bacteriology of the Ear.—J. Hudson concludes that bacteria are normally present in the mastoid antrum, that mastoiditis may be caused by a variety of organisms, and that the few patients whom he treated with vaccines after operation were greatly benefited.

The Lancet.

October 14, 1911.

The Past Work of the Obstetrical Society of London, and the Obstetric and Gynecological Problems Still Awaiting Solution. A Routh.
Intracranial Murmurs in Their Relationship to Tinnitus Aurium. T. B. Hyslop.
Intestinal Hemorrhage in Typhoid Fever and Its Relation to the Agglutinating Power of the Blood. H. Whitehead.
Acute Middle Ear and Mastoid Inflammations; The Relations of Active Autointoxications. S. F. Snow.
The Ophthalmo-Reaction of Calmette in the Early Diagnosis of Phthisis. A. Stroud Hosford.
Researches in Epilepsy. D. Moore Alexander.

Obstetrical and Gynecological Problems.—A. Routh states that the mortality both *in utero* and soon after birth is still far larger than it should be. The accoucheur is responsible for the newborn child, during at all events the first fortnight of life, and in that period nearly one-third of those children who do not survive their first year lose their lives. Progress in the knowledge of the physiology of menstruation, labor, and lactation, and of the causation of the toxic diseases of pregnancy and the puerperium, will not be possible without the aid of the physiological chemist. Obstetricians are still ignorant of the biochemical changes in the blood which influence the cyclical functions of menstruation and ovulation, or which have to do with the implantation of the fertilized ovum and the onset of labor and lactation. Little is known also of the autotoxemias lying at the basis of pernicious vomiting, puerperal albuminuria, eclampsia, chorea gravidarum, and puerperal insanity. The blood serum of pregnant women hinders the proteolytic ferments, as trypsin, while placental serum has a marked power in destroying cancer cells. Pregnant women have a relative immunity to scarlet fever. Excess of lutein tissue is associated with hydatidiform degeneration of the chorion, while destruction of the lutein tissue prevents implantation of the ovum. Abnormalities in the menstrual function are associated with diseases of the ductless glands. The following gynecological questions await solution: When should a pyosalpinx be operated upon and when left alone? What is the pathology of fibrosis of the uterus? What is the explanation of menorrhagia of puberty? Of what use is the retention of the term "endometritis" when used for adenomatous overgrowths of the uterine mucosa and what is the cause of vascular caruncle of the urethra? The author is opposed to operating on a fibroid that is producing no symptoms. He believes that one is at the beginning of a period when other methods of treatment than surgery are gradually being resorted to for many gynecological conditions that have hitherto been regarded as distinctly surgical.

Intracranial Murmurs in Relation to Tinnitus Aurium.—T. B. Hyslop states that there are three different kinds of brain movements: (1) pulsatile movements communicated from the pulsations of the large basal cerebral vessels; (2) respiratory movements, in which the brain rises during expiration and falls during inspiration; and (3) vascular elevations and depressions which alternate and are due to periodic dilatation and contraction of the blood-vessels. It is in connection with one or other of these movements that sound vibrations are apt to occur in the arterial, venous, or lymphatic systems. During these movements the cerebrospinal fluid is subjected to compensatory movement. When there is great expansion of the cerebral volume, owing to arterial pressure, and the cerebrospinal fluid has been driven out of the cranium, the brain comes into contact with the rigid bone, and, as a consequence, any murmur which becomes audible, either subjectively or on auscultation, is nearly always pulsatile The high arterial pressure which occurs in Bright's disease is attended by undue pressure on the peri- and endolymph and gives rise to tinnitus. In hemicrania due to gout the intracranial arteries may be dilated or hyperextended, and by their more forcible action not only drive the cerebrospinal fluid from the cranial cavity causing increased tension in the labyrinth, but, by the same process, force the brain toward the internal table of the skull and thereby render it possible for the pulsatile waves to come into almost direct contact with it. So it is in conditions of plethora culminating in apoplexy, of which tinnitus is an early symptom. Tinnitus is often a prominent and distressing symptom in anemia and chlorosis. Venous murmurs may be of pulsatile or respiratory rhythm. Various intracranial murmurs are also produced in many cases of cerebral aneurysm.

Intestinal Hemorrhage in Typhoid Fever.—H. Whitehead concludes that intestinal hemorrhage gives rise to an increased formation of agglutinins in the blood lasting for a short time, which may help to tide the patient safely over a dangerous period. As a result of his investigations he recommends that, in many toxic cases of typhoid fever, and more especially in those in which the blood gives a poor agglutination reaction, phlebotomy to the extent of about 10 ounces (according to the physical condition of the patient) be tried as a treatment. It would in all probability give excellent results in many cases, as it would be without the accompanying dangers of intestinal hemorrhage.

Middle Ear and Mastoid Inflammations.—S. F. Snow believes that these should be attacked not merely by means of local measures. Constitutional treatment is also necessary. There are certain alteratives that can cause the blood to become bacteriolytic; certain medicines that seem to act as antigens and induce the formation of more antibodies, or at least rehabilitate them with more antitoxic power. Any substance capable of inciting the formation of antibodies is an antigen. Mercury, iodine, the adrenal extractives, etc., seem to be in this class and are hopeful adjuncts in the fight against disease. Vaccine therapy also holds out some hope in the subacute and chonic cases, but the indications are not very encouraging in cases of acute mastoid trouble. The author relies at present most upon mercury by the mouth in some form as a remedial agent.

Calmette Reaction in Tuberculosis.—H. Stroud Hosford concludes that a negative result by no means excludes pulmonary tuberculosis. Some very advanced cases fail to give a reaction. He has never obtained a positive result except in true cases. He has never seen any bad results whatever from the use of the test as regards the eye. If a patient in a suspicious case fails to give a reaction, then the test should be applied on three different occasions, with an interval between each application of from three to four weeks.

Researches in Epilepsy.—D. Moore Alexander points out the fact that there appears to be a relationship between an epileptic fit and a low urea-ammonia ratio.

British Medical Journal.

October 14, 1911.

Auricular Fibrillation. By J. Mackenzie.
Aspects of Medicine as a Profession. J. T. J. Morrison.
A Large Fibrocystic Tumor Distending the Buttock. J. D. Malcolm.
Congenital Diaphragmatic Hernia Associated with Embryonic Organs. L. Rawes.

Auricular Fibrillation.—J. Mackenzie states that 60 or 70 per cent. of all cases of serious heart failure met with in practice owe the failure directly to this condition or have the failure aggravated by its presence. The most common evidence of this condition is an irregular action of the heart of a very disorderly kind. While senile and rheumatic hearts are those most frequently affected by this condition, there are numerous cases in which auricular fibrillation occurs, where there is no history of rheumatism, and at an age when senile changes are not present in a marked degree. Auricular fibrillation is present in the great majority of cases with dropsy, or dyspnea due to heart failure, where there is an irregular pulse. The term "fibrillation" is applied to a curious condition of the muscle fibers of the heart, where the individual fibers, in place of contracting in an orderly and simultaneous manner during systole, contract rapidly and independently of one another. The auricle, when in a state of fibrillation, presents an entirely different aspect from what it does during its normal action. Experimentally auricular fibrillation can be produced by electrical stimulation of the auricular wall. In the human heart it is found to arise under a variety of conditions. It is probable that it is produced by altered nutrition of the muscle. Effort, sometimes slight and simetimes violent, may provoke auricular fibrillation. This occurs most frequently in the middle-aged or elderly. In hearts which have shown auricular fibrillation during life there has been found in the auricle and ventricle an increase of fibrous tissue and of nucleated cells in the muscular walls. In the majority of cases when auricular fibrillation sets in it persists for the remainder of the individual's life. When the auricle passes into fibrillation the ventricle usually becomes irregular in its action. A considerable enlargement of the heart follows the inception of auricular fibrillation, which also increases the impairment of the heart. Cases of fibrillation stand apart from all others in regard to their response to the action of digitalis. With only rare exceptions all the cases that show a marked effect upon the heart are cases of auricular fibrillation, for although other cases might exhibit some benefit from the use of the drug, they never show the same tendency to slowing of the heart's rate. The slowing effects of digitalis are shown in a very striking manner in those cases of auricular fibrillation where heart failure sets in with a great increase of rate of the heart.

Medicine as a Profession.—J. T. J. Morrison discusses the following topics in medical sociology: the life history of the medical profession in England; its relation to legislation; and the question of medicine and public practice. The first Medical Act legalizing the practice of medicine in England was passed in 1511. It provided for a board consisting of medical and surgical examiners presided over by a bishop. The Royal College of Physicians was founded in 1518. Barber surgery was initiated by the exclusion of the clergy from surgical practice on the ground that effusion of blood was repugnant to the Church. Into the field thus abandoned entered the lay servitors, a class more or less trained as assistants to the surgical monks, and expert in such feats of minor surgery as venesection. Medieval trade unionism found expression in the formation of guilds, and in due course the London barber surgeons were federated as a special section of the barbers' guild. Commencing as a section of the Grocers' Company, the London apothecaries were raised to the dignity of an autonymous company by a charter of James I. The Apothecaries Act was passed in 1815; it created a new grade of medical practitioner neither physician nor surgeon. The Medical Act of 1858, creating a general medical council with large powers of regulation and discipline, is still in force. The author reviews the development of public practice in England and notes that there is a progressive tendency on the part of governments to utilize the service of medical practitioners for national purposes.

Fibrocystic Tumor.—J. D. Malcolm reports a case of an enormous fibrocystic tumor distending the buttock in a woman aged 30. This tumor was an extension along fascial planes of cystic tumors behind the uterus and beside the vagina.

Diaphragmatic Hernia.—L. Rawes reports a case of this condition associated with underdevelopment of the various organs in a newborn infant. Death occurred twenty hours after birth.

Münchener medizinische Wochenschrift.

October 10, 1911.

Alimentary Fever in Adults.—Walterhöfer refers to the classic work of Finkelstein in connection with alimentary fever in nurslings. In affections of the alimentary canal both sugar and salt can cause rise of temperature. The earlier attempts to produce the same phenomenon in adults resulted negatively, even when the sugar and salt were injected subcutaneously. Nevertheless alimentary fever does occur in certain subjects under certain conditions. The author narrates the case of a patient with gastroenteric symptoms, chiefly subjective, who developed fever as a result of eating certain articles of food. The fever seemed to coincide with the supervention of pain and nausea. A study of the diet showed that sugar and salt were responsible for the symptoms. Diet fevers probably represent an anaphylactic reaction. After a period of dietetic supervision the intolerance to these substances disappeared for the time. Egg albumin was then tested and the ingestion of raw eggs caused a temperature rise of 40.6° C. The patient had never partaken of eggs in the raw state, having always had a marked distaste for them. It was thought possible that the fever was hysterical and due to certain flavors operating by suggestion. Saccharine, however, failed to produce temperature rise. The case was studied exhaustively for five months and the author concluded that, while some dietetic articles were notably pyretogenetic, no sharp line could be drawn between these and other articles, for these might sometimes set up fever.

Acetonuria in Diphtheria and Acute Anginas.—Reiche speaks of the conflicting statements of authors concerning this subject. While some would use the occurrence of acetonuria to exclude diphtheria, others find the two conditions in frequent association. The author has therefore tested the immense material in the Hamburg-Eppendorf Hospital in the hope of clearing up the obscurity. In a series of over 3,000 cases of diphtheria acetonuria was present in 65 per cent. In all other forms of acute angina the percentage of acetonuria was about 40. The only diagnostic significance attributable is the possibility of differentiating diphtheria from the mildest form of angina, the presence of acetonuria suggesting diphtheria.

Specific Treatment of Gonorrhea.—Schmitt refers to the treatment of all forms of gonorrhea with improved vaccines. He has obtained good results in epididymitis, in many cases of gonorrhea of the cervix, and in the vulvovaginitis of children. He thinks it probable that gonorrheal prostatitis and spermatocystitis are amenable to the vaccine treatment. He could not satisfy himself that the latter possessed any bactericidal potency in urethral gonorrhea, while in arthritis the only result noticeable was diminished pain. The only unpleasant collateral effects were occasional temperature rise and headache. Probably the most significant property of the vaccine is its power over many cases of cervical gonorrhea.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

Circulatory System.—The personal history in regard to diseases of the circulatory system is usually meager for the reason that an applicant who understands that he has a heart murmur or diseased arteries is not likely to apply to a company that does not issue substandard policies. The majority of applicants in whom these conditions are discovered at the examination learn of them then for the first time. Occasionally, however, some person will apply who has previously been rejected and has learned that this action was taken on account of a heart murmur. He may admit this and at the same time declare that he has been examined since by his attending physician or some other doctor and found free from any indications of heart disease. He naturally believes in the more favorable diagnosis and, for this reason, feels justified sometimes in omitting the statement that any trouble was ever found with his heart. It is a good idea to question every applicant closely as to whether he has ever been refused the kind of insurance he applied for and, if he has, to ascertain the cause when possible. If he admits it was heart trouble or does not know, the heart should be examined even more carefully than usual during rest and also after he has been put through some form of exercise.

While, then, the previous history of defects in the circulatory system will not prove important in most cases and reliance for discovery of them must be largely based upon the physical examination, it is essential to question the applicant in regard to the following conditions:

Palpitation, Irregularity, Intermittency.—Ascertain the date, duration, and cause of each attack. Whenever an applicant acknowledges a history of one or the other of these disturbances, the heart should be thoroughly examined both during rest and immediately after some form of exercise to determine its size and location and whether there is a murmur.

Experience has convinced many physicians interested in life insurance that a persistently irregular or intermittent heart action does not detract from the insurability of a risk when the applicant is under 40 years of age, has not indulged in the excessive use of alcohol, is not an overweight, and all heart lesions have been excluded after a careful reexamination. Moreover, a heart action slightly over 90, the maximum rate commonly adopted by the companies, is not seriously considered in one who also is within the normal limits of weight, under 40 years of age, and has not used too much alcohol; but in these cases a careful reexamination of *all* the organs is required in order that the examiner may assure the company that the rapidity is not excited by some pathological condition. A full history in both these classes of cases should be always furnished, even though no abnormality is discovered in the examination. When no focus of irritation is found to account for the irregular, intermittent, or rapid heart action in these applicants, it may be set down as an idosyncrasy, probably the overflow of a rather active nervous system. If it is learned after a searching inquiry that the disturbance of the heart action was transitory and undoubtedly due to some unusual exercise, the fact is not worth recording.

Dyspnea.—A history of difficulty in breathing due to pulmonary congestion is sometimes obtained when the applicant has been subject to heart disease. The chief importance of the symptom will be to emphasize the gravity of the disease, as a lesion extensive enough to cause this disturbance will be easily recognized during the physical examination.

Pain in Region of Heart.—Give date, duration, severity, and cause of each attack. Close questioning will bring out the fact that the pain was caused by intercostal neuralgia in many of the cases, but the examiner is reminded that intercostal neuralgia is often given as the origin of pain in the chest when the real cause was pleurisy or angina pectoris.

Acute Rheumatism.—Whenever a history of this disease is obtained the examiner should endeavor to learn whether there was any form of involvement of the heart during or immediately after the attack. The date of the attack of rheumatism, the nature of the cardiac trouble, and the date of its last manifestation will be required.

Dropsy.—Ascertain the date, duration, cause, and parts affected. The dropsy may have followed malaria, some fever, or acute disease of one of the organs, in which case the risk will usually be acceptable if sufficient time has elapsed since full recovery. If, however, it occurred as a result of some form of heart disease the risk will not be accepted.

Purpura Hemorrhagia.—A history of this condition is always ground for rejection, as it is liable to be accompanied sooner or later by dangerous internal hemorrhages as well as effusions of blood under the mucous membranes. It is highly important to learn whether the applicant is a "bleeder," when he gives a history of nose bleeding, prolonged bleeding after extraction of teeth, or bleeding from the gums.

Anemia.—Ascertain the date, duration, and cause. In most of the cases it will have been due to some passing cause which does not detract from the value of the risk after full recovery. On the other hand, an investigation may bring out the fact that it was due to a chronic constitutional disease such as nephritis, pulmonary tuberculosis, or syphilis.

Varicose Veins.—An applicant with extensive varicose veins should be rejected. When the varicosities have not recently progressed rapidly, are not too marked or extensive, and are helped by the use of an elastic stocking, they may be accepted provided the history is one in which the occurrence of large or frequent ulcerations does not enter.

The Healed Tuberculous Lesion from a Life Insurance Standpoint.—By George Parker, M.D. (See page 915.)

Contusions of the Abdomen.—Dr. Richard V. Hippel opens a lengthy article on this subject by quoting de Suervain, who says in contusions of the abdomen rapid diagnosis as to the condition of the intestines must be made. Peritonitis frequently appears while doubt is entertained whether the intestines are wounded or not. This remark applies especially to wounds of the abdomen made by dull weapons and not resulting in perforation of the parietes: the latter case should be treated surgically from the beginning. The force causing contusion of the abdomen may act on a circumscribed area or be diffused. The kick of a horse, a blow with a hammer, etc., belong to the

first class of injury; a fall from a height, "Cuffer" accidents, etc., illustrate the second variety. Women are rarely exposed to either variety of injury; children, however, are frequently injured so far as the abdomen is concerned by being run over while at play. Injuries of the stomach and intestines are usually produced by a circumscribed force, a "spreading" force frequently resulting in injuries of parenchymatous organs. Two dangers are present in either case: hemorrhage and escape of infectious material into the peritoneal cavity. Severe hemorrhages are usually due to injury of the liver or spleen; these are usually fatal unless quick surgical treatment is adopted. Out of 165 cases of injury of the liver 150 ended fatally because of the primary hemorrhage. The value of immediate operation is shown by another set of figures, thirty-two patients out of eighty with injuries being saved. Injuries of the spleen show even a better percentage of recoveries. Injuries of the mesentery are seldom accompanied by severe hemorrhage as the line of injury usually runs parallel to the large vessels. Infection is the constant danger in injuries of the intestines, especially as multiple perforations are very frequent. Early operation even here has reduced the mortality from one hundred to twenty-three per cent. in the last twenty-five years. Most chance of success is present if operation is performed within the first six hours after injury. Rupture of the bile ducts may be accompanied by immediate infection or by an "irritation peritonitis." Operation has given eighty-eight per cent. recoveries, while of the non-operated cases only twenty-two per cent. recovered. Rupture of the urinary passages is accompanied by a high mortality which has been only a little diminished by early operative interference. The general conclusion, then, is: as soon as traumatic rupture of intraabdominal organs has been diagnosed, operation should take place. Diagnosis of the condition is, therefore, the most important thing. There are, however, no certain and pathognomonic symptoms, but there are many important phenomena that point to the right conclusion.

Many organs may be injured at the same time; examination, therefore, should embrace all intra-abdominal viscera. Shock is the first symptom of contusion of the abdomen, being due to injury of the vagus, splanchnic nerves, or the solar ganglion. It may result in immediate death. At other times, it leads to prolonged unconsciousness, and in general is proportionate to the severity of the injury. Spontaneous pain is at first localized at the site of injury, but soon spreads. It may result in a characteristic attitude, a dorsal decubitus with knees drawn up being adopted by the patient. Pain, however, may be completely absent, and likewise abdominal respiration, which when noted is a valuable sign. Initial vomiting is without significance, unless much blood is brought up, when injury of the stomach may, of course, be considered probable. Vomiting in the early hours after injury is more important; it is usually absent if contusion alone has taken place, but is frequently noted, alternating with nausea, if the hollow viscera are injured. This symptom, however, may fail completely until general peritonitis has developed. A rise of temperature is of little significance for early diagnosis; it may be subnormal in the period of shock. Pulse rate is important; if it rises after shock is gone, it means severe injury and a bad prognosis. Local symptoms consist in tenderness and rigidity, both being signs of peritoneal irritation, which may be caused by non-infectious or infectious material. Yet rigidity may be totally absent, or may be very evident when extraperitoneal organs are at fault. Injuries of the kidney and inflammations of the lungs may lead to very deceptive rigidity of the abdominal walls. Severe hemorrhage into the abdominal cavity is often accompanied by a very clear clinical picture. Primary shock is followed by a temporary recovery, which gives place to rapidly progressing collapse. Acute anemia becomes apparent at the same time. The liver should always be suspected, because of its vascularity, when such symptoms are present. —*Zeitschrift für Versicherungsmedizin*, August, 1911.

Diseases of Household Servants in Comparison with Those of Other Workers.—The Vienna correspondent of the *Journal of the American Medical Association* writes that a union of household servants is being formed in Austria. One of the earliest results of the movement is the information obtained in regard to the distribution of disease among this part of the population. Hitherto the conditions have been regarded by some as favorable, while others have thought them very bad. Certain affections are very frequent. Thus in Vienna anemia, disorders of the stomach, rheumatism, and troubles of the sexual organs are the most frequent, in the order mentioned. Anemia is readily explained by the long stay in badly ventilated rooms and the rare walks in fresh air, as well as by the insufficient amount of sleep; sometimes the quantity of food is insufficient. Cooks suffer from gastric disorders because of the too frequent tasting of the foods they are preparing. Rheumatic affections are very common among all servants, partly on account of the frequent exposure to cold and bad weather, without sufficient protection; partly from working in unhealthy kitchens, washing kitchens and sculleries. A frequent complaint of servants is static flat-foot with varicose veins of the legs. Affections of the lungs are less frequent than one would expect in Vienna. It seems that the inherited constitutions of the servants—mostly women from the healthy rural districts—protect them to a great extent; their health statistics are much better than those of, for instance, shop assistants, typewriters, and office girls. The reports of the Vienna Krankenkasse concerning the latter group show that within one year more than 13 per cent. of the members have suffered from affections of the respiratory organs, lasting more than three days, while for house servants the figures are found to be about half of that. The alimentary canal was affected in 9 per cent. of the latter, while in 11 per cent. of the shop and office girls the conditions of nourishment were also decidedly in favor of the house servants. Worst off is the factory girl, who not only is often underfed but is also exposed to much more danger of physical and moral nature. Illegitimate births are most frequent among this class of workers; the house servants come next in this respect, while the third group only rarely contributes to this item. A remarkable fact is the relative frequency of nervous diseases and neurasthenia, or rather hysteria, among the housemaids; one would not suppose that fully 2 per cent. of all the servants in this group are classified as victims of such diseases. Surgical diseases, except panaritium, bursitis patellaris, and dental periostitis, are not frequent among servants, while the factory girls are prone to various factory accidents.

The Motive for Taking Out Insurance.—E. J. Spratling said that the exact motive for taking out insurance, if known in every case, would give the exact percentage of risk incurred by the company. The four principal motives are protection of family, fair or unfair, protection of business, fair or unfair, investment and speculation. Unfair protection has fear behind it as a motive and results in bad risks for the company; such is the insurance taken by a man who somehow suspects illness which can be concealed and yet shorten life materially. Protection of business is frequently unfair when it is of "joint life" kind. Insurance for investment is usually safe for the company but is almost obsolete. Speculative motive should be suspected, if no other motive is plainly seen.—*Proceedings of the Medical Section, American Life Convention, New Orleans*, February, 1911.

Book Reviews.

Yellow Fever and Its Prevention. A Manual for Medical Students and Practitioners. By Sir Rubert W. Boyce, M.B., F.R.S., Holt Professor of Pathology, University of Liverpool; Dean of the Liverpool School of Tropical Medicine; Commander of the Order of Leopold III; Fellow of University College, London; Bacteriologist and one of the Public Analysts to the City of Liverpool. With Illustrations. Price $3.50. New York: E. P. Dutton & Company, 1911.

The late Professor Boyce had completed this volume just before his death. It presents a summary of his experiences and investigations in New Orleans early in 1905, in British Honduras and Central America late in 1905, in Barbadoes and other islands of the West Indies and British Guiana in 1909, and in West Africa in 1910. The subject is treated historically, geographically, and from the viewpoint of symptomatology, treatment, pathology, diagnosis, epidemiology, entomology, and prophylaxis. This book is the result of first-hand study of yellow fever in different parts of the world. The author devoted the last years of his life to a careful investigation of yellow fever on the West Coast of Africa, and special stress is laid in this volume upon the existence of yellow fever in this region. He has found that from time immemorial yellow fever has been endemic in West Africa. Many cases of so-called bilious remittent fever and of other fevers have been really cases of yellow fever. In fact, it is suggested that the evidence would seem to indicate that the home of yellow fever may be, after all, West Africa, and not the New World.

A Manual of Practical Hygiene. For Students, Physicians, and Health Officers. By Charles Harrington, M.D., late Professor of Hygiene in the Medical School of Harvard University. Fourth Edition, Revised and Enlarged by Mark W. Richardson, M.D., Secretary to State Board of Health of Massachusetts. Octavo, 850 pages, with 124 engravings and 12 full-page plates, in colors and monochrome. Price $4.50. Philadelphia and New York: Lea & Febiger, 1911.

The growing importance of preventive medicine creates a special demand for authoritative works on practical hygiene, to which category the present volume belongs. The untimely death of the author occurred while he was engaged on a revision of this work; nevertheless this revision has been ably completed by his successor on the State Board of Health of Massachusetts. It is hardly necessary to point out, as has been done in the case of the former editions, the comprehensive scope and depth of scholarship characterizing this work. Every phase of hygiene, with a few exceptions, is discussed in its numerous bearings. These exceptions cannot be dismissed without comment. It is difficult to understand why no mention is made of the rôle of bacteria carriers in the transmission of disease, a subject whose importance has challenged attention during the past few years; it is equally difficult to explain the omission of adequate reference to the modern conceptions of contact infection as contradistinguished from aerial infection. These subjects are vitally connected with public sanitary administration and deserve a complete discussion in a treatise on practical hygiene.

A Working Manual of High Frequency Currents. By Noble M. Eberhart, A.M., M.S., M.D., Professor and Head of the Department of Electrotherapy, Chicago College of Medicine and Surgery; Professor of Radiotherapy, High Frequency, and Vibration, Illinois School of Electrotherapeutics; Radiotherapist, Francis Willard Hospital; formerly Attending Physician Cook County Hospital; formerly Professor of Electrophysics, Post-Graduate Medical School, Chicago; Member Chicago and Illinois State Medical Societies, American Medical Association, American Medical Editors' Association, Press Club of Chicago, Victoria Institute or Philosophical Society of Great Britain, etc.; Fellow, American Academy of Medicine; Fellow, American Electrotherapeutic Association; author of "Practical *X*-Ray Therapy," "Brief Guide to Vibratory Technique," etc; Associate Editor, American Journal of Physiologic Therapeutics; Electrotherapeutic Editor Therapeutic Medicine and the Medical Brief. Price $2.00. Chicago: New Medicine Publishing Co., 1911.

The physician who is considering entering the field of electrotherapeutics is often bewildered by the apparent mass of technical knowledge required and is frequently at a loss to know where to look for enlightenment. Dr. Eberhart, in this book, has inserted only enough of the technical to give the physician sufficient knowledge to operate the common forms of apparatus on the market and intelligently apply the high frequency currents in the treatment of disease. A chapter is devoted to the practical technique required in treating the specialties and another to practical high frequency therapy. Ozone, its nature, physiological action, methods of administration, and therapeutic indications, are briefly considered. The book should certainly prove of value to the physician contemplating using the high frequency current, as it has simplified, to a large extent, a very difficult subject.

The Treatment of Fractures. With Notes Upon a Few Common Dislocations. By Charles Locke Scudder, M.D., Surgeon to the Massachusetts General Hospital, Lecturer on Surgery in the Harvard Medical School, Fellow of the American Surgical Association, Member of the American Urological Association. Seventh Edition, Thoroughly Revised and Enlarged. With 990 illustrations. Price $6.00. Philadelphia and London: W. B. Saunders Company, 1911.

The excellent features of this work have been commented upon so many times that the task of the reviewer would be simply one of reiteration. In the presentation of the simplest details necessary in the treatment of fractures, in the elucidation of the principles governing this treatment, in the host of photographic illustrations representing every important phase of the subject, this volume is preeminently one adapted for the general practitioner and student. The present edition contains, besides a new chapter on the operative treatment of fractures, new material, particularly in connection with the following subjects: fractures of the skull; old fractures of the nasal bones; fractures of the spine; excision of the shoulder joint; damage to the musculospinal nerve; fractures of the neck of the femur; old fractures of the lower end of the tibia; and injuries to the lower tibial epiphysis. In paper, typography, illustration, and binding this volume combines the best of the publisher's art.

Praktische Ergebnisse auf dem Gebiete der Haut und Geschleshtskpankheiten. Erste Jahrgang. Herausgegeben. Von A. Jesionek, Giessen. Wiesbaden: Verlag von J. F. Bergmann, 1910.

During the last few years collections of monographs dealing with the recent advances in various medical branches have become very popular in Germany. The volume before us represents such a collection of articles on cutaneous and genitourinary diseases. The ten subjects treated are: Gonorrhea, Radium and *x*-rays in therapeutics, Arsenic in therapeutics, General therapy of cutaneous diseases, Toxic exanthems, Relation of cutaneous to organic diseases, Wassermann reaction, Campaign against venereal diseases, Leucemic affections of the skin, and, finally, Eczema. These articles contain very extensive bibliographies, with short extracts of the newest publications on the subject treated; they thus save much time for the busy practitioner while acquainting him with progressive development of knowledge in the special subject. We have nothing but praise for this publication, as for other similar ones in the domain of internal medicine, pediatrics, surgery, etc. American skin and genitourinary specialists would do well to acquaint themselves with this volume and any of the series that may follow.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles, etc. By leading members of the medical profession throughout the world. Edited by Henry W. Cattel, A.M., M.D., Philadelphia, U. S. A. Volume II, Twenty-first Series, 1911. Philadelphia and London: J. B. Lippincott Company, 1911.

The present number of this well-known periodical consists of over twenty-five articles from the domain of medicine, surgery, obstetrics and gynecology, neurology, laryngology, ophthalmology, and pathology. We can name but a few articles in this review: Edward Turton writes on constipation, paying special attention to causes and treatment; Fenton B. Turck writes on the diseases produced by the *Bacillus coli communis* in the intestines, allotting a much more important rôle to this organism in the etiology of disease than is currently accepted; Friedenwald and Leitz publish a study of the action of various intestinal antiseptics upon gastric digestion; Cumston considers the surgical aspects of typhoid fever; Thomas communicates his experience with intravenous use of salvarsan, depicting one more form of apparatus for the purpose; Smith reviews the advances in obstetrics in the last twenty years; Robertson writes on the neoplasms of the larynx, etc., etc. These few titles show the variety of subjects treated. The readers need hardly be told what a valuable library of ready reference is gradually formed by the acquisition of the successive volumes of this quarterly.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held October 19, 1911.

Dr. L. Emmett Holt, Vice-President, in the Chair.

Resolution Concerning the Library.—The proposition to amend By-Law 13, Section 15, by substituting the following was unanimously carried. "The Library shall be open on week days to the Fellows, and Associate Fellows, and to persons specified in Sections 7 to 11, inclusive, of this Chapter, from 9 A.M. to 10.30 P.M., and to the Public from 9 A.M. to 2 P.M., excepting during June, July and August, when the Library shall be closed at 12 M. Saturdays, and at 6 P.M. on the other week days, and, also, excepting such time during the year, as it may be necessary to close the Library for cleaning and repairs. The Library may also be open on Sundays and legal holidays, to the members of the Academy, from 10 A.M. to 5 P.M., as may be deemed desirable by the Committee on Library, and approved by the Council."

The Rôle of Salts in the Preservation of Life.—Dr. Jacques Loeb of the Rockefeller Institute delivered this, the Wesley M. Carpenter, lecture. He said that less was known of the rôle of the salts in the animal body than of the rôle of the three other main foodstuffs, namely, carbohydrates, fats, and proteins. As far as the latter were concerned they knew at least that through oxidation they were capable of furnishing heat and other forms of energy. The neutral salts, however, were not oxidizable. Yet it seemed to be a fact that no animal could live on an ash-free diet for any length of time, although no one could say why this should be so. They had a point of attack for the investigation of the rôle of the salts in the fact that the cells of their bodies lived longest in a liquid which contained the three salts, NaCl, KCl, and $CaCl_2$ in a definite proportion, namely, 100 molecules NaCl, 2.2 molecules KCl and 1.5 molecules $CaCl_2$. This proportion was identical with the proportion in which these salts were contained in sea-water; but the concentration of the three salts was not the same in both cases. It was about three times as high in the sea-water as in the blood serum. A series of experiments were made which seemed to give an answer to the question why it was that the three salts played so important a rôle in the maintenance of life. In order to make it easier for those present to follow the enumeration of these experiments he stated briefly the chief conclusion. They knew that every cell represented a chemical factory in which specific chemical reactions took place and that these reactions were different from those going on in the cells of other tissues and in the blood. If a cell was to do its work properly, it had to be shut off to some extent from the blood. This privacy was guaranteed to each cell through the condition of the surface layer of its protoplasm. It seemed that nature had invented a process of "tanning" through the three salts NaCl, KCl, and $CaCl_2$ whereby the surface layer of each cell was rendered comparatively impermeable. In this "tanning" action of the three salts he was inclined to see the explanation of their life preserving action. In order to picture the extent to which the life of many animals depended upon the co-operation of the three salts he mentioned experiments made on a small marine crustacean, Gammarus, of the Bay of San Francisco, which led to the conclusion, that in order to preserve the life of the crustacean Gammarus, the solution must not only have a definite concentration or osmotic pressure but that this osmotic pressure must be furnished by definite salts, namely, NaCl, KCl, and $CaCl_2$ in the proportion in which these three salts existed in sea-water (and in the blood); this could be demonstrated for other marine animals. What was the rôle of these salts in these cases? The botanists had always considered salt solutions as nutritive solutions, but the experiments Dr. Loeb had made on a small marine fish, Fundulus, proved beyond question that this was not the case. He proved that a mixture of NaCl-$CaCl_2$ did not act as a nutritive solution but as a protective solution. KCl and $CaCl_2$ were only necessary to prevent the harmful effects which NaCl produced if it was alone in solution and if its concentration was too high. They were dealing, in other words, with a case of antagonistic salt action, an antagonism between NaCl on the one hand and KCl and $NaCl_2$ on the other. The question now arose: what was the mechanism of antagonistic salt action? The answer to this question lay in observations on the eggs of Fundulus. Fish, so long as it was in the egg, was separated from the surrounding solution by the egg membrane which possessed a small opening, the so-called micropyle, through which the spermatozoon entered into the egg. With a process of hardening or "tanning," it became more impermeable for the NaCl solution. This process of hardening was brought about apparently very rapidly if they added to this solution a trace of a salt of a bivalent metal like Ca, Sr, Ba, Zn, Pb, Mn, Ko, Ni, etc. Not only were the bivalent metals able to render the NaCl solution harmless but the reverse was also the case, namely, that NaCl was required to render the solutions of many of the bivalent metals, for instance, $ZnSO_4$, harmless. They arrived at a new conception of the mutual antagonism of two salts, namely, that this antagonism depended upon a common co-operative action of both salts on the egg membrane, by which this action became completely or comparatively impermeable for *both* salts. And from this fact they drew the further conclusion that the toxicity of each of these salts, if it was alone in the solution, was due to the fact that it could pass through the membrane rather rapidly and reach the embryo. As long as they assumed that lack of the two antagonistic salts acted, if applied singly, in the opposite way from its antagonist it was impossible to understand these experiments or find an analogue for them in colloid chemistry. But if they realized that NaCl alone was toxic because it was not able to render the egg membrane impermeable and that $ZnSO_4$ if alone was toxic for the same reason, both combined were harmless since for the "tanning" of the membrane the action of two salts was required, these experiments became at once clear and appeared in harmony with other experiences in the physicochemical analysis of the phenomenon of "tanning." It was shown that the antagonism between KCl and NaCl did not differ in principle from that of the antagonism between NaCl and $ZnSO_4$ for the egg of the fish. It was only due to the high concentration of the NaCl in the sea-water that, in addition to KCl and NaCl, $CaCl_2$ was needed. Cases were reported which proved that the life preserving effect of the combination of NaCl-KCl-$CaCl_2$ in definite proportions was not due to the fact that the organisms were adapted to this mixture but to a specific protective effect of the combination of the three salts upon the cells. Observations on the sea-urchin suggested the possibility that the combination of the three salts in their definite proportions and concentration had the function of forming a surface film of a definite structure of texture around the protoplasm of each cell by which the protoplasm was kept together, protected against, and separated from the surrounding media. *Conclusions.*—From all experiments they drew the conclusion that the rôle of NaCl, KCl and $CaCl_2$ in preserving the life of the cell was primarily due to a structural, a kind of tanning, effect which they exercised upon the surface film of the protoplasm of the cell. Through this action the film held not only the protoplasm of each cell together, but also required the qualities of semi-permeability necessary for the maintenance of the individual life of the cell. Various facts indicated that in this effect the

action of the Ca was perhaps the most important. This action of the salts was in some cases, if not universally, due to an action upon the proteins. This structural effect of the salts was not entirely irreversible. If they put cells into abnormal salt solutions the surface film might undergo modifications and salts might interact with the protoplasm which were formerly excluded from such interaction. The fact that, for example, the muscle twitched in the pure NaCl solution and was prevented from twitching through the addition of $CaCl_2$ might be due to the fact that in a pure NaCl solution the NaCl might enter through the sarcolemma while when Ca was present the diffusion of the NaCl into the muscle was retarded or entirely inhibited. If instead of NaCl a pure solution of Na oxalate was used, the removal of the Ca originally present in the surface layer facilitated the entrance of Na oxalate and the twitching occurred more rapidly than if they applied NaCl. The author did not believe that this exhausted the rôle of the salts in the body, but they understood now at least why it was that although the salts could not furnish energy, no organism could exist for any length of time on an ash-free diet. The salts, especially NaCl, KCl, and $CaCl_2$, were needed for the formation of the physical or structural qualities of the organisms, especially of the surface films of the protoplasm of the cells, without which life was impossible.

SECTION ON SURGERY.

Stated Meeting. Held October 6, 1911.

DR. JOHN A. HARTWELL, CHAIRMAN PRO TEM.

Gangrenous Appendicitis with Perforation and General Peritonitis.—Dr. SETH M. MILLIKEN presented a motorman, twenty-six years old, whose family and previous histories were negative. September 15 at about 8 P. M. he was seized with violent cramp-like abdominal pain. He had nausea and vomiting. He ran his car, however, until 2 A. M., working off and on during this day. Sunday morning, two days after the onset of his symptoms, he reported for service. He vomited several times and was not allowed to take out a car. Between 4 P. M. and 8 P. M. he called on a friend, carrying his baby several blocks. Sunday night he was very ill. Early Monday morning he went to a doctor. The examination made was very painful. He walked home. Late that afternoon the doctor called and, seeing his condition was worse, sent him to the hospital, where he was admitted at 8 P. M. September 18. He then had a temperature of 102.6° F., pulse 108, and respirations 24. There was great abdominal tenderness. The leucocytes numbered 12,000 and the polymorphonuclears were 82 per cent. The vomited matter was without odor. Dr. Milliken saw him at 9 P. M. The patient had a very anxious expression. The abdomen was rigid, was tympanitic in the middle and flat over both flanks. There was tenderness all over the abdomen. Operation was performed at 9.30 P. M. As soon as the abdomen was opened there came out gas, feces and yellow pus. A loop of intestine interfered much with the operation. The appendix could be felt low down in the pelvis, lying across the hollow of the sacrum, without adhesions. Pus was pouring into the abdominal cavity. The appendix was drawn up, ligated, cut off, the stump cauterized and inverted. Irrigation by the Blake method was employed and pus seemed to come from everywhere in the abdominal cavity. Twelve gallons of saline solution were used before the fluid came away clear. His condition was so serious that the doctor thought he would surely die. Strychnine and digitalis were given and the irrigation by the Murphy method started. The next morning the patient was very much better and asked for something to eat. He made an uneventful recovery.

Dr. ROBERT T. MORRIS said that it was very important that they should learn the character of the bacteria in the pus. Many overlooked a fact brought out by Welch that at the beginning of any infection of the peritoneum the staphylococcus albus spread over the peritoneum very rapidly, and a great deal of this pus rapidly became sterile. One might, however, have a terminal infection following this which was virulent in character. In a large series of cases of general suppurative peritonitis, with apparently the entire peritoneum involved, in many the pus would be found to be sterile. These patients made astonishing recoveries.

Partial Gastrectomy for Carcinoma.—Dr. JOHN DOUGLAS presented a man, forty-five years old. His family history was negative. He was moderately alcoholic. The history of his previous illness dated back one and a half years, when his condition was practically what it was when he came under observation. He vomited frequently, and had severe pain particularly after meals; this pain was relieved by vomiting. His present illness began two weeks before he entered the hospital on July 12. He had lost his appetite, and had sharp lancinating pain in his stomach. Partaking of a heavy meal produced the greatest pain. He vomited every day and during the last two weeks vomitus was dark and coffee-ground in character. He lost 10 pounds in three weeks, weighing on admission 120 pounds. There was an absence of free hydrochloric acid in the gastric contents. The *x*-ray pictures aided them in making a diagnosis of carcinoma of the stomach. On July 24 operation was performed. The carcinoma was found occupying about 3 x 2½ c.m. of the lesser curvature of the stomach to the left of the pylorus. A little over one-half of the stomach was removed and a posterior gastroenterostomy done. On the seventeenth day after the operation the photographs taken showed plainly the bismuth passing through the wound. The patient was discharged on the twenty-first day. In the five weeks following the operation he gained 16 pounds in weight. He now weighed 145 pounds. The interesting points in this case were the *x*-ray photographs showing the situation of the carcinoma, the presence of a tumor not palpable, and no dilatation of the stomach on account of lack of involvement of the pylorus.

Partial Gastrectomy for Carcinoma.—Dr. JOHN DOUGLAS presented a man, fifty-three years old, who was admitted to Bellevue Hospital August 3, being referred there by Dr. Satterlee. His previous history was negative. About eight months before his admission he complained of gastric pains which were relieved by belching up of gas. He had no appetite. He was never nauseated and never vomited. The belching of gas was very frequent. About one month ago he became jaundiced, and found that he had lost between 30 and 40 pounds in weight in eight months. There was no free hydrochloric acid in the gastric contents. He had had no vomiting at all. An *x*-ray was taken by Dr. Ewald. A carcinoma was found to involve fully two-thirds of the lesser curvature of the stomach. At operation between two-thirds and three-fourths of the stomach were removed, just enough of this organ being left to enable them to do a posterior gastroenterostomy. Just what the outcome would be was questionable. He was able to eat. He had gained 9 pounds in weight since the operation. He never vomited before or after operation. Both these cases showed the utility of the *x*-ray in making a diagnosis of these cases of carcinoma of the stomach.

Dr. ROBERT T. MORRIS said that it was not only for purposes of diagnosis in cases of suspected carcinoma that a fluoroscopic examination was made, but to determine the motility of the stomach which might give a clew to some interference with stomach function.

Resection of Small Intestine for Sarcoma.—Dr. JOHN DOUGLAS presented a patient, twenty years old. There was

no history of malignant disease in the family. His habits were regular, and he was not alcoholic. He denied venereal diseases. He was admitted to the hospital July 1. Six weeks prior he noticed a tumor in his abdomen and he felt uncomfortable when he was up and about. He had to stop work because of this discomfort and weakness. He had no constipation nor abdominal symptoms. Examination revealed a mass about one-half again as a fist, lying to the left of the median line and between the umbilicus and symphysis. It was irregular in outline and moderately hard. It was first thought to be fecal impaction; then it was believed to be a cyst; in fact the diagnosis was not made until the abdomen was opened. An exploratory incision was made and this mass was found between the umbilicus and the symphysis and involving the small interstines. It was grayish-white in color and adherent to the bladder and omentum. A diagnosis of sarcoma of the small intestine was made. At operation between 5 and 6 c.m. of the small intestine on each side of the growth were removed. The bowels moved the day after operation without the use of any cathartic. The growth removed was a lympho-sarcoma. Very few of these cases had been reported in the literature.

Dr. Edward W. Peterson reported the case of a patient, twenty-eight years old, with sarcoma of the rectum. He only saw him last week. Sections of the growth were taken and the diagnosis made. Resection of the rectum was proposed but declined. The patient went to another hospital where the growth was completely removed.

Dr. Robert T. Morris recalled a case of sarcoma of the large intestine that fell under his care. It involved the splenic flexure. The patient was referred to Dr. Judd, who kept him alive three years. It was a spindle cell-sarcoma.

Tumor of the Tibia.—Dr. John Carl Arpad Gerster presented a boy, ten years old. There was no history of any specific disease. The first unusual thing noticed was that the right leg seemed larger than the left; he seemed to walk on the toes of his left foot. He had no pain, no fever, and practically nothing abnormal except that this one leg appeared to be swollen and longer than the other. The *x*-ray photograph was interesting. The tibia and fibula on the right side were one and a quarter inches longer than on the left side. The swelling appeared to be about one and a half inches above the ankle. In this case the question of diagnosis arose. A number of *x*-ray plates were shown. In comparing the two fibulae there appeared what looked like a diffuse periosteal thickening on the right side; when the two tibiae were compared a distinct tumor on the inner side of the tibia could plainly be made out. Was this tumor of specific nature? Was it a proliferative process in the leg in a child with primary or secondary lesions not apparent? On the other hand it might be a sarcoma of the tibia. If so it would be subperiosteal. Just why one leg should be longer than the other was hard to answer. This might be a congenital anomaly. The Wassermann and Noguchi tests had been made. There seemed to be some asymmetry of the face. The subsequent course of the case would be reported at some future meeting of the Section.

Dr. Robert T. Morris thought that the question of diagnosis in this case would resolve itself into the question of subperiosteal sarcoma. With regard to the lengthening, it was supposed to occur from the epiphysis rather than from the diaphysis; in this instance the epiphysis was not involved. He remembered one case of pseudo-sarcoma in which the hyperplasia involved the entire leg and there was lengthening, but in this instance the medullary structures were involved.

Postoperative Treatment of General Suppurative Peritonitis.—Dr. Aspinwall Judd read this paper. He stated that various methods of treatment of this condition at the time of operation had been exploited which agreed in only one point of technique, namely, the necessity of the most rapid operation possible compatible with any sort of thoroughness. Dr. Judd expressed himself as of the opinion that the flushing of the peritoneal cavity with various solutions, the making of multiple incisions, except in rare instances, and the handling of the intestines were to be avoided wherever possible. Every effort should be made to avoid driving bacteria into the upper part of the abdomen where the lymphatic supply was particularly abundant and where the absorption of toxines was so rapid as to produce an overwhelming effect upon the system. The wiping off of peritoneal surfaces was also contraindicated. In the 38 cases whose histories the writer presented he had followed out the general method of fairly wide single incision, if by this incision he was able to reach the seat of the infection, evacuate the septic contents by gentle sponging, and effect the repair of the viscus as rapidly as possible. Where by a prolonged search for an appendix the life of the patient was endangered, Dr. Judd said he merely placed a large drain at the site of the lesion and returned the patient to bed as soon as possible. In many of his cases he had administered at the time of the operation or immediately afterward an infusion of from one thousand to fourteen hundred c.c. of normal saline solution, in which from one to two drachms of adrenalin solution had been added. In over 50 per cent. of his cases the cultures were either streptococcus or streptococcus plus colon bacillus. In the remainder the colon bacillus was predominant. Immediately upon being returned to bed the patient was placed in the exaggerated Fowler position. If the condition was desperate intravenous infusion was administered. This had proved very much more effectual than any other methods and was no more difficult to administer. As light a dressing as possible was applied, three or four layers of sterile gauze, and this was kept moist with saline solution and changed as often as required. An ice coil was applied and kept going continuously. Icebags did not answer the purpose; they were too weighty and failed to keep an even temperature. Murphy's drip, a continuous rectal irrigation, was started at once. In some instances the patient had absorbed as much as 140 ounces of normal saline in twenty-four hours by this method. A minority of patients were unable to retain the fluid but would absorb four ounces of saline to which one ounce of whiskey might be added every three hours. An enema of this size would often be taken up every three hours where one of eight ounces administered every four hours would be rejected. Absolutely nothing was given by the mouth. The lips and tongue might be moistened with water applied with a swab but not a drop was allowed to be swallowed. This treatment was persevered in from forty-eight hours in the milder cases to thirteen days in one of the cases reported. To prevent desiccation, a second, or even a third, intravenous infusion of one thousand c.c. of normal saline solution was administered. The writer had given three infusions within four days with no evil results. This treatment greatly reduced the craving for water. No opium or sedatives of any kind were given as they tended to diminish the excretions and secretions. Strychnine and other heart stimulants were given as required. This treatment absolutely inhibited peristalsis, pain was completely absent, and distension rarely occurred. Hunger was also completely abolished. Each twenty-four hours the drains were started, pulled out from one-half to one inch and cut off; this in conjunction with the moist, wet dressing insured good capillary action and copious drainage. If at the end of forty-eight hours the patient was doing well he reduced the Murphy irrigation to twelve hours in twenty-four, replaced the large drainage with short shock

blocks, or if Fowler's enemata were used omitted them during the night. A medicine dropper full of water was administered tentatively, alternating with a liquid food preparation, every fifteen minutes. This was done as much for the psychic effect as for the effect of the fluid itself. If after another twenty-four hours the patient continued to do well the ice coil was used each alternate twenty-four hours. The quantity of fluid given by the mouth was doubled or trebled, depending upon its failure to produce peristalsis. The bowels in all cases were moved by enemata alone up to the sixth day. In those cases in which the appendix was not found or the hole in the intestine not repaired, a fecal fistula usually made its appearance from the third to the sixth day. This was of no consequence as 90 per cent. of these fistulae closed of their own accord under appropriate treatment with permanganate of potash solution with a high irrigator containing two to four quarts and the insertion of a soft rubber tube to the bottom of the fistula, the tube being reduced in length and caliber as the fistula closed. Where in spite of all precautions a patient started up a sudden temperature, an intravenous infusion would almost invariably bring the temperature down to somewhere near normal within from six to twelve hours with a corresponding improvement of pulse. The aim of the writer's treatment in these cases had been to absolutely limit peristalsis, with a consequent absence of pain, to prevent the absorption of septic material, and to produce an exosmosis into the peritoneal cavity with a subsequent washing out of this septic material. With the use of the ice coil the writer had never seen paralysis of the vasomotors with a consequent dilatation of the blood vessels. Where it had been necessary to deprive the patient of food for more than four days in a well nourished individual, or more than forty-eight hours in a fragile person, nutrient enemata had been alternated with the Fowler's enemata. If this was done it was essential to wash out the rectum thoroughly once a day. Where the stomach was distended it was customary to wash it out as often as might be required. In two or three cases where postoperative ileus had developed he had administered as a last resort three or four minims of oleum tiglii suspended in one ounce of castor oil through a stomach tube. In one such case the procedure was repeated three times within thirty-six hours. This measure was resorted to only in cases in which death was inevitable without some radical procedure, and after this measure had proved successful, the routine treatment was immediately resumed. Dr. Judd had used autogenous vaccines to some extent but was not prepared as yet to report his results.

Dr. Edward W. Peterson asked how one could determine that there was a general suppurative peritonitis present through such small incisions.

Dr. Clarence A. McWilliams said that the question, whether to flush out the abdominal cavity in these cases or not, was a very interesting one; the general trend among surgeons today was not to wash out this cavity; such a procedure seemed to increase the shock; washing the abdominal cavity, even if thoroughly done, diluted the poison to such an extent that it was more easily absorbed and the patients died quicker. However, if the peritoneal cavity could be thoroughly and quickly washed out, it seemed to him that this would be an advantageous thing to do. The method used at the Presbyterian Hospital consisted of a suction apparatus; the salt solution was introduced by the ordinary irrigating tubes; then the suction tube was placed at various parts of the abdomen and the fluid withdrawn.

Dr. William Henry Luckett noticed that Dr. Judd gave enormous doses of stimulants. He had found that these patients with general suppurative peritonitis and suffering from shock, if placed in the exaggerated Fowler's position, required stimulation to keep them alive. There was the choice of free stimulation or letting the bed down a little bit. In cases of general peritonitis following pregnancy the late Dr. Pryor believed that the best thing to do was to perform a posterior vaginal celiotomy, and packing around the broad ligament with iodoform gauze, keeping the packing in until iodine appeared in the urine. Dr. Luckett said he did not see these cases of general peritonitis; he did not recall a single case in an active service. Of course they often saw cases of pus in the peritoneal cavity. He thought there must be something else to enable them to make a diagnosis of general suppurative peritonitis besides what was found by looking through a five-inch incision in the abdominal wall.

Dr. John A. Hartwell said that the subject under discussion was one that was always very prolific. He remembered such a discussion before the Surgical Society; the question was, should they use irrigation at the time of operation. Cases were shown on whom irrigation had been employed by the Blake method. This was a siphonage produced by a special device. At that time the method was severely criticised. The majority of those present were of the opinion that irrigating the abdominal cavity was not a good procedure. There was only one gentleman present besides himself that believed it to be a good procedure and he later found that he was the only one present who had a Blake tube. Their contention was that the use of the tube tended to do harm. At a subsequent meeting there was introduced a tube which was somewhat similar in construction to a vacuum cleaner and the gentleman who was especially bitter at the former meeting, and who had been very strong in his condemnation of these tubes, said that this tube was one of the best things to use because there was pus in the abdomen and the presence of pus there was dangerous. So far as his experience went he had not used the Blake tube; there was no way of getting rid of the pus that he considered to be safe. He therefore let it alone. Nature could take care of a great deal of the exudate.

Dr. Aspinwall Judd said that blood cultures were taken in practically every case. There was no great diminution in the body fluids; the patients did not become desiccated at all. They were never thirsty and did not have a dry tongue. They claimed they never felt the ice coil. He did not wish to be understood as saying that he used only small incisions; he made incisions sufficiently large to meet the requirements. If necessary an increase in the body fluids might be brought about by means of enemata and intravenous infusions. Pharmacists stated that they got no systemic effects from the use of adrenalin; but clinicians did get the results; they got distinct rises of blood pressure from the use of adrenalin but the dose must be larger than the pharmacists advised. In determining whether there was present a diffuse suppurative peritonitis or not, it seemed to him that the character of the pus would determine that point. If the blood culture showed the presence of streptococci together with the colon bacilli it meant, in all probability, that there was present a general diffuse peritonitis.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Sixty-first Annual Meeting, at Harrisburg, September 25 to 28, 1911.

(Continued from page 896.)

SECTION ON MEDICINE.

Tuesday, September 26—First Day.

Dr. Edgar M. Green of Easton in the Chair.

Chairman's Address.—Dr. Edgar M. Green of Easton said he would not for one moment discourage the most scientific and painstaking labor to make an accurate diagnosis, but what advantage was it to us in our practice and

of what benefit were we to our fellow men if we spent all our time and used all our knowledge merely in diagnosis? It mattered little to the patient whether he had one-half or two-thirds of the lower lobe of his left lung involved. It sufficed for him to know that he had pneumonia. Much more important to him was that his treatment should be so carried on that relief was given and a return to health secured. Great advances had been made in the treatment along the line of serum therapy, but this had reached comparatively few diseases and the treatment of most of our patients must still be limited to the assistance of nature in her work.

Surgical Treatment of Poliomyelitis.—Dr. G. G. Davis of Philadelphia said that as long as there was any ground for hope of improvement in poliomyelitis no radical measures such as operation should be undertaken. This usually applied to the first year of the disease. During this time apparatus was used to support the part and to substitute as far as possible the paralyzed muscle. If the knee was weak stability could be obtained by a brace. If the toe dropped it might be held up by a rubber band. When the body weight was placed on a paralyzed limb it tended to become distorted: braces prevented this. Exercise was the most important agent. It consisted in encouraging the patient in the attempt to use the paralyzed parts. Finally after two, three, or more years, when improvement apparently ceased, various operative procedures could be resorted to.

Pennsylvania's Work on Poliomyelitis.—Dr. S. G. Dixon, Commissioner of Health of Pennsylvania, stated that in January, 1910, the Advisory Board of the Pennsylvania Health Department adopted a resolution causing poliomyelitis to be classed as reportable. Since July, 1910, 1,076 cases had been reported. The geographical distribution was general. Geological studies seemed to indicate a relationship between the disease and wet subsoil, but neither vegetable nor insect life could be determined to be positively related to the spread, although simultaneously with the outbreak there was an unusual prevalence of mosquitos. Out of the 1,076 cases 739 occurred in children under 5 years of age. The most important work performed in the State Laboratory was the discovery and description in detail of a hitherto unobserved organism in the blood of children and monkeys suffering from the disease.

Dr. C. K. Mills of Philadelphia said he had had a large experience with poliomyelitis, but could not say much about the nature of the disease except to express his conviction that it was carried by some form of insect and that the microorganism to which it was due was very likely of animal rather than of vegetable nature. He had seen quite a number of cases in which the disease was characterized by pain due to various causes, among them coincident meningitis or multiple neuritis, also to constrained positions due to relaxation of the muscle incident to the paralysis. The differential diagnosis was easy as there was scarcely any other condition that could be confounded with it. He thought a great mistake was made in treating those patients too much and too soon. Nothing was so dangerous perhaps as the too early and too severe use of electricity. After a time electricity could be used and should be used with more care, but only under the observation of a physician who understood it.

Dr. Tom A. Williams of Washington, D. C., said that in 1910 there had been 500 cases within two months in Washington, D. C. No new early symptoms were discovered which would enable them to predicate that a case was one of poliomyelitis. It seemed wise that in times when the disease was suspected all febrile cases should be isolated for some days at least.

Technique and Clinical Significance of the Wassermann Reaction.—Dr. John L. Laird of Philadelphia presented a statistical report based on 2,672 reactions on 1,555 cases. Among 808 reactions in non-syphilitic cases with lesions 767 were positive, 37 negative, and 4 doubtful. In 458 reactions of syphilis without lesions 278 were positive, 174 negative, and 6 doubtful; in another series of syphilitic cases in which the stage of the disease and the amount of treatment were uncertain in 116 reactions 101 were positive, 12 negative, and 3 doubtful. In parasyphilitic conditions among 223 reactions 177 were positive, 45 negative, and 1 doubtful. In syphilis after treatment with salvarsan among 177 reactions 121 were positive, 43 negative, and 13 doubtful; in doubtful cases among 408 reactions 66 were positive, 294 negative, and 28 doubtful. In non-syphilitic cases among 482 reactions were all negative.

The Relation of Syphilis to Diseases of the Nervous System.—Drs. Theodore Diller and W. R. S. Denner presented this paper in which they said it was common to divide syphilitic affections of the nervous system into two groups, namely active syphilis and parasyphilis. In active syphilis the involvement of the nervous system was usually, if not always, secondary to the blood-vessels and meninges, whereas in parasyphilis the lesions were ably produced by the toxins of syphilis and were essentially incurable in character. Among the most important symptoms pointing to cerebral syphilis were persistent headache growing worse at night, vertigo, and mental torpor. When syphilis attacked the base of the brain various nerve palsies might be noted. When, in the presence of severe, persistent headache, there were apoplectiform convulsions and no optic neuritis it was to be suspected that the meninges of the convexity were chiefly involved. Whether all cases of tabes and paretic dementia were secondary to syphilis was still somewhat a debated question, but it appeared that the weight of evidence was leading more and more to an affirmative answer to this question. Brain syphilis was to be distinguished especially from tumor. In doubtful cases one had come to let the laboratory findings settle the case.

Treatment of Syphilis.—Dr. Walter F. Donaldson of Pittsburgh presented this paper, saying that it was the family physician who had the best opportunity to treat syphilis. He most often saw it in its earliest manifestations when it was most easy to overwhelm the infection by diligent treatment and to instil into the mind of the patient just what syphilis was and what its treatment should be. The recognition of the spirochetes in the secretions of the primary lesion made reprehensible the practice of waiting for secondary manifestations before instituting treatment. The Wassermann and the Noguchi reaction were able to clear up the diagnosis in doubtful cases and to facilitate prompt application of proper therapy. The practitioner must not only be familiar with the disease but must also be prepared to put in practice the most scientific modes of treating it. Plans should be outlined for the patient from the first by which one might expect to see the patient often enough to keep control and long enough to cure. It could not be said that mercury given in proper form and appropriate does had not proved highly satisfactory in the treatment of syphilis. The use of arsenic in the treatment of syphilis had been overlooked until very recently. To-day it had reassumed its position second to mercury and iodine. Where potassium iodide was indicated he believed it was nearly always better administered with mercury, the best results being obtained by increasing doses. The use of salvarsan in properly chosen cases was undoubtedly an improvement over other methods of treatment, but until many more years of experience with it had developed it must remain as an auxiliary to the tried and proven power of mercury.

Dr. Hillary M. Christian of Philadelphia said that in regard to the Wassermann test he was convinced as to its value. However, he would not pronounce an apparently healthy man necessarily syphilitic because

he responded to this laboratory test, neither would he say a man who had certain lesions was not syphilitic if he did not respond to the Wassermann test. In most of his work the Wassermann test was not needed. He thought it of the greatest value in nervous syphilis. Last May he reported a series of 70 cases that had been treated with salvarsan. He was then accused of being rather pessimistic, but he had tried it out since and had no reason to change his opinion.

Dr. Judson Daland of Philadelphia said the Wassermann reaction was unquestionably of the utmost importance in very many syphilitic conditions, not only from the standpoint of diagnosis, but also in judgment of treatment. Although there were certain conditions where it was to be preferred it seemed to him Dr. Donaldson had pointed out very clearly the point that one had in salvarsan an additional remedy capable of attacking syphilis in a different manner.

Wednesday, September 27—Second Day.

The Relation of the Streptococcus to Scarlet Fever with Active Immunization by Means of Streptococcic Bacterins.—Dr. John A. Kolmer of Philadelphia said that among the various organisms considered as the probable cause of scarlet fever streptococci had received the most study and attention, although they were regarded as secondary invaders and responsible for a high proportion of the complications. If streptococcic bacterin prevented scarlet fever, then streptococci bore a much closer relation to that disease than one was willing to admit. An inoculation, however, with the heat-killed streptococcic bacteria did not prevent scarlet fever. As scarlet fever was probably not due to the streptococcus, that organism being responsible only for the complications, the streptococcus bacterin might prevent a severe attack of scarlet fever by producing an immunity against secondary streptococcus infections.

Heart Stimulation in the Treatment of Lobar Pneumonia.—Dr. J. Irving Roe of Wilkes-Barre presented this paper and stated that pneumonia was one of the most fatal of all acute diseases. Therefore, its treatment was very important. The great danger with this disease lay in certain cardiovascular conditions, thus the heart rather than the lungs needed careful watching. Pericarditis, endocarditis, and myocarditis were common complications. As regards heart stimulation the wise physician withheld it until the heart begun to flag, a condition indicated by progressive rapidity, more feeble apex beat, and weak first sound. The condition was one of vasomotor paralysis with lowered blood-pressure and lessened systolic output. Strychnine had its value, not perhaps as a heart stimulant, but as a stimulant to the respiratory centers. The author stated that he had used camphor with most gratifying results. In approaching collapse adrenalin given in 1 c.c. doses of 1/1000 solution by hypodermoclysis, or venous transfusion, repeated every two to four hours, was the most likely to give relief.

Anaphylaxis in Its Relation to Bacterial Infection.—Dr. A. Barr Snively of Blue Ridge Summit read this paper. He said that anaphylaxis was a phenomenon with which all general practitioners should be familiar. Prophylactic doses of sera should not be given indiscriminately on account of the danger of sensitizing the patient against future injections which might become necessary. A careful history should be elicited concerning any hereditary or acquired asthmatic tendency or idiosyncrasy toward horses and stables. According to Anderson, old sera were just as potent as fresh sera, unit for unit, and less apt to give serum reactions. Antitoxin was in itself harmless. The period of incubation of certain diseases was analogous to the sensitization time of anaphylaxis.

Typhoid Fever with Relapse and Multiple Complications.—Dr. A. A. Eshner of Philadelphia reported a case of typhoid fever in a woman 30 years old, in which early in the course of the disease the urine contained albumin and tube casts, and in the third week there was hemorrhage from the bowel, in the fourth week bilateral parotitis, in the eleventh week hyperpyrexia to the extent of 106.6°. In the twelfth week a pure growth of typhoid bacilli was cultivated from the blood. The patient recovered after an illness of 13 weeks.

The Treatment of Cardiac Arrhythmia.—Dr. George W. Norris of Philadelphia said that the forms of cardiac arrhythmia were: (1) Sinus arrhythmia in which the normal inspiratory pulse acceleration and expiratory retardation become exaggerated. This might be symptomatically abated by atropine, but direct treatment was rarely necessary. Rest, diet, hydrotherapy, and massage constituted the chief line of defence. (2) Extrasystolic arrhythmia in which one or more beats were dropped, which usually resulted from accentuated myocardial excitability, although it might be due to heart block or diminished excitability. When temporary it neded no treatment; when persistent treatment consisted in lessening the work required of the heart muscle. (3) Auricular fibrillations. It was this variety which so often went hand in hand with the broken compensation of old rheumatic valvular lesions. These cases required rest, sleep, attention to diet, exercise, and excretions. When the compensation was bad, absolute rest with laxatives and restricted dry diet would often produce many beneficial results. It was in auricular fibrillation that digitalis accomplished its most brilliant results. (4) Heart block which was due to a depression of conductivity. For the serious form of heart block seen in myocardial disease no definite rule could be laid down. In incomplete block atropine in liberal doses often arrested the condition. Digitalis was contraindicated. If heart block was complete, digitalis might be beneficial. (5) Pulsus alterans, which was due to depression of contractility, a condition which could be inferred when we found an alternating pulse or a half frequency pulse. As this was an expression of exhausted or degenerated myocardium little could be expected by any direct treatment. The treatment might be said to be that of myocarditis in general.

Report of and Observations on a Case of Massive Pericardial Effusion.—Dr. Thomas W. Kay of Scranton read this paper. During the past winter five cases of pericardial effusion had come under his observation. In one case at least 4,000 c.c. of fluid were present. The gravity of the case depended not upon the quantity of fluid, but upon the intrapericardial pressure. Paracentesis pericardii was easily done and gave prompt relief, but was usually not permanent. By it one was never able to draw off all the fluid. Excellent results were claimed as a result of passing the trocar into the pericardium and introducing a rubber catheter through a rubber cannula well below and to the rear of the heart. Thoracotomy with incision and drainage of the pericardial sac had been reported to give good results.

Dr. A. Stengel of Philadelphia said that one feature of the discussion which appealed to all in everyday work was the matter of diagnosis as between the serious and the trivial form of irregularity of the heart. He thought that the treatment of cardiac irregularities was infinitely more unimportant than the diagnosis, because, after all, the trivial forms took care of themselves in the long run and the other forms were serious and would remain serious even in spite of treatment, though they might be helped. The matter of diagnosis was of importance mainly because a proper recognition of the forms that were unimportant had led to permission to the patient to follow a mode of life that in the end rid him of the trouble; or, on the contrary, if the physician looked upon it as serious and gave a serious prognosis, would lead to hopeless in-

validism. One ought to be very careful in making the prognosis in these cases. A good rule was that the more the patient was incommoded by subjective recognition of his cardiac irregularity the greater was the trivality of his condition. The use of digitalis was governed strictly by the effects and we should recognize that in actual cardiac disease it sometimes, even in proper doses, did harm. In very large pericardial effusions the fluid was mistaken for pleuritic fluid and the aspiration was made far out in the left side and a fluid was obtained, but it was really a pericardial effusion. As to the radical operation for pericardial effusion he said that it was desirable to have more evidence than the evidence that was quoted before we could unequivocally recommend this form of treatment for pericarditis. He would prefer to stick to the old paracentesis at present.

Symptomatology and Pathology of Tumor of the Pons—Pathological Report of One Case.—Dr. John H. W. Rhein of Philadelphia stated that the symptoms characteristic of tumor of the pons were crossed hemiplegia, that was, palsy of one or more cranial nerves, on one side, chiefly the 5th, 6th, 7th, or 8th nerve, and hemiplegia on the opposite side. The variability of the symptomatology, on the other hand, was also characteristic for obvious reasons when the tumor was an infiltrating glioma, which was the most frequent type of pontine tumor. The frequency of dysphagia and dysarthria should be emphasized. Paralysis of associated ocular movements was of extremely important diagnostic value as indicating the presence of a lesion of the pons.

Herpes Zoster.—Dr. Frank Crozer Knowles of Philadelphia read this paper. He stated that during the last nine years he had observed 21,337 case of skin diseases among which were 286 cases of herpes zoster. The disease was rare under one year of age, but three cases having been seen. The disease was seen in the negro race only twelve times. Ulceration, pustulation, abscess, and a hemorrhagic or gangrenous condition of the vesicles were noted in a few instances. Itching, pain, and burning persisted for some weeks after the attack in a few cases. Unusual locations noted were the hands, soles of the feet, scrotum, and penis. The mucous membranes were attacked in four cases. Trauma was apparently the cause in one case and arsenic in another. None of the cases was bilateral.

Officers.—The following officers were elected for the ensuing year: *Chairman,* Dr. Charles H. Miner, Wilkes-Barre; *Secretary,* Dr. James D. Heard, Pittsburgh.

(To be continued.)

AMERICAN ROENTGEN RAY SOCIETY.

Twelfth Annual Meeting, Held in Richmond, Va., September 20 to 23, 1911.

The President, Dr. Percy Brown of Boston, Mass., in the Chair.

(Concluded from page 848.)

The Röntgen Rays in Neurasthenia.—Dr. Arthur Holding of Albany, N. Y., believed that neurasthenia and other neuroses were often caused by conditions which did not have their origin in the nervous system, and which might be detected by the röntgen ray; therefore, it was advisable that all these patients be examined thoroughly by a competent röntgenologist. A few illustrative cases were the following: Case 1, obscure progressive paralysis of the arm, shown by the röntgen rays to be due to a supernumerary rib. Case 2, epileptiform convulsions, shown to be caused by unerupted teeth. Case 3, a very obscure gastrointestinal condition due to cardiospasm. Case 4, neurasthenia with obscure constant pain caused by hour-glass contraction of the stomach. The patient was regarded as a neurasthenic for twenty years. Case 5. autointoxication with nervous prostration, regarded as a case of neurasthenia due to visceroptosis. Case 6, neurasthenia proved to be a case of tuberculosis of the lungs. Case 7, neurasthenia cured by the removal of a stone from the kidney. Case 8, patient unable to walk because of pain in the feet and legs, thought to be due to a broken-down arch. The röntgen ray showed an arteriosclerosis in the arteries of the feet and determined the case to be one of intermittent claudication. Case 9, a painful condition of the wrist supposed to be a neuritis, shown, however, to be caused by tuberculosis of the bones. Case 10, severe case of neurosis which proved to be caused by a dislocation of the symphysis pubis.

Dental Defects as a Cause of Epilepsy.—Dr. Henry K. Pancoast of Philadelphia wished to call attention to the importance of including a careful examination of the teeth as a part of the general routine examination of all cases of idiopathic epilepsy. Dental defects might exist and be responsible for the epilepsy. In three cases examined by him such defects proved to be etiological factors because when they were remedied the patient was free from epileptic attacks. Such defects might exist without any clinical manifestation; in fact, that was the rule; therefore, it was advisable in all cases of epilepsy to include as a part of the routine examination of the head a careful examination of the teeth. This was especially important in the case of children, although cases had been discovered in adults where the epilepsy was caused by the dental condition. Any defects found must be remedied early in order to do any good, as they were usually, perhaps, only a contributing factor in the etiology of the condition. Moreover, in view of this fact there should be no relaxation in the vigorous application of any other therapeutic measures that had been practised, or which might be indicated.

Dr. E. H. Skinner of Kansas City, Mo., once heard a man speak against machine-made diagnoses, and yet diagnoses made by mechanical means were superior to mere gray matter diagnoses. The thermometer, microscope, röntgen ray and blood-pressure apparatus had superseded less accurate and exact aids in diagnosis. Many cases of gastrointestinal disturbances had been diagnosed as neurasthenia until the röntgen ray disclosed an ulcer of the stomach, which was substantiated by a careful inquiry into the history of the patient. The gastroenterologist claimed that gastroptosis was the cause of neurasthenia, while the neurologist held that neurasthenia was responsible for the gastroptosis. The röntgen ray would often disclose a condition which, if corrected, would dispel the neurasthenia.

Dr. George C. Johnston of Pittsburg said that, as for neurasthenia being caused by unerupted teeth, it was probably true that there was some connection between the irritation of impacted teeth or any other constant irritation and epilepsy—but only in the case of an individual who was going to have epilepsy anyway. For three or four years he had examined cases of impacted teeth removed by two extraction specialists, but he had yet to see a single instance of epilepsy from this cause. As for neurasthenia and neuralgia: he was asked to examine a gentleman who had been suffering intensely from tic douloureux for a long time. Careful examination with the röntgen ray finally disclosed a little area of caries just under the gum margin in which there was a tomato seed. When that was removed the neuralgia ceased, and it had not returned since. In another case the nervous disturbance was due to abscessed incisor teeth.

Dr. George E. Pfahler of Philadelphia was asked to examine a woman who had neuralgia in her right foot. The neurologist who referred the lady to him scouted the idea that the neuralgia might be caused by an abscessed tooth, although he had found two such teeth in the

röntgenogram. Two years later another physician referred the patient to a dentist, who treated these two teeth, and the neuralgia promptly disappeared.

Dr. Clarence E. Coon of Syracuse, N. Y., had seen a young man of seventeen who had begun to have attacks of epilepsy which increased in severity and frequency until his mind became affected. His family finally had to place him in an asylum for the insane. He became violent and unmanageable. He was asked to examine him and found four impacted wisdom teeth, which he advised to have extracted. This was done, and from that time on this man had not had a single attack of anything like epilepsy. Within two weeks after the operation he was rational and quiet. He gained rapidly in weight and was now entirely well. The speaker would not want to create the impression that he believed that epilepsy was solely caused by impacted teeth, or other dental conditions. In epilepsy, as in any other disease, perhaps more so, one must have the soil in which the seed could develop. It was particularly in those cases where the dental conditions did not give rise to clinical phenomena that one must include the mouth and teeth in the examination. But this was only one factor which might cause the epilepsy.

Compensating Displacements of the Thoracic Viscera in Pulmonary Tuberculosis.—Dr. Charles Lester Leonard of Philadelphia thought that compensation for the loss of expansion in the lungs took place through an increase in the capacity of their normal area, or through the interposition between the visceral and parietal pleura of an area filled with air, or fluid, or both. These changes must take place in proportion to the volume of the lungs involved in a pathological process. They were in a measure appreciable by the ordinary methods of physical diagnosis. The changes which could be noted by inspection and mensuration were, however, less marked in ratio with the extent of the disease than those within the thorax, which produced displacements or alterations in the position of the viscera. An internist connected with one of the largest institutions for the special study of tuberculosis did not believe that displacements of the viscera could occur so frequently in the earlier stages of the disease. He said that in some hundreds of post-mortems conducted at the institute they had failed to find such displacements. These pathological variations in the position of the thoracic viscera could be clearly shown only by the rapid röntgenograms that eliminated the heart's motion. Their exact position and interthoracic relations could only be fully appreciated by the rapid stereoröntgenogram. In the entire series of one hundred cases twenty-six displacements of the heart and aorta were found, with three cases of pneumothorax. In seventeen cases the heart was displaced to the right; in four to the left; and in five a rotation took place, with an upward displacement of the heart and aorta, so that the heart assumed an anteroposterior position. In two cases a superficial pneumothorax was found overlying the lower left lung, and in one case an acute hydropneumothorax of tuberculous origin was shown. A review of the cases in the entire series showed that those cases in which no displacement of the viscera was present were early lesions, in which no fibroid change had taken place, or that the lesions were not extensive and symmetrical, or that the heart was bound down by adhesions between the pericardium and the diaphragm. The unequal elevation of the two halves of the diaphragm, Williams' sign, was present in less than one-half of all the cases, and was not present where displacements of the interthoracic viscera had occurred. The pathological displacements of the thoracic viscera in pulmonary tuberculosis were the result of compensation for the destruction of expansive normal lung tissue by the disease. The displacing force was the result of one or two changes, or the combination of both, or, as in the case of acute pneumothorax, from the rupture of the lung. The consolidated lung area might undergo fibroid change and contraction, the contracting tissues drawing the heart and aorta with them, while the emphysematous lung on the opposite side assisted in their displacement. In addition to the displacements which caused compression of the diseased portion of the lung there were present in many cases an ossification of the costal cartilages and an approximation of the ribs over the affected area. The compensating displacements might be divided into four groups. Displacements of the lung by superficial pneumothoraces; displacements of the heart upward and into an anteroposterior position; displacements of the heart and aorta to the left; and displacements of the heart and aorta to the right.

The Control of Fracture Work by the Röntgen Ray.—Dr. Roland Hammond of Providence, R. I., said that the time was near at hand when no fracture or joint injury would be considered to have been properly treated if a röntgen examination had not been made. It was a well-recognized fact that a röntgen plate should be taken after an attempt at reduction had been made to see if the desired result had been obtained. Of almost equal importance was a plate beforehand to know accurately with what condition we had to deal—a fact not appreciated by the profession at large. With the knowledge thus obtained the reduction could often be easily made and with but slight trauma to the parts. Many cases now subjected to open operation and plating could be treated by extension and counter-extension after the method of Bardenheuer and Graessner, with as good anatomical and functional results, and at less risk and greater comfort to the patient. In many cases which seemed irreducible plates made while the patient was under ether and after successive attempts at reduction had been made would often give the clue to the situation, enabling the reduction to be made without resorting to an open operation. Some fractures were irreducible by the above methods and an open operation was necessary. In these cases an absorbable suture material should be used, if possible, reserving wire and plates for cases in which the fragments could be held by no other means.

Dr. Arthur Holding of Albany, N. Y., thought it was the röntgenologist's duty to impress on the surgeon that this fracture work must be controlled by the röntgen ray. Only by this means could we determine absolutely whether the approximation of the fragments was as it should be. We must not hesitate to advise the surgeon to sacrifice his pride and reset a bone. In fact the röntgenologist might be in the rather trying position of having to protect the surgeon and the patient. We must be careful, however, when we used the röntgen ray while the patient was still under the ether anesthesia. He had seen several instances where the spark had caused serious damage, even when the tube was not anywhere near the ether can or mask. The spark jumped to the iron bedstead and in that way got to the ether can, and in one case there was produced a conflagration in which the patient was injured seriously. The ether bottle should be out of the room and the can away from the patient's face before the tube was excited.

Dr. Lewis G. Cole of New York said that he used bromide paper instead of a plate. One could show as much on the paper as on the plate in from two to three minutes from the time the exposure was made. The prints might be made as rapidly as could be done. This applied not only to fractures, but to foreign bodies.

Dr. George C. Johnston of Pittsburg thought the only man competent to treat fractures correctly was he who controlled his work with the röntgen ray. It was also necessary to examine these fracture plates stereoscopically, especially in the case of fractures of the shoulder.

Röntgenographic Diagnosis of Ureteral Kinks Causing Intermittent Hydronephrosis.—Dr. G. M. Stover of Denver, Col., said that hydronephrosis had heretofore been recognized only in rather an advanced stage, when the dilatation of the renal pelvis was considerable. We had found, and had demonstrated by catheter tests, röntgenograms, and surgical operation that there was easily recognizable a much earlier stage of this condition, to be discovered before dilatation of the renal pelvis had taken place. A certain number of patients complained of pain in one or both kidneys; a pain somewhat like that of the classical hydronephrosis, but not relieved by the sudden passage of a quantity of urine and a disappearance of the tumor, and without the microscopic urinary findings of fully developed hydronephrosis; a pain suggestive, but not typical, of renal calculus colic, and in which röntgenographic examination for stone was negative. The symptom-complex in this class of cases had usually been rather vague in its diagnostic indications, and there had undoubtedly been many instances in which a faulty diagnosis had led to operation for conditions which were not present, the trouble being laid to an appendix, a tube, an ovary, or a gall-bladder. In the class of cases under consideration it was found by Fowler that the injection of a comparatively small amount of solution (averaging only 14 c.c.) into the pelvis of the kidney produced a pain exactly similar to the pain from which the patient suffered; an injection of the unaffected kidney produced a pain which the patient had never felt there before, but identical with that which had been felt on the other side. They had already examined hydronephrotic cases after collargol injections, and in the course of several conferences on the subject of the röntgenographic examination of the various viscera in which mention was made of the fact that he, as a routine, made röntgenographic examinations of the stomach and intestines with the patient in the erect posture, Fowler suggested that in examining these cases of "intermittent hydronephrosis" the collargol be injected first with the patient reclining and a plate made, then the patient placed in the erect posture and a second plate made. While the patient was in the erect posture he was instructed to make various movements of the trunk, such as would be calculated to dislodge a really movable kidney, and at the same time the ureteral catheter was being withdrawn while a further amount of solution was being injected through it, thus showing röntgenographically the changed position of the kidney and demonstrating the appearance of the ureteral kink. This procedure, as far as they could ascertain, had not been made use of prior to their work.

Collaboration Essential in the Diagnosis of Surgical Conditions of the Kidney and Ureter.—Dr. John Hunter Selby of Rochester, Minn., thought that cooperative examination opened up additional possibilities, especially in that large group of abdominal cases seen in daily practice which exhibited an indefinite line of symptoms referable, perhaps, to the appendix, gall-bladder, stomach, duodenum, spine, or genitourinary tract, but with a strong possibility of involvement of the genitourinary tract. Such cases required careful study, and some of them taxed every means at our command before we could approach an accurate diagnosis. In St. Mary's Hospital (Mayo Clinic) all such cases were referred to the röntgen laboratories for examination. The routine examination in this clinic might be described as follows: A full history was taken and a physical examination made. A twenty-four hour specimen of urine was reported on, and, perhaps, a gastric analysis was made—all of which might throw considerable light on the case and yet not clinch the diagnosis. The röntgenologist was then called upon to examine the case, and after the proper preparation of the intestinal tract a set of stereoscopic plates of the upper abdomen and a second set of the lower abdomen and pelvis were made by the rapid method, that is, while the breath was held. If this examination failed to reveal any abnormalities, we had not yet ruled out the genitourinary tract. If, then, in the light of the clinical findings and negative *x*-ray examination, the diagnosis was still under suspicion, the patient went through a second preparation of the intestinal tract and was referred to the cystoscopist the following day. In the meantime the original plates were studied and a consultation was held between the physician in charge, the röntgenologist, and the cystoscopist. This at times furnished the cystoscopist with much-needed information and established a new working basis for the röntgenologist should subsequent events indicate a second *x*-ray examination. The cystoscopist now made his thorough routine examination and he alone might clear up the diagnosis by one of his ingenious methods and thus eliminate the necessity for the "combined examination." He might gather evidence to confirm the original *x*-ray findings or to disprove them. Again, he might find evidence of trouble that had not so far been suspected. Therefore, the indications for the combined examination depended upon the original *x*-ray findings plus the findings by the cystoscopic examination. There were two efficient methods of examining these cases in use: The gravity method and the syringe method. The important factor in each was to avoid overdistending the kidney pelves, the calices, and the ureter. Should overdistension occur, a renal colic might cause a violent contraction, which prevented getting an outline of the pelves in repose. During the attack of colic the patient was restless and even if the exposure was short we seldom got a clear image. The shadow of the pelves in contraction was misleading and valueless. Let one assume that in the original röntgen examination the pelvic plates showed a shadow at the region of the ureteropelvic junction on the right side. Both plates of the stereoscopic set showed it distinctly; one recorded its presence, its appearance, and its apparent location, and called it a "suspicious shadow." The case was referred to the cystoscopist for further examination since one did not dare to risk making a diagnosis on the original plates alone, even when the history and symptoms seemed to justify it. Experience in a large number of these cases had taught one that the most skilful interpretation in many instances was unsafe. Therefore, one was content to call these shadows "suspicious" until one had established their identity and their approximate location. At the subsequent or combined examination one sought not only to locate and identify the calculus, if present, but one endeavored to gain additional information, such as demonstrating the presence of an associated ureteritis, constriction, local dilatation of the ureter, hydroureter, hydronephrosis, pyonephrosis, or deformities. Should the procedure exclude the suspicious shadow as a possible source of trouble and fail to demonstrate any deviations from the normal, the genitourinary tract could be eliminated in the diagnosis. But the combined examination might have demonstrated any one of a number of important surgical conditions; for example, an anatomical or pathological stricture, kink, constriction, tortuosity, an anomaly of the ureter, nephroptosis, pyonephrosis, hydronephrosis, tuberculosis, or chronically inflamed kidney, variation in the shape and contour of the normal pelves and calices, the presence of recognized or amorphous deposits in the kidney, and renal neoplasm. One oftentimes was called upon to rule out the kidney in the case of an abdominal tumor with which the kidney might be easily confused. Here the combined examination was of the greatest value. One could not only locate the position of the kidney and thereby ascertain the relative position of the tumor, but experience, gained by the study of a large number of

collargol plates outlining the renal pelves, had taught one that where the kidney itself was involved by a tumor to any extent one could usually find distinct evidences of it in a clear *x*-ray plate of a carefully injected kidney pelvis. These observations were based upon a study of 1,986 abdominal cases of the type referred to, radiographed during the past eighteen months in St. Mary's Hospital (Mayo Clinic). Of these 300 were examined by the combined method, collargol being used.

Dr. Percy Brown of Boston had had a case which, clinically, was diagnosed as a nephroptosis, but the Dietl's crisis was out of proportion to the ptosis. He made a roentgenogram and found a kink in the ureter. A ptosis was present, but not startling.

Dr. Eugene W. Caldwell of New York City encouraged the cooperation between the surgeon and the röntgenologist. One could not hope to get the best results until one got team work. He would advise Dr. Selby to do more stereoscopic work.

Dr. Charles L. Leonard of Philadelphia said that it was important to look at these plates stereoscopically. He recently located five stones in the lower ureter. The surgeon would not have found the fifth stone if he had not examined the plate stereoscopically.

Röntgen Diagnosis of Position in Pregnancy.—Dr. P. M. Hickey of Detroit, Michigan, said that it was possible to make a Roentgen diagnosis of the position of the fetus in utero without apparent injury to the mother or fetus. The differential diagnosis between single and multiple pregnancy could be made with certainty. The cases be investigated went on to term and normal delivery. Careful examination of the child failed to reveal anything indicative of damage done by the ray.

Pulmonary Metastases from Papillomatous Cyst of Ovary.—Dr. Hollis E. Potter of Chicago said that eight years ago a woman was operated on for papillomatous cyst of the right ovary. Regional recurrence necessitated a second and a third operation, six and five years ago, respectively. One year ago a small mass was removed from the right groin. At present there were symptoms and signs pointing to a pulmonary involvement. The roentgenogram cleared up a condition which could not be diagnosticated in any other way. Over the central portion of the left lung was a mass obscuring the heart. It apparently occupied one-half of the left side of the thorax. In the right lung was a mass the size of an orange. There was no pulsation. A diagnosis of cyst was made, but the case was considered inoperable.

Relation of Röntgen Laboratory to the Medical School.—Dr. Eugene W. Caldwell of New York thought that there was at present a lack of cooperation between the röntgen laboratory and the medical college. Five or six schools were beyond criticism in this respect. Most schools had laboratories which were useless and dangerous. In many hospitals a photographer or druggist ran the *x*-ray machine. Nearly all the development in röntgenology had been made by private individuals at their own expense. The results of röntgen examination should be checked up by the röntgenologist in cooperation with the clinician and the pathologist. The hospital and the medical school should make the specialty attractive to medical men who possessed the necessary qualifications to do efficient work.

The Use of the Fluoroscope as a Guide for the Bronchoscope and Esophagoscope in the Removal of Foreign Bodies.—Dr. C. F. Bowen of Columbus, Ohio, said that the successful outcome of a foreign body case depended, first, upon the diagnosis, and, second, upon the method of procedure. In all cases where a foreign body was either swallowed or inspired, an *x*-ray examination should be made by a competent person before any attempt at its removal. If the foreign body was dense enough to be revealed on an *x*-ray plate, the diagnosis by this means was easy, but even in those cases where a vegetable foreign substance itself was not opaque to the *x*-ray, a great deal of information could still be obtained. A grain of corn, for instance, lodged in the bronchus would not cast a shadow on a photographic plate, but its presence could usually be determined by the slight changes in the lung itself, caused by a localized pneumonia, or by a blocking up of certain air cells. The same was true of vegetable foreign bodies in the esophagus, for while the body itself could not be seen, information, especially as to its location, could be obtained by giving the patient bismuth either in the form of a capsule or in gruel, and watching the passage of this preparation down the esophagus with the fluoroscope. If a foreign body was present, the bismuth would be stopped, or at least hesitate at the obstruction. He believed that it was a rare case in which an *x*-ray examination would not be of some service in the hands of one skilled in this work. He had removed quite a number of foreign bodies from the esophagus by means of the esophagoscope, and while their removal had, as a rule, been accomplished without difficulty, he had always taken the precaution of placing the patient upon his *x*-ray operating table, so that if he had failed for any reason to have at once located the foreign body with the esophagoscope, he could have used the *x*-ray and fluoroscope in guiding the esophagoscope towards the foreign body. This was a precaution which he had never heard of being used before and which he thought should be used in every case. No attempt should be made to either use the bronchoscope or the esophagoscope without having an *x*-ray apparatus close at hand, and since the *x*-ray played such an important part in the diagnosis and treatment of this class of cases, he believed that this work should be done by the *x*-ray operator himself, who had a knowledge of surgery, rather than by a surgeon with an *x*-ray operator as an assistant.

The Abdominal Viscera in Autointoxication and Autoinfection.—Dr. Joel E. Goldthwait of Boston said that the important viscera of the body were in the chest and abdomen, except the brain, and the proper relation of these organs, one to the other, determined the health of the individual. The röntgen ray was of the greatest assistance in determining the position of these organs as well as the disturbances that might result from a malposition of one or more organs. A displaced organ might not suffer of itself, but it might push some other organ out of place and cause that organ to suffer. In the quadruped the abdominal organs hung freely from the backbone, and there was no interference of one with the other. In the biped this relation was changed. One individual in five was born with the organs of a quadruped, although that did not necessarily do any harm in itself, and that was one of the points he wanted to emphasize. For instance, these patients had sacroiliac strain because they were standing out of poise; but that in itself was a cause of visceral strain. If the viscera were not hung right it led to a drooped posture. In one such case he saw the stomach was down in the pelvis. Then, the stomach could not unload itself unless the patient assumed a certain posture. The transverse colon very frequently was dropped away down. There might be a loose liver or loose kidneys. In all these cases there was an absence of retroperitoneal fat. It either never was present or it was absorbed. There was no shelf for the kidney. Sewing the stomach or any other one loose organ into place did not give these patients any relief, except for a short time only. All the loose organs must be replaced and that could not be done by suturing. There were certain earmarks which accompanied these conditions so that this class of patients was easily recognized at sight. Ptosis of the hepatic flexure of the colon was very distressing.

The progress of the intestinal contents in these cases was interfered with seriously, and the result was autointoxication. In the work he had been carrying on almost every combination had been found—a firmly attached ascending colon, with a free descending colon, and vice versa, or any part of the colon might be free or attached. The fluid part of the intestinal content was absorbed and the waste was worked together into a bolus which refused to pass onward. A patient might have a regular bowel movement and yet in the pockets and pouches formed in the walls of the colon there might be fecal matter so firmly caked that a blunt dissector was necessary to loosen it. The röntgen ray was of the greatest value in diagnosticating these conditions; in fact, the diagnosis could not be made without it. One could not relieve these patients until one got the viscera to work right. With proper treatment one could replace these organs, and the rontgen ray would aid in checking up the results of the treatment. These patients must be nourished until one could see the retroperitoneal fat. Exercises must be prescribed. The organs could not be replaced when the chest was narrow or the body was stooped. One must make it possible to have the ribs flare so that the organs could stay in place. The posture was the result of the ptosis. When the ribs slanted inward and downward, the liver and stomach were pushed out of place, which in turn interfered with the position of the colon and other viscera. That was an acquired condition. These patients must be fed properly, live properly, exercise, and observe certain rules of posture.

Dr. Percy Brown of Boston said that this paper opened up an interesting field of work. Hertz of England wrote an admirable book on constipation. He called the condition in the colon, described by Dr. Goldthwait, a hyperperistalsis, where apparently the succus entericus was formed in increased amount; everything was ready for the waste, but none came. The so-called "gredy gut," of Hertz, was an excessive contraction of the circular muscle fibers of the intestine. When the food finally came, it was dry and the constriction of these circular fibers squeezed the food, and it became sapless, hard and scybalous. Dr. Goldthwait's investigations were of the greatest value in directing attention to the probable cause of these conditions and their treatment.

Dr. George E. Pfahler of Philadelphia said that Jordan recently called attention to a kink in the duodenum at its junction with the jejunum, which might give rise to a spasmodic condition of the bowel leading to pain, ulcers, and sometimes to adhesions. This condition was easily overlooked; therefore, one must make a series of examinations and do considerable fluoroscopic work. He had seen adhesions betwen the descending and transverse colons and sigmoid caused pain. Sometimes patients were operated on for appendicitis, and then they failed to get relief from their symptoms. It was a problem just what to do in these cases.

Dr. Charles L. Leonard of Philadelphia in one of these obscure cases, found adhesions and a stricture of the ileum which had caused the patient much pain, and which one surgeon had diagnosed as appendicitis.

Dr. F. H. Baetjer of Baltimore had seen two cases in which the abdominal viscera were in the pelvis, although the splenic flexure was held firmly in its normal position.

Dr. C. E. Coon of Syracuse said that if one could show that there was a retention of the intestinal contents due to malposition of the abdominal viscera, many of these chronic sufferers would be able to get relief.

Dr. Roland Hammond of Providence, R. I., had observed many times that while we might not change the position of the viscera by supportive and stimulative treatment, we often relieved the patient of symptoms by simply taking off the strain—the sag. By restoring the normal physiology of an organ by supportive apparatus and stimulating exercises, we were doing all that could be done and practically were effecting a cure.

Dr. J. E. Goldthwait of Boston said that in studying these cases one must use his good sense and not see only the colon or stomach, but the human being, with a lot of organs whose balance must be worked out. He believed that one could help these patients. These were human problems, capable of solution by human intelligence, otherwise the scheme of the universe was wrong—and it was not wrong. One could not give these patients normal ligaments, but we could give them normal function. If one operated to replace an organ, the patient would feel better for a while, and then got much worse again, as food was taken. If there was a special condition for which suture was desirable, all right, but it must be followed up by other treatment. The same was true of the operations done for drainage of the bowel. The short-circuiting of the bowel which Lane and others were doing was faulty, in that they saw only the colon, and not the other abdominal viscera. It was not only the colon which was causing the mischief. One could not do very much for the acquired cases. As for the congenital cases, if one would make the patients suffering from acquired conditions as nearly normal as possible, one would gradually lessen the number of congenital cases. It was simply a question of race improvement. If one could get these organs to work right, the patient would get well. The patients should be fed judiciously and well, exercised, trained and taught how to stand correctly, and their posture should be improved; then one would get good results.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Sixth Annual Meeting, Held at Oklahoma City, Okla., October 10 and 11, 1911.

The President, Dr. M. L. Perry of Parsons, Kan., in the Chair.

President's Address: Management of the Nervous Child.—Dr. M. L. Perry of Parsons, Kan., stated that the nervous child was the father of the neurotic and neurasthenic adult, but granting this potentiality it was also true that proper care during the developmental period would often prevent the occurrence of actual disease at a later date. It was not only the functional nervous conditions whose seed was sown in early life, but many preventable organic affections originated within or developed later on the groundwork of nervous instability acquired in infancy or during the first few years. Under the term "nervous child" he included several types differing from one another in some particulars, but all showing evidence of a more or less deviation from the evenly balanced, well-adjusted, normal nervous system. He included in this category: 1. The precocious child, with its highly organized but poorly balanced nervous mechanism, who was capable of rather extraordinary mental efforts along certain lines, but prone to an early breakdown. 2. The quick, alert, restless child, whose whole nervous system appeared to be hypersensitive, whose mental faculties were so active that concentration was difficult, and who was largely reflex in type. 3. The shrinking and abnormally timid child, who was weak in nerve force, and therefore easily exhausted. 4. The backward child, who was slowed up mentally either on account of defective organs of special sense, or an inherent defect in correlating sense perceptions and in forming ideas. In the care of such children the influence of nutrition and dietetics was of paramount importance. Malnutrition was a potent factor in the development of nervousness as well as in aggravating the condition when it existed. Measures directed toward maternal feeding and providing the poor with the means for carrying out artifi-

cial feeding, according to the most rational methods, were suggested as the best means of prophylaxis. There was a crying need of reform in our educational system. A more thorough inspection of school children by physicians or some one competent to detect defects and disease should be made, and school authorities should recognize the necessity of special class work in the public schools for defective children not ordinarily classified as feebleminded. The greatest asset of any nation was its children. No effort should be spared that made for their mental and physical betterment, for on their stability depended very largely the future prosperity and progress of the nation and the race.

Ulcers of the Stomach and Duodenum, with Report of a Case of Duodenal Ulcer.—Dr. C. B. Hardin of Kansas City, Mo., stated that the etiology of ulcers of the stomach and duodenum was obscure. Early diagnosis and early efforts at control were the dicta of the present-day treatment of ulcers of the stomach and duodenum. Very important was the differential diagnosis between ulcers of those structures and conditions closely simulating them from the standpoint of symptomatology, as cholelithiasis, cholecystitis, malignancy, appendicitis, affections of the kidney, etc. The majority of gastric ulcers at or near the pylorus which gave rise to typical symptoms were near the greater curvature, but especially so in the absence of complications. The control of pain was most important in the management of peptic ulcers. The relief afforded by medicine certainly delayed early surgery in ulcers of the stomach and duodenum. He thought in the light afforded us at the present time, when definiteness of diagnosis was approximately certain, that all cases where the physical condition of the patients would warrant should be early relieved by surgical operation.

Pancreatitis: Suggestions as to Etiology and Surgical Treatment.—Dr. A. L. Blesh of Oklahoma City drew the following conclusions: 1. Chronic pancreatitis in association with bile track infections was not uncommon. Without this association it was comparatively rare. 2. When present, while it added more or less to the symptom-complex, the clinical syndrome was so overshadowed by gall tract infection that it was rarely ever diagnosed in the absence of a palpable enlargement of the head of the pancreas. 3. Both pancreatic and gall tract infections might be due to an infection from below, and this in turn might depend upon a malformed colon, causing a high degree of coprostasis. 4. The frequent association of pancreatic biliary infections, duodenopyloric ulcers and chronic appendicitis was at least suggestive of a common exciting cause. 5. In this train of sequences the fact that we never encountered an acute, but always a chronic, type of appendicitis was of great theoretical and practical importance as, at least, hinting at the etiology. 6. Direct biliary and pancreatic drainage or simple gastrojejunostomy would not always cure the respective diseases, but would always give temporary relief. This fact suggested that these operations did not always measure up to the pathology and etiology. 7. In properly selected cases Lane's operation should be added. 8. If done in time, perhaps the latter, in properly selected cases, would be sufficient.

Dr. Bacon Saunders of Fort Worth, Tex., said that in common with other surgeons he had noted the various conditions spoken of by the essayist, but there was one thing that impressed him, namely, the marked tendency in searching for something wonderful every time the surgeon opened the abdomen for the relief of some intraabdominal condition. It would be better not to look for these wonderful things when one operated. He had straightened out many of these kinks by removing the apparent pathological condition. He had cured many cases of chronic pancreatitis by drainage of the biliary tract. He had had a great many cases in which things looked curious, but after removing well-known pathological conditions the patients had recovered.

Dr. J. H. Riddell of Enterprise, Kan., said that when a surgeon opened the abdomen and found bands of adhesions, if they had nothing to do with the pathological condition he was going to correct, they should not be separated. If a surgeon should open his abdomen he would not want him to remove any section of his anatomy that looked right for fear it might give him subsequent trouble.

Dr. J. F. Binnie of Kansas City, Mo., agreed with Dr. Saunders that we should only remove the real pathological condition that was causing the trouble; that we should not take out an appendix that was not causing trouble.

Dr. Howard Hill of Kansas City, Mo., said he had been having a series of cases of gall-bladder trouble, and in twelve out of thirty or forty cases there had been inflammation of the pancreas, and in most of them the appendix was affected primarily.

Dr. Blesh, in closing, said he had had the uncomfortable experience of having had uncured cases come to him in which he thought he had extirpated the disease. He asked whether the surgeon always removed the disease when he thought he did. The pathology must always be coupled with the etiology, and the man who forgot etiology in dealing with a pathological condition was surely going to have some cases come back to him.

Retrocecal Appendicitis.—Dr. J. N. Jackson of Kansas City, Mo., said there were two anatomical positions of the appendix that were extremely unusual, and when the appendix was situated in either of these places and was inflamed it gave rise to a different set of symptoms and led to delay in diagnosis. These were the retroperitoneal and retrocecal types of appendicitis. He gave the symptoms of each type. In the surgical treatment in the retrocecal type the incision should be made farther out than usual to avoid infection of the peritoneal cavity, possibly splitting the outer fold of the mesocolon so as to turn the colon over to the inside to get the appendix situated behind. After removing the appendix, sometimes there was an abscess cavity to contend with, and the patient was subject to the usual infection following a cellulitis. Instead of inserting a drainage tube, the cavity should be thoroughly disinfected with strong iodine or carbolic acid, followed by alcohol and free packing of the cavity. In cases where an abscess had ceased to be local and had spread behind the gut and peritoneum, spread up under the colon, a counter-opening should be made to get drainage at the most dependent point.

Dr. Bacon Saunders of Fort Worth, Tex., stated that he read a paper on this subject in 1892 before the Southern Surgical and Gynecological Association. In the cases of appendicitis under discussion the symptoms were so slight that they were frequently overlooked, but the paitent did not get well. He developed a septic condition and the surgeon saw him one or two weeks afterward and found out what the trouble was. In these cases he usually made the incision entirely outside of the colon, and in a large percentage of them it was necessary to resort to posterior drainage. A small drain would not do much good.

Dr. Crowell said he had never seen a case in which the appendix was beneath the peritoneum. He was satisfied that one of his patients, a girl of twelve, who was subjected to the Ochsner treatment for twelve or fourteen days, had a retrocecal abscess. There was a very much distended space in this region. He cleaned out the abscess thoroughly, but the patient died immediately. He believed that death followed because in opening up and disturbing this abscess so effectually at the time he liberated an undue number of toxins. He believed that we frequently had sudden deaths following large abscesses by disturbing the relations and having absorption of the toxins take place Had he opened the abscess in this case in a limited way

and drained, he felt certain that the girl would have recovered.

Dr. John G. Sheldon of Kansas City, Mo., said that in some of these cases, where the appendix was retroperitoneally located, there might be involvement of the ureters. Indeed, the speaker said, it was almost impossible to imagine what might not happen in some of these cases.

Dr. J. D. Walker of Caney, I. T., related the case of a patient who had the typical symptoms of appendicitis, but on opening the abdomen no inflammation could be found. In tracing the ascending colon down to its termination and finding its union with the small intestine coming across, he found an organ about the size of a goose quill, which he took to be the appendix. This he removed and the patient recovered.

Dr. J. M. Inge of Denton, Tex., said he thought it was important in these retroperitoneal conditions to go in back of the peritoneum, but how many surgeons in making an incision went far enough back to avoid the peritoneum? In some of these cases it was not good surgery to break up dense adhesions in the effort to find the appendix and remove it.

Postoperative Ileus: Report of a Case Relieved by Intestinal Puncture.—Dr. Leroy Long of McAlester, Okla., said that the patient entered the operating room with a temperature of 98.2°, pulse 62, and of good quality. Operation was done with the patient in the Trendelenburg position. When the abdomen was opened there was found on the right side a cystic tumor involving both tube and ovary. The tumor and both the tube and the ovary were removed. The left tube was found distended and tense. It was probably three-quarters of an inch in diameter. There were no adhesions about it, and it was easily removed without disturbing the ovary, which was left. This tube, when opened subsequently, was found to contain a fetus. The round ligaments were shortened on account of a retrodisplacement of the uterus, and the vermiform appendix was removed. Several hours later intestinal obstruction occurred, which was promptly relieved by puncture of the intestine.

Dr. L. S. Willour of Atoka said that some authority had recommended that drainage of the intestine be established in these cases of ileus by means of the Murphy button. The technique of this was as follows: One end was to be inserted in a catheter, an opening made in the intestine, and the Murphy button brought together, and in this way drainage could be had without the contents escaping about the wound.

Dr. Howard Hill of Kansas City, Mo., stated that in cases of ileus he had thought that the administration of one-fiftieth of a grain of eserine had helped these patients to recover tone if they were seen early and before much distention of the abdomen had taken place.

Dr. J. N. Jackson of Kansas City, Mo., said that it was his privilege to have seen only three cases of well-defined Lane's kink, and a liberation or straightening out of the kink had resulted in the relief of the localized intestinal obstruction.

Dr. H. C. Crowell of Kansas City, Mo., stated that in the past surgeons physicked these patients too much. There was no reason why this should be done, and now it was rare for him to do it. If he physicked these patients at all, it was three days before operation in order to remove the flora from the intestinal tract, which otherwise would cause distention and fermentation and ileus and the paralysis which would follow. He was convinced there was some benefit to be derived from the use of eserine in these cases after symptoms of distention had manifested themselves. He had also thought that he derived benefit from the use of physostigmine, and these patients as a rule had recovered.

(To be continued.)

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Oklahoma Board of Medical Examiners.

July 11, 1911.

ANATOMY.

1. Name the parts common to all vertebræ. Name and describe the peculiar cervical vertebræ.
2. Describe the elbow joint.
3. Give origin, insertion, and nerve supply of the coracobrachialis muscle.
4. Describe the thoracic duct, giving origin and termination.
5. Describe the duodenum.
6. Briefly describe the arch of the aorta and name its branches.
7. Give the origin and name the principal branches of the musculospiral nerve.
8. Name the principal branches of the cervical ganglia of the sympathetic.
9. Give the histological difference between a cerebrospinal and a sympathetic nerve fiber.
10. Locate and give histological structure of the intestinal villi.

PHYSIOLOGY.

1. Name three kinds of impulses that pass over an anterior nerve root.
2. Trace a motor impulse from the cortex to a muscle of the face.
3. In what part of the brain would the impulse arise in the above question?
4. In the knee joint what kinds of tissue are represented in (*a*) the capsular ligament, (*b*) the semilunar cartilage, (*c*) the entire extremity of the femur?
5. (*a*) What nerves control the distribution of the blood, (*b*) the heart's action?
6. (*a*) By what organs is most of the carbon excreted, (*b*) most of the nitrogen?
7. Name all the nerves involved in sneezing.
8. Name five things that affect the character of a muscle contraction.
9. Name six secreting organs and an important characteristic in the process of two of them.
10. Name four purposes for taking food.

MATERIA MEDICA AND THERAPEUTICS.

1. Give indications for use of aconite.
2. Give symptoms and treatment of diabetes mellitus.
3. Give indications for use of belladonna.
4. Give etiology, symptoms, and treatment of pericarditis.
5. Give indications for use of quinine.
6. Discuss palpitation of the heart.
7. Give indications for use of veratrum viride.
8. Differentiate a functional derangement from an organic lesion.
9. Give indications for use of nux vomica.
10. Diagnose and treat diphtheria.

CHEMISTRY.

1. What is an element? Name ten elements existing uncombined in nature.
2. Name the abnormal constituents of urine and the normal specific gravity of urine.
3. Define (*a*) precipitate, (*b*) filtration, (*c*) evaporation, (*d*) endomosis, (*e*) alloy.
4. How would you determine, chemically, whether a urinary deposit were composed of urates or phosphates?
5. Complete the equation:

$$2SO_2 + H_2O + HNO_3 = N_2O_3 + (\quad).$$

6. Mention antidotes applicable in case of poisoning from iodine.
7. Chemically, what is albumin?
8. Mention some of the important physical, physiological, and chemical properties of ptomaines.
9. What are the antidotes for bichloride of mercury?
10. Describe your mode of procedure in making a chemical examination of suspected urine.

TOXICOLOGY AND MEDICAL JURISPRUDENCE.

1. Give symptoms of chronic mercurial poisoning.
2. How does chloral hydrate cause death?
3. What alkaline antidotes are most likely to be at hand in a case of emergency poisoning?
4. Give symptoms caused by eating poisonous fungi. In fatal cases how soon does death occur?
5. Give symptoms of acute and chronic arsenical poisoning.

6. Give symptoms of prussic acid poisoning and the appearance of the body after death from such cases.
7. Define "unprofessional conduct."
8. When may abortion be legally permitted?
9. In case of poisoning, the nature of the poison being unknown, how should the case be handled?
10. Give symptoms of aconite poisoning, of lead poisoning.

BACTERIOLOGY.

1. Name three ways by which you can prove that a microorganism is the cause of a disease.
2. Divide bacteria into three groups and explain each group.
3. Name the bacterium found in erysipelas and how does it spread?
4. Differentiate between *Bacillus typhosus* and *Bacillus coli communis*.
5. Give brief history of *Bacillus tetani* since 1884.

PATHOLOGY.

1. Describe the pathology of lung tissue in lobar pneumonia.
2. Give the pathology of acute yellow atrophy of the liver.
3. What is parenchymatous nephritis? Give its pathology.
4. Describe the pathology of tabes dorsalis.
5. Give brief history and pathology of senile gangrene.
6. When and where found: (*a*) Mucoid degeneration, (*b*) colloid degeneration, (*c*) hyaline degeneration?
7. Name four conditions in which tumors are distinguished, and give example of each.
8. Name three varieties of inflammation, give process of each.
9. Name three causes for arterial hyperemia. Give example of each.
10. Differentiate between thrombi and embolism.

PHYSICAL DIAGNOSIS.

1. Give physical signs of malaria.
2. Give physical signs of anemia.
3. Give physical signs of acute follicular tonsillitis.
4. Differentiate malaria from anemia.
5. Give physical signs of spasmodic croup.
6. Differentiate spasmodic croup from follicular tonsillitis.
7. Give physical signs of acute catarrhal dysentery.
8. Give physical signs of enteralgia (colic).
9. Give physical signs of a typical case of typhoid fever.
10. Differentiate typhoid fever from malarial fever.

OBSTETRICS AND HYGIENE.

1. Define parturition.
2. When does the second stage of labor begin? Give your management of the second and third stages of normal labor.
3. What causes constipation during pregnancy? Give your treatment of same.
4. Diagnose a case of pregnancy at the end of the fourth month.
5. Give care of a seven-months' child when without the hospital advantages.
6. How would you determine the death of the fetus *in utero* after the fifth month?
7. Give treatment of breech presentation.
8. Give indication for producing podalic version. What precautions are necessary?
9. How is the typhoid germ transmitted? Give instructions to prevent spread of disease.
10. Give hygienic treatment of summer diarrhea in children.

GYNECOLOGY.

1. Describe and treat urethral caruncle.
2. Define prolapsus uteri, giving etiology, pathology, and treatment.
3. Give etiology and diagnosis of pyosalpinx.
4. Define vicarious menstruation.
5. Give symptoms of acute pelvic peritonitis.
6. Define and treat pruritus vulvæ.
7. What conditions may result from gonorrhea in women?
8. Diagnose ruptured tubal pregnancy.
9. Define amenorrhea, dysmenorrhea, menorrhagia.
10. What is subinvolution of the uterus? Give treatment.

SURGERY.

1. What are the symptoms of septic surgical fever?
2. What is the differential diagnosis between septicemia and pyemia?
3. What is hydrophobia and how is it treated?
4. What are the contraindications respectively to the use of the three principal general anesthetics?
5. What are the causes of secondary hemorrhage?
6. Name the varieties of shoulder joint dislocation.
7. How are dislocations distinguished from fractures?
8. What is Colles' fracture? How would you treat it?
9. Give the method of inserting Wyeth's pins for amputation at the hip joint.
10. What tissues are divided in the operation of oblique inguinal hernia?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

OKLAHOMA BOARD OF MEDICAL EXAMINERS.

July 11, 1911.

ANATOMY.

1. *Parts common to all vertebræ:* Body and neural arch; this latter is formed of two pedicles, two laminæ, and seven processes (four articular, two transverse, and one spinous.

Peculiar cervical vertebræ are: First, second, and seventh. See Cunningham's "Anatomy" (1909), page 79; or Gray's "Anatomy" (1910), page 50.

2. See Cunningham's "Anatomy" (1909), page 279; or Gray's Anatomy (1910), page 306.

3. CORACOBRACHIALIS. *Origin:* Coracoid process of scapula; *insertion:* Middle of inner surface of humerus; *nerve supply:* Musculocutaneous.

4. The *thoracic duct* extends from the second lumbar vertebra, where it commences by a dilatation, the *receptaculum chyli*, to junction of left internal jugular with left subclavian vein. The abdominal part is placed on the front of the body of the second lumbar vertebra, behind and to the right side of the aorta and on the inner side of the right crus; it then enters the thorax through aortic opening, on the right side of aorta, lying between it and the vena azygos major, and passes upward to right of aorta on right intercostal vessels. Opposite the fourth dorsal vertebra it passes to the left behind arch, and runs along the left side of the esophagus, behind the left common carotid artery. At the level of the seventh cervical vertebra it turns outward, and, passing behind left internal jugular and crossing first part of left subclavian artery, arches over the apex of the left pleura to open at the angle of union of the left internal jugular and left subclavian veins. (From *Aids to Anatomy.*)

5. See Cunningham's "Anatomy" (1909), page 1065; or Gray's "Anatomy" (1910), page 1283.

6. See Cunningham's "Anatomy" (1909), page 797; or Gray's "Anatomy" (1910), page 582. *Branches:* Innominate, left common carotid, and left subclavian.

7. MUSCULOSPIRAL NERVE. *Origin:* Posterior cord of brachial plexus. *Branches:* Muscular, cutaneous, radial, posterior interosseous.

8. See Cunningham's "Anatomy" (1909), page 706; or Gray's "Anatomy" (1910), page 1069.

9. *Cerebrospinal nerve fibres* are medullated; and consist of an axis cylinder, a medullary sheath, and a neurilemma. *Sympathetic nerve fibers* are mostly non-medullated; and consist of an axis cylinder and a neurilemma, but have no medullary sheath.

10. See Cunningham's "Anatomy" (1909), page 1062; or Gray's "Anatomy" (1910), page 1292.

PHYSIOLOGY.

1. Motor, vasomotor, and secretory impulses may pass over an anterior nerve root.

2. The impulse would travel from the cortex cerebri, through the corona radiata, internal capsule, crus, pons, medulla, and the facial nerve.

3. The impulse would arise in the cortex cerebri, in the lower third of the frontal convolution.

4. *In the capsular ligament,* white fibrous tissue; *in the semilunar cartilage,* fibro-cartilage, and hyaline cartilage; *the extremity of the femur,* bone and cartilage.

5. (*a*) Vasomotor (vasoconstrictor and vasodilator); (*b*) Vagus, and sympathetic.

6. (*a*) Most of the *carbon* is excreted by the lungs; (*b*) most of the *nitrogen* is excreted by the kidneys.

7. In *sneezing,* the *afferent* nerve is generally the nasal branch of the first division of the fifth cranial nerve; the vagus and glossopharyngeal nerves are also involved. The *efferent* nerves are the phrenic, vagus, and intercostal nerves; the spinal nerves to the extraordinary respiratory muscles and the facial, spinal accessory and hypoglossal nerves also assist.

8. (1) The character of the muscles, (2) the character of the stimulus; (3) the load; (4) temperature; (5) previous stimulation.

9. *Six secreting organs:* (1) Lacrimal glands; (2) testes; (3) mammary glands; (4) liver; (5) salivary glands; (6) glands of stomach. The mammary glands only secrete under the stimulus of pregnancy and labor; and the salivary glands only secrete as the result of suitable reflex stimulation of the secretory nerves.

10. *Four purposes for taking food:* (1) For the growth of the tissues and organs of the body; (2) for the repair of waste; (3) to supply energy; (4) to supply heat.

MATERIA MEDICA AND THERAPEUTICS.

1. *Indications for use of aconite:* Fevers, some inflammatory conditions, in high arterial tension, in nervous palpitation of the heart, and congestive dysmenorrhea; also externally for neuralgia, pruritus, herpes, chilblains, etc.

2. See French's "Practice of Medicine" (1910), pages 970 and 974; or Osler's "Practice of Medicine" (1909), pages 414 and 420.

3. *Indications for use of belladonna:* To relieve pain, relax spasm, check sweating, as a mydriatic, for night sweats, to check griping of purgatives; in asthma, to check fevers, in heart disease, shock and collapse, acute coryza, urinary incontinence, chordee, low delirium of fevers, mania, alcoholism; as an antigalactagogue, spasmodic cough.

4. See French's "Practice of Medicine" (1910), pages 567, 569, and 573; or Osler's "Practice of Medicine" (1909), pages 775, 776, 779, and 782.

5. *Indications for use of quinine:* In malaria; as a tonic; in influenza, in dyspepsia, in asthma; as an antipyretic; and locally, for sores in diphtheria, and in hay fever.

6. See French's "Practice of Medicine" (1910), page 627; or Osler's "Practice of Medicine" (1909), page 832.

7. *Indications for use of veratrum viride:* "As a circulatory depressant, given early, in croupous pneumonia, pleurisy, hepatitis, maniacal delirium, etc., with strong, bounding pulse and other sthenic conditions; in puerperal convulsions and the early stage of peritonitis, phlebitis, and other inflammatory affections of the puerperal state; also acute rheumatism, tonsillitis, aneurysm, and wounds of the head, pericardium, and peritoneum."—(Wilcox, *Materia Medica.*)

8. In a *functional derangement* the functions of a tissue or organ are out of order, but no structural defect can be discovered; in an organic lesion some structural defect may be detected.

Organic murmurs are due to stenosis or incompetency of one or more of the valves of the heart.

Functional murmurs are not due to valvular disease.

Organic murmurs may be systolic or diastolic; may be accompanied by marked dilatation or hypertrophy, and there will probably be a history of rheumatism or of some other disease capable of producing endocarditis. Whereas a murmur, usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient, is a *hemic* or *functional* murmur, and denotes as a rule an impoverished condition of the blood.

9. *Indications for the use of nux vomica:* As a general tonic or bitter; in indigestion, cardiac depression, impaired peristalsis, pneumonia, phthisis, amenorrhea, dysmenorrhea, impotence, some forms of paralysis, chorea, epilepsy, neuralgia, alcoholism, and urinary incontinence.

10. See French's "Practice of Medicine" (1910), pages 184, 191, and 195; or Osler's "Practice of Medicine" (1909), pages 200, 205, and 207.

CHEMISTRY.

1. *An element* is a kind of substance which cannot, by any known means, be split up into dissimilar substances.

Ten elements existing uncombined in nature: Oxygen, hydrogen, nitrogen, carbon, sulphur, arsenic, antimony, bismuth, copper, lead.

2. *Abnormal constituents of urine:* Albumin, sugar, blood, pus, acetone, bile, mucus, casts, bacteria, parasites. The normal specific gravity of urine is about 1015 to 1025.

3. A *precipitate* is the deposit of a solid separated out from a solution.

Filtration is the process of passing a liquid through a filter.

Evaporation is the process by which a substance passes from the liquid to the gaseous state.

Endosmosis is osmosis inwards.

Alloy is a mixture of two or more metals.

4. Urates disappear on heating the urine containing them, while a deposit of phosphates is rendered more abundant by heating. The addition of acid dissolves the phosphates, but has little effect on the urates.

5. $2SO_2 + H_2O + 2HNO_3 = N_2O_3 + 2H_2SO_4$.

6. *Antidotes for iodine poisoning:* Starches in solution, or sodium thiosulphate, or sodium carbonate, or bicarbonate.

7. Chemically, *albumin* is a form of proteid, characterized by being soluble in water and in saline solution, coagulable by heat or by saturating a solution with ammonium sulphate.

8. *Physical:* Some ptomaines are liquid, oily and volatile, others are fixed and crystalline.

Physiological: Some ptomaines are poisonous, some are not; some are of animal origin, some of vegetable; most cause dilatation of pupil, convulsions, slowed heart beat and respiration, vasomotor paralysis.

Chemical: Some are strongly alkaline and basic, others only feebly so; some are prone to oxidation and are active reducing agents, others are stable.

9. *Antidotes of bichloride of mercury:* White of egg, or milk, in moderate quantity, followed by an emetic.

10. See French's "Practice of Medicine" (1910), pages 1233, etc.

TOXICOLOGY AND MEDICAL JURISPRUDENCE.

1. *Symptoms of chronic mercurial poisoning:* Salivation; tremor, first of arms and hands, then of legs and trunk; hypersensitiveness; insomnia; irregular heart action; anemia; cachexia; loss of teeth; emaciation; and necrosis of jaws.

2. In poisoning by chloral hydrate death is said to be due to failure of respiration and sometimes to pulmonary edema; but the matter is not definitely settled.

3. Magnesia, carbonate and bicarbonate of sodium, chalk, limewater, sulphate of magnesium or sodium, soap and water, milk, and white of egg.

4. *Eating of poisonous fungi* may cause: Nausea, thirst, abdominal pain, gastrointestinal irritation with vomiting and purging, fainting, convulsions, small rapid pulse, dilated pupils, delirium, stupor, and death. In fatal cases death usually occurs within twenty-four hours.

5. The *symptoms of acute arsenical poisoning:* Nausea and faintness, severe burning pain in the stomach, persistent vomiting of matters, sometimes brown or gray, or streaked with blood, or green; purging, and cramps in the legs.

Symptoms of chronic arsenical poisoning: Inflammation of the conjunctivæ, with intolerance of light. Irritation of the skin, accompanied by an eruption (eczema arsenicale); local paralyses; great weakness and emaciation; exfoliation of the cuticle and falling out of the hair.

6. *Symptoms of prussic acid poisoning:* "Its action is always rapid. Relatively small doses cause an immediate sense of constriction of the throat, followed in one or two minutes by sense of pressure in the head, vertigo, confusion of intellect, and loss of muscular power. The pulse is quick, the respiration slow and stertorous. Tetanic convulsions and involuntary discharges of urine and feces occur, followed by paralysis. Death follows, in from two hours to two days, from asphyxia. When large doses are taken no subjective symptoms are observed. The patient loses consciousness in less than one minute. There is a short convulsive seizure, usually accompanied by evacuation of feces, after which the patient lies perfectly still, with no sign of life, save an almost imperceptible pulse and infrequent spasmodic respiratory efforts, in which inspiration is short and expiration protracted. Death follows in from five to twenty minutes."—(Witthaus' *Essentials of Chemistry.*)

Post-mortem appearance: "The face is usually pale or cyanosed, the eyes glistening and staring, the blood-vessels of the neck and head turgid. Bright red spots may be noticed on the surface of the body. The blood in the superficial vessels is red, while, unless the dose has been excessive, that in the large vessels is dark. If the dose has been very large all the blood may be arterial in appearance. The poison destroys the power of the blood to decompose hydrogen peroxide. The odor of the acid may be observed soon after death unless overpowered by stronger odors, as tobacco, products of putrefaction, etc. Should the odor have disappeared in other organs it may frequently be found in the brain, as that organ does not undergo decomposition so early. The cerebral vessels are generally congested; in fact, the symptoms are very similar to those of asphyxiation from any other cause."—(Riley's *Toxicology.*)

7. *Unprofessional conduct* may be said to be anything which contravenes the ethical duty which the medical practitioner owes to his profession.

8. Conditions warranting the induction of abortion: (1) Certain pelvic deformities, (2) placenta prævia, (3) pernicious anemia, (4) toxemia of pregnancy, (5) habitual death of the fetus toward the end of pregnancy, (6) hydatiform mole, (7) habitually large fetal head.

9. The first thing to do is to remove as much as possible of the unabsorbed poison, give an emetic (apomorphin hydrochlorid), and also wash out the stomach except when a corrosive has been taken. White of egg and water may be given. Then combat symptoms as they arise, try to prevent shock; artificial respiration, warmth, stimulants, etc., may be indicated.

10. *Symptoms of aconite poisoning* usually manifest themselves within a few minutes; sometimes are delayed for an hour. There is numbness and tingling, first of the mouth and fauces, later becoming general. There is a sense of dryness and of constriction in the throat. Persistent vomiting usually occurs, but is absent in some cases. There is diminished sensibility, with numbness, great muscular feebleness, giddiness, loss of speech, irregularity and failure of the heart's action. Death may result from shock after large doses of the alkaloid, but usually it is by syncope.

The symptoms of poisoning by lead are: "Metallic taste; dryness of the throat; thirst; severe colicky abdominal pains, referred particularly to the umbilical region, and relieved by pressure; pulse very feeble and slow; great prostration; constipation; urine scanty and red; violent cramps; paralysis of the lower extremities; convulsions, and tetanic spasms."

BACTERIOLOGY.

1. To prove that a microorganism is the cause of disease it is essential: (1) That the microorganism be found in the tissues, blood, or secretions of a person or animal sick or dead of the disease; (2) the microorganism must be isolated and cultivated from these same sources; it must also be grown for several generations in artificial culture media; (3) the pure cultures, when thus obtained, must, on inoculation into a healthy and susceptible animal, produce the diseases in question, and (4), the same microorganisms must again be found in the tissues, blood, or secretions of the inoculated animal.

2. The three basic forms of bacteria are: (1) The *coccus*, which is round or oval, and may appear singly, in pairs, in groups of four, in chains, or in bunches. (2) The *bacillus*, which is rod shaped, with the longer sides parallel and the short ends either straight, rounded, or concave. (3) The *spirillum*, which is spiral.

3. Streptococcus erysipelatis; see French's "Practice of Medicine" (1910), page 218; or Osler's "Practice of Medicine" (1909), page 210.

4. *To distinguish the typhoid bacillus from the colon bacillus:* (1) On gelatin plates the colonies of typhoid develop more slowly than those of colon bacillus. (2) The colon bacillus causes fermentation with production of gas in media which contains sugar; the typhoid bacillus does not. (3) The colon bacillus produces a strong acid reaction and coagulates milk within twenty-four to forty-eight hours; the typhoid bacillus does not coagulate milk. (4) In peptone solution the colon bacillus produces indol; the typhoid bacillus does not. (5) The typhoid bacillus gives the Widal reaction with typhoid serum; the colon bacillus does not.

5. The bacillus of tetanus is characterized by its peculiar spore, formed at one end of the bacillus, and giving it the appearance of a pin; it is purely anaërobic, and cannot be developed at all in the presence of oxygen. It generally comes from the soil, and is found in penetrating wounds. It appears in two forms, the spore-bearing form, as described above, and the vegetative form, which is a short bacillus with rounded ends, and which may occur singly or in pairs, or may form long filaments. It grows in gelatin stab cultures in the middle of the medium, and the colonies look something like a fir tree; its growth is slow, and a disagreeable odor is at the same time emitted. In bouillon it grows near the bottom of the tube and produces gases.

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), page 154; or Osler's "Practice of Medicine" (1909), page 170.

2. See French's "Practice of Medicine" (1910), page 840; or Osler's "Practice of Medicine" (1909), page 539.

3. See French's "Practice of Medicine" (1910), pages 911 and 918; or Osler's "Practice of Medicine" (1909), page 692.

4. See French's "Practice of Medicine" (1910), page 1082; or Osler's "Practice of Medicine" (1909), page 887.

5. See Rose and Carless' "Surgery" (1908), page 105; or Da Costa's "Surgery" (1908), page 170.

6. See French's "Practice of Medicine" (1910), pages 35 and 36.

7. See Rose and Carless' "Surgery" (1908), pages 183, etc.; or Da Costa's "Surgery" (1908), pages 296, etc.

8. See Rose and Carless' "Surgery" (1908), page 40; or Da Costa's "Surgery" (1908), page 81.

9. *Arterial hyperemia:* "Excessive stimulation of the vasoconstrictor fibers, active stimulation of the vasodilators, and injury of the vascular muscle fibers all have in the end the same effect of causing active hyperemia, which explains many contradictory drug actions through paralysis by overstimulation. Sudden removal of support may cause active hyperemia in the vessels of various parts, as when a large amount of residual urine is incautiously withdrawn and hemorrhage follows from the vessels which had become accustomed to its pressure. So also the relief of pressure anemia is followed by hyperemia, as when a tight shoe by its removal allows the part to be filled by blood, with consequent growth of the corn which is the joint result of intermittent pressure and blood supply."—(Thayer's *Pathology.*)

10. See French's "Practice of Medicine" (1910), pages 25 and 27; or Rose and Carless' "Surgery" (1908), pages 344 and 347; or Da Costa's "Surgery" (1908), pages 185, etc.

PHYSICAL DIAGNOSIS.

1. See French's "Practice of Medicine" (1910), page 242; or Osler's "Practice of Medicine" (1909), page 16.

2. See French's "Practice of Medicine" (1910), page 518; or Osler's "Practice of Medicine" (1909), page 726.

3. See French's "Practice of Medicine" (1910), page 735; or Osler's "Practice of Medicine" (1909), page 445.

4. See French's "Practice of Medicine" (1910), pages 242, 518, and 520; or Osler's "Practice of Medicine" (1909), pages 16 and 726.

5. See French's "Practice of Medicine" (1910), page 663; or Osler's "Practice of Medicine" (1909), page 599.

6. See French's "Practice of Medicine" (1910), pages 663 and 735; or Osler's "Practice of Medicine" (1909), pages 599 and 445.

7. See French's "Practice of Medicine" (1910), page 254; or Osler's "Practice of Medicine" (1909), page 245.

8. See French's "Practice of Medicine" (1910), page 831.

9. See French's "Practice of Medicine" (1910), page 74; or Osler's "Practice of Medicine" (1909), page 70.

10. The following table is taken from an elaborate one by Thayer:

TYPHOID FEVER.	MALARIAL (REMITTENT) FEVER.
Blood shows no leucocytosis; eosinophiles diminished or absent; serum causes agglomeration of typhoid bacilli; malarial parasites and pigment absent.	Blood shows no leucocytosis; eosinophiles not notably diminished; serum does not cause agglomeration of typhoid bacilli; malarial parasites and pigmented leucocytes present.
Fever uninfluenced by quinine.	Fever disappears under quinine.
Usually epidemic; prevailing commonly in cities.	Is an endemic disease occurring particularly in rural districts; rarely epidemic.
Anemia absent, excepting in later stages.	Anemia more or less marked early in the course.
Characteristic roseola.	No characteristic exanthem; urticaria not uncommon.
Has a fairly characteristic course.	No distinct course.
Urine high-colored; bile absent; Ehrlich's diazo-reaction present during the height of the process.	Urine high-colored; may show a trace of bile; Ehrlich's diazo-reaction rarely present.
Onset gradual and progressive.	Onset generally intermittent.
The temperature does not reach 40° C. (104° F.) before the third or fourth day.	The temperature may arrive at 40° C. (104° F.) within twenty-four hours.
The apathetic expression of the face, the dryness of the tongue, and sordes upon the teeth are well marked and progressive.	The symptoms are not very marked.
Herpes rare.	Herpes common.

OBSTETRICS AND HYGIENE.

1. Parturition is the act of giving birth to a child.

2. See Williams' "Obstetrics" (1909), pages 226, 229 and 292; or Hirst's "Obstetrics" (1909), pages 320 and 341.
3. See Williams' "Obstetrics" (1909), pages 173, 200 and 491; or Hirst's "Obstetrics" (1909), pages 187 and 242.
4. See Williams' "Obstetrics" (1909), page 100; or Hirst's "Obstetrics" (1909), page 204.
5. See Hirst's "Obstetrics" (1909), page 926.
6. Symptoms of death of fetus are: cessation of the signs of pregnancy, the abdomen and uterus are both diminished in size, the fetal heart sounds and movements are absent, there is no pulsation in the cord, the mother's breasts become flaccid and occasionally secrete milk. If the fetus has been dead for some time, crepitus of its cranial bones may be elicited.
7. See Williams' "Obstetrics" (1909), page 289; or Hirst's "Obstetrics" (1909), page 419.
8. See Williams' "Obstetrics" (1909), page 435 and 437; or Hirst's "Obstetrics" (1909), pages 830 and 827.
9. Typhoid fever is transmitted through the food and drink becoming contaminated; flies may aid in this contamination.

Typhoid fever is preventable. All water for drinking or for washing dishes, etc., and milk should be boiled; no ice should be put *in* water or other drink or food; flies should be kept out of the house; all discharges from the sick person must be disinfected; all utensils, dishes, etc., used by the patient must be thoroughly cleansed, and boiled every day; soiled linen must be soaked in a disinfectant solution before being washed; after each attendance on a patient, physicians, nurses, and others should wash their hands in a disinfectant; thorough sterilization of all bedding, etc., must be performed after the disease is over.

10. See French's "Practice of Medicine" (1910), page 798; or Osler's "Practice of Medicine" (1909), page 509.

GYNECOLOGY.

1. *Urethral caruncle* is a small red fleshy growth generally situated on the posterior part of the meatus of the urethra. There are local pain and tenderness, which may be excessive; a burning sensation is experienced on urination; it may bleed. The proper treatment is to excise it or destroy it with the thermocautery.
2. PROLAPSIS UTERI. *Definition:* A condition in which the uterus sinks below its normal level, but does not protrude through the vagina. *Pathology:* "Decrease in the power of uterine support. Distention and eversion of the vagina with decrease in the power of its sphincter and thickening of its epithelium. The uterus is enlarged from impairment of its circulation, its cavity is increased in size, and hyperplasia of its areolar tissue may result. The endometrium becomes thickened, congested, and inflamed. Ectropion may occur. Varicose degeneration of the vessels of the cervix may take place with consequent absorption of its proper tissue; ulceration may also occur. Pelvic congestion from compression of the hypogastric veins. Tension on the broad ligaments may produce obstruction of ureters and hydronephrosis. Occasionally, epithelioma from continued irritation of the cervix. Varicocele of the pampiniform plexus from torsion of the broad ligaments. When cystocele is present, complete evacuation of the bladder cannot be obtained, and the result is dysuria, ardor urinæ and cystitis or retention of urine."

Etiology: Injury at childbirth, lacerated perineum, relaxation and elongation of the ligaments of the uterus, loss of rigidity of the abdominal walls, increase in the weight of the uterus, subinvolution, increased intraabdominal pressure. *Treatment:* "Operative, unless some contraindication to operation exists. In such a case some *mechanic device* should be tried for the support of the uterus. Pessaries are not to be recommended, as their constant use leads to irritation and excoriation of the vaginal walls. Probably the best means for supporting the uterus is by Braun's colpeurynter. This is worn only during the day, and can be introduced by the patient herself every morning. The uterus is replaced and the colpeurynter, well anointed with carbolized vaseline and containing about an ounce of water, is introduced into the vagina. It is then distended with air, thus making an even pressure on the vaginal walls and not causing ulcerations. *Operative treatment* gives the most satisfactory results in prolapse. In slight cases of prolapse repair of the perineum will effect a cure. The severer grades will require, in addition, some operation on the anterior vagina. The best of these is Martin's operation for cystocele. If the cervix is hypertrophied it should be amputated. Three operations—on the perineum, for cystocele, and amputation of the cervix—are required in the usual case of prolapse. In addition, hysterorrhaphy may be advisable, since there can be no prolapse so long as the uterus maintains its normal position of anteflexion. These operations failing, hysterectomy may be performed."
3. See Rose and Carless' "Surgery" (1908), page 1288.
4. *Vicarious menstruation* is the flow of blood from some organ (other than the uterus) recurring at the monthly periods and taking the place of menstruation. It may occur from the hemorrhoidal vessels, the lungs, the skin, under the nails, the mammary glands, ulcerated surfaces, and many other parts.
5. ACUTE PELVIC PERITONITIS. *Symptoms:* Intense and diffuse abdominal pain, tenderness, and distention; vomiting, constipation, elevation of the temperature (103°-104° F.), small, hard, rapid, and wiry pulse (120-140), and increased respiration (30-40) of a painful character are also present. The dorsal decubitus with the legs and thighs drawn up is assumed.
6. Pruritus vulvæ is a condition characterized by intense itching of the external genitals. It may be *caused by*: Parasites; diseases of the vulva, as inflammation, edema, vegetations, congestion, irritating discharges, lack of cleanliness, diabetic urine; it may also be of nervous origin, or idiopathic. *Treatment* consists in removing the cause, if possible; cleanliness, fresh air, tonics, and general attention to hygiene; local applications of solution of bichloride of mercury, 1:2,000; or carbolic acid, 1:100; or lead and opium; dusting powders of bismuth subnitrate, calomel, or zinc oxide are also useful.
7. Possible results of gonorrhea in the female. Cystitis, urethritis, vulvitis, endometritis, salpingitis, septic peritonitis, sterility, condylomata of vulva, abscess of Bartholin's glands.
8. See Williams' "Obstetrics" (1909), page 640; or Hirst's "Obstetrics" (1909), pages 295 and 187.
9. *Amenorrhea* is absence of menstruation during the period of sexual activity.

Dysmenorrhea is painful menstruation.

Menorrhagia is a condition characterized by excessive loss of blood during the menstrual periods.

10. See Williams' "Obstetrics" (1909), page 904; or Hirst's "Obstetrics" (1909), pages 645 and 647.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), pages 82 and 85; or Da Costa's "Surgery (1908), page 124.
2. See Rose and Carless' "Surgery" (1908), pages 83, 85 and 87; or Da Costa's "Surgery" (1908), pages 197 and 199.
3. See Rose and Carless' "Surgery" (1908), page 129; or Da Costa's "Surgery" (1908), page 268.
4. The following contraindications for ether and chloroform are from Hare's *Practical Therapeutics:* "Ether should not be used by inhalation in bronchitis or acute nephritis, because of its irritant properties; in peritonitis or gastritis, because it is apt to induce vomiting; in aneurysm or in the presence of marked vascular atheroma, because it may rupture a blood-vessel by raising arterial pressure; nor in diabetes, lest it produce diabetic coma; and if anemia is present and an examination of the blood shows that the hemoglobin is below 50 per cent. the use of the drug should be avoided if possible.

"*Chloroform* is not to be used in cases of fatty heart or dilatation of the heart, in those with a known idiosyncrasy, nor in the so-called lymphatic persons with overgrowth of lymphoid tissues, as, for example, adenoids. In the latter case it is particularly apt to cause sudden death. In valvular disease of the heart chloroform may be used with caution, although either is preferable. Given a case of valvular disease that must be subjected to operation, the chances are bettered with an anesthetic than without it, as the pain and mental shock are worse for the heart than is the anesthetic."

Nitrous oxide is contraindicated in the presence of vascular degeneration; advanced heart disease; and conditions in which muscular relaxation is required.

5. See Rose and Carless' "Surgery" (1908), page 290; or Da Costa's "Surgery" (1908), page 394.
6. See Rose and Carless' "Surgery" (1908), page 620; or Da Costa's "Surgery" (1908), page 587.
7.

FRACTURE.	DISLOCATION.
1. Crepitus may be present.	1. Crepitus never present.
2. Preternatural mobility.	2. Rigidity rather than mobility.
3. Easily reduced—but	3. Difficult to reduce—but
4. Deformity more liable to recur after reduction.	4. Deformity less liable to recur after reduction.
5. The head of the bone is in its proper place.	5. The head of the bone is not in its proper place.

FRACTURE.	DISLOCATION.
6. The socket containing the head of the bone is not empty.	6. The socket which should contain the head of the bone is empty.
7. When rotated the bone does not move as one piece.	7. When rotated the bone moves as one piece.

8. See Rose and Carless' "Surgery" (1908), page 521; or Da Costa's "Surgery" (1908), page 505.

9. See Rose and Carless' "Surgery" (1908), page 1316; or Da Costa's "Surgery" (1908), page 1223.

10. Skin, superficial fascia, aponeurosis of external oblique, peritoneum.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery	Montgomery	Jan. 9
Arizona*	Ancil Martin, Phoenix	Phoenix	Jan. 2
Arkansas	F. T. Murphy, Brinkley	Little Rock	Nov. 14
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	Los Angeles	Dec. 5
Colorado	David A. Strickler, Empire Building, Denver	Denver	Jan. 2
Connecticut*	Chas. A Tuttle, New Haven	New Haven	Nov. 14
Delaware	J. H. Wilson, Dover	Dover	Dec. 12
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	Jan. 11
Florida*	I. D. Fernandez, Jacksonville	Jacksonville	Nov. 7
Georgia	C. T. Nolan, Marietta	Atlanta	
Idaho*	O. J. Allen, Bellevue	Boise	April 2
Illinois	J. A Egan, Springfield	Chicago	
Indiana	W. T. Gott, Crawfordsville	Indianapolis	Jan. 9
Iowa	G. H. Sumner, Des Moines	Des Moines	Sept. 19
Kansas	H. A Dykes, Lebanon	Topeka	Feb. 13
Kentucky	J. N. McCormack, Bowling Green	Louisville	Dec. 19
Louisiana	A. B. Brown, Cusach's Bldg., New Orleans	New Orleans	May 30
Maine	F. W. Searle, Portland	Portland	Nov. 14
Maryland	J. McP. Scott, Hagerstown	Baltimore	Dec. 12
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Nov. 14
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 11
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	Jan. 2
Mississippi	S. H. McLean, Jackson	Jackson	May 14
Missouri	Frank B. Hiller, Jefferson City	Kansas City	
Montana*	Wm. C. Riddell, Helena	Helena	April 2
Nebraska	E. A. Carr, Lincoln	Lincoln	Nov. 8
Nevada	S. L. Lee, Carson City	Carson City	Nov. 6
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	Jan. 9
New Jersey	H. G. Norton, Trenton	Trenton	June 18
New Mexico	J. A. Massie, Santa Fe	Santa Fe	Jan. 8
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	Jan. 30
N. Carolina	B. K. Hays, Oxford	Hendersonville	June 11
N. Dakota	G. M. Williamson, Grand Forks	Grand Forks	Jan. 2
Ohio	Geo. H. Matson, Columbus	Columbus	Dec. 5
Oklahoma*	J. W. Duke, Guthrie	Oklahoma City	Jan. 9
Oregon	B. E. Miller, Portland	Portland	
Pennsylvania*	A. R. Aleen, Carlisle	Philadelphia / Pittsburgh	Dec. 12
Rhode Island	G. T. Swarts, Providence	Providence	Jan. 4
S. Carolina	H. E. Boozer, Columbia	Columbia	June 11
S. Dakota	F. W. Freyberg, Mitchell	Huron	Jan. 10
Tennessee	C. A. Abernathy, Pulaski	Memphis / Nashville / Knoxville	
Texas	J. D. Mitchell, Fort Worth	Fort Worth	Nov. 14
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	Jan. 7
Vermont	W. Scott Nay, Underhill	Montpelier	Jan. 9
Virginia	R. S. Martin, Stuart	Lynchburg	Dec. 21
Washington*	F. P. Witter, Spokane	Tacoma	Jan. 2
W. Virginia	H. A. Barbee, Point Pleasant	Clarksburg	Nov. 13
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	Jan. 9
Wyoming	A. B. Tonkin, Riverton	Riverton	Jan. 9

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Wisconsin.—At a meeting of the Board held at Madison, July 11-13, 1911, it was decided that hereafter the board will demand documentary evidence of preliminary education in the form either of a high school diploma or a certificate signed by the proper examiner for the State from which the applicant comes showing that he has an equivalent education. Furthermore, the board will require that hereafter all conditions must be made up before the student is admitted to the junior year. The board also resolved that in all examinations hereafter practical tests will be required in physical diagnosis, chemical and microscopic uranalysis, bacteriology, pathology, histology, and practical anatomy.

Montana.—Twenty-three out of a class of thirty-six who took the recent examination before the Montana State Board of Medical Examiners were successful.

Massachusetts.—Complaint is made by Massachusetts physicians that the medical registration law in that State is not sufficiently stringent in that it does not specify that applicants shall be graduates of a medical school.

Medical Items

Experimental Researches on the Etiology of Estival Fever.—Melchiorre Napolitani and Aldo Tedeschi have made researches into the etiology of the so-called estival fever, and present their conclusions. The clinical characteristics as seen among military men are nervous phenomena, such as headache, chills, delirium, high temperature and severe depression. Sometimes the fever comes without prodromal symptoms. The author has traced the infection to the *Phlebotomus pappatasii*, which he believes carries the causative organism in this disease. Only the female sucks blood, since the male is not provided with suctorial organs. The larvæ live in dark and damp places, among filth; the nymphæ are found in similar places. The adults live by preference in houses. Inoculation experiments were made in animals and in man, and succeeded in producing the disease. The author's conclusions are that the cause of estival fever is a filterable virus; the transmitting agent is the *Phlebotomus pappatasii;* the period of incubation is 4-5 days; in the pappatasii the virus remains active for as long as ten days; to contract the disease it is necessary to be punctured by the pappatasii.—*Giornale de Medicina Militare.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended October 27, 1911:

CHOLERA

Places.	Date	Cases.	Deaths.
India: Bombay	Sept. 17-23	1	2
Calcutta	Sept. 2-9	..	21
Madras	Sept. 17-23	3	2
Indo-China: Saigon	Aug. 28-Sept. 10	9	6
Italy		..	*..
Provinces—Catania	Sept. 17-23	59	33
Genoa	Sept. 17-23	11	2
Genoa	Sept. 17-23	5	..
Naples	Sept. 17-23	8	5
Naples	Sept. 17-23	14	4
Palermo	Sept. 17-23	18	13
Palermo	Sept. 17-23	37	13
Rome	Sept. 17-23	16	5
Venice	Sept. 17-23	12	2
28 other Provinces	Sept. 17-23	484	201
Java: Batavia	Sept. 3-9	12	5
Japan: Kobe	Sept. 16	..	1
Philippine Islands: Provinces			
Laguna	Aug. 6-12	1	..
Union	Sept. 3-16	17	†15
Russia		..	‡..
Governments—Astrakhan	Sept. 3-13	119	43
Baku	Sept. 3-13	7	2
Bessarabia	Sept. 3-13	2	..
Don Territory	Sept. 3-13	9	2
Khasan	Sept. 3-13	3	2
Novoryssisk	Sept. 3-13	2	..
Perm	Sept. 3-13	1	1
Rostov on Don	Sept. 3-13	16	3
Samara	Sept. 3-13	65	17
Saratov	Sept. 3-13	62	25
Simbirsk	Sept. 3-13	20	8
Tambov	Sept. 3-13	2	1
Vitebsk	Sept. 3-13	1	..
Siam: Bangkok	Aug. 6-Sept. 4	..	61

*Total, Sept. 17-23: Cases, 664; deaths, 280.

†Total, Sept. 2-13: Cases, 309; deaths, 104. Sept. 30-Oct. 7: Cases, 71; deaths, 36.

YELLOW FEVER.

Brazil: Manaos	Sept. 24-30	..	*2
Pernambuco	Sept. 1-15	..	1
Ecuador: Bucay	Sept. 1-14	1	..
Changue	Sept. 16-30	1	1
Guayaquil	Sept. 1-30	5	2
Naranjito	Sept. 16-30	3	1
Hawaii: Honolulu	Oct. 21	1	†
Mexico: Merida	Oct. 1-13	5	2
Venezuela: Caracas	Sept. 10-23	4	..

*Oct. 20, 3 cases.

†Arrived convalescent on s. s. Hongkong Maru from Monzanillo, Mex.

PLAGUE.

Brazil: Pernambuco	Sept. 1-15	..	2
Chile: Iquique	Sept. 10-23	2	3
China: Canton	Sept. 3-9	4	..
Ecuador: Guayaquil	Sept. 1-30	37	12
India: Bombay	Sept. 17-23	21	18
Calcutta	Sept. 3-9	..	7
Karachi	Sept. 17-23	1	1
Indo-China: Saigon	Aug. 28-Sept. 10	12	*..
Java: Pasoeroean Residency	Sept. 3-9	25	10
Siam: Bangkok	Aug. 6-Sept. 4		9
Turkey in Asia: Smyrna	Sept. 17-22	2	1
Venezuela: Caracas	Sept. 17-23	1	..

*And vicinity.

SMALLPOX

Brazil: Pernambuco	Sept. 1-15		130
Canada: Quebec	Oct. 8-14	2	..
Ceylon: Colombo	Sept. 3-16	3	1
Chile: Valparaiso	Sept. 19-23	54	..
China: Hongkong	Sept. 3-9	2	2
France: Paris	Sept. 24-30	1	..
Germany		..	*..
Great Britain: Liverpool	Oct. 1-7	6	..
India: Madras	Sept. 17-23	6	2
Indo-China: Saigon	Aug. 28-Sept. 10	10	4
Italy: Genoa	Sept. 16-30	1	..
Naples	Sept. 24-30	7	..
Palermo	Sept. 24-30	155	61

*Total for Germany Oct. 1-7: Cases, 4.

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Original Articles.

BLOOD PRESSURE IN PROGNOSIS.*

BY HENRY WIREMAN COOK, M.D.,

MINNEAPOLIS, MINN.

THE true estimate of any apparent advance in knowledge must lie somewhere between the optimism of the enthusiast and the pessimism of the reactionist. Obviously the discussion of a settled question can be of little value. Yet one must remember in attempting to discuss a question which is still *sub judice* that our conclusion must occupy an indefinite place in relation to the final consensus of opinion. It will show the errors of the enthusiast or the reactionist reflected from our individual mental attitude. Our conclusion should be drawn from a knowledge of the theory of the subject and the study of the individual experiences and collaborated statistics which bear upon it. In the absence of positive statistical evidence, the best single guide to the practical value of a new method, if a sufficient interval has elapsed since its introduction, is to determine whether it is receiving increasing indorsement from qualified authorities, in spite of the objections of reactionists, or whether it is being gradually dropped or neglected, in spite of the praise of enthusiasts.

If it is permissible to anticipate the general conclusion of this paper, it may be stated here that such mass evidence seems to indicate that the instrumental estimation of blood pressure has become a permanent clinical method, and that its application to life insurance examinations is trending toward general acceptance.

Although von Basch constructed an instrument which gave approximate measurements of blood pressure as early as 1876, modified by Potain in 1889, it was not until 1896 that an instrument was devised which permitted a practical and accurate estimation of arterial pressure. At about the same time, 1896, Riva Rocci, working in Italy, and Hill in England, devised a simple and practical instrument, the former for the measurement of systolic pressure, the latter for diastolic pressure. The air system, the constricting band, and the monometer of the Riva Rocci instrument, are familiar to all, and appear more or less modified as the essentials in all sphygmomanometers now in general use. Numerous foreign articles on clinical methods of measuring blood pressure had appeared in 1901, when Howell and Brush published the first American article in the *Boston Medical and Surgical Journal*. The subject then in this country is but ten years old, and has received general attention only during the past five or six years. The wide interest is, however, indicated by the appended bibliography, which is limited to literature appearing within the past eighteen months, and which shows a total of 140 articles.

The proper use of the Riva Rocci sphygmomanometer in obtaining systolic pressures is now well known. In addition to the usual methods of palpation there is a more recent method of auscultatory estimation by listening for variations in sound with a stethoscope applied over the brachial below the constricting band. Another method is a visual estimation, by the use of Dr. V. Pachon's sphygmo-oscillometer, the disappearance and reappearance of the pulse wave being indicated by a needle. No very definite improvement has been demonstrated for these methods, and certainly at this time they need not concern us here. In the use of a sphygmomanometer we should be sure that the constricting band is at last 10 c.m. wide; that it is applied snugly well above the elbow joint; and, when a mercury manometer is not employed, that the device reads correctly—the mercury column being used occasionally as a standard. In determining the systolic pressure it is preferable to take a figure half way between the point of disappearance of the pulse and the point of reappearance, and several consecutive observations should be made to establish a mean.

Following the work of Erlanger, it has been demonstrated that in certain cases a knowledge of diastolic pressures and pulse pressures is of distinct clinical value; for example, the work of Wiggers on pulse pressure during hemorrhage, or Sheldon's interpretation of diastolic pressures and pulse pressures in certain cardiac conditions. But the methods of obtaining diastolic pressure are too technical at the present time, and the interpretation too vague to make it of positive value in connection with the topic under consideration. At the present time all well-equipped hospitals have sphygmomanometers in daily use in the wards: nor is this use confined to the medical wards; in fact, the instrumental measurement of pulse tension was probably used in this country as early by Harvey Cushing in the surgical wards of Johns Hopkins Hospital as by Theodore Janeway in the medical wards of the City Hospital, New York. It is seen in children's wards, as a guide to stimulation and other treatment; in obstetrical wards, in diagnosis and treatment of toxemias; in surgical wards, in the preparation of certain dangerous cases of high tension, myocarditis, or nephritis, and in following their condition in the operating room. The oculist and the aurist are finding blood-pressure measurements of increasing value, and tuberculosis sanatoria are modifying their prognoses and treatment according to the indications of this sign. I venture to say that no case history would to-day be considered complete by a competent internist without a record of pulse tension.

I shall assume, then, without further argument, that blood pressure is an important clinical sign, and that the instrumental measurement of this sign, thus permitting of its being recorded and used compara-

*Read at a meeting of the Medical Section of the American Life Convention, held in Pittsburgh, Pa., September 20, 1911.

tively as well as absolutely, is a signal advance in medical practice, deserving to rank with the advance in estimation of temperature over tactile impression or a blood count over visual estimates. The acknowledgment of this clinical usage is, however, no indication that it is of equal value, or in fact of any value to us in insurance examinations. A leucocyte count over 15,000 would make us hesitate to approve a risk, yet this requirement will never appear in our blanks. If we had the benefit of a tuberculin test in all applicants under 45, the relative position of tuberculosis in our mortality statistics would probably be changed. If we could give a hypodermic of phenolsulphonephthalein to all applicants over 45 and have accurate measurement of the amount excreted in an hour, we would undoubtedly have fewer recent entrants with impaired renal function. Notation of a coated tongue appears in clinical histories, but is omitted from an insurance blank. Thus a sign may be of clinical value and yet be too technical for the average examiner, too annoying for the applicant, or as in the case of a coated tongue, might be so often associated with trivial causes as to be only a source of confusion.

The medical examination is at the present time a lengthy affair, and we should hesitate before making it more complicated. In the consideration of the applicability of an additional prognostic sign to the insurance examination, we should weigh very seriously whether it is of sufficient importance to justify the disadvantages. In addition to authoritative clinical endorsement:

It should be within the ability of the possible, not the ideal, examiner.

It should permit conclusions as to prognosis not possible from the physical examination already required.

It should not entail hardship nor undue annoyance on the applicant.

Further, whether its bearing was on those diseases and conditions which played a large part, or on those which played a small part in insurance mortality, would tend to determine its scope of usefulness.

Finally, in order to maintain a permanent place in this field, statistical evidence should show that action guided by the use of data thus obtained permitted a more accurate selection.

One of the most seriously urged objections to the use of the sphygmomanometer has been that the average physician in the small town is not equipped with an instrument. This condition would, of course, remain only until such time as this sign was required by a sufficient number of companies. Insurance appointments aggregating $10 to $400 a month to different examiners, are too valuable for physicians to permit the expense of $6.50 to $10 to stand in the way of satisfactory service. If insurance companies want blood pressure readings and require them, examiners will equip themselves—of that we may be assured. Several large companies have required blood pressure in certain cases since 1906. One of them has tabulated the results of 4,000 observations. At the present time over one hundred companies are requiring this sign. One company in Texas, within a year following a circular letter from the home office on the subject, found that 200, or 50 per cent. of their Texas examiners were equipped to give blood pressure readings when requested. Equally accurate data from other States would probably give as good, if not a better, showing. If the present rate of increase in this direction continues, it is safe to say that within five years a blood pressure reading can be obtained in practically every town where there is a regular physician capable of making an ordinary uranalysis.

I think it is worth more than passing comment that insurance companies should thus be compelled to point out to the physicians of the country the necessity for properly equipping themselves. It might be interpreted as an emphasis of the well-known inferiority of the physician turned out by the majority of medical schools of this country, and indicates the highly beneficial influence that insurance companies are exerting on medical standards. Physicians who can practice successfully without materials for a uranalysis or a blood pressure instrument, will find it difficult to hold insurance appointments; and conversely, patients are learning that an examiner who is preferred by Old Line companies is the safest man to trust as a physician.

Janeway is always conservative in his statements. In a recent article under the title, "When should the general practitioner measure blood pressure?" he deems it absolutely necessary for competent work, and ranks it of first importance in every careful examination of the cardiovascular system, specifying under separate headings, the first examination of every new patient, and every examination made for the purpose of certifying to the existence of a state of health—including applicants for life insurance, recruits for the army, navy, police and fire departments, etc. He further mentions obstetrical work, diagnosis of abdominal pain, etc.

Granted that a physician has an instrument for measuring blood pressure, some hold the opinion that only an expert can use the instrument and give reliable readings. This contention I cannot understand, and believe it must arise from lack of any practical experience on the subject. I admit freely that the average physician is not properly trained or educated, but I cannot believe that he is incapable of determining whether or not the pulse is beating in the radial. This is the only required attainment. I have had occasion personally to instruct students in three different medical schools in as many different States during the past ten years, and I have yet to find one who could not after five minutes' practice give a proper reading. Furthermore, in the Johns Hopkins Hospital, in the Memorial Hospital, Richmond, and Thomas Wilson Sanitarium, Maryland, I have had nurses accurately follow the blood pressure, keeping a chart record from day to day, controlled by observations of the medical attendant.

When blood pressure observations are obtained from many examiners, undoubtedly there would be a certain proportion of no value; a figure would be given without the trouble of using the instrument, or only the form would be gone through without a sincere effort to obtain an accurate reading. This, however, we have learned to expect in regard to every question in our blanks. What percentage of examiners never examine the urine; how many never remove the clothing over heart and lungs; as a matter of fact, do 90 per cent. of the examiners of any company find albumen if it is present only in minute traces? We are replacing poor examiners with better; we believe that medical graduates are better trained each year; we are continually attempting to educate our examiners and control their work. In spite of the poor work obtained from many, we continue to ask for reports on heart, lungs, and urine. It would appear that the incompetence of American physi-

cians is one of the strongest arguments *for* and not *against* requirement of blood pressure estimation, because it is the simplest and easiest part of the physical examination, next to counting the pulse and taking weight and measurements. A hundred examiners could give us a reliable blood pressure reading where *one* could detect cardiac hypertrophy, or an accentuated second aortic in a stout person, or a minute trace of albumen in a chronic interstitial nephritic.

A contrary opinion has been expressed by several prominent medical directors, to the effect that examiners who could take a blood pressure reading could detect an abnormal variation in tension either by palpation or by associated signs. In other words, that the ordinary physical examination as now required would reveal any condition that would be indicated by an instrumental estimation of blood-pressure. It is difficult to understand this opinion because clinical evidence is so overwhelming against it. I have personally heard Osler, Barker, Thayer, Janeway, Greene, and other clinical teachers of eminence deny their ability to estimate tension accurately by palpation. Certainly no one would contend that the degree of cardiac hypertrophy as obtained by percussion or the relative intensity of the aortic second as heard by auscultation could be used as an accurate indication of the degree of tension. I know of only one clinician who still maintains that he can estimate tension accurately by palpation: Hoover of Cleveland says that by palpating the femoral artery at Poupart's ligament he can very accurately estimate the tension, rarely, as he says, having a disparity of more than 20 mm. in pressures between 150 mm. and 250 mm. He adds: "I readily admit the impossibility of making an accurate estimate of blood-pressure from the radial or even the brachial." However interesting Hoover's ability to ordinarily measure the tension in the femoral within 20 mm. may be, it does not affect the present discussion. Twenty mm. is too wide a variation for practical purposes. The difference, for instance, between 145 mm. and 165 mm. cannot be neglected, nor is the femoral accessible in an insurance examination. Clinicians are practically unanimously of the opinion that instrumental estimation of blood-pressure cannot be replaced, where accuracy is desired, by any other data.

If a blood-pressure estimation entailed any pain or caused unreasonable annoyance to an applicant, it would be impractical, no matter how valuable might be its evidence, but no such objection could be made in this instance. An applicant should certainly have removed his coat, and unless he has on a thick flannel undershirt, the sleeve can be rolled up sufficiently to permit adjustment of the band. In the case of thick underwear it is not unreasonable to request removal of the sleeve. With a little practice, an observation requires not more than a minute after the band has been adjusted. I have never had an applicant object, nor ever heard of one objecting to the instrument, and usually I have found them interested and anxious to know the result of the observation.

If our examiners can give us accurately and without serious objection from the applicant the reading of a sphygmomanometer when the pulse returns at the wrist after obliteration, does such a figure give us any reliable information as to the average pulse tension for that individual? This question might be assumed to be answered by the present scope of clinical usage. As it has been urged especially in connection with life insurance examinations, it may properly be answered here. The width of the cuff, the thickness and elasticity of the artery, the size of the arm, the time of day, food, drugs, the mental condition, the age—each of these factors has its influence on the blood-pressure; but I think it can be shown that this variation is either negligible or possible of control. Medicine is probably the least exact of all sciences. I know of no single sign or symptom that permits a positive conclusion; râles, fever, heart murmurs, tachycardia, albuminuria, may mean much or nothing. In my experience an abnormal variation in blood pressure has been more constantly associated with organic disease than any of the above signs. The employment of too narrow an arm piece has led to errors, but so far as I know, following the work of v. Recklinghausen, all instruments indicate recognition of this factor, and are supplied with an arm piece at least 10 cm. in width (10 to 12 cm. is probably better), so that this source of error is eliminated. The normal artery was early shown by v. Basch to be a negligible factor, as he found experimentally that 1 mm. of pressure was sufficient to close the lumen. The recent extensive experimental work of Janeway and Park shows that "with normal arteries and a normal range of blood-pressure the arterial wall is a practically negligible factor; that atheroma, even of considerable degree, is without appreciable effect on compressibility; and finally, if a wide arm piece and the return of the first fully developed pulse wave be taken as an index, even advanced arterial thickening and calcification do not introduce an error of any importance."

There is a factor of error in attempting to estimate the actual blood-pressure, which has been urged by Russell, and which may be operative in certain cases, and which has received but little attention. The work of Janeway and Park confirms the contention that tonic contraction of an artery may materially decrease its compressibility, possibly as much as 30 mm. Hg. Sufficient work, however, clinical and experimental, has not been done to show in what conditions, if any, this hypertonus is present, nor has it been shown that this vasoconstriction of the larger arteries would not be associated with an actual increase in tension. Arteries are not normally in this state of extreme contraction, and so for our purpose, unless it could be definitely shown to be due to temporary nervous influences, the high reading, though not the exact systolic blood-pressure, would still indicate an impairment. We must think of some serious nervous contraction, marked toxemia of some kind, or altered internal secretion (adrenal?). Furthermore, this factor must be rare, as any such marked variation from the normal is most unusual in the absence of disease, in all recorded observations.

The size of the arm has been shown by numerous observers, especially Hensen and Janeway, to be a negligible factor, provided a wide arm piece is used. The pressure exerted by the band is transmitted through the semifluid tissues as through a liquid without appreciable loss. As Janeway points out, if the size of the arm were an important factor, low pressures would be impossible in large arms—and in his experience and that of other observers this is not true. I have at this time under observation a man weighing 240 pounds, fifty years old, in excellent health, whose blood-pressure is constant between 110 mm. and 120 mm. Several years ago

in testing the blood-pressure in a group of students, we were all surprised to find that the lowest reading was in the stoutest of the group. The band could with difficulty be made to encircle the arm. Undoubtedly, high blood-pressures are more common in stout men, and a group of this class, especially over forty-five, would show a higher blood-pressure than men of normal weight, but our clinical knowledge of the incidence of arteriosclerosis, cardiac hypertrophy, and dilatation, and nephritis, in overweights, confirmed by insurance statistics, would anticipate such a finding.

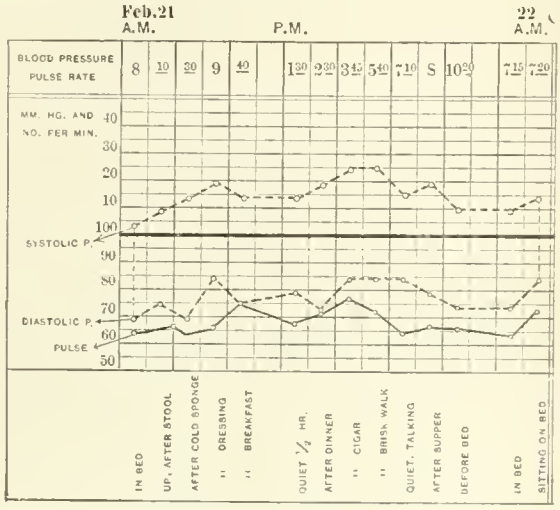

Fig. 1.—Diurnal blood-pressure chart of a healthy man. (From Janeway's "Study of Blood-pressure." New York, D. Appleton & Co.)

There are distinct variations in blood-pressure, to correspond to the waking and sleeping states, averaging from 10 mm. to 20 mm. lower during sleep. Janeway's chart shows graphically the diurnal blood-pressure chart of a healthy man. The variation, however, from 8:30 A. M. to 8:30 P. M. is within 10 mm. Observers vary as to the effect of meals, some showing a fall of 5 mm. to 10 mm., others a rise of 5 mm. to 10 mm. The difference of opinion and the variation being within normal limits would indicate that the effect, if any, was not constant or important. A change of posture shows a variation within the same limits, 5 mm. to 10 mm.

Of drugs, the nitrites used in normal individuals and some cases of high tension cause a marked fall in blood-pressure. Adrenalin intravenously will produce a marked rise in blood-pressure. Strychnine, caffeine, digitalis, may or may not produce a slight rise. Alcohol in moderation produces a slight fall in blood-pressure, but not enough to affect the normal limits. Tobacco in excess, especially when one is unaccustomed to its use, causes a temporary rise of from 10 mm. to 20 mm. A dose of nitrite in a case of high tension just before examination might seriously mislead. Otherwise the effect of drugs need not be considered here.

A rise of 10 mm. to 20 mm. is said to be produced by muscular or mental exertion or moderate excitement. Extreme fright or anxiety would probably cause a rise above normal limits, but these are factors easily controlled in an insurance examination. In the experience of practically all observers, a rise in pulse *rate* above the accepted normal maximum of 90 is far more frequent under the nervousness of a medical examination than a rise in blood-pressure above 5 mm. or 10 mm. In my personal experience during the past ten years in taking blood-pressure, I do not remember a single instance when nervousness or excitement at examination produced an appreciable error.

Age, after childhood, is constantly assuming a less and less important place as a factor in normal blood-pressure variations. In early observations high blood-pressures at older ages were found of so much greater relative frequency that practically all observers were misled into the belief that much higher blood-pressures were normal at the older ages than is actually the case. This partly arose from the use of a narrow arm piece which unduly emphasized any increase, but probably in most part the mistake was due to the fact that cardiovascular and renal changes are so much more common after forty-five. Later and more accurate observations, however, showed that there is very little normal increase in blood-pressure before sixty years of age, and that when a marked hypertension is present it is associated with a distinct abnormality of tissue or function. Authoritative data on this point are most convincing.

In over two hundred consecutive blood-pressure observations Janeway saw 145 mm. Hg exceeded only once or twice, except where cause for hypertension existed. In routine examinations of many hundreds of cases he never saw a pressure above 160 mm. in a normal person—seldom one above 140 mm. (wide arm piece). He regards with suspicion any pressure over 145 mm. His later statement, March, 1911, is: "A blood-pressure reading of more than 145 mm. before middle life, or of more than 160 m.m. after, must be considered abnormal." Barach's recent study of ninety observations on males free from sign or symptom of disease found for all ages 110 mm. to 120 mm. the medium normal, and, taking this in conjunction with his observations on patients during four years, he concludes that a range from the medium normal of 20 mm. should be maximum and minimum normal. He further states definitely that figures beyond that are invariably found associated with something abnormal.

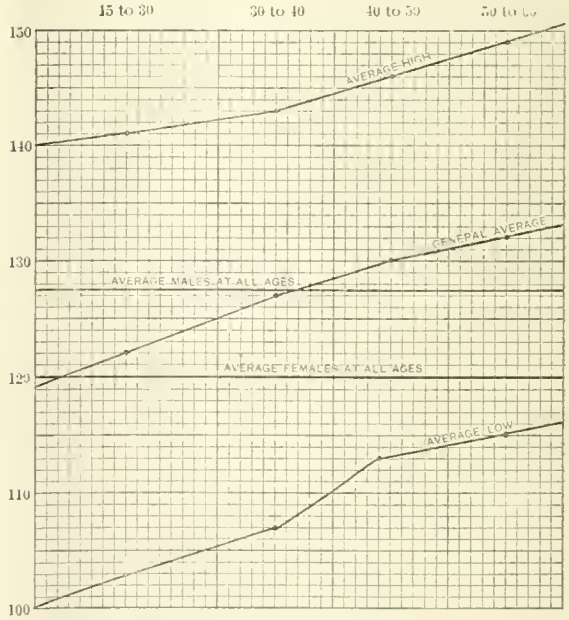

Fig. 2.—Chart of one thousand cases, from "The Normal Variation of the Systolic Blood Pressure," by H. P. Woley, M.D., Journal of American Medical Association, July 9, 1910.

Woley, after observations on 1,000 cases, believes that a blood-pressure of 160 mm. or over is path-

ological. Hayaski, after observing fifty-eight men below sixty, found an average pressure of 132 mm. Doleschal, in one hundred persons, found an average of 120 mm. Thayer, in 276 healthy individuals arranged by decades, records the following: (5 cm. arm piece—above 140 mm. at least 20 mm. should be deducted to interpret in terms of wide arm piece.)

37	cases,	1-10 years	..... 104.6	mm. Hg.
87	"	10-20 "	..... 128.7	"
89	"	20-30 "	..... 136.9	"
37	"	30-40 "	..... 140.8	"
20	"	40-50 "	..... 142.2	"
5	"	50-60 "	..... 154.8	"
1	"	60-70 "	..... 180.	"

Numerous observations on aged persons even with marked arteriosclerosis have shown normal readings. I have under observation a specific example—an old lady eighty-five years of age, in excellent health, whose blood-pressure for five years has not been above 135 mm. Individual cases are sometimes interesting, though dangerous for purpose of generalization. My company accepted without question in 1907 a man fifty years of age, with a blood-pressure of 140 mm., examined and recommended by a competent physician in a large city. Eighteen months later the claim was paid, after the second attack of angina pectoris. Babcock, in discussing a case of myocarditis, considered a blood-pressure of 138 mm. as highly significant, even in a man of fifty-three. In Bachman's list of eighty-five cases six were over fifty years of age, and the highest pressure of the six was 135 mm., in a laborer sixty-two years of age. A tailor sixty years of age showed a pressure of 105 mm. Starling, a London obstetrician, who has for five years been taking blood-pressure in all pregnant women under his care, states: "Any rise above 125 mm. would make me suspect that the pregnancy was not quite normal, and would put me on the lookout for some degree of toxemia." Sahli gives as the high limit of health 135 mm. Faught gives a convenient rule for estimating the normal blood-pressure at different ages, which coincides with the experience of most observers. Taking 120 mm. as the normal at age twenty, he would add ½ mm. for each additional year: thus at age forty, 130 mm., age fifty, 135 mm., age sixty, 140 mm. In June, 1904, the author gave 120 mm. to 130 mm. as normal limits before thirty years of age; 125 to 140 mm. after thirty years of age; over 150 mm., the risk was questionable; over 180 mm., bad.

The tendency, then, has been to restrict the limits of normal variation. As Janeway is the pioneer and highest authority on this subject in the United States, and as his early prophecies have been largely fulfilled, and as his most recent (1911) revised conclusions coincide with those of most observers, it seems proper to accept his doctrine that over 145 mm. before middle life, and over 160 mm. after middle life, must be considered abnormal. As the average normal pressures for these two periods are 120 mm. and 130 mm. respectively, it would seem conservative for the present to consider a blood-pressure between 140 mm. and 160 mm. a definite impairment. I believe that further study will lower this upper limit of 160 mm. by about 10 mm., and that Lauder Brunton's figures will be accepted—115 mm. to 135 mm. or 140 mm. for men in middle life, and that above 150 mm. is an abnormal blood-pressure. The lower limits of normal blood-pressure have received less attention. Infants have a pressure of 90 mm. or slightly under. The normal adult, however, rarely shows a pressure under 105 mm. Lauder Brunton considered under 100 mm. abnormally low. Reitter considers 100 mm. or under abnormal. Hensen's lowest figure in fifty-five individuals was 105 mm. Janeway has put 90 mm. in females and 100 mm. in males as the usual low normal limit. Most observers agree that a pressure under 105 mm. is rare in the normal adult.

In considering blood-pressure as an insurance requirement, it is of particular interest to determine in what condition this sign is of diagnostic or prognostic value, and whether these conditions are important factors in life insurance mortality. Excluding accidents, we might roughly divide the main factors in insurance mortality as well as general mortality into two main groups.

First. Cardiovascular-renal disease, divided into two groups: (a) When cardiovascular-renal disease is the immediate cause of death, *eg.* myocarditis, apoplexy, arteriosclerosis, uremia. (b) Where cardiovascular-renal disease is the primary factor, but a terminal infection—pneumonia, erysipelas, tuberculosis, septicemia—closes the clinical picture. *Second.* Primary infectious diseases, determined by the accident of exposure, the individual resistance, and the virulence of the infection.

The first group, the cardiovascular-renal group, is steadily becoming a relatively and absolutely larger factor, as the danger from the second—infectious—group becomes less. Public sanitation has already removed several diseases, very fatal during the past few decades, from our mortality statistics, and it is not too optimistic to expect that in the coming decades the mortality from typhoid, tuberculosis, and pneumonia, will be still further lowered. The Mutual Life statistics of deaths from 1843 to 1898 show about 30 per cent. due directly to cardiovascular-renal disease. When we consider the part that this factor plays as the primary cause in pneumonia, bronchitis, pulmonary edema, etc. (72 per cent. of the deaths from respiratory diseases were over forty-five years of age), to ascribe one-half of all deaths directly or indirectly to this group would probably not be an overestimate. The census report for 1908 gives about 25 per cent. of total deaths due directly to cardiovascular-renal disease, and this total of course includes the large mortality in infancy and childhood. Clinical evidence proves unequivocally that an increase in tension accompanies or antedates a large proportion of diseases of the cardiovascular and renal systems. An increase in tension produces arteriosclerosis, causes rupture of a diseased artery, apoplexy; overtaxes the heart, myocarditis; accompanies or in some cases apparently causes renal insufficiency, nephritis.

The statement and prophecy of George Dock in 1904, in this country, has been substantiated. In speaking of the relation of arteriosclerosis to nephritis, he said: "It is doubtless true that in many cases the arterial disease causes the renal disease, and the recognition of the earliest stages of arteriosclerosis is only beginning to assume a practical character. By the use of instruments for measuring blood-pressure and by the more careful study of symptoms and physical signs, it will be possible to put the subject on a more definite basis than at present. . . . The importance of hypertension in causing vascular disease is now well recognized." In England, Clifford Allbutt and Lauder Brunton have been preaching the same doctrine for several

decades. The recent clinical deduction of Reed that continued high blood-pressure in a person under forty, or in any except the very old, would alone warrant the diagnosis of either existing or threatened presenile arteriosclerosis is in accordance with the inference of Thayer and Brush in 1904, after a critical study of 3,894 cases at Johns Hopkins Hospital. Their conclusion was as follows: "It seems to us there can be small doubt that the main etiological factor in the development of the hyperplastic thickening of the intima, which constitutes so important an element of arteriosclerosis, is overstrain of the vascular walls, continued or intermittent high tension, whatever its ultimate cause may be."

In quoting authorities on blood-pressure, first position should be given to Sir Lauder Brunton. His own words in opening an address before the British Medical Association in 1908 are most interesting in any study of blood-pressure: "The measurement of blood-pressure in man is a subject in which I have taken a great interest for more than forty years, partly on its own account and partly because I have been fortunate enough to reckon among my personal friends many of the pioneers of this kind of research; Ludwig, Marey, von Basch, Burdon-Sanderson, Gamgee, Kronecker, Mosso, and Oliver." We have the following from this authority: "It seems to be proved by experiment that high tension *per se* will lead to the production of arteriosclerosis and atheroma, and therefore it is of the utmost importance to ascertain the tension of patients in middle life." The experience of Hare (*Journal of the American Medical Association,* October 30, 1909, p. 1507) is particularly instructive as to the value of blood-pressure determinations in insurance work. He holds that arteriosclerosis of the calcareous type is mostly found in the laboring class; the sclerosis resulting from arterial spasm and consequent high tension, usually in the well-to-do or upper class. As the latter are our applicants for Ordinary insurance, especially for the larger policies, his conclusion is pertinent: "The recognition of the underlying vascular state is of the utmost importance in prognosis." A recent editorial in the *Journal of the American Medical Association,* October 1, 1910, discussing Elliott's article, voices the present sentiment: "Increased blood tension, which is now early recognized and actually measured, is the forerunner of all that may happen to a well man. . . . Whatever the cause (of high tension), the etiological factor must be removed or the condition will sooner or later cause cardiovascular-renal disease with its various serious sequelæ."

The report, in March of the present year, of Peter on high tension in eye diseases is most instructive: "High Tension in Eye Diseases" (*Pennsylvania Medical Journal,* March, 1911).

	mm. Hg.
Average pressure in 29 cases of retinitis	165
Average pressure in 59 cases of neuroretinitis	185
Average pressure in 3 cases of albuminuric retinitis	190
Average pressure in 6 cases of hemorrhagic retinitis	205
Average pressure in 3 cases of papillitis	225

The association of high tension and Bright's disease is too well known to require emphasis. The cause of this hypertension is still only vaguely understood. Whether the recent work of Bittorf of Breslau, tending to prove that mechanical obstruction in small branches of the renal artery is cause of high tension; whether Kantenberg's work (*Deutsche medizinische Wochenschrift,* March 25, 1910), showing that this high tension is the result of a toxemia following upon kidney changes; or Loeb's theory of compensatory reflex vasoconstriction will be confirmed; whether adrenal hypertrophy, altered renal secretion, raises the systemic pressure; whether reflex vasoconstrictor impulses from sclerosed aorta and large vessels; or, finally, whether retained waste products or autolysins, possibly nephrolysins, are specific or contributing causes of this symptom can only at present be surmised.

The exact relation of high tension to nephritis, arteriosclerosis, and myocarditis is being extensively studied clinically and experimentally. We can content ourselves with the established fact that hypertension is a sign of preeminent importance in any condition associated with cardiovascular and renal changes, and that before the stage of myocardial incompetence is reached the degree of hypertension is a fair measure of the danger of the condition. In the later stages of these diseases, if the kidneys and arteries endure longer than the myocardium, and if a terminal infection does not interfere, the blood-pressure will gradually fall as the heart muscle fails; so that a man dying of nephritis after ten years of high tension may show a normal blood-pressure. These late conditions should, however, not offer serious difficulties. It is in the early cases, so constantly overlooked by the average examiner, that we need additional diagnostic aids, and it is here that blood-pressure observations will prove invaluable.

If, in addition to giving us accurate information in the large group of cardiovascular-renal diseases associated with high tension, blood-pressure observations could assist us in the exclusion of applicants susceptible to infectious diseases, tuberculosis being the most important, its value and scope would be materially enlarged. There are at present sufficient clinical data to justify the belief that this can be expected in certain cases. Recent clinical work, notably that by Emerson, appearing in the *Archives of Internal Medicine,* April, 1911, and Pottinger, *Archives of Internal Medicine,* October, 1909, shows that relative low pressures are constantly found in tuberculosis, unless some complicating cause of hypertension be present. Lowsley shows low tension in conditions of physical exhaustion; Munzer in cachexia, exophthalmic goiter, and Addison's disease; Sizary in tuberculosis. Thompson and Pearce and Eisenberg in experimental work show effect of certain toxins, for example, peptone, in production of low pressures. Edgecombe finds hypotension in subjects with poor circulation, cold hands and feet, liable to chilblains, neurasthenics, weak heart. Dr. Barker has stated that he has come unconsciously to think of tuberculosis as a probability when hypotension is present.

The experience of Lauder Brunton in a single case and his general opinion are pertinent here. In 1909 he wrote: "About three years ago I met some of my old students at Bloemfontein and gave them a demonstration on blood-pressure. One of the medical men present was the picture of health, but we found his pressure to be only 100 mm. There was no apparent cause for this, and it was simply put down as a personal peculiarity. About a year and a half afterwards I met him at King Edward VII Sanatorium at Midhurst, and he told me that about two months after I had taken his blood-pressure he developed symptoms of phthisis, and had

come home in order to undergo a cure at the sanatorium. I have not sufficient data to justify a generalization, but the coincidence in this case struck me as very remarkable, and I think it may be well to direct attention to the abnormally low blood-pressure as a possible premonitory symptom of phthisis. The blood-pressure is apt to fall much below the normal in cases of general debility from overwork, underfeeding, and especially from acute diseases."

Several paragraphs from Emerson's summary are sufficiently instructive to justify full quotation: "Hypotension or subnormal blood-pressure is universally found in advanced pulmonary tuberculosis, in which condition emaciation may play a part in its causation. Hypotension is found in almost all cases of moderately advanced tuberculosis, or in early cases in which the toxemia is marked, except when arteriosclerosis, the so-called arthritis or gouty diathesis, chronic nephritis, or diabetes complicate the tuberculosis and bring about a normal pressure or a hypertension. Hypotension has been found by so many observers in early, doubtful, or suspected cases with or before physical signs of the disease in the lungs, and is considered by competent clinicians so useful a differential sign between various conditions and tuberculosis, that it should be sought for as carefully as it is the custom at present to search for pulmonary signs. Hypotension when found persistently in individuals or families or classes living under certain unhygienic conditions should put us on our guard against at least a predisposition to tuberculosis. Most unhygienic conditions, overwork, undernourishment, and insufficient air are of themselves causes of a diminished resistance, and it seems likely that a failure of normal cardiovascular response to exercise or change of position may be found to indicate this stage of susceptibility, especially to tuberculous infection. Hypotension, when it is present in tuberculosis, increases with an extension of the process. Recovery from hypotension accompanies arrest or improvement. Return to normal pressure is commonly found in those who are cured. Continuation of hypotension seems never to accompany improvement. Prognosis can as safely be based on the alteration in the blood-pressure as on changes in the pulse or temperature."

We can then, I think, definitely state that a pressure in an adult under 105 mm. warrants further investigation; under 100 mm. should make the case very doubtful. I think knowledge of the blood-pressure in underweights, in cases with a family history of tuberculosis, history of exposure to infection, or suspicious personal history, will prove a valuable additional diagnostic and prognostic sign.

The last word has not been spoken in regard to the value of any insurance data until there has been sufficient experience to permit a determination of actual results. At least two large companies have collected data which appear to show conclusively that medical selection will be greatly improved, at least in certain cases, by a recognition of the blood-pressure. Dr. Fisher of the Northwestern Mutual has shown in a recent paper delivered before the Medical Directors' Association that their mortality in rejected cases where the blood-pressure was over 150 mm. had been four times greater than the general average of the company covering the same period.

The reports received from one hundred and fifty companies in answer to a series of questions* are tabulated as follows: Replies were received from 150 companies. Forty-six companies do not request blood-pressure readings; 6 give no opinion; 7 consider it of no practical value; 33 consider it of value, but unobtainable. One hundred and four companies request blood pressure readings; 6, in all cases; 31, in special cases only; 67, when indicated by amount or age; 4, by amount only, $5,000, $10,000, $25,000; 31, by age only, (1—25), (2—35), (12—40), (7—45), (9—50), 32 by both amount and age, as follows:

No. of Cos.	Amounts.	No. of Cos.	Age (over)
2	$2,000	1	30
1	2,500	1	35
2	3,000	1	38
11	5,000	14	40
1	7,500	8	45
10	10,000	7	50
1	15,000		
4	20,000		

Twenty-six companies have question as to blood pressure in blank.

Of the companies from which replies were received, fifty-eight have over ten million insurance in force. Of these fifty-eight companies having ten million in force, fifty-one request blood-pressure readings; only seven companies, or 12 per cent. do not. Of the one hundred and fifty replies received, we note that one hundred and four companies, or 70 per cent., use blood-pressure at the present time, more or less. This is interesting as compared with the results of a similar investigation by Faught two years ago. In thirty-two replies which he received there were no companies that required blood-pressure in all examinations; twenty-two companies required it in certain cases; ten companies did not employ it at all. Faught's

*Do you require or request blood-pressure readings?...
If no:
Do you consider it of no practical value in insurance work, even if obtainable?.....
Do you consider it of value, but unobtainable, or an impractical requirement?.....
If yes:
In all cases?.... Or only over.....years of age?.....
Only over $....application? Only in special cases?....
Is a question as to blood-pressure incorporated in your examination blank?.....
Do you believe blood-pressure readings enable us to exclude certain cases in which other signs often associated with hypertension might not be present or might be overlooked—*i.e.*: trace of albumin, casts, thickened arteries, retinal changes, accentuated second sound, cardiac hypertrophy?.....
Do you believe a risk under sixty years of age is doubtful when the blood-pressure is over 140 mm. Hg, wide cuff?.....
If not, how many mm. Hg would render case doubtful?.....
Do you believe a risk under sixty impaired when blood pressure is over 150 mm. Hg?.....
If not, how many mm. Hg would render case impaired?.....
Have you had cases with sufficiently increased blood-pressure to render case impaired without other evident signs?.....
Do you believe an abnormally *low* blood-pressure has any practical significance in life insurance?
Would an abnormally low blood-pressure, say under 105 mm. Hg. render a case doubtful?.....
Would underweight, or one or more cases of tuberculosis in family, or history of exposure to tuberculosis, have any more unfavorable aspect when associated with a low blood-pressure?.....
Do you ever use or request diastolic pressure or pulse pressure?.....
REMARKS: (Particularly requested and appreciated).

figures were obtained from the larger companies. When I subdivide our replies into those above and below ten million insurance in force, we find that 88 per cent. of the companies having above ten million insurance in force are now using blood-pressure. This comparison and the fact that seven years ago no company requested blood pressure show a rapid increase.

The individual usage of some of the larger and more representative companies, as well as the individual expression of opinion from their medical departments, is of interest. The maximum blood-pressure which could be considered normal varies in the usage of the different companies from 145 mm. to 180 mm. It is worthy of comment that the company which has had the largest experience has the lowest maximum normal blood-pressure. Although there is a hesitancy to express an opinion in regard to the lower limits of normal blood-pressure, the majority are of the opinion that a blood-pressure below 105 mm. should receive investigation. With the warning expressed above against general inferences from individual experiences, I might add several that might seem noteworthy. One medical director writes that he declined a man last fall though everything was favorable but increased blood-pressure. He adds that the man died in March of this year. Another writes of a recent experience, six months ago, where a man thirty-two years of age was rejected solely on account of high blood-pressure. His urine was normal in every respect. The man claimed to be in perfect health. The latest news from this applicant is that he has had two cerebral hemorrhages and is confined to bed. Immediately after the rejection, this man received $10,000 insurance from another company. Another writes that he examined and declined a man sixty-two years of age who had just received a policy from another company. His declination was based on a blood-pressure of 160 m.m. On every other point the risk appeared first-class. Seven weeks later the man dropped dead at his place of business.

In conclusion, I would merely reiterate the position taken in the premises: that instrumental estimation of blood-pressure has become an established clinical sign, and that its usage in life insurance examinations is trending toward a more general acceptance. Coincident with the broadening experience in the use of this method, there is a distinct tendency toward restricting the limits of normal variation.

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TRACHOMA.

By M. VICTOR SAFFORD, M.D.,

BOSTON, MASS.

U. S. PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

It may be noted that over twenty-five different kinds of bacteria have been identified as responsible for the production of inflammatory conditions of the conjunctiva or cornea. This list includes some like the Klebs-Loeffler, leprosy, tuberculosis and colon bacilli, gonococcus, pneumococcus, and others more usually identified with disease processes elsewhere in the body; also staphylococci, streptococci, the Penecillium glaucum, various aspergilli and saccharomycetes. In addition there are others like the Koch-Weeks, Morax-Axenfeld, Petit's, Nedden's bacilli, etc., which appear to be associated with diseases of the eye alone. The resistance of the eye to the various known possible agents of infection varies greatly. Some, as for instance the colon bacillus, seem to require that the natural resistance of the conjunctiva be reduced by trauma or otherwise before infection can occur, while others like the Koch-Weeks appear to be able to attach a perfectly healthy conjunctiva. There is no reason to believe that all bacteria capable of producing conjunctivitis or other inflammatory affections of the eye have been discovered and it is also well known that conjunctival congestion at least may be kept up by many causes other than bacterial infection.

Of the various forms of bacteria which are known to be capable of producing inflammation of the conjunctiva or cornea, some may at times produce a distinctive clinical appearance which suggests at once the cause of the trouble, but this is not always true. The same bacteria do not always produce the same clinical picture and very different bacteria may give rise to similar symptoms. Mixed infections are undoubtedly common and practically identification of the cause of an inflammatory condition of the eye is often complicated by the presence in the secretions of the eye of all sorts of aerobic bacteria and the difficulty of distinguishing the actual cause of the trouble from its accidental companions.

In considering the symptoms to which an inflammation of the conjunctiva may give rise it is necessary to take into account the anatomy of the eyelid. It will be recalled that the surface of the conjunctiva itself although apparently smooth is really traversed by minute ridges and grooves. This condition is capable of becoming greatly accentuated when the conjunctiva is congested and swollen, even causing here and there an appearance which may suggest a beginning granulation process. Scattered through the conjunctiva are also mucous follicles which too are capable of becoming swollen and simulating granulations.

Lying beneath the conjunctiva, interspersed through the connective tisseu of both lids are numerous lymphoid cells, in the upper lid most abundant in the looser tissue back in the retrotarsal fold and the least so where the conjunctiva lies over the tarsal cartilage. The amount of such lymphoid tissue varies normally in different individuals. It is not present in early life and is said to appear at about three years of age. These lymphoid cells exhibit a ready tendency under various conditions to increase greatly in numbers, group together in masses and if the eyelid generally be not at the same time infiltrated and swollen these masses or follicles will push up and show through the conjunctiva, giving what is often referred to as a frog-spawn appearance. Any sort of a persistent irritation of the eye is likely to start this process. The presence of a small foreign body on the conjunctiva for a day or two may prove sufficient. In the upper lid it probably will be noticed first in the looser tissue toward the corners of the eye and back in the retrotarsal fold because here the lymphoid cells are normally more abundant. When this condition becomes extensive and conspicuous it is likely to get called follicular conjunctivitis, even when it occurs in children as a concomitant of adenoids.

In this simple proliferation of the subconjunctival lymph cells the resulting follicles or frog spawn will be found on close examination to be soft and compressible, there will be no indication of structural damage to the overlying conjunctiva, and no matter how long the condition may exist when it finally disappears the conjunctiva will be restored to its normal appearance. Subconjunctival lymphoid proliferation is not a disease but a symptom, and a symptom and accompaniment of so many pathological conditions of the eye as to be practically without diagnostic value whatever.

Increase in the subconjunctival lymphoid tissue may be accompanied by hyperplasia of the subconjunctival connective tissue as well. This may occur of course in connection with ulceration from traumatism or from destructive inflammatory changes of any sort. In three instances, however, all from causes as yet unknown, a lymph cell proliferation and connective tissue hyperplasia are associated with histological changes in the eyelid and clinical manifestations so distinctive in character as to have lead to the differentiation of these three processes into three separate diseases. In one instance, so-called vernal conjunctivitis, *frühjahr catarrh,* or more appropriately, periodic hyperplastic conjunctivitis, there is a great general increase of the subconjunctival connective tissue, both elastic and fibrous. The effect of this connective tissue hyperplasia with its accompanying lymph cell infiltration of the lid and epithelial

changes is both to hump up and fissure the palpebral conjunctiva, giving it a tessellated appearance comparable to an old street paved with Belgian blocks in bad repair. Clinically this affection is also distinguished by its periodicity and by the fact that it shows no tendency to destroy the conjunctiva, leaving it after periodic attacks covering seven or eight years practically undamaged.

In another instance, Parinaud's conjunctivitis, there is a diffuse formation of new tissue greatly infiltrated with loose lymph cells and tending to the production of polypoid vegetations of the eyelid. When fully formed the clinical appearance as well as the microscopical structure of these vegetations is absolutely distinctive. The onset of this disease is characterized by general constitutional disturbance and by swelling or even suppuration of the preauricular glands and possibly other glands in the vicinity. There may be some localized ulceration of the conjunctiva as an accidental consequence of the symptoms of the disease, but the disease usually disappears without causing permanent changes in the eyelid from destruction of the conjunctiva or otherwise.

In the third instance in which a characteristic connective tissue hyperplasia occurs in the eyelid, as the lymphoid cells proliferate the follicles tend to degenerate and to become encapsulated by the newly formed connective tissue. In connection with this process new blood vessels are also formed which permeate to some extent the interior of the follicle. As the inflammatory process continues these little round, firm capsules are pushed up into the conjunctiva. Their contents break down. The overlying conjunctiva becomes involved in the same degeneration and gives way. The contents of the capsule are discharged and the little spot of destroyed conjunctiva is replaced by scar tissue. In this way the disease tends to destroy bit by bit the entire conjunctiva. As a result also of the changes which take place beneath the surface there is a permanent obliteration of the normal blood vessels and a general atrophy of the lid.

This is the disease which the United States Government recognizes as trachoma. The pathological changes as shown by the microscope in a section of a trachomatous eyelid are absolutely characteristic, but such procedure is of course not practicable for diagnostic purposes. What, therefore, has been taken as the essential diagnostic feature of the affection is the formation of firm organized follicles which coalesce with the conjunctiva, break down and cause its progressive destruction. It is on the demonstration of this process that officers of the Public Health and Marine Hospital Service are instructed by their regulations to rely as furnishing the conclusive evidence requisite for the issuance of a medical certificate that any immigrant is afflicted with the disease.

In considering other and incidental clinical manifestations of trachoma, especially in the light of the experience which has been gained by medical officers of the Public Health and Marine Hospital Service in their examination of the eyes of 14,000,000 people of all nationalities and their practice of holding abnormal conditions of the conjunctiva under observation *ad libitum*, the following mentioned general conclusions seem justifiable. In its onset trachoma is clinically indistinguishable from a conjunctivitis from any other cause. It may come on as a violent inflammatory affair. The original infection, alone or mixed, may produce an ophthalmia which may quickly destroy vision. The type of the disease with a more or less violent onset appears to be emphasized in the literature regarding the affection, probably because these are the cases usually recognized early. The experience gained in the examination of immigrants at both ports of departure and arrival certainly warrant the belief that the initial conjunctivitis is ordinarily a comparatively mild affair. The disease often seems to come on insidiously without sufficient inflammatory reaction to cause an individual to give up work or seek medical treatment. A pronounced inflammation of the palpebral conjunctiva without corresponding involvement of the ocular conjunctiva and a secretion rather watery than purulent are suspicious signs. A mild conjunctivitis from unaccountable cause persisting in spite of intelligent treatment is still more suspicious. But the writer knows as yet of no trustworthy indications of a trachomatous process until the appearance of the firm hyperplastic granules, which not only push up but also involve the overlying spot of conjunctiva. Even when the disease has actually reached this stage the granules may be so masked by the general swelling of the lid as not to be demonstrable until the acuter inflammatory symptoms have subsided. The writer is inclined to believe that trachoma ordinarily begins with an infection of the lower lid and that it is there that the first signs of granulation will appear. The disease process in the lower lid however does not take place under the same mechanical pressure as in the upper lid, and for this reason probably its manifestation in the former are less pronounced and more likely to be overlooked. The writer also believes that the trachomatous process leaves there a scarring which would always be characteristic if not obscured by the changes so likely to be produced in the lower conjunctiva from various irritative causes by the time adult life is reached. The time which may elapse from the onset of the disease until distinctive granules become visible in the conjunctiva varies considerably. In a case which recently came under the writer's observation seven weeks elapsed from the time troublesome subjective symptoms became manifest until even suggestive indications of a trachomatous process appeared. Until then the disease presented itself as a mild but more or less annoying conjunctivitis of an indefinite character. This case it might also be noted received medical treatment in hospital from within three weeks after the subjective symptoms were stated to have appeared, and in an effort to account for the resistance to treatment an exhaustive bacteriological study was made of the eyes and the patient even subjected to a tuberculin test, all with negative results. Ordinarily, however, in the writer's opinion, some fairly definite indications of a trachomatous process may be expected to become visible within two or three weeks from the onset of inflammatory symptoms.

The chances for error of diagnosis which may exist in connection with the recognition of the earlier stages of trachoma cannot be too strongly emphasized. Under the practical conditions often presented, swollen conjunctival corrugations, swollen mucoid follicles, or simple lymphoid follicles may be mistaken for a beginning trachomatous process. It may be stated without qualification that the cases of supposed active trachoma which yield readily to treatment actually belong

in this category. What is still worse the recognition of the true character of the three conditions just mentioned is very likely to lead experienced oculists to overlook a true coexisting trachomatous process, even after some localized destruction of the conjunctiva has actually begun. The fact to be emphasized is that all these conditions may proceed or accompany a trachomatous process. Trachoma and a typical follicular conjunctivitis may coexist on the same lid, perhaps owing to some causal relationship or perhaps purely as the result of superadded infection. In connection with the avoidance of diagnostic errors in abnormal conditions of the eyelids three or more or less neglected factors might be mentioned which are equally as important as a recital of pathological differences. They are: A familiarity with the appearance of an ordinary, substantially normal conjunctiva, including both the inferior and superior culs-de-sac. A practice, when examining an eyelid, of invariably pressing down and exposing to view the retrotarsal fold of both eyes. A beginning trachomatous process is always seen most distinctly in the retrotarsal fold. Third: Sufficient dexterity to be able to evert an eyelid and thoroughly expose this fold to view in the case of an ordinarily sensitive inflamed eye without causing such a spasm of the ocular muscles as to produce an engorgement of the tissues and thus make a satisfactory examination impossible.

The trachomatous process may involve the ocular conjunctiva, but the disastrous effects on vision commonly associated with trachoma are rather in the nature of accidental consequences of the process which takes place in the eyelids. The attrition of the roughened trachomatous tarsal conjunctiva tends steadily to impair the transparency of the cornea. It may be that in this way a true trachomatous process is maintained on the eyeball itself. Pannus has usually been regarded as an indication of such a result and to be a certain diagnostic sign of trachoma. As the disease becomes more advanced and the inner surface of the eyelid becomes scarred and contracted the resulting entropion may bring the rough margin of the lid or the eyelashes themselves against the cornea, subjecting it to still greater irritation. The constant irritation of the eyeball from these sources with its maceration in abnormal secretions tends not only to impair vision itself, but to render the eye susceptible to superadded accidental infections of all sorts. It is to these intercurrent infections, or in other words to mixed infections that, the writer believes, the acute exacerbations seen in the course of the disease, the destructive corneal ulcerations and blindness is ordinarily due.

The writer has seen too much of the horrible results of trachoma not only among foreigners, but among the unfortunate inmates of orphan asylums in this country, to wish to underrate the dangerousness of the affection, but the work of the medical officers of the Public Health and Marine Hospital Service during the last fourteen years seems to justify the conclusion that in localities where the disease is prevalent trachomatous infection is much more common and less uniformly disastrous in its results than is often supposed. The acquaintance of the medical profession generally with trachoma is apt to be limited to the type and stage of the disease which is calculated to lead even the most stupid and ignorant to seek medical relief. But in our wholesale examination of the eyes of immigrants from regions where trachoma is notoriously prevalent, cases are continually being met in which the trachomatous process is proceeding steadily with the destruction of the conjunctiva without causing marked inflammatory reaction or even serious discomfort. Often cases are seen in which in one eye or both the disease has become spontaneously arrested before the destruction of the conjunctiva has become complete. It is reasonable to suppose that the seriousness of the manifestation of trachoma may vary with the virulence of an original or intercurrent infection, but the writer believes that there is a large mechanical factor in this matter as well, depending on the natural looseness or tightness of the individual's eyelid. Given an eyelid which fits tightly over the eye there is going to be serious trouble from the start, while in persons with naturally loose, flabby eyelids the conjunctiva may be found to have been entirely destroyed without producing noteworthy damage to the cornea or sufficient entropion to give rise to trichiasis.

The cause of trachoma is unknown. Mechanical irritation or inflammation from any known causative agents, no matter how long-continued or how virulent, fail to start up the trachomatous process. The healed ravages of a gonorrheal infection or the final result of gross ulceration from trauma or other cause produce in an eyelid changes which are usually easily distinguishable from a cicatrized trachomatous process. The minute pathology of this process points to some infective agent. The trachomatous process from its beginning suggests a clumsy effort of nature to bring about the extrusion of irritative material which has found its way down into the subconjunctival tissue. It is of course conceivable that this process might be set going as an accidental consequence, as it were, of various kinds of infective bacteria finding their way down into the subconjunctival tissue. Such a supposition would seem to fit very well with the variations seen in the severity of symptoms, and the apparent difference in the degree of contagiousness of the affection. The writer has been inclined to this view, but in the face of a steady accumulation of circumstantial evidence to the contrary feels forced to conclude that such a theory is untenable. The more that one goes into this matter the stronger the evidence appears to be that hyperplastic granular destruction of the conjunctiva, no matter how limited in extent or mild in its symptom, is due invariably to a single infective causative agent.

As to the contagiousness of trachoma. There are many honest, well-meaning individuals who maintain that smallpox is not contagious, and support their contention by more or less plausible arguments. Arguments that trachoma, as described in the foregoing, is not a distinct disease spread by affected individuals, belong in the same category. We find no difference of opinion as to the contagiousness of trachoma among those who have achieved any success in actual efforts to check the spread of the disease. For a hundred years its contagiousness has been recognized in continental Europe as the cause of one of the most troublesome problems of military hygiene. On the long voyages from Italy to South America on emigrant ships the Italian Government has found it necessary to segregate in a special part of the ship those passengers who are found after a specially prescribed medical examination by governmental offi-

cers to be afflicted with trachoma even though the countries to which they are going do not as yet exclude trachomatous immigrants.

In the present state of knowledge as to the etiology of trachoma, deductions as to its contagiousness must of course rest on the same sort of evidence as that on which conclusions usually must be based in human affairs. Four children carefully guarded in a luxurious home suddenly develop trachoma and in spite of skilled treatment one of them becomes totally blind. On investigation a recently arrived immigrant girl employed in the family is found to have an unsuspected case of trachoma so far advanced in the cicatrical stage as to be commonly regarded as innocuous to others. Two members of a similar household develop serious cases of trachoma. A servant who has been employed in the family goes on a visit to Europe. On her return her employer finds that she has been stopped at Ellis Island on account of an old long-standing case of trachoma of a benign type. It takes something more than mere theorizing to satisfy one who has seen trachoma spread through an orphan asylum, and has from time to time seen doctors and nurses being treated for the disease after association with trachomatous patients, that the natural conclusion in the above-mentioned instances is not correct.

As to the matter of immunity to infection. On the S.S. *Oldenburg*, arriving at Baltimore in February, 1907, sixty-seven persons from the same compartment were found to be suffering from an inflammatory affection of the eye of the same general type, the origin of which was apparently due to the presence in their midst of four cases of trachoma in a state of acute exacerbation. Of these sixty-seven affected passengers forty-eight subsequently developed trachoma, while the remainder promptly recovered under simple remedial measures.* In the writer's fifteen years' experience in the medical examination of immigrants he has never yet found a well-established active case of trachoma in an immigrant family which has been living together in the same house without discovering other members of the family also affected. When he has thought he has found such an instance investigation has always brought out the fact that the diseased individual has not been living at home. On the other hand, he can recall instances of families of as many as twelve members all so diseased, the parents practically blind and the children presenting successive gradations toward the same stage. The impression that one member of a family may have trachoma and others escape is probably due to the fact that the others may have a type of the disease which does not give rise to conspicuous symptoms and consequently passes unrecognized. So also in those instances in which trachoma appears to be confined to one eye a more careful examination will usually reveal a milder or arrested case of the disease in the other. The writer has, however, seen cases in which there were no discoverable signs of disease except in one eye but similar instances have been reported even in the case of a demonstrated gonorrheal infection.

In contagious inflammatory eye affections it seems safe to assume that the danger of contagion is directly proportional to the amount of secretion. This probably holds good for trachoma. But it begins to seem that in affections of this general character danger of contagion is not entirely obviated by the adoptions of means to prevent the direct conveyance of infective material to the eyes of a second person as by the medium of a towel or soiled fingers. Military surgeons in Europe have long persistently declared that trachoma has continued to spread among troops after the possibility of such means of contagion has been positively eliminated. In connection with the study of the spread of other forms of conjunctivitis whose bacterial cause is known, recent observers seem inclined to emphasize the danger of the spread of such affections in two other ways, directly by sneezing or coughing and through the medium of dust. In this connection they point out that the secretions of the eye naturally drain down into the nose and throat and when the infective bacteria are sneezed or coughed out they are enveloped in a watery pellicle which serves to prolong the vitality of those which are susceptible to drying. Attention has also been called to the fact that when introduced in the eye in connection with dust they are accompanied by a mechanical irritant which may facilitate infection.

The matter of the contagiousness of trachoma possesses much more than academic interest. The United States Government regards trachoma, except in a healed cicricial stage, as a dangerous contagious disease, and denies admission to the country to all foreigners so afflicted. This action taken by the Government in 1897 because of evidence that the newly developed immigration from southern and eastern Europe was spreading trachoma in this country to an alarming extent. The policy of excluding trachomatous immigrants appears to have had the desired effect. In some of our cities eye clinics then occupied almost entirely with the treatment of trachoma, have been closed from lack of material, and in many localities an acute case of trachoma has come to be looked on as a curiosity. As the policy of the Government has tended to accomplish its purpose the old conditions which led to the adoption of that policy have been gradually forgotten. In the meantime immigration from eastern Europe and Asia has been constantly increasing. In the last ten years also immigrants denied admission at our ports of arrival because of trachoma have increased from one in eighteen hundred to one in four hundred, and this too in spite of the refusal of the transportation companies to accept trachomatous individuals for passage, and the adoption of more and more rigorous measures to prevent them from getting aboard ship at foreign ports of embarkation. The number of people thus held back from attempting to come to this country has been augmented each year. Today the policy of our Government in regard to trachoma is the sole obstacle in the way of the migration to this country of hundreds of thousands of trachomatous inhabitants of Europe and Asia who are bound by racial and family ties to people that have already come here and now form an integral part of our population.

The Relation of Trachoma to the Administration of the United States Immigration Laws.— The uphill struggle in which this country has been engaged for over seventy years to devise effective means for the control of the conduct of the immigrant traffic has always had three distinct purposes

*"Trachoma. Its Character and Effects," Passed Assistant Surgeons T. Clark and J. W. Schereschewsky, U. S. Public Health and Marine Hospital Service: Government Printing Office, 1907.

in view. They have been to prevent the bringing into this country of certain obviously and seriously objectionable classes of individuals, to protect the country against the accidental importation of exotic epidemic diseases, and to safeguard the personal welfare, physical and economic, of the immigrants themselves. The means by which it has been sought to attain these ends have proved to a great extent ineffectual. The earlier measures devised under State authority have been largely superseded by Federal legislation, the execution of which has fallen from time to time to different branches of the Federal Government. That portion of existing Federal laws relating to the exclusion of foreigners from the country and providing for the protection of immigrants against "fraud and loss" has been placed in the hands of a branch of the Federal Government especially created for the purpose, the Immigration Service. These laws require that the right of every foreigner to enter the country shall be passed upon by officers of this Service who, after a prescribed method of examination, shall decide whether or not any individual may belong to any of twenty specifically defined classes which the law says are inadmissible. Twelve of the classes so enumerated, among which are "insane persons," "persons likely to become a public charge," under certain conditions persons having a defect "affecting ability to earn a living," "persons afflicted with a loathsome or dangerous contagious disease," etc., call for the possession on the part of the immigration officials of authoritative information regarding the physical and mental condition of every alien applying for admission. Since 1891 the task of supplying such information to the immigration officials has been a part of the work of the U. S. Public Health and Marine Hospital Service. Medical Officers of this Service are required by law to certify for the information of the appropriate immigration officials any and all physical or mental defects or diseases which arriving aliens may have. Medical certificates or statements submitted by duly authorized medical officers of the Public Health and Marine Hospital Service, after compliance with the regulations of their own Service applicable in the premises, are made by law final and conclusive in the matters to which they relate.

Since 1891 nearly 14,000,000 alien arrivals of every race and nationality have come before these medical officers for physical and mental examination at the ports of entry of the United States and its possessions, and of Canada. In addition officers stationed at Asiatic and to some extent at European and tropical American ports have been called upon to examine prospective passengers with reference to the requirements of our immigration laws, as well as to secure enforcement of our quarantine laws and regulations. During these twenty years the Public Health and Marine Hospital Service has been steadily utilizing the experience thus gained by its own officers, together with the benefits of general progress in medical knowledge and special help from various sources in a systematic effort to put this branch of its work on a plane of efficiency and uniformity that will enable it to fulfill the purpose contemplated in the immigration laws.

The detection of diseases and defects among arriving passengers still depends largely, but by no means entirely, on such a "primary medical inspection" as forms a conspicuous feature of the work of the medical officers at Ellis Island. To the casual visitor this process may seem hasty and superificial, but the wide range of diseases and defects comprised in the list of "cases certified" in the course of a year shows better the extent to which the possibilities of such a systematic scrutiny of arriving passengers has been developed. The cumulative experience and study of the past has led to the adoption of certain definite rules for the conduct of this process and newer men are trained at once in their application. But official regulation of the conduct of the medical examination goes still further. This "primary medical inspection" aims solely at the segregation of the obviously defective and suspects of any sort. It is not concerned with the matter of diagnosis. To insure uniformity, guard against diagnostic or clerical errors, and to preserve compliance with court decisions and authoritative legal opinions of the executive departments of the Government with reference to the meaning of medical terms used in the law, the subsequent conduct of the medical examination work is also largely prescribed in detail by official regulations. Neither law, regulations, nor custom places any limit on the time which medical officers may take to insure an accurate diagnosis in any case. Three or four weeks is not an unusual period of detention for this purpose. By existing regulations medical officers are instructed "not to render a certificate setting forth the person concerned to be the subject of any physical or mental defect or disease unless the existence of such defect or disease rests upon conclusive evidence." In many instances, also, the regulations state specifically what evidence is to be regarded as conclusive. The acts of an individual officer are furthermore subject to a system of checks and reviews which operates to put the conduct of the whole medical work at the larger ports of entry on a basis comparable to a modern business management, and to so safeguard the interests of an immigrant as to make his deportation to-day by reason of an unjustifiable medical certificate a practical impossibility.

The scrutiny of the eyes of arriving immigrants is naturally a conspicuous feature of the "primary medical inspection." It is necessary to be on the watch to follow up the hint which may be furnished by a puckered face, a corneal opacity, a drooping lid, nystagmus, strabismus, any evidence of inflammation, or any other abnormal sign not only as regards the possibility of indicating some local affection, but any constitutional disease as well. Unequal pupils, for instance, may arise from various causes, and may have slight practical importance, but they have repeatedly led to the detection of cases of beginning paresis.

In 1897 this matter of the disposition of inflammatory eye affections began to assume a new importance. Among the classes of aliens expressly declared by the immigration laws to be inadmissible to the country are "persons afflicted with a dangerous contagious disease." In that year, as the result of persistent representations from oculists and municipal authorities in various localities to the effect that trachoma was rapidly spreading in this country as the result of its prevalence among immigrants and constituted a serious public menace, the Secretary of the Treasury invoked the authority which was then vested in him by law to declare trachoma to be a dangerous contagious disease, and to instruct immigration officials to exclude from admission to the country all aliens so afflicted. Prior to this time it had been customary for the

medical officers engaged in the medical examination of arriving immigrants to certify marked cases of trachoma for the information of the immigration officers, pointing out the danger to eyesight, the probability of recurrent attacks of acute inflammation calling for treatment, and the possible contagiousness of the affection. As a result, some of the severer cases were excluded as "likely to become a public charge," but little or no attention was paid to the milder types of the disease even if detected. Cases of acute eye inflammations, whether due to trachoma or not, calling for immediate treatment, were then, as now, placed in hospital and action deferred until sufficiently improved to be able to travel.

This order added nothing to the already existing duty imposed on the medical officers by law of detecting and certifying "any and all physical and mental defects or diseases." The Service to which these officers belong was thereby placed under no greater obligation to devise methods for the detection of trachoma and to formulate regulations that would safeguard against errors of diagnosis than in other instances in which an alien's admissibility might hinge on the results of the medical examination. But as the result of this order a situation rapidly developed which has stimulated the Public Health and Marine Hospital Service to direct special attention to the matter of the etiology and diagnosis of trachoma, and has led to the adoption of special precautions to prevent the issuance of medical certificates for trachoma except on conclusive evidence of the existence of the disease.

When this order went into effect it was nothing unusual to find at New York among the passengers on a single ship sixty or seventy typical textbook cases of trachoma, with eyesight in various stages of impairment. The detection and diagnosis of such cases presented no difficulty. In addition, hospital accommodations were swamped with cases of apparently acute conjunctival inflammations. These it had usually been the practice to discharge when acute symptoms were relieved in order to make room for new arrivals. As closer attention began to be directed to the diagnosis of trachoma it soon became apparent to both the medical officers and the local oculists, whom it was customary to call on for assistance at that time, that many of these presumably transitory cases of "catarrhal" conjunctivitis were in reality cases of beginning trachoma due to recent infection. Complaints were made by municipal authorities as late as 1903 that the medical examination to which immigrants were being subjected at the chief ports of entry was failing to keep cases of trachoma out of the country as intended by the order of 1897. Even to-day officers conducting this examination are confronted from time to time by an aggravated case of trachoma in an alien resident of this country who had been noted at the medical examination on his arrival some months previously as having what was regarded as an inconsequential ocular irritation.

It is to be observed that in 1897, when complaints in regard to the spread of trachoma reached their climax, the newer type of immigration to this country was coming into prominence. With the development of the immigrant traffic in Southern and Eastern Europe, and the lessening attractions of this country to people of Northern and Western Europe, we were coming to draw our immigration more and more from countries where trachoma is extremely prevalent, affecting in some localities nearly the whole population, instead of, as formerly, from that part of Europe where the affection is relatively uncommon. We are now not only drawing immigration from Eastern Europe but from as far into Asia as Persia. In the exploitation of emigration from this whole region of Southern and Eastern Europe and Western Asia a constant obstacle has been encountered in the policy of this Government with reference to the exclusion of aliens afflicted with trachoma. At a conference at which the writer was present, four years ago, it was stated by a representative of the transportation interests that the steamship companies were then rejecting in Europe on account of trachoma over 100,000 actual applicants for passage a year. At prevailing rates for passage these actual rejections alone would represent a loss to the transportation and allied interests in gross income of not far from $4,000,000 annually.

As time has gone on there has been a constant accumulation of people in Europe and Asia whose emigration to this country has been checked by reason of the fact that they are afflicted with trachoma. Their relatives and compatriots who have come to this country have likewise been increasing not only in numbers, but in wealth and political power. These latter are naturally interested in securing the admission of those who are now prevented from joining them here, and this interest is developing into a powerful organized movement to bring about a modification of the present policy of this Government in regard to the disease. Indications of the progress of this movement are constantly apparent. Out of 24,270 aliens refused admission at our ports last year only 2618 were excluded by reason of trachoma and a considerable proportion of these undoubtedly contracted the disease from fellow passengers en route, yet how often is mention made in the newspapers of an immigrant being deported for anything else? The hardships of deportation in such instances are minutely dwelt on. Trachoma is pictured as a sort of bugaboo of the "immigration doctors," and allegations that it is not contagious at all are given the widest publicity. Criticism of the medical officers is nothing new. They have always been charged from various sources as being "inexperienced," "overzealous," and "incompetent." When after the observance of all precautions against error, a certificate of trachoma, or, for that matter, some other disease, has been issued, and the exclusion of an immigrant has resulted, it has been a common occurrence to have to defend the certificate against medical testimony produced by the immigrant's attorney to the effect that the disease stated in the certificate does not exist.

Under stimulation of the character above referred to and with the possibility of trachoma ever present in mind, these Government medical officers during the last fourteen years have examined the eyes of nearly 10,000,000 Europeans, Asiatics, and Africans. In probably 7,000,000 instances this examination has at least included an eversion of the upper lids and the pressing down and exposure to view of the superior retrotarsal fold of conjunctiva. In an unknown number of instances, but probably reaching into the hundreds of thousands, persons showing indefinite inflammatory conditions of the conjunctiva have been held under observation and studied for periods varying from a few days to several weeks until the conjunctiva has regained a practically normal appearance or until conclusive evidence of some definite disease has developed. Noteworthy research work in tra-

choma being done anywhere in the world has been watched for and followed, in many instances personally, by some officer of the service who happened to be near. Officers who have had opportunity to study trachoma while stationed in Europe or Asia, or among the natives of Alaska, have added their experience to that gained at our own ports of entry. But while in this way a vast amount of clinical knowledge of inflammatory conjunctival conditions has been accumulated and applied to the conduct of the medical examination of immigrants it has failed thus far to supply any quick and easy method for the recognition of incipient or atypical cases of trachoma. The Government still rests the diagnosis of trachoma on clinical evidence. As practically from the beginning the instructions to medical officers contained in official regulations still regard the essential clinical feature of trachoma to be a hyperplastic granular destruction of the palpebral conjunctiva. The demonstration of this destructive process is regarded to be the conclusive evidence requisite to the issuance of a certificate that any immigrant is so afflicted. By these instructions it is furthermore required that all arriving cases of inflammatory conjunctival affections shall be held under observation to see if such evidence of trachoma may appear, or until the inflammation disappears or is otherwise satisfactorily accounted for.

MANIC DEPRESSIVE INSANITY, THEN SYPHILIS, LATER GENERAL PARALYSIS.

By W. F. LORENZ, M.D.,

MENDOTA, WIS.

The sequence of events, as illustrated in this case, is extremely rare and the relationship of syphilis to general paralysis is further emphasized.

C. M. was admitted to the Wisconsin State Hospital April 5, 1911. Male. Age 41. Single. Salesman. Family history is practically negative. The paternal grandmother died of a "stroke" at the age of 64. Reliable and detailed information as to the various members of the family was obtained and was of no significance. Personal History: During infancy nothing of note occurred, and as a boy patient was considered a bright and active youth. He made good progress at school, was socially inclined, enjoyed sports, and was generally active and progressive. After leaving school he was employed in the office at Racine College.

First Psychosis: At the age of 21, the patient developed his first depression and it was described by the relatives as a "melancholia." This was of short duration, and he made a complete recovery, returning to his work until the following year, when a similar depression occurred. This was again followed by recovery. In the spring of the year following, or at the age of 23, a third attack occurred, and the informant emphasized the fact that this attack was different from the two former. They describe him as having been "extremely unbalanced" and more especially that his mood was elevated and he was generally overactive. It became necessary to send him to a hospital, and he was admitted to a private institution at Wauwatosa in April, 1893, where he remained four weeks. He was then transferred to the Northern Hospital. Unfortunately, the records are rather meager, although the dates of admission and discharge are unquestionable. He was admitted to the Northern Hospital May 1, 1893, and the notes made at that time describe him as being "profoundly melancholic." Subsequently in the history statements are made which would indicate that the patient's mood altered to one of elevation with overactivity, since he was described as having become "deranged on subject of finances and constantly writing checks, etc." Finally he was described as becoming well-behaved, quiet, and was discharged as recovered October 20, 1893. Following his discharge from the hospital, the patient secured employment as a canvasser for baking powder and was successful. Nothing abnormal was noticed in his behavior and he was considered mentally sound and capable. In 1903 he contracted syphilis and had well-marked secondary manifestations. A rigid mercurial treatment was given for eighteen months and nothing of consequence occurred until the onset of his present trouble.

Second Psychosis: For several years previous to his present admission it was noticed that the patient's business ability fell off and that he did not display the same interest and vigor that he formerly had, although he continued at his work until the winter of 1910, when he became extremely indolent, remained at home all day, lying on the sofa, and became generally careless and indifferent. About one month previous to his admission he became very restless and began expressing peculiar ideas. Concerning his habits, he was thought to be temperate in his use of intoxicants, but was decidedly immoral in his tendencies.

Mental examination upon admission showed a typical case of general paralysis. The patient was absurdly expansive; owned fabulous sums of money; fraternized with millionaires and financiers; he was extremely euphoric and his memory was very faulty, especially for dates, in giving which he made gross discrepancies. Physical examination likewise gave evidence of a general paralysis. The pupils were unequal and Argyll-Robertson in type, the deep reflexes were exaggerated and the knee-jerks were unequally so; the Romberg symptom was present, as was also a marked tremor of the extended fingers, lips and tongue; the patient had the characteristic speech defect and tremulous and irregular writing; there was a scar on the glans. Lumbar puncture was positive; the fluid showed an average of 73 lymphocytes per c.mm.; a very positive Noguchi butyric-acid test, and a well-marked first and second phase of the Nonne-Apelt test.

The two early depressions, episodal in their nature, with a subsequent attack, probably of the circular variety, would surely warrant the conclusion that the patient had a manic-depressive psychosis. Ten years after his first hospital admission he contracted syphilis and approximately seven or eight years after this infection showed signs of mental failure. It is to be noted that the mental picture at present is the usual expansive form of paresis and the existence of a previous psychosis in no way colored the clinical manifestations of the paresis.

ON THE OCCURRENCE OF SO-CALLED HENOCH'S PURPURA, WITH REPORT OF A CASE.

By JOSEPH LEWI BENDELL, M.D.,

ALBANY, N. Y.

Blood spots or hemorrhagic areas occurring in the skin as an accompaniment of diseased processes were observed and described by physicians of antiquity. It remained for Werlhoff, in 1775, to first differentiate such conditions as definite clinical en-

tities, the term purpura hemorrhagica being designated to describe the conditions. Subdivisions later on included the terms purpura simplex, designating what probably to-day we should consider as a simple purpura, and purpura urticans, in which marked itching of the skin was a feature of the disease. Finally Schönlein grouped together certain ill-defined rheumatoid manifestations in conjunction with purpuric spots and coined the term peliosis rheumatica. To-day, in honor of its originator, we use the term Schönlein's disease, thereby designating groups of arthritic disorders associated with hemorrhagic infiltrations into the skin.

All of the above classifications depend more upon symptomatic pictures than upon any definite pathological basis. Hence the distinctions were more artificial than real. In order to gain a better understanding of the disease, Osler has divided the purpuras into two groups, the one symptomatic, the other arthritic. He considers the symptomatic purpuras those in which purpuric lesions exist simply as a part of the diseased process, recognizing at the same time a definite etiological factor. Under this heading are included infectious diseases, such as smallpox, measles, scarlet fever, typhus, and ulcerative endocarditis.

The second subdivision of the above group we may term the toxic purpuras or those dependent upon certain drugs, such as quinine and the iodides; or again icteric purpura, and lastly ecchymoses, dependent upon the bites of venomous snakes. Third, cachetic conditions, viz., carcinoma, tuberculosis, and nephritis, diseases which, if protracted, not infrequently produce the lesion in question. Fourth, certain nervous states among which may be mentioned tabes, where occasionally the stabbing pain in the extremities is accompanied by purpuric disorders, and infrequently the intense forms of hysteria. Fifth, mechanical causes, slight bruises and straining efforts during whooping cough. Litten reports a case in this group following the administration of an anesthetic that was poorly taken.

The second great group, the arthritic purpuras, may be divided into purpura simplex, purpura rheumatica, and purpura hemorrhagica. No hard and fast rule obtains in the above classification. Thus in purpura simplex joint symptoms are entirely absent, a slight series of ecchymotic spots being the principal lesion. In purpura hemorrhagica bleeding from mucous membranes dominates the picture, whereas in purpura rheumatica the joint symptoms predominate.

The type of disease with which we are chiefly concerned in this paper, differing as it does from the other forms hitherto mentioned, was first described by Henoch, the so-called Henoch's purpura. Henoch was the first to definitely study and classify a group of purpuras that in addition to the purpuric eruption and arthritic manifestations presented abdominal symptoms. Willan, several years prior to Henoch, published the report of a single case of what we now classify as Henoch's purpura, but the latter was the first to describe as a clinical entity the disease now by common consent bearing his name. This particular type of purpura is at the present time, in no wise regarded as having a different pathogenesis from the other forms. It is considered merely as representing a severe blood dyscrasia plus marked gastrointestinal symptoms. The disease occurs principally in the early years of life. The maximum number of cases are encountered between the ninth and twelfth years. Beyond the fourteenth year it is rarely found, although the age in our own case was fifty-three. Males are more prone to the disease than females; of a series of forty cases, thirty-three were males and seven females. Poor hygienic surroundings, lack of proper nourishment, and previous rheumatoid attacks are considered among the etiological factors favoring the occurrence of the disease, although the condition is frequently found among the well-to-do and well nourished. Mention is made of the latter point since formerly much stress was laid upon poor conditions of nourishment, as predisposing toward purpuric states, the later associated in this instance with scurvy.

The disease is commonly ushered in with symptoms of headache, depression, and general malaise. Indefinitely situated rheumatoid pains, lancinating in character, are met with during this early stage and sometimes transitory edematous swelling of the affected regions may be seen. These symptoms are soon followed by swelling of the joints and the usual symptom-complex of acute articular rheumatism. During this stage of the disease isolated purpuric spots may be discovered. The latter are usually light red and small in the beginning, distributed irregularly, singly or in groups, gradually becoming large and tending to become confluent. As the disease progresses, their color changes from a light red to a dark purplish black, going through the various color changes due to transition from one pigment stage to another. The purpuric eruption usually begins on the legs and extends to the genitals and abdomen and sometimes covers practically the entire body. During this stage of the disease we begin to get the usual train of toxemic symptoms such as heightened temperature and pulse rate coupled with depression. The appearance of the gastrointestinal syndrome now follows. Violent colicky abdominal pains set in. The abdomen becomes extremely sensitive, in this particular point the conditions resembling one of general peritonitis because of the pain and rigidity. Nausea and vomiting set in, the vomitus at first consisting of food mixed with bile and later on containing blood. In our own case diarrhea was a persistent symptom. Numerous blood-stained evacuations continued from time to time, no remedy apparently being able to control the condition. In certain atypical forms of the disease in which hemorrhage from mucous membranes is absent large ecchymotic areas appear suddenly and rapidly become confluent so that the entire surfaces of the limbs become brawny and deep purple in color. Because of the rapidity of the process, this type of the disease has been termed "purpura fulminans." But a few cases have been reported, all of these proving rapidly fatal within a few days of the onset, the longest duration of any of them being four days. The autopsy in one of this series showed nothing but evidence of intense anemia, no embolic or thrombotic processes being discovered.

The following case, reported through the courtesy of Dr. Edgar A. Vander Veer, on whose service it occurred, is as follows:—

Mrs. A. B., age 53 years, U. S., married, entered the Albany Hospital complaining of swelling in arms and legs. Family history, negative; mother of five children who were alive and well. For several years menstruation had been irregular and scanty. Has had several previous attacks of arthritis, involving the ankles, shoulders, and wrists, complicated with slight hemorrhages from the

gums. In 1899 first noticed a swelling in both legs and arms associated with reddening of the skin which later on was followed by the appearance of purpuric discolorations in these parts. The patient claims that, although she has long been subject to rheumatic attacks, the swelling of the limbs with the accompanying purpura bore no relation to the attacks of arthritic pain. About two weeks before the patient entered the hospital she noticed a swelling of both arms and legs accompanied by discoloration of the skin in certain areas covering these parts. These symptoms appeared suddenly and have persisted. There is some difficulty in urination, pain occurring just after micturition. She complains of feeling sick and faint after eating but there are no other gastric symptoms. The history is otherwise negative.

The patient is a well-developed but poorly nourished individual. Skin and mucous membranes are somewhat pallid but there is no marked anemia. Temperature 99°, pulse 78, fair quality. Blood-pressure 140 mm. Covering the extensor surfaces of both legs and arms are numerous ecchymotic patches varying in size from a ten-cent piece to large irregularly shaped patches covering an area five or six inches in diameter. Both arms and legs are moderately swollen. The abdomen is somewhat distended and likewise presents purpuric spots resembling those covering the limbs. The abdomen is also somewhat sensitive to pressure and is painful. Physical examination is otherwise negative. The urine contains a faint trace of albumin, a few finely granular casts, and a few leucocytes, slightly acid and sp. gr. 1020; leucocytes, 13,200; erythrocytes, 3,560,000; hemoglobin 80 per cent.

The patient presented no unusual symptoms until the eighth day after entrance, at which time the temperature jumped from 99° to 104°, the pulse mounting from 80 to 116. At this time the patient had a bloody bowel movement and complained of intense colicky abdominal pain with nausea. From this time on the patient's condition grew steadily worse. The temperature remained for the most part in the neighborhood of 102°, the pulse oscillating between 120 and 140. Each day there were several bloody bowel movements. Nausea and vomiting occurred frequently although the vomitus contained no blood. Abdominal pain became severe and constant and fresh purpuric spots appeared upon the legs and abdomen. The patient passed into a state of coma and died on the tenth day after entrance. No autopsy was permitted.

178 State Street.

PRINTED INSTRUCTIONS FOR CLINIC PATIENTS

By WILLIAM HILLS SHELDON, M.D.,

NEW YORK,

CHIEF OF MEDICAL CLINIC, OUT-PATIENT DEPARTMENT, AND INSTRUCTOR IN MEDICINE, CORNELL UNIVERSITY MEDICAL COLLEGE.

That a hygienic régime is very often the most important benefit obtained from visiting a physician can, I think, be reasonably granted. Yet, since I have been connected with dispensaries I have been impressed by the lack of any intelligent idea on the part of the patient as to what he should or should not do. As an instance, I recall a man who had a serious heart lesion and who had been through repeated attacks of failing compensation. He had been told he should not overexercise and should be careful of his diet, without any more specific directions. Lifting, running up stairs, etc., did not seem overexertion to a man who had always been a truckman; neither did corned beef and cabbage, pies, etc., appear to him to be the cause of his indigestion and its consequent strain upon the heart. During all his attacks no one had had the time to explain in detail what he should do. Even if it had been explained, it is doubtful whether he would have remembered more than a small part. The examples of this sort are to numerous to mention.

Patients with chronic nephritis who have attended dispensaries for years generally have but a vague conception of their proper diet. Chronic constipation cases are given drugs with no effort at instruction. I know of a man with the latter complaint who for fifteen years had been regularly visiting clinics with no relief except from drugs, who was cured by following our printed instructions, much to his relief and our satisfaction.

I think instructions are neglected, not only in our clinics, but also in our hospitals, largely because of lack of time. Let him who thinks it does not take time sit down and labor with a patient with heart disease, taking up in detail his diet, bathing, exercise, etc. It takes an extraordinary amount of time and is a discouraging task inasmuch as on the next visit the doctor finds that the patient has not remembered more than a fraction of what has been told him, and the process of explanation has to be repeated. Is it any wonder that, with the crowds of patients and the lack of sufficient assistants, the doctor becomes discouraged, writes his prescription, and lets it go at that?

Constant verbal repetition is without doubt the best method of instruction. In the Boston dispensaries, where the doctor can frequently devote an hour to every new patient, wonders are achieved in the education of the sick poor, but here in New York, with an enormously increased number of patients and somewhat decreased number of doctors, the lesser sick must necessarily receive less time in order that proper attention may be given to those seriously ill. Under these circumstances repeated verbal instructions are out of the question in most instances.

Printed Instructions.—During the past year, in order to get over this difficulty, there have been distributed in the out-patient department of Cornell University Medical Clinic the following printed slips:

(No. 1.)

Directions for Patients with Kidney Disease.

Remember, with good care and by obeying instructions you may live many years with little discomfort.

Instructions.

I. *To avoid taking cold.*—(1) Wear flannel underclothes all the year, warmer in winter. (2) Keep the feet dry, wear warm socks. (3) Do not get wet or chilled. (4) Keep in the open air and sunshine all you can. (5) Keep your rooms at an even temperature, not too hot.

II. *To relieve the work of the kidneys.*—(1) Take a hot sponge bath every night at bedtime to keep open the pores of the skin. (2) Keep the bowels open; have at least one good passage every morning.

III. *Occupation.*—(1) Get work in which you never have to lift or strain, such as tailoring, operating, etc. It is harmful to lift heavy weights, walk too fast, stoop or climb long stairs. Rest as much as possible with not less than eight hours sleep. Do not worry or get too tired.

IV. *Diet.—Dairy foods.* Milk, cream, butter, and a small amount of cheese. *Cereals.* Rice hominy, Indian meal, barley, cracked wheat, oatmeal, cream of wheat, etc. *Breads.* Whole wheat, graham, rye, corn bread. *Vegetables.* Potatoes, beets, carrots, onions, turnips, squash, lettuce, spinach, tomatoes, peas. *Fruits.* All the fresh fruits except bananas. *Liquids.* Drink no alcoholic liquors of any kind,

not even beer. They are all absolutely poisonous to anyone with kidney disease, and are likely to cause dropsy, shortness of breath, or convulsions, and destroy your eyesight, besides shortening your life. Do not drink large quantities of water or other liquids.

Avoid all red meats, and eat eggs only in moderate quantities. *Avoid* all salted or dried or canned meats and vegetables.

(No. 2.)

Rules for General Care of Health.

1. Remember that rooms that have no sunshine are not healthy.
2. Sleep with your windows open and spend as much time as possible in the open air.
3. Take a tepid sponge bath every day, and at least two warm baths a week. Brush the teeth every morning.
4. Unless you have outdoor work, walk at least four miles every day. Practice breathing exercises and take fifteen minutes exercise daily with light dumb-bells or a cane.
5. *Habits.*—Sleep eight hours every night; be sure to have one good movement of the bowels every morning; do not drink more than one cup of tea or coffee a day; use tobacco in moderate quantities only; drink no liquor of any kind. It destroys digestion, ruins the kidneys, and leads to dropsy and other serious diseases.

Meals.—Eat moderate quantities, chew your food well. Rest for half an hour after each meal.

Diet.—Dairy products. Milk, cream, butter, and cheese. *Cereals.* Oatmeal, hominy, rice, Indian meal, etc. *Eggs.* In any form except fried. *Fish.* Any fresh fish, boiled, baked, or broiled. *Meat.* All the red and white meats, boiled, broiled, or roasted. *Vegetables.* Potatoes, beans, peas, carrots, beets, turnips, squash, lettuce, tomatoes, spinach, onions. *Fruits.* All the fresh fruits except bananas.

Avoid all fried foods, fresh breads, canned or salted meats. Do not eat pickles, pastries, or candies.

Remember, that all alcoholic liquors, including beer, are poisonous. *Do not drink.*

(No. 3.)

Directions for Persons with Heart Disease.

Remember, with good care and by obeying instructions you may live many years with little discomfort.

Instructions.

1. Hurry, worry, hard work, drinking too much liquor of any kind, or beer, will shorten your life.
2. Get work where you never have to lift or strain, such as tailoring, operating machines, etc.
3. Live on the ground or first floor, as climbing stairs is very harmful.
4. Never hurry. Do everything slowly. Don't run or walk fast. If you get short of breath, or feel dizzy or faint, stop and rest. Don't walk against a strong wind or when it is very cold.
5. Never indulge in sexual intercourse oftener than once a month.
6. Rest all you can, lie down as much as possible. Have at least eight hours sleep every night.
7. Be sure to get plenty of fresh air. Keep your windows open at night.
8. Wear flannels the year round, warmer in winter.
9. Avoid getting your feet wet.
10. See that you have one free passage of the bowels every morning, and never strain at stools.
11. Indigestion is very bad for persons with heart disease, as it is a strain on the heart. So eat very slowly, and chew your food well. Rest after meals. Do not eat so much that you gain weight.
12. *Diet.—Meat.* Boiled, broiled, or roasted meat once a day. *Dairy products.* Milk, cream, and butter in moderation. *Cereals.* Rice, hominy, Indian meal, barley, cracked wheat, oatmeal, cream of wheat, etc. *Bread, at least a day old*, whole wheat, rye, graham, corn bread. *Eggs.* Cooked in any way except *fried*. *Vegetables.* Potatoes in small quantities, beets, carrots, squash, lettuce, spinach, tomatoes, peas.

Avoid canned, salted, or fried meats. It is better to eat small meals frequently than too much at one time.

Do not drink much water or fluid of any kind at one time; it overloads the stomach and strains the heart. Drink water several times between meals, not with meals, and do not take more than a tumblerful at one time.

What to Do for Constipation.

1. Eat slowly; chew the food well.
2. Drink plenty of water; a tumblerful before each meal, and more on rising and on going to bed.
3. Keep a regular time for going to stool each morning.
4. Exercise in the open air as much as possible. Practice exercises that will strengthen the muscles of the abdomen.
5. *Diet.*—The following foods are especially useful; Apples, oranges, pineapple, prunes, figs, dried stewed peaches, cabbage, onions, spinach, "greens," tomatoes, rhubarb, butter, olive oil, coarse graham bread, rye bread, oatmeal, wheaten grits. Molasses, honey, and gingerbread are useful for children. Foods to be avoided because they cause constipation are: Milk, cheese, eggs, sweets, pastry, pickles, fried foods, and tea. It's better to eat fruits, green vegetables, and coarse cereals than much meat.
6. It is better to cure constipation by careful dieting than to be always taking pills or medicine.

We have also given out a dietary containing a list of cheap, nourishing foods, with directions for cooking them properly.

For consumptives, through the courtesy of the Board of Health, we have distributed a limited number of their pamphlets.

Satisfactory Results.—These leaflets have been exceedingly satisfactory both to patients and to doctors. Less time has been consumed and on the part of the patient more intelligent cooperation has been obtained. That the patients study these leaflets is shown by the questions asked at succeeding visits, and I have known not a few patients who could recite the directions by rote.

The expense of printing large numbers of these pamphlets is but trifling, the results most encouraging. I am well aware that the idea of these circulars is not new, and in presenting them I merely wish to draw attention to the great necessity of such forms of printed instructions, and to urge the adoption of similar leaflets by other clinics.

784 Park Avenue.

Intestinal Invagination in Children.—Kirmisson gives the symptoms of invagination as pain, colic, suppression of stools and passage of blood mixed with mucus from the bowel. The blood is the most characteristic sign. Examination by rectum combined with abdominal palpation will reveal a soft, movable tumor. The diagnosis should not be hard, since this is a disease of infancy and of strong, healthy children. It is produced by spasm of the intestine pushing one portion of the bowel into another. As soon as the diagnosis has been made a large injection under ether may be tried, and if this fails an immediate operation should be done before gangrene or septicemia has set in.—*Le Bulletin Médical.*

Signs of Organic Lesions in Epilepsy.—Francesco Agosti says that it is coming to be acknowledged that epilepsy is not a functional disease but one that is the result of pathological processes in the cerebrum. The author enumerates the signs of involvement of the cerebral system that are to be looked for in cases of epilepsy; among them are the Babinski sign, lessening of muscular power, muscular hypotonia, Neri's sign, the position of the lids, of the palate, phenomena connected with the hands, the gait, etc. The special morbid reflexes are of diagnostic value. Most of these phenomena belong to groups of associated movements which accompany voluntary movements. The author has made a study of thirty cases of epilepsy. He concludes that there are cases of epilepsy in which the signs of local organic lesions are evident, and there are other cases in which they are lacking. This absence of such signs may be due to the fact that the existing lesion is still so slight as to cause no symptoms. The author believes that idiopathic epilepsy is due to cerebral changes, alterations of the nervous elements, cellular and fibrous, and that they are the expression of a special alteration of development, causing changes in the cortex cerebri or histological and physicochemical changes in the nerve elements.—*Il Policlinico.*

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SOME OF THE MEDICAL ASPECTS OF IMMIGRATION.

AT first thought the relationship existing between medicine and immigration may not be apparent, but a close study of the subject reveals the fact that almost all the problems of this vexed question are in their ultimate factors essentially medical ones and require the cooperation and judgment of our profession for their proper solution. The general physical and mental examination of arriving aliens, conducted with a view of sorting out the individually unfit, is undertaken by physicians of the Public Health and Marine-Hospital Service, and the general principles by which the examiners are guided are set forth in an article by Dr. J. G. Wilson, on "Diagnosis by Inspection," in the *New York Medical Journal* for July 8, 1911. Referring to the immigrant, he states that "all symptoms must have their relative value interpreted with due regard to the racial characteristics of those who present them." This principle is illustrated by noting the differences existing in various races in the mental reaction or attitude to the medical inspection itself. Thus, "the stolidity and apparent indifference of the Slav would be suggestive of melancholia if presented by the South Italian or Russian Hebrew. If the Englishman should evince the external signs of emotion which the Assyrian or Italian shows on slight provocation, his sanity would at once be in question."

This suggests that the medical inspection of immigrants not only offers the opportunity to weed out the *individually* unfit, but likewise presents a rich field for the investigation of the broad problems of *racial* unfitness. It is well known that disease has often played an important part not only in molding the physical type, but also in determining the mental characteristics of a race. Thus, the flabby muscles, apathetic countenances, and arrested physical and sexual development so common among Greek immigrants is probably due to the chronic malaria with which that nation is afflicted. Alcoholic psychoses seem to be more prevalent among the Irish than any other race. The question naturally arises as to just what part alcohol has played in the development of national mental characteristics. Among immigrants from southern Europe, where wine drinking is universal, we find no such percentage of alcoholic psychoses. Kirby found only 5 per cent. of 120 insane Italians attributable to this cause. The Jews make the best showing of all, only 0.6 per cent. of 455 admissions from this people being classified among the alcoholic insanities. Inherent racial susceptibilities to particular affections might be illustrated in many other ways. For instance, Assyrians are more liable to trachoma than are Irish peasants, though the crowding in close quarters and unhygienic surroundings which are supposed to be such prime factors in etiology of this disease are as prominent conditions in the life of Ireland as in that of Assyria. The Jewish immigrant presents the largest number of hernias and the fewest congenital deformities, and though practically free from the alcoholic psychoses he seems to be especially liable to the insanities of adolescence.

So, in like manner we might go on almost indefinitely, pointing out peculiarities of racial susceptibilities and immunities, which so far have been simply accepted as unexplained phenomena in the field of medicine, but which are no doubt governed by definite natural laws. The opportunity which our large immigration affords for the investigation of such problems should not be neglected, for such an opportunity is not likely to recur.

MODERN THEORIES OF CRIMINALITY.

ALTHOUGH America has led the way in putting into practice the most advanced ideas in penology, this country is still far behind Europe in contributing to the science of criminology. Our jurists and lawyers particularly have been slow to accept the teachings of anthropology, medicine, psychology, and the various social sciences with regard to the delinquent individual. But recent years have beheld a gradual awakening and the bench and bar are no longer subservient to obsolete traditions. They are willing to be guided by every important discovery as to the essential nature of criminality. The American Institute of Criminal Law and Criminology was established a few years ago and in order to promote the study of criminal science in this country it has secured the translation of the most important works on this subject that have appeared in the European tongues.

One of these works which is now available for English readers is from the pen of Senor de Quirós,* the eminent Spanish student of criminology. It presents a concise survey of the development of this subject during the past century. An offshoot of psychiatry, criminal science is traced back to its occult origins in demonology, and the pseudo-sciences of physiognomy and phrenology are shown to be the precursors of Lombroso's criminal anthropology. The theory of degeneration found its greatest exponent in Morel, while the Englishman Pritchard was the first to employ the phrase "moral insanity." There are three names that stand out prominently in the history of criminal science: Cesare Lombroso, Enrico Ferri, and Raffaelle Garofalo. The first reduced the etiology of

*"Modern Theories of Criminality," by C. Bernaldo de Quirós. Translated from the Spanish by Alfonso de Salvio, Ph.D. With an Introduction by Wm. M. Smithies, Esq. Boston: Little, Brown and Company, 1911.

crime to three principal factors—atavism, moral insanity, and epilepsy; Ferri showed that crime is a phenomenon of complex origin and the result of biological, physical, and social conditions; Garofalo advanced the theory of "natural crime," the crime common to all peoples, as distinguished from "artificial" or "positive" crime, which is peculiar to each nation. In addition to these main currents of thought there are subordinate theories. Among these may be mentioned Marro's conception of crime as the result of nutritional defects in the nervous system; Bonfigli's theory of developmental defects in the inhibitory centers; Benedikt's reduction of crime to a neurasthenic basis; Vaccaro's hypothesis of crime as indicating a lack of adaptation of the individual to social environment, and Nordau's definition of crime as human parasitism. The social must be distinguished from the socialistic theories which found their leading exponent in Enrico Ferri. If crime was due in most instances to social causes and influences, then, according to Ferri, the advent of socialism would mean the disappearance of the greater part of crime.

The rise of the modern systems of penology represents the practical application of the scientific study of criminality. The development of penology has shown three distinct tendencies: first, the traditional infliction of punishment as a retribution for crime without any other aim; second, the reform movement which has advocated a double aim, the repression of certain delinquents, and in others the institution of preventive measures against relapse and imitation; third, the tendency of a small minority who would consider only the preventive side of penology.

It is gratifying to note that America has taken the lead in applying the principles of modern penology. The establishment of juvenile courts and the treatment of the young delinquent not by imprisonment, but by surveillance in a reformatory or charitable institution, and the probation system are distinctively American contributions to penology. The Elmira Reformatory is pointed out as the archetype of all penal institutions. Space will not permit a discussion of the various arguments relative to the merits of the conditional and indeterminate sentence, the latter of which has been adopted in several of the States in this country. The most pithy utterance on this subject and one which sums up an entire doctrine on the treatment of criminals is that which is attributed to Griffiths, the general inspector of English prisons, who classified the criminals of all countries in two large groups: those who should never enter a prison and those who should never leave it.

One of the outgrowths of the study of the criminal types has been the development of scientific methods for the detection of crime by means of anthropometry and dactyloscopy. But the ingenuity of the criminal has enabled him to adapt himself to the arts of his pursuers. Ottolenghi has pointed out in illustration of this fact that the Bertillon system led professional criminals to abandon tattooing, while dactyloscopy makes them commit crime with gloves on in order to avoid the betraying dactylogram.

THREATENED STATE INSURANCE IN NEW JERSEY.

State insurance seems to be in the air. In Germany a system of state insurance has been in effect for some little time and in Great Britain a somewhat similar system may be adopted soon. Governor Woodrow Wilson of New Jersey has excited a considerable amount of criticism at the hands of insurance officials in this country by his statement that it may be considered necessary in the interests of the public to establish a system of state insurance in New Jersey. At the annual meeting of the Liability Insurance Association held in this city on October 19 Governor Wilson's suggestion was for the most part adversely discussed. Mr. Edwin S. Lott, president of the U. S. Casualty Company, was the chief spokesman for the opponents of the proposed scheme. Lott questioned the Governor's knowledge with regard to insurance matters and showed from his point of view that the idea in certain quarters prevalent that the rates of liability companies are too high was not correct. Against the contention that state insurance in Germany with respect to workmen's compensations for accidents had been successful the authority of Dr. Ferdinand Friedensburg, president of the Senate of the Imperial Insurance Office of the German Empire, was brought forward to demonstrate that numerous abuses had been the outcome of state control. The eminent German said that charity had crept in and corrupted the system from the beginning. The insurance office was overburdened with frivolous and unfounded claims. Officials had multiplied. The number of accidents had grown with monstrous speed. As a result of the cost of insurance, which gradually had become appalling, German industry had been put to great disadvantage and it had caused a marked rise in prices, which made the cost of living oppressive to all classes.

On the other hand Mr. S. H. Wolfe, a consulting actuary, told the meeting that in his opinion state action of some kind was bound to come and that insurance officials had better resign themselves to the inevitable. "We should be fooling ourselves," said he, "did we not come to the conclusion that before long we shall find upon the statute books of every State some law dealing with the question of workingmen's compensation, and that the treatment will be along the lines of the enactments to be found at the present time in European countries."

It appears from well authenticated accounts that the working of the German national insurance bill has injuriously affected the medical profession of that country. It likewise seems that the passage of the Great Britain bill in its present form will even more seriously affect the British medical profession. If the bill, as it now stands, is carried through Parliament it will mean that not only will medical men be underpaid but that they will virtually lose their independence and be subjected to the control of the "approved societies." The treatment which British medical men have received from societies does not lead them to favor the amplification of the system into a national affair. Moreover,

the experience of the German medical profession with their national insurance bill has been so disappointing that its members have been compelled to band themselves together into a league to protect their rights and to preserve to some extent their independence and self respect. The suggestion of the Governor of New Jersey reads as if the introduction of the thin edge of the wedge, so far as state insurance is concerned, may be near. It therefore behooves the medical profession of this country to be on its guard.

Antitryptic Index.

As was surmised at the outset, the increase of the antitryptic index in the blood serum appears with added experience to be of the same type as the diazo reaction. That is, it pertains to no one disease or class of diseases, but has in general an unfavorable prognostic significance. Katzenbogen (*Berliner klinische Wochenschrift,* October 9) concludes that an increased index corresponds to a certain amount of destruction of the leucocytes, from which we infer that in some respects it is a phenomenon the opposite of leucocytosis. The increase in the index may denote a destructive lesion of the pancreas, or the presence of placental or cancer enzymes in the blood. We cannot, however, postulate the existence of a cancer if all other evidence is negative. Of much greater significance is the presence of a normal index, for this nearly excludes malignant disease. A tumor with normal index is almost surely benign. In a highly febrile septic puerperium an increased index, if persistent, is of grave prognosis. If after a temporary increase the index subsides somewhat the prognosis becomes favorable.

Treatment of Pleurisy.

The manner in which indications of necessity may become evolved into indications of choice is well seen in the treatment of pleurisy as advocated by Arnsperger before the recent session of the Deutsche Naturforscher und Aerzte (*Deutsche medizinische Wochenschrift,* October 12). This writer advocates immediate puncture in all serous and serofibrinous pleurisies, with evacuation of the exudate and subsequent insufflation of 300 to 400 c.c. of nitrogen gas. At the same time autoserotherapy is carried out. The *x*-ray is used first, to determine the amount and seat of exudate, and after the evacuation of the latter to locate the nitrogen. At a still later period it is employed for detecting the formation of thickened areas of pleura and adhesions. If the nitrogen insufflation has been carried out successfully the latter should be at a minimum.

News of the Week.

Vital Statistics of New York City.—During the last week in October the death rate for this city was 12.2 per 1,000 population, a decrease of 1.41 points from the corresponding period of last year. The rate for the last week in October, 1898, the year the boroughs were consolidated, was 15.99, and two years later it ran up to 16.16, so that the rate in eleven years has fallen practically four full units. The decrease in mortality has been brought about in practically all diseases, the greatest decrease, however, occurring in diseases of children. The death rate among them has fallen 50 per cent. The mortality rate from infectious diseases, such as scarlet fever, diphtheria, croup, whooping cough, typhoid fever, and pulmonary tuberculosis, has also decreased for the entire city; the death rate from heart disease and Bright's disease was also considerably below the average. Queens Borough is the healthiest part of the city map, the rate being only 8.40 per 1,000, the lowest any of the boroughs has ever shown.

The Typhoid Mortality.—The Census Bureau in Washington has recently published the typhoid death rate for several of the larger cities in the registration district of the country, based upon the estimated mid-year population in 1910 for each city. The largest number of deaths, 556, occurred in New York City, although its rate was but 11.6. The smallest number, 32, is credited to Cincinnati, which also showed the lowest rate, 8.8, of all the 17 cities concerned. Second in point of number is Chicago with 300 and a rate of 13.7. Philadelphia held third place with 272 deaths, the rate being 17.5. Next came Baltimore, 235 deaths, rate, 42, the second highest of all. Then followed Milwaukee, with 172 deaths, rate 45.7, the highest shown; after which Detroit, 108 deaths, rate 23; St. Louis, 103 deaths, rate 14.9; Buffalo, 87 deaths, rate 20.4; Washington, D. C., 77 deaths, rate 23.2, the other cities showing a still smaller number of deaths with rates ranging from 13.1 to 13.7.

A Surgeon as Princeton's President.—Dr. John M. T. Finney of Johns Hopkins Hospital, Baltimore, is spoken of as the possible choice of the trustees for president of Princeton College to succeed Governor Woodrow Wilson. Dr. Finney is a graduate of Princeton in the class of 1884. His medical degree was obtained from the the Harvard Medical School in 1889.

The Nobel Prize for Mme. Curie.—The Nobel prize for chemistry has been a second time awarded to Mme. Curie. She and her late husband received the prize together in 1903 after their discovery of radium.

A Tribute to Dr. Finlay.—At a meeting of the Academy of Sciences in Havana, on October 13, Dr. Juan Guitereras delivered an oration on the life and work of Dr. Carlos Finlay. At the conclusion of the address Dr. Santos Fernandez spoke briefly on the same theme and urged the erection of a monument to Finlay in the Havana Morro, at the base of which should be engraved: "Columbus, indeed, discovered Cuba, but Finlay, by his conception, made it habitable."

The New York Physicians' Association held their regular meeting October 26. The paper of the evening was read by Dr. Charles E. De M. Sajous of Philadelphia. The title was "The Thyro-Parathyroid Secretion as Wright's Opsonin," and was discussed by Drs. Wm. Hanna Thomson, Joseph Fraenkel, Wm. N. Berkeley, and Dr. Heinrich Stern. The following cases were reported: "Chondrodystrophy in an Infant," by Dr. G. D. Scott; "Pemphigus in a Young Girl," by Dr. Gotthiel; "A Case of Intestinal Crisis," by Dr. Harry G. Watson; "A Specimen of Sarcoma of the Small Intestine," by Dr. A. Sturmdorf."

Automobile Accidents in Massachusetts.—The Massachusetts Highway Commission reports that there were 1,357 automobile accidents in the State during the ten months of the present year, in which 1,100 persons were injured and nearly 100 killed.

During the year 1910 there were 77 deaths and 963 injuries caused by motor vehicles.

The Health Department Takes Milk Stations.—The announcement is made that on November 1 the Board of Health assumed charge of twenty-two Infants' Milk Stations formerly kept by the New York Milk Committee, but about to be discontinued. These stations have nearly 4,000 babies under continual supervision.

Dangerous Hunters.—Thus far in the present year, according to the statistics of the United States Biological Survey, forty-seven men have been killed by hunters who mistook them for deer. Of these forty-seven the laragest number were reported from Michigan, with fifteen deaths, New York coming second with nine and Washington and New Jersey being tied for third place with three fatalities each.

A Hospital to Be Sold at Auction.—The court has decided that the Hempstead, L. I., Hospital must be sold at public auction to satisfy mortgages amounting to over $31,000 held by Mrs. O. H. P. Belmont. The mortgages fell due last January, and as they were not paid Mrs. Belmont instituted foreclosure proceedings.

The Crocker Cancer Research Fund.—The suit brought in the Supreme Court by the three stepchildren of the late George Crocker to get possession of the house which was left by Mr. Crocker's will to Columbia to establish a cancer research fund has been settled. The plaintiffs will get $60,000. The property is valued at $1,000,000 and the bequest to Columbia included the contents of the house.

American Association for Study and Prevention of Infant Mortality.—The second annual meeting of this society will be held at the Hotel La Salle, Chicago, November 16-18, 1911, under the presidency of Prof. Charles Richmond Henderson of Chicago. There will be six sections, the meetings of which will be held in the forenoons, the afternoons being filled by general meetings, at which the conclusions and resolutions adopted at the section meetings will be discussed by the general body.

New York and New England Association of Railway Surgeons.—The twenty-first annual meeting of this society will be held at the Hotel Astor, New York City, on November 16 and 17, 1911, under the presidency of Dr. F. A. Goodwin of Binghamton, N. Y. The corresponding secretary is Dr. George Chaffee, 338 Forty-seventh street, Brooklyn, N. Y.

Removal.—Dr. Morris J. Clurman has removed to 949 Avenue St. John, Borough of the Bronx.

Bequests to Hospitals.—By the will of the late Elizabeth K. Steele of Philadelphia the sum of $10,000 is bequeathed to the Presbyterian Hospital for the endowment of two free beds; also the sum of $5,000 is bequeathed to the Home of the Merciful Savior for Crippled Children. The following residuary bequests are made: to the Franklin Reformatory Home for Inebriates, $5,000; to the Orthopedic Hospital, $1,000; to St. Joseph's Hospital, the Jewish Hospital, and Mt. Sinai Hospital, each $500.

The Strafford County (N. H.) and District Medical Society held its one hundred and fourth annual meeting in Dover on October 26. The following officers were elected for 1911 and 1912: *President*, Harry O. Chesley; *Vice-President*, F. L. Keay of Rochester; *Secretary*, Louis W. Flanders; *Treasurer*, A. N. Smith; *Auditor*, M. B. Sullivan; *Censor*, E. C. Batchelder; *Delegate to the New Hampshire State Medical Meeting*, R. G. Batchelder.

Obituary Notes.—Dr. George Cornell Freeborn died at his home in this city on October 30. He was born in New York in 1849, studied at the school of mines at Columbia, and then for a short period entered business. His interests, however, led him to study medicine and he was graduated from the College of Physicians and Surgeons in 1873. For seven years he served as a surgeon to St. Michael's Hospital in Newark, N. J. Then becoming interested in scientific work he returned to Columbia as a teacher of normal histology, a place which he held for more than twenty years. In addition he was for a long time pathologist to the Woman's Hospital and of late years assistant pathologist to St. Luke's Hospital.

Dr. Alexander Hugh Ferguson of Chicago died at his home in that city on October 20. He was born in Ontario in 1853 and was graduated in medicine from the medical department of Trinity University, Toronto, in 1881. He removed to Chicago in 1894. He was professor of clinical surgery in the Chicago Post-Graduate School and Hospital, and attending surgeon to the Cook County Hospital. In 1910 he was elected president of the Chicago Medical Society.

Dr. Ward H. Long of Baltimore died in that city on October 23 of apoplexy, at the age of 34 years. He was born in Fort Covington, N. Y., and was a graduate of the Baltimore Medical College in the class of 1907.

Dr. Lee Smith of Bloomington, Ill., died at his home in that city on October 16, aged 80 years. He was a graduate of Rush Medical College, Chicago, in 1854. He was a surgeon in the Union Army during the Civil War, retiring with the rank of captain.

Dr. Robert L. Burrage, medical director of the Prudential Insurance Company, died at his home, Orange, N. J., of valvular heart disease. He was 54 years old and was graduated from Bellevue Hospital Medical College in 1878. He is survived by his wife and one son.

Dr. G. W. Crouse died at Citronelle, Ala., on October 13, aged 65 years. He was for thirty-seven years a practitioner in Waterloo, Iowa, and served a term as president of the Iowa State Medical Association. Five years ago he moved to Citronelle in the hope of overcoming the tuberculosis from which he suffered.

Dr. L. D. Archinard, a well-known dentist of New Orleans, was killed by a trolley car on October 12. He was a graduate of the Baltimore College of Dentistry in 1891, and was professor of operative dentistry and dental pathology and therapeutics in Tulane University.

Dr. John S. Beck of Dayton, Ohio, died of apoplexy at his home in that city on October 19. He was born in 1842 and was graduated from the medical department of the University of Pennsylvania in 1868. He was physician to St. Elizabeth's and to the Miami Valley Hospital, and was a member of the American Medical Association, the Mississippi Valley Medical Association, and the Ohio State Medical Society.

Dr. David A. Thompson of Elizabethtown, Ind., died suddenly on October 17. He was born in 1844 and was graduated from the Medical College of Ohio, in Cincinnati, in the class of 1868. He had practised in Elizabethtown for thirty-five years.

Dr. Walter R. Wilson of Hoopestown, Ill., died at his home in that city on October 19. He was a graduate of the Hahnemann Medical College, Chicago, in 1876. He served a term as mayor of Hoopestown.

Dr. A. J. Franklin of Blue Earth, Minn., died of apoplexy at his home in that city on October 13. He was born in Wisconsin in 1852 and was graduated from the College of Physicians and Surgeons, Keokuk, Iowa, in 1876.

Dr. E. P. Turner, formerly a practitioner in New York City, died of pneumonia in Stratton, Me., on October 20. He was a graduate of the Long Island College Hospital in the class of 1882.

Dr. William Nye Swift died at his home in New Bedford, Mass., on October 27. He was born in 1854 and was graduated from Harvard University in arts in 1877 and in medicine in 1881. From 1882 to 1896 he was city physician in New Bedford. He was president and one of the charter members of the medical staff of St. Luke's Hospital in that city.

Dr. George S. Albee of Worcester, Mass., died October 18 at the age of 81 years. He was born in Westmorland, N. H., and was graduated from the Jefferson Medical College, Philadelphia. He practised for many years in Hopkinton, removing to Worcester about ten years ago.

Dr. John C. Hoye of Newcastle, Pa., died in this city on November 3 as the result of an assault by some unknown person the night before. He had just come to New York to take a course of post-graduate study. He was 45 years old and was a graduate of the Medical Department of the Western Reserve University, Cleveland, in the class of 1888.

Dr. John J. Martin of Beverly, Mass., died October 28 at the age of 50 years. He was born in Lowell and was graduated from the Dartmouth Medical School in 1891. He practised for a time in Marblehead but moved to Beverly about fifteen years ago. He was chairman of the Board of Health.

Dr. Wooten Moore Wilkerson of Montgomery, Ala., died October 19 at the age of 54 years. He was born in Marion and was graduated from the University of Virginia in 1879 and from the N. Y. University Medical College in 1880. He was an ex-president of the Alabama State Medical Society.

Dr. John Bradley Crandall of Sterling, Ill., died on October 18. He was born in Roxbury, Mass., in 1840, and was graduated from the Medical Department of the University of Vermont in 1862. He served as surgeon of volunteers during the Civil War and at the close of the war entered the medical corps of the regular army. In 1868 he resigned and began practice in Sterling, where he resided continuously until his death.

Dr. Charles Fredigke of Chicago died October 22, at the age of 73 years. He was born in Carrel, Germany, and came to this country in 1857. He was graduated in medicine from the College of Physicians and Surgeons, Chicago, in the class of 1887.

Dr. George McLain of Excelsior, Minn., died October 21, at the age of 60 years. He was a graduate of McGill University in 1882, and practised for many years in Hillsboro, N. D.

Dr. Charles H. Gundelach died at his home in St. Louis on October 23, of heart disease, at the age of 74 years. He was a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in the class of 1865.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE BILL, CONFERENCES, MEETINGS, SURPRISES—THE HARVEIAN ORATION—EVOLUTION OF MEDICAL OFFICER OF HEALTH, MEETING OF THE SOCIETY—NAVY REPORT—OBITUARY.

London, October 20, 1911.

Mr. Lloyd George has been compelled to give way to the Friendly Societies. This surprise, the last of a week of surprises, was announced late last night. The official statement issued by the Chancellor of the Exchequer gives the fact in a more roundabout way—merely intimating that the societies have accepted the promises he made in the name of the government and have "decided to invite their members to give hearty support to the bill with the promised amendments."

This news was further published in a surprising way late last night at a great meeting in the Albert Hall called by the societies to condemn the bill. There they were condemning it for two hours and a half—the representatives of three million members with a capital of fourteen millions, charged as they held to insist on their amendments. Then in the last quarter of an hour came the collapse. The chairman rose and said he had received the decision of the Chancellor to grant nine of the eleven demands of the late conference, the tenth being under consideration and for the eleventh an alternative being offered. So a resolution was passed accepting the decision, appreciating the conciliatory attitude of the Chancellor. The meeting rapidly dispersed delighted with the victory. Of course the medical profession has not the influence of these societies with their numbers, capital—and votes. But we are hoping that our interests will not be trodden upon. To take in the full meaning of the collapse—as ludicrous as many other incidents of the dispute—we need to go back only a week when the Chancellor, speaking in Whitefield's Tabernacle, denounced in his Limehouse rather than his parliamentary manner all who had dared to criticise his scheme and declared he would carry his bill this year or fall, and this determination has been repeated by government speakers throughout the week.

The adjourned conference on the bill at the Treasury was resumed on Monday and lasted over six hours. The sitting was in private and practically again adjourned. Nothing being decided platform and newspaper discussion has gone on. The doctors have been blamed in many quarters, but it is only fair to repeat that we have not given absolute opposition to the bill, though we have insisted on our manifest rights.

Our chief opposition is to the contract system unless it is put on a reasonable footing. If the state undertakes to supply attendance in sickness as a part of insurance it cannot expect us to accept terms we give as assistance to the struggling poor and we do not consider men such who can command £3 per week. From the many statements of various authorities one or two may be selected.

The London School of Economics is giving a series of lectures on state assurance. The first was by Sir. E. Brabrook who said what Friendly Societies insured against was sickness, and the smaller societies were the more successful in having fewer claims on the funds because the friendly

element prevailed. Those with less than 1,000 members had £8 per member invested, while those above 1,000 had only £4.16.0. He looked to the future with great doubt. The "wicked part" of the bill was the destruction of societies which did not "become approved" and so substituted for their own rules the "autocracy of a board." People, he held, had better manage their own affairs—even if they managed them badly.

A conference has been held by the Union of Public Health authorities respecting parts of the insurance scheme. They do not seem altogether agreed and the complexity of the plan may well cause differences. Some maintained that the existing authorities had so molded themselves to their work and had accomplished so much that it would be a calamity to hand over their duties to untried and non-elected bodies. It would be a simple matter to extend the powers of county and borough councils and give them the responsibility for administering the sick benefits, as well as for the prevention of disease which they now had. Dr. Clark of Liverpool showed that unification had been most successful in his city and was supported by several others. But some considered unification was not desirable and spoke of the great extent of the work. Others held that two committees should manage separately the health and the insurance matters.

The B. M. A. had arranged a series of meetings in various towns, and these may perhaps go on until Parliament meets unless the profession is to be treated to as unexpected a surprise as the societies. The secret sitting at the conference has naturally given rise to many rumors, but the settlement with the societies so alters the position that many are saying the doctors are now helpless. The leaders admit that some scheme of state insurance is now certain to pass and they must make the best bargain possible, especially insisting on the Chancellor making good his promises. They will hold, I hear, the general meeting on the eve of the opening of Parliament, and some say they may wait until they see how the matter proceeds in the House. Some regard this talk as a sign of surrender, but there is strong opposition to any compromise on the points which the B. M. A. has declared absolutely essential to secure the acceptance of the measure by the profession.

There are many other doctors who would gladly see the bill rejected *in toto*, and a still larger number who urge delay, as do not a few of the societies.

But the government will listen to no such thing. Having secured the support of the societies, a whip was sent out last night, saying that on Wednesday next Mr. Asquith would move that the remaining stages of the bill be guillotined and that the whole time of the House be taken by the government for the rest of the session.

The Harveian Oration at the Royal College of Physicians was delivered on Wednesday afternoon by Dr. Theodore Williams. He began by a reference to Harvey's great discovery and the results which have ensued, noticing the knowledge of tuberculosis that existed in his day and the increases that have continued to date. He mentioned that in 1852 Ancell had enumerated 54 theories put forward since Hippocrates to account for tuberculous diseases, but most of their authors attributed them to predisposing causes. The real cause, though previously suspected, was only discovered by Robert Koch. The orator then remarked that the depressing treatment common in the eighteenth century, mostly directed toward the reduction of inflammation, was the cause of the short duration of the lives of consumptives in that period, and not a difference in the type of the disease. The effects of sanatorium treatment, the substitution of graduated labor for walking exercise, the use of the several forms of tuberculin, were referred to and the orator thought it probable that most of the two-thirds reduction of the mortality of phthisis during the last fifty years was due to improved drainage, better cleanliness, and other sanitary factors. He held, too, that the dispensary system with the home visitation connected with it had proved of the greatest use, and the out-patient department of consumption hospitals ought to fulfill the same functions. Few of their cases were suited for admission to a sanatorium and the hospital was more fitted for most of the working classes who delayed coming for treatment until the late stages, though they might benefit after being in hospital for a time by removal to a sanatorium. Dr. Williams declared he was convinced that a comprehensive system of dealing with the disease should include the establishment of many consumption hospitals scattered over the country and linked with labor colonies, exchanges, and sanatoria. He said, "the task of further reducing and abolishing tuberculosis is not a hopeless one and does not lie wholly with the doctors. It lies also with those who have it in their power to reduce or remove the principal causes, viz., overcrowding, want of ventilation and open spaces, insanitary houses, lack of a good supply of water and pure milk." If all such defects were removed he believed the number of consumptives would be much smaller. The government and local authorities between them might further insist on the removal of advanced cases to hospitals or infirmaries and thus do away with one chief source of infection. If this were done "we should soon see a rapid fall in the number of contact cases and in the mortality tables."

At the annual meeting of the Society of Medical Officers of Health Professor Bostock Hill (president) gave an address in which he sketched the evolution of the officers in question, who came into existence during the nineteenth century. Though certain acts were passed by a Board of Health established between 1831 and 1848, it was in the latter year the first great public health act was enacted. But it was not until 1872 that the medical health officer was authorized to be appointed in sanitary districts, and not until 1875 that such appointments were made compulsory. Even now there are people who regard the medical health officer as a sort of superior inspector of nuisances—if not himself a nuisance. Some of the public still cling to the old idea that drains are at the bottom of all the sanitary evils that flesh is heir to, although the conception of the work of sanitation is constantly extending. One of the difficulties of getting the public to understand the work of the medical health officer, continued the president, is the simplicity of the general principles involved. Long years of superstition did not readily give way to education, which should begin in early life. So the first practical step was the advance of late years by the medical inspectors of school children. But he could not claim improved conditions as solely due to hygienic efforts as other causes reinforced them. This showed the necessity of a wider conception of the

scope of the work. He never wrote a report without a twinge of conscience on this point. In his county they had health talks by the visitors to the schools, and the teachers without exception helped forward the movement.

A blue book has been issued showing the health of the navy for 1910. The improvement is marked compared with the preceding five years. The case, invaliding, and death ratios all show a decrease and the average loss of service for each person, although slightly higher than in 1909, compares favorably with the ratio for five years. Compared with 1909, the case ratio is slightly higher, but both invaliding and death ratios show a decrease.

The death occurred on the 18th of Col. William Pleace Warburton, C.S.I., M.D., of the Indian Medical Service (retired), aged 68. He graduated at Edinburgh, M.B., 1865, M.D., 1885. After his Indian service, for which he received the C.S.I., he became superintendent of the Edinburgh Royal Infirmary.

Captain George Snyder Nickerson, R.A.M.C., M.B., Ch.B., Victoria University, governor of the Sennar Province, in the Soudan, died on October 14 in consequence of a fall from his horse two days previously. He was only 38 years old, but had been a colonel in the Egyptian army.

Dr. Horace Savory died October 13 suddenly, aged 45. He graduated at Cambridge M.A., M.B., B.C., in 1891, was late resident medical officer at Haileybury College, and wrote "Food and Meals for the Schoolboy" and various contributions to the journals.

Dr. C. V. Hitchins, medical health officer and surgeon to the Weston-Super-Mare Hospital, died on October 11 at the ripe age of 84, and was in vigorous health until quite recently. He qualified in 1854-5. He was admiralty surgeon and agent. He wrote on Weston-Super-Mare as a "Health Resort," on which he was for many years the leading authority.

Dr. John Nicholas Miller died on October 9, aged 74. Educated at University College Hospital, took the M.B Lond. 1861, and proceeded to the M.D. 1864, having previously taken the double qualification. He served his hospital as house surgeon and physician's assistant, and was for a time surgeon to the Royal Kent Dispensary. He retired from practice some years ago.

Progress of Medical Science.

Boston Medical and Surgical Journal.

October 26, 1911.

Open-Air Schools. D. Snedden.
Open-Air Rooms and Schools. T. F. Leen.
Report on Replies to a Circular Letter Concerning Fresh-Air Rooms and Outdoor Schools, Sent Out by the Associated Tuberculosis Committees of The Massachusetts Medical Society. J. B. Hawes, 2d.
Brown-Séquard Epilepsy in Guinea-Pigs. L. B. Alford.
One Hundred and Fifty-eight Cases of Heat Prostration Treated at Boston City Hospital, July 2-13, 1911. W. D. Reid.
Observations on Heat Prostations. I. C. Walker.

Open Air Schools.—D. Snedden presents the following considerations with reference to open-air schools for normal children: The restraints of the classroom expose the child to the dangers of abnormal and imperfect development. The "fresh-air" treatment of normal children would do much to prevent physical impairment of various sorts. Vigorous intellectual activity can only be carried on effectively under conditions of abundant ventilation. Open-air schools for tuberculous children are important, but vastly more important is it to get back to the sources and to stop the manufacture of tuberculous cases. Artificial ventilation seems to have been a failure. Those abnormally sensitive to cold air may by means of abundant exercise and suitable clothing avoid the development of colds. The future open-air school may necessitate the wearing of suitable protective clothing to be worn by the pupils only within the school itself.

Open Air Rooms and Schools.—T. F. Leen believes that these should be established for anemic children. If food is to be given it should be supplied by the parents, or, in cases of necessity, by private charity.

Open Air Rooms and Schools.—J. B. Hawes, 2d, presents the results of a questionnaire on this subject sent out among school officials, school physicians, and others interested in this subject.

Brown-Séquard's Epilepsy in Guinea Pigs.—L. B. Alford states that when watched in their cages the scratching reactions of so-called "epileptic" guinea-pigs are seen to be intense, prolonged, and poorly coordinated, and to occur more frequently than in normal animals. Preventing this scratching by removing its most potent exciting factor, viz., the body lice, prevents the appearance of "epilepsy" in newly operated animals and causes it to disappear in animals already "epileptic."

Heat Prostration.—W. D. Reid presents an analysis of 158 cases of heat prostration. He differentiates between three types of cases regarded from the clinical and therapeutic viewpoint: heat exhaustion, heat prostration, and heat stroke. Heat exhaustion with lowered temperature represents a sudden vasomotor palsy. On the other hand, heat stroke is thought to be a paralysis by the extreme external heat of the heat-regulating center in the medulla, with the result of the production of more heat than is given off. The heat prostration type occurs in an individual who has not been subjected long enough to severe heat or whose nervous system gives up the unequal battle earlier and before the extreme paralysis of the medullary center has occurred. In heat exhaustion there is a moist, cool skin with subnormal temperature; the pulse is small and rapid and the patient is pale and prostrated, and not rarely unconscious. Heat prostration includes the largest number of cases but has the lowest mortality. The temperature varies from normal to 103°. The circulatory condition is generally good. Heat stroke is the most serious of the three. The patients are generally unconscious, livid, and often cyanotic, with a hot, dry skin and a temperature ranging from 104° to 110°. There is venous engorgement with visible carotid pulsations, and a full, bounding pulse except in the moribund cases. The pupils are generally small, often pinpoint, and do not react to light; the knee-jerks are frequently absent, and a majority of the cases show muscular rigidity. Analysis of the author's cases shows a preponderance in males above twenty years of age. Heat stroke is more common in those past middle life. A large majority of the cases are of the brunette type. About one-fourth of the survivors require treatment of more than three days' duration. Relatively the heat stroke cases require the longest treatment. Of heat exhaustion there were 10 cases with 3 deaths; of heat prostration 87 cases with 1 death; and of heat stroke 61 cases with 38 deaths. The high mortality of the last is explained by the presence on admission of the following complications: alcoholism, failing heart, edema of the lungs, and convulsions; and later of delirium tremens, persistent coma, pneumonia, and recurrence of fever. As regards treatment, this varies with the individual case. An initial hypnotic subcutaneously is a good prophylactic against convulsions in the severe heat stroke cases. Camphor subcutaneously is a good stimulant.

Heat Prostration.—L. C. Walker presents an analysis of sixty cases of this condition.

New York Medical Journal.

October 28, 1911.

The Relation of the Biophysical Laws of Osmosis to Nasal Vasomotor Processes. J. Wright.
The Present Status of Vivisection in the Medical Profession. M. J. Clurman.
The Etiological Factors of Otitis Media Purulenta Chronica. S. M. MacCuen Smith.
Acute Otitis Media. G. L. Richards.
The Comparative Merits of the Various Methods Employed in Operations for Septal Spurs. J. B. Kanter.
A Statistical Review of the Work of the Tuberculosis Clinics of the Department of Health for 1910. G. H. Waters.
Dental Radiography; a Plea for Its Further Recognition. M. K. Fisher.

Osmosis and Nasal Vasomotor Phenomena.—J. Wright states that pathologically and physiologically, in the edema of inflammation and in the vasomotor nasal phenomenon, one must acknowledge the presence of a reversible mechanism, more or less delayed in the former, more or less prompt in the latter.

Vivisection.—M. J. Clurman discusses the present status of this subject.

Chronic Purulent Otitis Media.—S. M. MacCuen Smith states that the chief causative factor of this condition is the neglect or improper treatment of acute tympanic disease. In the latter streptococcic or staphylococcic infection is the most virulent. Obstructed or prevented ventilation of the tympanic cavity is one of the primary causes of aural discharge.

Acute Otitis Media.—G. L. Richards describes the treatment of this condition.

Septal Spurs.—J. B. Kanter states that the advantages of the submucous resection of the spur by the use of the chisel are the following: It avoids troublesome secondary hemorrhage by leaving no exposed cut surface of cartilage or bone. It takes very little, if any, more time than the saw operation. There is no bothersome scab and crust formation. A functioning mucous membrane is left in place of scar tissue that would result from the saw operation. There is no recurrence of the spur from thickening of the exposed cartilage or bone and scar in the mucous membrane. The wound in the mucoperichondrium heals rapidly. In five days or a week healing is complete.

Tuberculosis Clinics.—B. H. Waters presents a statistical review of the work of the tuberculosis clinics of the New York City Department of Health during 1910. He notes that the clinics are used almost exclusively by those of foreign birth. This fact seems to be due, in part, to their greater poverty and their greater willingness to accept charitable aid, in part to their greater concern for their health, but mainly to their greater confidence in and helpless reliance upon institutions of governmental character. Pulmonary tuberculosis is especially prevalent among garment workers, *i.e.* in crowded workrooms or sweat shops. When the facility and widespread extent of the dissemination of infection possible by this means are considered, it becomes an important matter, and the need of requiring disinfection of all finished clothing, as well as routine examination of all workers, might well be considered.

Dental Radiography.—M. K. Fisher emphasizes and urges upon the dental profession the wider and more frequent employment of this most safe, painless, cleanly, and accurate probe as an aid in clearing up cases of doubtful diagnosis of the teeth and accessory structures.

Journal of the American Medical Association.

October 28, 1911.

Primary Carcinoma of the Fallopian Tube. E. E. Montgomery.
A Milk-Borne Epidemic of Typhoid Fever and the Demonstrated Value of the Widal Reaction in Detecting a Typhoid Carrier. E. B. Bigelow.
The Tryptophan Test for Cancer of the Stomach with Special Reference to Peptidolytic Enzyme in the Saliva. J. W. Weinstein.
The Treatment of Hemoptysis in Pulmonary Tuberculosis. M. Rothschild.
Climate in the Treatment of Pulmonary Tuberculosis. W. J. Barlow.
The Use of Hypodermics of Citrate of Iron in the Secondary Anemia of Tuberculosis. E. S. Bullock, and L. S. Peters.
The Dietetic Management of Pellagra. G. M. Niles.
Immunity to Tuberculosis; Its Production in Monkeys and Children. G. B. Webb, W. W. Williams, A. M. Foster, and G. B. Gilbert.
Effect of Hypodermic Injection on the Secondary Anemia of Chronic Pulmonary Tuberculosis. W. J. Barlow, and R. L. Cunningham.
Intestinal Approximation. A Preliminary Report on a New Mechanical Device and a New Method. J. B. Bacon.
Universal Gravity Outfit. W. T. Mefford.
The Institutional Care of Young Infants. Thomas S. Southworth.
Influence of Summer Heat on Diarrheal Diseases. I. A. Abt.
Twin Pregnancy in Uterus Bicornis. Phelps G. Hurford.
Circular Blade, Hollow and Guarded Chisels. Advantages of Their Use in Making Bone-Flaps. D. M. Greene.
Treatment for Slip-Meniscus. G. Chandler.
Successful Use of the Staphylococcus Spray on Diphtheria Carriers. S. R. Catlin, L. O. Scott, and D. W. Day.
The Transfusion of Blood. Further Notes on a New Method. A. H. Curtis, and V. C. David.
A Simple Method for the Treatment of Glenard's Disease.

Primary Carcinoma of Fallopian Tube.—By E. E. Montgomery. (See Medical Record, July 8, 1911, page 105.)

Typhoid Epidemic.—E. B. Bigelow reports an epidemic of typhoid fever in the city of Worcester traceable to a single milk supply, and finally to a single typhoid carrier, in whom the bacilli were found in the urine but not in the stools, and in whom the Widal reaction was positive.

The Tryptophan Test.—J. W. Weinstein has verified Warfield's findings that saliva, when not acid, is capable of decomposing glycyltryptophan into glycin and tryptophan, and these facts explain in part the reasons why the glycyltrytophan test has been the subject of such a wide difference of opinion and how it produces tryptophan when no cancer exists, which renders it so unreliable in cancer diagnosis.

Hemoptysis.—M. Rothschild recommends in cases of obstinate hemorrhage occurring in the course of pulmonary tuberculosis the production of artificial pneumothorax by means of nitrogen.

Climatic Treatment of Pulmonary Tuberculosis.—W. J. Barlow notes that the atmospheric conditions of greatest importance are in order of importance: (1) Plenty of air. (2) Percentage of sunshine. (3) Amount of humidity. (4) Temperature with its variations. (5) Pressure of air. (6) Severity of winds, dust, etc. As a general rule patients with pulmonary tuberculosis developing between the ages of seventeen and forty should be sent to a high dry altitude. With disease beginning after forty patients should be kept in lower altitudes and more equal and relaxing climates, and children will always do better near the coast in cold or warm climates. The great mass of tuberculous patients under the age of 40 in the early stages, with or without fever and constitutional symptoms, including patients with hemoptysis and those with beginning dyspepsia, present indications for high altitude treatment (3,000 to 7,000 feet). So also do cases with compensated cardiac disease and with no great degree of emphysema. Contraindications are acute pneumonic cases with high fever, rapid pulse and respiration, advanced cases with extensive involvement or cavity formation of both lungs with extensive adhesions and dyspnea, chronic fibroid cases with a good deal of bronchitis and emphysema, young children and infants, and many patients of a neurasthenic type of nervous temperament. For medium altitude treatment (1,000 to 3,000 feet) there are many resorts throughout the East which are suitable at all seasons of the year. In the West there are only two important places of this sort, Phoenix (altitude 1,087 feet) and Tucson (altitude 2,400 feet). Of these, Tucson is probably better for all-round climatic advantages, but for those who can exercise and ride around Phoenix would probably be more agreeable. The southern California resorts are all included in the low altitudes by the author as well as are those in the region of the Great Lakes and in the Southern States.

Iron in Tuberculosis.—E. S. Bullock and L. S. Peters have adopted the Italian practice of using citrate of iron

hypodermically in the secondary anemia of tuberculosis. As is generally understood, a high altitude in itself is very effective in removing the secondary anemia and it is only in specially resistant cases that they at first employed this method. The dose used is not over 0.05 gram hypodermically in the buttocks daily until some result is obtained.

Dietetic Management of Pellagra.—G. M. Niles states, that while the maize theory of the origin of pellagra has not been absolutely disproved, one should not include any substance derived from that plant in the diet of patients treated for pellagra. Flesh proteins seem to be well borne. Eggs are generally permissible. Sweet milk is valuable when it agrees, and buttermilk is a most useful article of diet and is generally recommended. When constipation exists, oatmeal, tender vegetables (in pure form), thoroughly baked potatoes, or cereals with but little sugar are suitable.

Immunity in Tuberculosis.—G. B. Webb, W. W. Williams, A. M. Forster, and G. B. Gilbert in their experiments on monkeys have not been able to determine the exact number of tubercle bacilli which will infect the rhesus monkey, nor have they been able to demonstrate any antibodies in its serum.

Anemia of Tuberculosis.—By W. J. Barlow and R. L. Cunningham. (See MEDICAL RECORD, July 8, 1911, page 92.)

Intestinal Approximation.—J. B. Bacon describes a device for intestinal approximation—consisting of a simple grooved ring three-eighths of an inch wide and three-fourths of an inch in diameter made from thin sheet silver with a forged groove one-eighth of an inch deep to hold the compressed tissue under a ligature. It simply acts as a hollow cylinder for the passage of liquids and gas, and at the same time as a base on which to tie the connective tissue by means of a rubber and silk suture of coarse fiber, and thus have a firm union for three or four days while the serosa and muscularis are becoming united by organized lymph.

Universal Gravity Outfit.—W. T. Mefford has devised an apparatus which can be used in the treatment of abscesses by the closed method, as recommended by Wright: in the treatment of hydrocele: irrigation of the bladder; proctoclysis; the intravenous administration of salt solution, defibrinated blood, salvarsan, and other medicines: the subcutaneous administration of salt solution; and for direct intravenous transfusion.

Institutional Care of Young Infants.—By T. S. Southworth. (See MEDICAL RECORD, July 1, 1911, page 49.)

Summer Heat and Diarrheal Diseases.—By I. A. Abt. (See MEDICAL RECORD, June 8, 1911, page 106.)

Twin Pregnancy in Uterus Bicornis.—P. G. Hurford reports a case of this condition, with the delivery of one living and one dead child.

Chisels for Making Bone-Flaps.—D. M. Greene describes circular blade, hollow, and guarded chisels devised by him for the purpose of avoiding the fractures which cause detachment of the periosteum in making bone-flaps.

Slip-Meniscus.—G. Chandler details the following treatment for slip-meniscus or dislocation of the internal semilunar cartilage: He uses a piece of sole leather cut in a shape to be fitted to the inner aspect of the knee-joint and about 4 inches long and 1¾ inches wide. By soaking the leather in water and whittling the edges it can be molded into shape. This is firmly fastened over the cartilage by means of adhesive straps.

Staphylococcus Spray in Diphtheria Carriers.—S. R. Catlin, L. O. Scott, and D. W. Day state that the ordinary immunizing dose of diphtheria antitoxin does not always protect an exposed individual against the disease. Only by regular and constant taking of cultures can institutional epidemics of diphtheria be controlled. The usual methods of throat antisepsis are of little value in ridding the throat of diphtheria bacilli. Treatment of the nose is as important as treatment of the throat. In institutional epidemics more than one series of three negative cultures is necessary for release. Results with the use of a broth culture of *Staphylococcus aureus* as a spray for the purpose of ridding the throats of the diphtheria bacillus, as recommended by Schiotz, were such as to warrant recommending its further use. Apparently no harm results from the application of the spray.

Transfusion of Blood.—A. H. Curtis and V. C. David describe a new method and apparatus for performing this operation.

Glenard's Disease.—G. W. McCaskey describes his application of the method of employing adhesive plaster supports in the treatment of visceroptosis.

The Lancet.

October 21, 1911.

Old and New Views on the Treatment of Consumption. C. T. Williams.
On the Results of the Manipulative Treatment of Congenital Dislocation of the Hip-joint. G. C. E. Simpson.
On a Case of Axial Rotation of a Fibroid in which the Uterus Was Involved in the Twist. J. Bland-Sutton.
Acute Rheumatism Among Children; An Inquiry Into the Prevalence of Acute Rheumatism and Its Consequences Among Children of School Age. F. Langmead.
Acute Endocarditis Caused by a Microorganism Hitherto Undescribed. A. T. Nankivell.
Spinal Anesthesia in Egypt. H. E. S. Stiven.

Old and New Views on Treatment of Tuberculosis.—C. T. Williams notes that in Harvey's time the principal treatment for cases of scrofula or the king's evil was the royal touch. The first writer on tuberculosis after Harvey's time was Christopher Bennett, who proposed treatment with bleeding, cough mixtures, and inhalations. At the beginning of the eighteenth century appeared Morton's "Phthisiologia," which recommended bleeding, purging, and the administration of emetics, diuretics, diaphoretics, crab's-eyes, etc. Sydenham recommended bleeding, purging, and "long and continued journeys on horseback." Laennec considered the best means of opposing the disease was by sea voyages or residence on the sea-coast in a mild climate. In 1866 the tonic treatment of tuberculosis had commenced, chiefly with the aid of cod-liver oil, which was placed at the head of all remedies. Although the open-air and sanatorium treatment was originated in 1840 by Bodington of England, the idea developed on German soil; the first sanatorium being Brehmer's at Görbensdorf in Silesia. Here methodical hill-climbing was a part of the treatment. The object was to further the development of the heart—a small heart, according to Brehmer, being one of the predisposing causes of phthisis. Dettweiler substituted for hill-climbing the Liegehalle system, in which the patients lie for several hours together in open shelters. Walther of Nordrach advocated instead a form of solitary confinement during the rest hours, and outdoor walks in all weathers with overfeeding. According to the statistics of the modern German sanatoria, 44 per cent. male and 51 per cent. female consumptives are capable of work four or five years after leaving the sanatorium. A system of graduated labor as a substitute for walking exercises forms a prominent feature of the treatment at some of the English sanatoria. The author's statistics of the effects of high altitudes in the treatment of consumptives showed the most favorable results and the fewest relapses. There is still no unanimity of opinion as to the value of tuberculin.

Congenital Dislocation of the Hip.—G. C. E. Simpson states that congenital dislocation of the hip is a condition which progressively gets worse till puberty and may cause severe deformity. In adult life further trouble may arise and completely incapacitate the patient. Treat-

ment by manipulation at the earliest possible time after infancy may be expected to yield a stable articulation with perfect function in 60-70 per cent. of cases. A slight limp (due to imperfect growth of the bones) and some slight limitation of movement may remain, but the children are cured of any obvious deformity or incapacity. Of the remaining 35-40 per cent. the condition is usually much improved by treatment. The treatment in children below 8 years of age is attended by little or no danger and by few unfavorable accidents. The trouble caused to the parents is slight and the loss of school attendance in early childhood is of but small importance. In children between 9 and 12 years of age treatment by manipulation has greater dangers and inconveniences and gives much less favorable results. It should, however, be tried in all cases which have unfortunately reached this age with the condition unremedied; great care and gradual reduction avoid the dangers of shock and laceration and considerable improvement is usually effected. In unsuccessful and relapsed cases some form of open operation may prove of advantage.

Axial Rotation of Uterine Fibroid.—J. Bland-Sutton reports a case of this condition, in which the pedicle was twisted like a rope. The twist also included the uterus, Fallopian tubes, and ovaries.

Acute Rheumatism in Children.—F. Langmead finds that there is a large amount of disregarded rheumatism among the children of school age in London. With the knowledge that about 1 in every 15 children from the age of 7 onward attending the elementary schools is rheumatic, and that about 87 per cent. of these have some consequent affection of the heart, one may well consider what may be done to remedy this serious condition of affairs.

Acute Endocarditis.—A. T. Nankivell reports the case of a child three and a half years old in whom a mild attack of scarlet fever was complicated in the third week with an attack of endocarditis. Blood cultures showed a non-motile diplococcus hitherto undescribed.

Spinal Anesthesia.—H. E. S. Stiven states that the most notable feature with regard to operations in 1910 is the great advance which stovaine has made as a routine anesthetic. In his hospital service in Egypt the operations under stovaine exceed those under general anesthesia. The figures are: stovaine, 662; general 599. No untoward results are recorded, and the chief danger seems to be a lowering of the general blood pressure during the operation. In the majority of cases this can be remedied by the administration of adrenalin. Stovaine did not produce its customary effect in at least 16 cases, which, therefore, had to be done under a general anesthetic. Operations were finished off under chloroform in at least four cases. A successful administration of "high stovaine" was accomplished in 17 cases.

British Medical Journal.

October 21, 1911.

Old and New Views on the Treatment of Consumption. C. T. Williams.
Auricular Fibrillation. J. Mackenzie.
Infusion Anesthesia. The Use of Normal Saline Infusion as a Means of Administering Ether. F. Rood.
The Symphyseal Ligament of the Parturient Guinea-Pig. J. Bland-Sutton.

Treatment of Tuberculosis.—By C. T. Williams. (To be noticed later.)

Auricular Fibrillation.—J. Mackenzie continues the discussion of this subject, noting the manner by which it may be recognized, its prognostic significance, and its treatment. Graphic records show that all signs of an auricular wave disappear from the apex beat and the jugular liver pulses, and that these pulses change at the onset of auricular fibrillation from the auricular to the ventricular form. There are frequently present small waves caused in some way by the fibrillating auricle. The electrocardiogram gives a characteristic record, the chief feature of which is a total disappearance of the peak due to the auricle. As regards the clinical characteristics, it is noted that auricular fibrillation is very frequent in two classes of cases, namely, heart disease of rheumatic origin, and that due to senile degenerative changes. The patient may first become conscious of the condition that has developed insidiously in his heart by sensations of abnormal rhythm: long pauses, that may be followed by big beats; by paroxysmal tachycardia accompanied by a gentle fluttering in the chest that may be interrupted by thumping sensations. The pulse is characteristic, of a very irregular kind; not like the irregularity in the heart of the young, or the intermittent pulse, or the irregular pulse due to extrasystoles; in auricular fibrillation, as a rule, the pauses between the beats are continually changing, and two succeeding beats are rarely of the same strength. If there is a diastolic mitral murmur without a presystolic murmur one can in the majority of cases conclude that auricular fibrillation is present. The signs of heart failure are usually the first to attract attention, are not characteristic, and vary from a slight breathlessness on exertion to dyspnea of the most severe kind accompanied by dropsy, enlarged liver, and the symptoms associated with extreme heart failure. In giving a prognosis in cases of fibrillation it is necessary to form an opinion of the changes that have led up to the fibrillation: the prognosis will depend upon the extent of these changes. A valuable aid to prognosis is obtained by noting how speedily the heart responds to digitalis. In treatment, the first measure is to ease the heart of its work. The drug *par excellence* in this condition is digitalis, used in the form of the tincture. In cases of marked failure the quantity of the latter to be administered is one dram per day in doses of 15 to 20 minims.

Infusion Anesthesia.—F. Rood presents a series of twenty-one cases in which ether was administered by intravenous infusion in a 5 per cent. solution in normal saline. This method was originated by Burckhardt. The mode of inducing anesthesia is as follows: An hour before the induction a hypodermic injection is given, which consists of scopolamine 1/100 grain, morphine, 1/6 grain, and atropine 1/100 grain. The patient is placed on the operating table and the selected arm lightly bandaged to a splint to prevent flexion of the elbow; a few drops of cocaine having been injected into the skin, the vein is exposed through an incision of a third of an inch. The cannula having been tied in, it and the wound are packed round with sterile gauze. The strictest asepsis is, of course, preserved throughout this procedure. The solution is run in rapidly during the period of induction, which usually lasts about ten minutes. It is usually possible to attain surgical anesthesia with the use of 8 ounces of the solution, while for the maintenance of the anesthesia as little as a pint an hour (1 ounce of ether) is in most cases enough. The most striking features of infusion anesthesia, the author maintains, are: (1) Extreme flexibility so that the condition of the patient can be adjusted with great nicety and can be changed in the direction of deepening or lightening of anesthesia with really remarkable rapidity. (2) The patient begins to come round very soon after the anesthetic is stopped and is able to converse rationally within a few minutes. (3) Postanesthetic vomiting and pulmonary irritation are both extremely rare.

Symphyseal Ligament in Parturient Guinea-Pig.—J. Bland-Sutton confirms what has been noted by Owen, namely, that parturition in the guinea-pig is accompanied by a marked extensibility and elongation of the symphyseal ligament.

Berliner klinische Wochenschrift.

October 16, 1911.

Treatment of Lupus with Nascent Iodine.—According to Reyn an attempt had already been made to decompose sodium iodide in the tissues through the aid of a stream of ozone topically applied. The author has sought the same end by electrolysis. After successful animal experiments, human subjects with lupus vulgaris were treated. The skin lesions in some cases had already been healed by the Finsen light, but there were patients with mucous lesions and untreated or unhealed skin lesions. The patients received one to three grams of sodium iodide per os and one hour later electrolysis up to three milliampères, 65 volts, the needles being applied *in situ*. The action on the lesions was surprisingly prompt and favorable That nascent iodine was present readily appeared from the starch test.

Treatment of Typhus with Iodine.—Uftugeaninoff has tested Jaworowsky's method of treating exanthematic typhus with iodine internally. He gave three drops of the tincture three or four times daily. Although but fourteen cases were treated, it appears that the remedy exerts a certain specific activity. That it is actually curative cannot as yet be maintained. The specificity of the action appears readily from the temperature fall, the abortive character of the exanthem, the favorable influence on the nervous system and pulse. The combined material of Jaworowsky and the author amounted to fifty-five cases, without mortality.

Action of Pressure Massage on the Nerves.—Jaffe writes with reference to the treatment of neuralgia with massage. The latter is one of a number of therapeutic resources for this affection and is believed to be especially efficacious in sciatica. The rationale is not clear, but the effects seem akin to those of nerve stretching combined with pressure. The treatment, as carried out by the special massage technique, seems at first to aggravate the condition, but improvement soon follows. It is assumed that after a preliminary hyperemia some degeneration of nerve fibers follows, to be succeeded by a regenerative process.

Hydrophthalmus Infantum.—Writing of the so-called glaucoma of childhood, Fejer states that it is a very rare affection and usually unilateral. Its nature remains obscure. He has seen three cases. In the first—in a boy of four—the trouble seemed to date from birth. The affected eye was larger and became inflamed, watery, and painful, with increased tension. The cornea was cloudy and the pupil atrophic. The eye was enucleated as there was no prospect of cure. The second case was seen in a boy of the same age, but the affection was bilateral. Attempts were made to relieve the patient with pilocarpin and anterior sclerotomy on the worse eye, but to no purpose. As both eyes were compromised enucleation was not done. The third patient was nineteen years old, affected since childhood. Some vision remained in the left eye—5/50 with a convex lens. Both eyes were improved by iridectomy, the vision of the left eye surpassing that of the right.

Indications for Artificial Termination of Pregnancy.—Runge enumerates these in the following order: Tuberculosis should first be mentioned, especially its laryngeal localization, this forming a strict indication. In pulmonary phthisis he would not interfere after the fourth month. Before that period each case should be decided for itself. Next in importance is heart disease, and here also each case must be individualized. With good compensation or even in its absence, provided the patient reacts properly to digitalis, there need not be any intervention, but labor must be made as brief and easy as possible. Diabetes and pregnancy are not often seen together. If the disease can be controlled by diet gestation need not be interrupted. Albuminuric retinitis and optic neuritis may demand artificial termination of pregnancy to prevent blindness. Other affections to be considered are mental disturbances—suicidal impulses and phobias call for intervention—chorea, chronic nephritis, pyelitis, hyperemesis, pelvic anomalies, and fixations of the uterus both spontaneous and operative.

Münchener medizinsche Wochenschrift.

October 17, 1911.

The Vasomotor Syndrome in Children.—Hamburger discusses this syndrome as an expression of neuropathy which stands in a certain causal relationship with arteriosclerosis in adult life. These children are often brought to the physician for palpitation of the heart. Not much is found by objective tests. The rhythm is unstable, the impulse diffused, there is epigastric pulsation and in many cases the position of the organ changes readily with that of the body. The pulse frequency also increases with rising and slight exertion and a respiratory type is then noted (increase during inspiration, decrease during expiration). Vascular symptoms are very numerous and varied. Many of these depend upon active congestions and ischemias. Headache, even migrane, is common after mental effort. Vertigo and fainting attacks are also common. Cold extremities are another expression of local ischemia. Other symptoms are dermographism, visible pulsation of the carotids, increased tension of the radial and temporal arteries, the walls of the vessels being distinctly palpable. This condition naturally shades into the so-called juvenile arteriosclerosis which some authorities regard as of common occurrence. There is naturally a complete vascular instability, which represents the predisposition (angiasthenia). Upon this predisposition a great many kinds of irritation, toxic, psychic, physical, work. Certain mental characteristics also accompany the predisposition. The children are sensitive, easily elated or depressed, often benevolent and highminded. They learn readily in school and are ambitious. These traits are no doubt due in part at least to the vasomotor instability.

Influenza Bacteriemia.—Reiss and Gins report a case of this rare condition. Its infrequency is due doubtless to want of success in cultivating Pfeiffer's or other germs from the blood. The case cited was a complete one from this point of view, and Pfeiffer's bacillus was cultivated from the blood 17 days before death. The patient was a nursling who first had measles, from which she made a good recovery. A few days later marked fever again appeared which assumed a septic type. It was at its acme at the early morning hours, sank to nearly normal in the morning, and rose again in the afternoon. Bronchial sounds were heard to the right, behind; and later they appeared on both sides toward the apices. The *x*-ray showed shadows which corresponded to areas of percussion dulness. Blood was taken for a test but thus far there had been no suspicion of influenza. The diagnosis was evidently sepsis of unknown origin. The Pirquet reaction was found to be negative. Death finally took place from cardiac weakness. The autopsy showed no evidence of pyemia, nor of any local septic condition beyond pneumonia.

Diabetes Mellitus and Adrenalinemia.—Bittorf asks if the adrenals are hyperactive in diabetes mellitus. He has recently tested the blood in ten diabetic patients with the frog pupil method. In seven cases in which there was no acidosis he found no evidence of adrenalinemia, even in one case later found to have an atrophic pancreas. Instead of a dilatation of the frog's pupil the author repeatedly saw a contraction. In the three diabetics with acidosis there was a slight or doubtful positive reaction, but the dilatation was succeeded by contraction. Because of this finding, the author says, he altogether disbelieves in the existence of hyperactivity of the adrenals in diabetes mellitus.

Deutsche medizinische Wochenschrift.

October 12 and 19, 1911.

Nature and Treatment of Eclampsia.—Zangemeister believes that puerperal eclampsia must be regarded as a sort of reflex epilepsy. Toxins he would consider rather as predisposing than exciting causes; that is to say, they do not behave like strychnine, for example, in setting up convulsions in a normal soil. The toxins, placental or other, so affect the central nervous system as to make it easily convulsible. The exciting cause is always uterine contraction, whether gestational, parturient, or postpartum. The parallel between these pains and eclamptic seizures is unmistakable. The nervous centers are believed to be anemic as a result of the toxicosis at the onset of the convulsions. The author admits without comment that eclampsia has been known to occur in ectopic pregnancy, but uterine contractions may of course be present here. The anemic state of the brain in eclampsia favors the development of cerebral edema and the author has in several desperate cases practised trephining with the aim of reducing intracranial pressure. The results were encouraging and the author hopes that he has added a new resource to the heroic measures for saving life in eclampsia.

Rhinogenous Traumatic Meningoencephalitis.—Manasse reports a case of this type in a 16-year-old girl who, while knitting in a railway carriage, had one of the needles driven into the left nasal chamber. She lay unconscious for hours. Within the next two days headache, vomiting, and purulent nasal discharge set in. The syndrome of meningitis was in evidence when patient was first seen. Lumbar puncture showed a sterile fluid. The frontal and ethmoidal simuses were at once opened and bony tissue removed until the dura was accessible. This was split along the track of the needle wound and the opening drained with iodoform gauze. Despite precautions a cerebral abscess formed, the pus from which contained the *Diplococcus lanceolatus*. The patient recovered. The author had not been hopeful of the outcome. The novelty of the case left him without precedent and he simply followed the principles which underlie the treatment of otogenous meningitis. An integral part of the management was repeated lumbar puncture.

Unusual Collateral Phenomena in Mitral Stenosis.—Muktedir Effendi refers to pulse differences in the radial arteries and paresis of the recurrent laryngeal nerve. Gouget recently reported instances of these complications and the present writer was able to confirm them from his own experience. Both patients showed the pulse differences and one of the two recurrent paresis. In typical cases of mitral stenosis examination usually fails to detect any evidence of these complications. The inequality of pulse is due probably to the strongly dilated vena cava and right innominate vein which compresses the innominate artery of that side. Recurrent paralysis is usually unilateral. The left nerve is always involved and at times both nerves. The paralysis is due doubtless to compression by the left auricle. The sympathetic nerves are involved with the same relative frequency, as shown by the pupillary symptoms. This triad—pulse inequality, recurrent paralysis, and pupillary behavior—is usually taught to be pathognomonic of aneurysm of the aorta, hence the importance of the finding in mitral stenosis.

Relations of Coprostasis to Bronchial Asthma.—Ebstein had already written on this subject but without attracting the attention of the profession. Quite recently Pinz has taken up the matter. Since a definite relationship has long been noted between stercoremia and certain dermatoses like urticaria, and since these dermatoses sometimes behave as equivalents to bronchial asthma and *vice versa*, it follows that stercoremia should be able to cause asthmatic paroxysms. That this is possible appears from the two cases which Ebstein reports in detail. This type of asthma is toxic in nature, comparable in a measure with uremic asthma. This toxic type does not appear to be very closely related either with the organic, reflex, or neuropathic types which form the greater part of all asthma cases.

Differentiation Between Aphasia and Anarthria.—Gutzmann writes at great length on this subject. While typical cases of either possess little in common, there are many instances in which the two may be associated, or in other words aphasia may possess an anarthric component. It may likewise be maintained that true disturbances of articulation exist as a result of cortical mischief. Centers in the pons and medulla oblongata preside immediately over mechanical speech, but are indebted for much of their activity to cortical influence. What is known as subcortical motor aphasia seems to be a connecting link between aphasia and anarthria, since it presents the phenomena of both the latter. Every shade of opinion as to the relationship of these two conditions seems to have been upheld, largely because of differences in individual experience. In recovered cases of aphasia mechanical speech defects sometimes persist. The present author believes that in every case of complete cortical motor aphasia there is a dysarthric component. To be able to demonstrate the presence of the latter is his special task. He has devised a system of articulation gymnastics requiring speech coördination, with graphical methods for recording which is not put forward as wholly original since Goldscheider has done work of a similar character, and many others have occupied themselves with experimental phonetics. Tracings show very clearly the differences between normal articulation and dysarthria.

Dystrophia Adiposogenitalis.—Pick begins as a serial perhaps the most extensive monographic study of this subject which has as yet been undertaken. Marie described acromegaly in 1886 and in 1901 Froehlich published an account of a condition apparently the reverse of the latter. The existence of the so-called Froehlich syndrome was promptly recognized by clinicians. Both it and the Marie syndrome are known to stand in direct relation to tumors of the hypophysis but the precise relationship is by no means obvious. The assumption that one syndrome is due to defective and the other to excessive functioning of the pituitary body may not be borne out by the facts but it seems certain that both are due to a dyspituitarism. Cases are upon record in which Froehlich's syndrome underwent improvement after successful removal of the offending tumor of the hypophysis—a type of result of more frequent occurrence in connection with acromegaly. Moreover, cases occur in which there is an association clinically of acromegaly and dystrophia adiposogenitalis. That tumors determine both hyper- and hypofunctioning of the pituitary body is evident, yet clinically the two cannot always be separated, any more than in connection with the thyroid. Atrophic alterations suggest lowered functions, hypertrophic alterations heightened functions, yet as we see in connection with the testicles and ovaries a possible sexual component comes into play; so that what is apparently an excess of growth may really signify a defect. Thus the fat deposit may be conceived as a defect in the dystrophia adiposogenitalis and the eunuch voice in acromegaly is manifestly a defect.

Malformation of Femur.—O. L. Addison reports the case of a child 2½ years of age, in whom the right leg was two inches shorter than the left. The femur was much curved, and there was a marked degree of coxa vara. The leg was first noticed to be shorter than the other when the child was 10 months old. There was no history of injury.—*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

THE AGENT AND THE APPOINTMENT OF EXAMINERS.

An agent will not infrequently promise to procure the appointment of examiner for some physician as an additional inducement to the latter to take out a policy in his company. This procedure is recognized by well-regulated companies as a very questionable one, and some of them go so far as to follow up each new appointment made at the request of an agent with a systematic search of the records to ascertain if the appointee has taken out a policy at or about the time he was made examiner. If it is found that he has done so, he is informed at once by letter that he must not consider himself indebted to the soliciting agent in any way, as the latter has absolutely no influence in the appointment of examiners other than notifying the company that a vacancy exists at some point; also, that, while the company is glad to have him on its list of policy holders, it can not extend any privileges to him on that account.

This line of action will not fail to meet the approval of all physicians, especially when their attention is directed to two points: (1) An agent who makes this proposition to one doctor will repeat it to others and will not be deterred by the fact that any of them happen to practise in the same place as the one already favored, since he has the idea firmly fixed in his mind that new business must be obtained even if his methods are not always commendable. If such nominations were approved at the home office, the position of examiner would become cheapened sooner or later and not worth seeking. It may be added that, generally speaking, urgent requests from an agent for the appointment of a certain physician are not well regarded at the home office and that efforts are made toward choosing another doctor if there is one in the same community equally equipped. (2) A company necessarily depends upon every one of its examiners for honest, fearless, and painstaking work, and the relations between the two must not be weakened under any circumstances by other obligations. The examiner must be free and independent, not bound to the agent by any sense of gratitude or indebtedness; the company, on the other hand, must not be hampered in the slightest degree by the fact that the examiner carries one of its policies.

Blood Pressure and Prognosis.—By Dr. Henry Wireman Cook.—(See page 959.)

Medical Section of the American Life Convention.—(See page 1004.)

Threatened State Insurance in New Jersey.— (See page 979.)

Anamnesis in Accident Cases.—Ruge says that careful history of the incidents preceding an accidental injury, or what is claimed to be an injury, often clears up the question of the relation between the alleged accident and the damage done. Thus a fall followed by symptoms of apoplexy may simply have been a result of the apoplexy and not its cause. A careful history of the symptoms may clear up such a case. Appendicitis is frequently claimed to have been due to a kick, a blow, etc., yet in many cases the findings at operation show a long-standing inflammation of the appendix. Traumatic tuberculosis must be proved to have started from the site of injury: usually the injury simply brings to light an existing tuberculosis. Many physicians claim indemnity, if insured, for becoming infected with such a disease as measles. It should be shown in such a case where the source of infection was probably found and whether proper measures were taken by the insured to protect himself. In discussing Ruge's paper, Böhler said that the definition of accident is an ever-changing one, because modern medicine is more and more inclined to see a causal relation between injury and disease. Insurance companies should therefore rigidly formulate certain conditions as not includable among those due to accidents. This has been done in the case of ruptures, and it should be done in cases of infectious disease among physicians. Otherwise, other professional men, teachers, for example, should be indemnified for contracting an infectious disease, like measles, in the discharge of their duties. Lennhof objected to the statement that traumatic tuberculosis originates at the site of injury. The damage may be done a good distance from this site by indirect transmission of the damaging force.—*Blätter für Vertrauensärzte der Lebensversicherung*, January and February, 1911.

Cardiac Symptoms and Life Insurance.—Grassmann says that the physical findings in reference to the heart frequently decide the fate of an applicant for insurance, so far as acceptance or refusal are concerned. The proper interpretation of cardiac findings is therefore very important for both the applicant and the insurance companies. The latest clinical and pathological studies of the circulation have introduced many new points of view and these should not be neglected by the medical examiners. Thus arrhythmia used immediately to suggest degeneration of the myocardium and the consequent dangers to the life of the patient. However, it has been shown that only the so-called "perpetual irregular pulse" always means the existence of an organic disease, for example, of a valvular lesion or of arteriosclerotic damage to the heart. On the other hand, juvenile arrhythmia has no such significance; it is usually of nervous origin and may be an hereditary condition and not a serious disease.

Arrhythmia caused by extrasystoles has frequently led to the refusal of an applicant; yet this phenomenon is not uncommonly of purely nervous nature and may be produced by excessive use of tobacco, for instance. Mackenzie says that he has never seen anything serious follow his irregularity in youthful and nervous individuals. Broadbent says that an intermittent pulse is not characteristic of any form of heart disease and but seldom points to organic disease of the heart. In older individuals this phenomenon is of ill significance when it can be shown to have appeared only recently. Valvular lesions should also not be grouped all together as very serious from a prognostic standpoint. Those following an endocardial inflammation are, of course, serious, but frequently a mitral leak may be due simply to muscular insufficiency and not to changes in the valve itself. Chlorosis and anemia of girls and young women frequently lead to such an insufficiency.

"Dilatation of the heart" has become a very fashionable diagnosis, since various mechanical methods of measuring the size of the heart have been multiplied. Yet Romberg says that such a diagnosis should be made only in the presence of undoubted and considerable increase in the size of the heart, for normal variations are likewise considerable. Variations in blood-pressure should also be very carefully interpreted; moderate increase over normal has not much significance, and, on the other hand, low blood-pressure may coexist with a marked degree of arteriosclerosis.—*Blätter der Vertrauensärzte der Lebensversicherung*. January and February, 1911.

Delicate Test for Albumin in Urine.—A. Ravold has found that the Spiegel-Jolles reagent and sulphosalicylic acid form the two best reagents for detection of albumin. The former reagent, however, seems to deteriorate with

age. For the second test, a 50 per cent. solution of sulphosalicylic acid is dissolved in distilled water and 15 drops (1 c.c.) added to five or six c.c. of urine in a tube. A white precipitate forms if a quantity of albumin is present; if the amount is small the urine becomes turbid. The precipitate or turbidity does not disappear on heating. Albumoses are also precipitated by the reagent, but disappear upon heating, to reappear on cooling.—*Proceedings of the Medical Section, American Life Convention, New Orleans,* February, 1911.

Cancer of the Testicle Following Injury.—Haberern says that the rôle of trauma in the causation of cancer is fast becoming a very important and practical problem, because of the numerous claims for indemnity for neoplasm following injury, in accident insurance. He communicates the following case. A healthy individual, 31 years of age, was kicked by a horse in the right testicle. Six weeks later there appeared a tumor of this testicle which on pathological examination proved to be adenocarcinoma. The lymphnodes in the inguinal region gave a similar picture. The patient died several months later of recurrence of the tumor and internal metastases. Haberern quotes Löwenstein's cases of testicular carcinoma following injury and considers his to be the fourth case published. Sarcoma of the testicle after a similar accident seems to have been much more frequent, over two score cases being mentioned by Löwenstein.—*Deutsche Zeitschrift für Chirurgie,* September, 1911.

Industrial Accidents and Diseases in England.—In the Annual Report of the Chief Inspector of Factories and Workshops for the year 1910 the subject of accidents again receives careful consideration. The Accidents Committee appointed in 1908 to investigate accidents in places under the Factory and Workshops Acts reported in February last. From 1897 to 1907 the accident risk apparently remained nearly constant; any slight increase due to the extended use of machinery and greater pressure of work was counteracted by improved inspection and by greater care resulting from the operation of the Workmen's Compensation Act. Since 1907 the decline in the number of accidents has been partly due to the more efficient guarding of machinery adopted by employers; but, taking the accident statistics generally, it would appear that, while there was a decrease during 1908 and 1909 owing to slackness of trade, in 1910, with the increased volume of manufacture, there came an increase. The fatal accidents for 1907, 1908, 1909, and 1910 were respectively 1,179, 1,042, 946, and 1,080, the total number of accidents being for the same years 124,325, 122,154, 117,500, and 129,550. The total number of accidents for 1910 was 4 per cent. greater than for 1907, the highest previous record, when a considerable part of the excess was largely the result of "minor" accidents. It is gratifying to note that the fatal accidents were 8.4 per cent. fewer. For many of the accidents the increasing use of machinery is responsible. The hours between 10 and 12 A.M. and 3 and 5 P.M. are those in which the largest number of accidents takes place. The large number of accidents for which shipbuilding is responsible is a matter recently recognized. In this industry more accidents happen to men under the age of 25 than to their elders. The inspector of the Midland Division draws attention to the fact that the number of accidents followed by blood poisoning is increasing. Slight wounds or abrasions which do not interfere with work at the time become infected, and are occasionally followed by a fatal result. Until lately there has been heard little of "needle puncturing" accidents. The subject is alluded to by one of the lady inspectors, who states that perforation of the hand by sewing-machine needles occurred in 40 instances last year. The greatest number of accidents occurred between the ages of 18 and 25, the group next in order being between 14 and 16. Very few of the accidents happened to workers over 25 years of age. As regards the trades in which the accidents occurred, blouse making headed the list, this together with skirt making being responsible for 50 per cent. of the total accidents. The largest number of such accidents apparently occurs at the prime of working life, when machines are run at the highest speed, and this is mostly in the blouse and skirt making trades. The substitution of electroplated for ordinary sewing-machine needles is said to contribute to safety, as they do not break so readily and if the finger is punctured less serious results follow.

Cigarette making as a home industry is said to be on the increase in London, a practice undesirable from all points of view, and yet one with which it is difficult to cope. The greatest offenders are workers of Russian and Polish origin. The total number of cases of lead poisoning for 1910 was 505, with 38 deaths, as against 553 cases, of which 30 ended fatally, in 1909, and 646, with 32 deaths, in 1908. China and earthenware trades were responsible for 77 cases, with 11 deaths; white-lead for 34 cases, and 1 death; and coachbuilding for 70 cases and 6 deaths.

Among house painters and plumbers, not included in the above notifications, there were 232 cases of plumbism and 35 deaths. At the Brussels Congress Drs. Agasse-Lafont and Heine of Paris read papers upon the condition of the blood in the presaturnine state, or what might be called latent saturnism, in which, while the system is impregnated by lead, as shown by the presence of the metal in the urine, the reaction on the part of the organism is so slight as almost to pass unobserved. They contend that in this presaturnine state, though the white corpuscles show nothing abnormal beyond a slight increase in the number of mononuclear cells in the blood, the red corpuscles, on the other hand, in addition to being slightly diminished in number, exhibit almost constantly basophile granules, and that some are also nucleated. Against this it is stated that neither Sir Thomas Oliver, King Alcock, nor K. W. Goadby has obtained any practical assistance from this as a sign of plumbism. The subject, however, is one which requires further investigation. The use of non-poisonous paints has proved so satisfactory in several of the large railway carriage works that the experiment is well worth extending. It yet remains to be seen how far lead sulphate can replace the carbonate and be free from risk. The use of lead paint for stenciling letters on goods wagons by means of aerographs is a source of danger. Arsenic and mercury as industrial poisons still claim victims, but fewer than formerly.

There were 51 cases of anthrax reported in 1910, compared with 56 for the previous year, the mortality rates being respectively 17.6 and 21.5. Considerable space is devoted to the subject of occupational dermatitis—a circumstance which suggests that skin affections in consequence of employment are on the increase. An interesting appendix on dermatitis caused in the manufacture of roll tobacco is from the pen of Dr. Collis. The eruptions were traced to the olive oil used in the process of spinning. The thin skin between the fingers and on the back of the hand and forearm becomes affected. The worker first feels the skin hot and irritable; it subsequently becomes dry and scaly; later it cracks, becomes red and inflamed, and pustules form. Apart from pain, the irritation of the skin causes a considerable amount of sleeplessness. The malady resembles eczema, and may spread by intercellular infection from the area originally affected. Removal from exposure to the olive oil is generally followed by recovery without further treatment, while resumption of the old work is followed by a relapse.—*British Medical Journal,* July 1, 1911.

Book Reviews.

THE PRACTICAL MEDICINE SERIES. Under the General Editorial Charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and CHARLES L. MIX, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume IV: Gynecology. Edited by EMILIUS C. DUDLEY, A.M., M.D., Professor of Gynecology, Northwestern University Medical School; Gynecologist to St. Luke's and Wesley Hospital, Chicago, and C. VON BACHELLÉ, M.S., M.D., Assistant Professor of Obstetrics, Chicago Policlinic and College of Physicians and Surgeons; Gynecologist to the German Hospital, Chicago. Volume V: OBSTETRICS. Edited by JOSEPH B. DELEE, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. With the collaboration of HERBERT M. STOWE, M.D. Series 1911. Price $1.25. Chicago: The Year Book Publishers.

VOLUME IV of this series covers, in a brief way, the literature of gynecology of the past year. The value of the book has been enhanced by the pertinent comments which have been inserted by the editors.

Volume V contains a review of the literature on the investigations which have been carried on in the realm of obstetrics during the past year. Although very little has been accomplished we may in the near future reap great benefit from the work done. The editors have given a good synopsis of this work. The book should prove of value to the physician.

THEORY AND PRACTICE OF THYROID THERAPY. Being some experiences of the results of thyroid medication, with deductions concerning the influence of thyroid secretion in health and disease and certain effects of drugs and various circumstances upon thyroid secretion. A Book for General Practitioners. By HERBERT EWAN WALLER, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Honorary Anesthetist Birmingham Dental Hospital, Medical Officer Balsall Heath Provident Dispensary. Price $2.00. New York: William Wood & Company, 1911.

THE author has performed a distinct service in writing this volume, which is unique in its discussion of a subject which concerns every practitioner. It is stated that an understanding of thyroid matters is essential to the practitioner in treating every case, and will materially improve his success in the treatment of fully one-fourth of his patients. The multiple rôle which the thyroid plays in the human economy is described in detail. Among the many phases of this rôle may be mentioned the need of the thyroid for calcium assimilation, deficiency of the thyroid causing rickety symptoms and dental caries; the thyroid treatment of obesity and of vomiting of pregnancy; the relation of calcium and thyroid to Graves' disease, goiter, and urticaria; the relation of iodine and meat to Graves' disease; the lymphatic glands and Graves' disease; thyroid and eczema; thyroid and arsenic; and the influence of salicylates and kindred drugs on thyroid activity. The value of thyroid medication in many morbid conditions, such as mental degeneracy, enuresis, and asthma, is fully discussed, as is also the mode of administering thyroid.

CARBONIC ACID SNOW: As a Therapeutic Agent in the Treatment of Diseases of the Skin. By R. CRANSTON LOW, M.B., F.R.C.P., Assistant Physician to the Skin Department, Royal Infirmary, Edinburgh. Price $1.50. New York: William Wood & Company, 1911.

THE application of carbon dioxide snow as a refrigerant in the treatment of many diseases of the skin is one of the most important advances within recent years in practical dermatology. The simplicity of technique renders this mode of treatment available to the general practitioner, who is now in a position to treat a large class of cases without the aid of the specialist. Diseases such as the various forms of nevus, and warts, papillomata, callosities, molluscum, powder stains, etc., are quickly removed by the use of this agent. The present volume supplies the information which will enable the practitioner to carry out the treatment successfully, describing the methods of application and the results obtained in the various diseases. In addition to the introductory chapter this volume consists of chapters on the following: the technique of collecting and applying CO_2 snow; the effect of carbonic acid snow on the skin; microscopical changes and experimental results, and therapeutic uses of carbonic acid snow. There is a series of sixteen excellent photographic plates illustrating the apparatus and technique, the microscopical effects of the refrigeration, and the appearance of cutaneous lesions after treatment with carbonic acid snow.

REPORTS FROM THE LABORATORY OF THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH. Edited by Sir JOHN BATTY TUKE, M.D., and JAMES RITCHIE, M.D. Vols. X and XI. Edinburgh: Oliver & Boyd, 1911.

THESE two volumes contain over sixty original papers issued from the laboratory of the Royal College of Physicians of Edinburgh in the years 1905 to 1910. The papers have for the most been published in various journals during these years. The subjects are mostly anatomical and pathological. But a few titles can be named in this review: The Vermiform Appendix of Man and the Structural Changes Therein Coincident with Age, by J. A. Berry and L. A. H. Lack; the Bacteriology of Aural and Nasal Discharges in Scarlet Fever and Other Diseases, by C. J. Lewis; the Duration of Vitality of *B. coli communis* in Various Waters and in Sewage, by J. G. McNaught; An Experimental Investigation of Infective Sarcoma of the Dog, by Henry Wade; Experimental and Clinical Observations on the Urine and Blood in Nephritis, by J. L. Green, etc., etc.

THE high reputation of this laboratory is well supported by the character of the papers gathered in these volumes. For the most part they represent real additions to our anatomical and pathological knowledge. The idea of issuing them in one volume is a good one, for in a great many of them the same central idea of research is dominant, as might be expected from workers in one laboratory. The volumes, too, present a much more pleasing addition to one's library than would numerous separate reprints of the same papers.

LEITFADEN DER AKUSTIK FÜR OHRENÄRZTE. Von Dr. M. TH. EDELMAN, Prof. h. c. der Kgl. tech. Hochschule München. Mit 80 Abbildungen und einem Porträt. Berlin: Verlag von S. Karger, 1911.

THIS volume of 118 pages discusses the elements of acoustics and describes the selection, use, and adjustment of the various instruments used by the aurist, some of which are of recent introduction. The book is practically a supplement to Bezold's well-known textbook on diseases of the ear, taking up purely the physical and technical aspects of this subject.

ÜBER SCHARLACH (Der Scharlacherkrankung zweiter Teil). Von Dr. DIONYS POSPISCHILL, k. k. Primarärzt, und Dr. FRITZ WEISS, gew. Assistant der Abteilung. Mit 14 Kurven. Berlin: Verlag von S. Karger, 1911.

IN this monograph the author has taken as his theme the phenomenon which among all the acute infectious diseases seems to be peculiar to scarlet fever, namely, the recurrence of subjective and objective symptoms after an interval of freedom from symptoms—a sort of second invasion of the disease. The latter would apply to the so-called complications occurring in the second and third weeks, such as nephritis, otitis, adenitis, and fever. This subject is discussed in a thorough and interesting manner.

HEREDITY IN THE LIGHT OF RECENT RESEARCH. By L. DONCASTER, M.A., Fellow of Kings College. Price 40 cents. Cambridge: University Press, 1911.

THIS little volume of 143 pages forms one of the Cambridge Manuals of Science and Literature. It is a scholarly exposition of the various aspects of heredity; its relation to variation, its statistical study, and its causes. Mendelian heredity is clearly described. The chapter on heredity in man, including a discussion of the rôle of heredity in diseases, is one that will particularly interest the physician.

LEHRBUCH DER SPEZIFISCHEN DIAGNOSTIK UND THERAPIE DER TUBERKULOSE. Für Aerzte und Studierende. Von Dr. BANDELIER. Chefarzt des Sanatoriums Schwarzwaldheim in Schömberg bis Mildbad, and Dr. ROEPKE, Chefarzt der Eisenbahnheilstätte Stadtwald in Melsurgen bis Cassel. Sechste erweiterte und verbesserte Auflage, mit einem Vorwort von Wirkl. Geh. Rat Prof. D. R. KOCH, Exzellenz. Mit 19 Temperaturkurven auf 5 lithographischen Tafeln, 1 farb. lith. Tafel und 5 Textabbildungen. Price 6.60 Marks paper, 7.80 Marks bound. Würzburg: Curt Kabitzsch, 1911.

IN the sixth edition of this excellent work, which follows the fifth with the briefest interval, that having been reviewed in these columns only about six months ago, no very great change has been made. A short chapter on the specific treatment of aural tuberculosis has been introduced and in the other chapters on treatment everything of importance that has appeared during the past year is noted. The preface to the third edition, written by the lamented Koch a year before his death, is reproduced in this edition, which also is dedicated "To the Great Master, Robert Koch."

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held October 17, 1911.

DR. H. S. PATTERSON IN THE CHAIR.

A Case of Thoracic Tumor and Aneurysm of the Descending Thoracic Aorta, Treated with Salvarsan.—Dr. GEORGE REESE SATTERLEE presented a patient, fifty years old, a chef by occupation. He had measles when a child and yellow fever in 1874. Twenty-five years ago he had an attack of jaundice with pain; this sickness lasted nine months and it took nearly two years to clear up the jaundice. He had an attack of gonorrhea thirty years ago with a chancre, said to be a soft one. He had local treatment only. He had no eruption and did not know that he had syphilis. His present illness began four years ago with "indigestion" for which he was treated in New York Hospital O. D. P. He had pain in the back and dyspnea. He was then treated in the Board of Health tuberculosis clinic. A diagnosis of tuberculosis was made and he was sent to Otisville, where he became worse; the pain was very severe and he could not work. He then went to Denver and Colorado Springs, where he became much worse with severe pain in the back and dyspnea. He was told he had pulmonary tuberculosis. Fourteen physicians in New York City had treated him. On admission to the University and Bellevue Hospital Medical College Dispensary he complained of severe pain in the left side of the chest, epigastrium, and in the left shoulder. The pain was continuous and prevented him from lying on his back. He was hoarse and he had dyspnea on exertion. There was a paralysis of the left vocal cord, but no other syphilitic manifestations. The superficial veins on the left side of the chest and over the left sholder and arm were enlarged and tortuous. The heart showed a moderate hypertrophy and an area of dulness in the first left interspace. There was no pulsation, murmur, or tracheal tug evident. The pulsation in the left radial artery was almost obliterated. The diagnosis of thoracic tumor, possibly an aneurysm, was made and a radiograph showed a rounded mass at this spot and an apparently dilated descending thoracic aorta. The mass seemed to be in the region of the aorta and it seemed as if it was separate from the aorta. There were no positive evidences of tuberculosis. There was a positive Wassermann reaction. Salicylate of mercury was given intramuscularly and then about 0.4 gram of salvarsan was injected into the gluteal muscles. Two and a half days after salvarsan was administered the improvement was wonderful. The left radial pulsation returned in full, a sensation to this effect being noticed by the patient. His general condition began to improve immediately and the pain was relieved. The voice began slowly to improve also. Instead of the paralysis there was just a little weakness. This was followed up by doses of salicylate of mercury, grain 1, into the buttocks twice a week; iodide of potassium up to grains xx three times a day was given. A second dose of salvarsan, 0.3 gram, was given and this was followed by iodide of potassium, 40 grains a day, and salicylate of mercury twice a week. Gradual improvement took place. The Wassermann reaction was negative. The second series of radiographs failed to show any apparent diminution in the size of the tumor. The examination of the larynx showed slight weakness of the left vocal cord. He still had some pain in the back and some dyspnea on exertion. The fluoroscope showed pulsation in the tumor mass in front and behind which pointed to the existence of an aneurysm. The polygraph tracings showed a normal heart and circulation.

A Case of Syphilitic Aortitis Treated with Salvarsan.—Dr. FREDERICK FRANCIS KOSAK presented a patient, forty years old, a cooper by occupation. He received his initial lesion thirteen years ago for which he was treated locally and internally for six weeks, during which time the chancre healed. With this exception the patient stated that he was in comparatively good health until a year previous to the time he first came under observation. At this time he was suffering from dyspnea, feeling of oppression in the upper chest, flashes of light before the eyes, and dimness of vision. These symptoms were almost constant up to the present time, when they became more exaggerated, so much so that he could not sleep lying down. It was for these symptoms that he applied for treatment. The physical examination showed a patient fairly well developed; there was no enlargement of the thyroids; the heart was enlarged, the apex extended four inches from the median line and was at the fifth interspace, and the right side was slightly beyond the right margin of the sternum; there was a double aortic murmur. The aorta showed marked dilatation. The *x*-ray verified these findings. The liver and spleen were not palpable; there was no change in either radial or popliteal pulses. There was a moderate arteriosclerosis; the blood-pressure was 100 mm. The Wassermann reaction was markedly positive. During September salvarsan, 0.3 gram, was administered by the intravenous method. One hour after the blood-pressure rose to 105 mm. With the exception of a slight rise of temperature, which soon became normal, the patient was in such good condition that he decided to go home, where he returned to his occupation, doing light work. About the fifth day the burning sensation behind the sternum returned, and on the tenth day became so marked that he returned to the hospital suffering from extreme dyspnea, palpitation, pain over the precordium, and with a severe cough. The physical examination at this time showed the apex behind the sixth rib, four inches from the median line; there was a loud systolic murmur transmitted to the back. There were a presystolic murmur at the aortic orifice and a number of moist râles in the interscapular region and base of the lungs. Under the application of ice, rest, and a fluid diet he gradually improved and was discharged on October 14, two weeks after his admission. The blood-pressure during this period varied between 90 and 100 mm. The examination of the urine was always negative. The blood examination on admission showed 3,000,000 red cells with 85 per cent. hemoglobin. When the patient was discharged there was a slight increase in the latter to 90 per cent. The leucocytes were normal and remained unchanged. The temperature, pulse, and respirations were practically normal during his stay in the hospital. The patient now could sleep lying down, felt much better, and except for an occasional pressure over the precordium had never felt as good in the past year. Much had been written on the contraindications of salvarsan in complicated cardial and vascular diseases. The presence of endomyocarditis, aortitis, and arteriosclerosis raised the question, Were they justified in administering salvarsan in this case? In reviewing the literature they found that very few cases had been reported in which salvarsan had been tried in these cases, and in all such reported cases the results had been very encouraging. The general physical condition of the patient and the belief that his aortitis and endocarditis were due purely to his specific condition led them to administer a small dose of salvarsan with the idea of repeating the same if the results were favorable. To attribute the acute dilatation developing ten days after the injection to salvarsan brought out a question yet to be decided. Had the patient been kept longer in bed with proper diet this dilatation probably would not have occurred. Its subsidence in a few days strengthened this belief.

Dr. G. R. Satterlee said that after the salvarsan was given there appeared some burning along the aorta. The man's condition now was not good. He had some dilatation of the heart and he was not cured.

Diagnosis of Gastrointestinal Conditions by Means of the Röntgen Rays.—Dr. George Reese Satterlee and Dr. Leon Theodore Le Wald presented this communication in part. The paper was read before the Section on Medicine at the Los Angeles meeting of the American Medical Association, and was abstracted in the Medical Record of July 8, 1911, page 98. To illustrate the paper the following cases were presented.

Case I.—This patient was a woman, twenty-seven years old, and ever since childhood had been constipated and had to take cathartics and laxatives. For the past two years she had been getting worse and vomited one-quarter to one-half hour after meals. She had pain which was most marked in the epigastrium. In January, 1911, she developed hemorrhoids, which were removed. Since the operation the symptoms had continued; there were cramp-like pains in the abdomen after eating, flatulence, very severe constipation, vertigo, flashes, vomiting, and loss of weight. Her diet was reduced to a very low amount. The medical treatment consisted in the use of water, sodium phosphate, agar agar, bran biscuits, olive oil by mouth and rectum, but it was of no avail. Her weight from March to August dropped from 127 to 109½ pounds. The stools were very dry, hard, and contained undigested food. In May, 1911, the bismuth-Röntgen ray test was made. This showed a long, ptosed, and sluggish colon. The stomach was normal. It required six days for the entire intestinal tract to empty. On August 6 the patient had a typical attack of appendicitis. On August 11 a laparotomy was performed and the colon was found as diagnosed by the bismuth-Röentgen ray. An appendectomy was done and the transverse colon was sutured across at the umbilicus to the abdominal wall. Since then the patient had gained in weight and returned to her work, but she was still suffering from constipation.

Case II.—This patient was a woman, thirty-one years old, housewife. She had had measles, pneumonia three times, and diphtheria. Her personal habits were good. Five years ago she weighed 160 pounds; one year ago she weighed 135 pounds; she now weighed 102 pounds, a loss of 58 pounds in five years and 33 pounds in one year. She had had attacks of vomiting *every two weeks for one year*. Her illness began with loss of appetite, vertigo, flatulence, and then she would vomit everything she had eaten. In between the attacks she felt fairly well, but there continued this gradual emaciation. She was admitted to the Washington Heights Hospital, July 8, after a vomiting attack. She was extremely nervous, complained of insomnia, and was very much emaciated. Percussion of the stomach showed that it was very large and low. The use of the test meal and lavage was impossible on account of her nervous condition. The urine was normal and the blood showed a moderate anemia. On July 22 she had a vomiting attack lasting two days. The bismuth-Röntgen ray test revealed a ptosed stomach with the greater curvature six inches below the umbilicus. The emptying of the stomach took five hours. Aside from a moderately long and ptosed colon with a four-day motility (complete) it was normal. The patient was placed in the Goldthwaite position in bed, and this was followed by a very severe attack of vomiting lasting two days. This made the patient feel very feeble, necessitating rectal feeding. She vomited blood and became very hysterical. Operation was then decided upon. On August 12, at St. Luke's Hospital, Dr. John Douglas operated. The stomach was found to be very low, the lesser curvature being below the umbilicus; the pancreas appeared above it. The gastrohepatic omentum was very thin and stretched. The duodenum was in the normal position. The colon was low in the pelvis. The large veins of the stomach were much congested. The gastrohepatic omentum was too thin to suture; therefore the ventral surface of the stomach was sutured to the peritoneum of the abdominal wall by two chronic gut sutures, the gastrocoloic omentum being also sutured just below the stomach to the peritoneum. The right kidney was not movable. The patient made a good recovery. She vomited some blood on the day following the operation. She had an attack of hysteria in the bath room. On September 6 an abdominal binder was applied, her diet was carefully regulated, she was made to rest, malt extract was ordered, etc. On September 10 she was unable to sleep well and had pain in the right side of her abdomen. Turpentine stupes were ordered and an abdominal webbed belt with a colon pad was applied. On September 13 her condition was much improved. On October 4 she weighed 104½ pounds and had diarrhea after eating.

Dr. Leon Theodore Le Wald gave a lantern slide demonstration showing the results as to the position, size, shape, and motility of the colon which had been very satisfactory. The organ could be readily identified by its size, position, and sacculations. They had classified the cases into (1) normal colons, (2) abnormally long and looped colons, (3) ptosed colons, with or without abnormal length and loops, and (4) abnormally short colons. As to the shape of the colons, the following terms had suggested themselves:—(a) straight, transverse colons, the strictly normal; (b) the U-shaped colon, caused by one loop dipping down toward the pelvis; (c) the V-shaped colon, which was similar; (d) the double U-shaped colon, with one loop from the hepatic and another from the splenic portions of the transverse colon; (e) the W-shaped colon, similar to the last; (f) the diamond-shaped colon, with the transverse portion running abruptly upward from the hepatic to the splenic flexure; and (g) the dragon-shaped colon. Their control radiographs showed the constancy in the shape and position of these colons and in their estimation proved them to be peculiar to the individual.

Dr. Herman Fred Lange Ziegel reported the case of a man 55 years old who came under observation 10 months ago with the history that for a number of years there had been epileptiform convulsions occurring two to four times every day and that for several months there had been dyspnea, cough, and severe pain in the right infraclavicular region. On the day before admission to Beth Israel Hospital there was a large hemoptysis. Examination showed signs of marked arteriosclerosis, with accompanying high blood-pressure, hypertrophied heart, etc. The right radial pulse was smaller than the left. There were dullness, bulging, and tenderness below the right clavicle, but no pulsation. The exact cause of the convulsive seizures was not determined, though cortical gumma and nerve pressure from aortic aneurysm were considered. The Wassermann reaction was positive. Salvarsan, 0.5 gm., was given intramuscularly in alkaline solution. Severe pain followed the injection, four or five days after which the Wassermann reaction was negative. The symptoms improved greatly—the pain in the right upper chest disappeared, and the convulsions diminished considerably in both frequency and severity. The serum test, performed from time to time after the treatment, remained negative for about six weeks, when it again became strongly positive. At this time Dr. Robinsohn, Dr. Ziegel's successor in the hospital service, wanted to readminister salvarsan, but the patient refused. When casually met seven months after the treatment, the patient complained of the same infraclavicular pain and the convulsions had recurred, less frequent and severe, however, than formerly. The result in this case confirmed the view

that salvarsan was not usually dependable for lasting effects and that in such a case it should perhaps be readministered one or more times, but that by all means it should be followed up by prolonged mercurial treatment.

Dr. Anthony Bassler said that good quality of gastro-intestinal work was to-day not possible without the use of the *x*-ray. He felt that one should always be conservative in making positive diagnostic conclusions from plates and fluoroscopic observations, and that plates must show the same findings in a series before we were warranted in making diagnoses in the majority of cases. He drew attention to the fact that, whereas it was a most valuable method of examination, it occasionally failed in suggesting a condition that should be seen by it, and in some simple disorders plates were obtained that strongly suggested extreme conditions. He said that it was necessary for diagnosis that the anatomy of the organ be changed in a definite and permanent way, and that it was in the field of work of the transit of bismuth through the alimentary tract as presented in the paper read that the worst mistakes were possible. He then showed plates that he had made of cases under his observation, preceding the diseased conditions of the esophagus, stomach, and colon, with normal plates showing important points in the physiology of motility in these structures. Among the latter of these he demonstrated that during rest, the esophagus was depressed antero-posteriorly by the base of the heart, and that the lower end of the gullet was funnel-shaped; the separation of food in a full stomach from the lesser curvature when fluid was swallowed forming the "water street" in which the fluid ran off into the duodenum, leaving the food in the stomach, the phenomenon of the pyloric reflex in the production of the pyloric shortening and rounding, the incisura angularis, the closing of the sphincter muscle, and the regurgitation of fluids from the beginning of the third part of the duodenum back to the height of the horse-shoe course before it flattened out for its onward course; normal stomach motility; and the positions and size of the normal esophagus, stomach, and colon. He then showed plates of the following conditions: carcinoma of the cardia, neurotic hypermotility, cirrhotic gastritis, acute and chronic gastric ulcers, different extents of gastric carcinoma, various types and combinations of splanchnoptosia, angulations and permanent obstructions of the colon, chronic appendicitis, and redundant and looped sigmoids. Some of the plates he drew particular attention to formed a set which showed the benefits that had been brought about from one month's treatment with thymus extract in a case of gastric carcinoma, the fact that redundancies and angulations of the colon and sigmoid could only be diagnosed by this means, which made him wonder that those engaged in rectal work did not take advantage of this means of examination more frequently than they did, and the demonstrable benefits that came from the rest, dietetic, and mechanical method of treatment in the splanchnoptosia cases.

Accidents and Deaths from Exploratory Puncture of the Pleura.—Dr. Hughes Dayton read this paper. He said that among the accidents which had been recorded as resulting from simple exploratory puncture of the pleura a fatal outcome had been noted as a result of pneumothorax, puncture of a hydatid cyst, perforation of the diaphragm, stomach, and liver, hemorrhage from an intercostal vessel or the lung, and pleural reflexes. The records of about 20,000 consecutive admissions to the medical wards of the New York Hospital included one case of breaking of the needle in the chest wall, three of subcutaneous emphysema, one of puncture of an abscess of the lung, followed by septic symptoms, four of hemoptysis, one of puncture of an aortic aneurysm, one of syncope, and one of death after sudden onset of grave cerebral symptoms. From the histories of these cases and from a review of the literature, including 21 cases of pleural reflexes, and excluding from consideration all accidents resulting from aspiration, it was seen that: 1. Breaking of the needle involved the danger of the presence of a foreign body. Its prevention demanded only ordinary care and skill and restriction of movement of the patient. 2. Localized pleurisy could not be prevented, but the pain might be relieved by strapping or local applications of heat. 3. Subcutaneous emphysema was rarely productive of more than slight discomfort and perhaps an alarming appearance, unless accompanied by cellulitis. It could not be prevented, but rarely required treatment. As a complication of pneumothorax it might even act as a safety valve, hastening resorption of air. 4. Pneumothorax could not always be avoided. Its importance depended upon the physical condition of the site of puncture as regarded the possibility of spontaneous closure of the puncture, and upon the condition of the patient. 5. Infection of the pleura from without might be prevented by aseptic technique, and its occurrence was probably comparatively infrequent. That from foci of infection within the body cavity could not be avoided. If empyema resulted the treatment was surgical. 6. Puncture of a hydatid cyst of the lung was a rare but not a serious accident. Radiographic examination might show a shadow whose rounded outline would suggest the presence of a cyst rather than a pleural effusion and favor exploratory incision rather than puncture. 7. Puncture of the diaphragm with peritoneal infection from an intrathoracic focus might sometimes be avoided by radiographic determination of the level of the diaphragm. 8. Prevention of perforation of the heart, stomach, liver, or spleen, with possible infection or hemorrhage, called for reasonable care as to the site and depth of puncture. Its occurrence, if results were serious, demanded an early diagnosis and immediate surgical treatment. 9. Perforation of an aneurysm of the descending aorta submerged by fluid, as in the case recorded, and giving no definite signs, could be avoided only by puncturing as far as possible from the median line. In the reported case this would have been beyond the posterior axillary line. 10. Hemorrhage from an abnormally placed intercostal vessel could not be foreseen. Sudden increases of pleural effusion with symptoms of internal hemorrhage or profuse bleeding from the site of puncture required incision and ligation. Hemorrhage from the lung was shown by the twenty-one cases to occur most often in cases of consolidation; 33 1/3 per cent. of these resulted in death. Unnecessary movement of the needle within the chest should be avoided. 11. Albuminous expectoration, which usually occurred only after withdrawal of a pleural effusion, had resulted from puncture, being probably due to reflex vasomotor changes. 12. Pleural reflexes, cardiac or respiratory failure, convulsions, coma, paralysis, etc., resulted from stimulation of branches of the vagus nerve, probably in the visceral pleura, but possibly in the lung. These accidents occurred most often (at least 76 per cent.) in cases with consolidation of the lung, usually due to a chronic inflammatory process. The precautions in performing exploratory puncture of the pleura which an analysis of 23 cases of accidents due to pleural reflexes suggested were: (1) Avoid moving a patient with pneumonia or pleurisy with effusion, especially avoid moving him from the recumbent to the sitting posture. (2) Avoid turning him onto the sound side. (3) Avoid excitement before the operation. (4) Use as small a needle as would suffice and avoid all unnecessary shock, as this was badly borne by cases of pneumonia. A small trocar inserted through a skin incision might be safer than a needle, as it was less likely to lacerate the visceral pleura and lung. It should be introduced only far enough to obtain fluid. (5) Never use the exploring needle as a labor-saving device if a careful study of physical signs

would suffice. (6) Cases with a probable consolidation should be punctured only when a definite indication for diagnosis or treatment existed, *e.g.* the probable presence of pus as shown by the temperature curve and increasing polymorphonuclear leucocytosis, or extreme and increasing signs of fluid indicated by displacement of the apex beat or by respiratory embarrassment. In a case beginning as a definite lobar pneumonia it was often more conservative to wait until after the crisis before exploring unless the symptoms suggested the necessity for early operation if pus should be found. In such a case rapid resolution might remove the signs which simulated fluid. If the signs were such, however, as to prevent a clear diagnosis of the intrathoracic lesion, and empyema was suspected, exploration should be made without delay, especially in children. More lives were probably lost by delayed diagnosis of empyema than by all the accidents due to exploratory puncture of the pleura.

Dr. Morris Manges said that if there was any place where a warning was needed it was in the city of New York; anyone who had done hospital work knew how common were accidents associated with explorations of the chest. He always felt that the use of the exploring needle was much abused, especially in hospital work. Fortunately, this did not apply so much to work in private practice. When Dr. Manges was a junior in the hospital a case of sudden death occurred from a simple exploratory puncture; Dr. Biggs was the curator at the time, and he said that this was an unnecessary death, because it was caused by an exploratory aspiration. The patient had emphysematous lungs, and there had occurred a perforation of an air vesicle which resulted in the death of the patient. This accident occurred in 1888. He had seen many accidents since, most of which were of minor consequence. Only one week ago he saw a very difficult case of interlobar empyema, the diagnosis of which was confirmed by the *x*-ray; in the attempt to find the pus a pneumothorax occurred. Not only was the patient not benefited by this exploration, but she was made worse, as it was now an inoperable case, since it was now a case of interlobar empyema in a collapsed lung. There was also a paralysis resulting from an embolus after the exploratory puncture. Dr. Manges had observed such a case; it was not after a thoracentesis, but after an exploration of the pericardial cavity. Some three years ago he saw a patient with a tuberculous pericarditis; three days after aspiration of the pericardium a cerebral embolism occurred, the results of which were demonstrated four months later at autopsy. This patient died of an acute miliary tuberculosis, and not from the embolism or from the pericarditis. Dr. Dayton in his paper had referred to the visceral reflexes. The embolism in the case of Dr. Manges referred to occurred three days after exploration and not immediately or within twelve hours after, as in the cases usually reported. The embolism was due to a loosening of a thrombus in the pulmonary vessels; on account of the impairment in the circulation the formation of a thrombus was favored, and where the dynamic conditions were so changed it was very easy for a clot to become loosened and an embolus to form. There was one thing in the paper that they should carry home with them. What Dr. Delafield had said about the treatment of pleural effusions was not correct in all cases; in the city of New York they seemed to think this was the right treatment. Dr. Delafield's dictum was, "If pleural effusion anywhere, empty it." That was not accepted everywhere. All cases of pleural effusion, whether the result of tuberculosis or not, should not be emptied indiscriminately. In many cases of tuberculous effusion the fluid was of distinct benefit in the early stages, provided the amount was not too large. The lymphocytosis and the antibodies contained in the effusion were a part of nature's defense against the tuberculous process in the lung.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Sixty-first Annual Meeting, Held at Harrisburg, September 25-28, 1911.

(*Continued from page 947.*)

SECTION ON SURGERY.

Tuesday, September 26—First Day.

Traumatic Surgery of the Hand and Foot.—Dr. James Jefferson of Johnstown read this paper. He said that during the past six years he had been associated with a large industrial hospital where an average of 150 traumatic cases were cared for daily. The most important feature in traumatic surgery of the hand was in the care of severed tendons. In suturing tendons the approximation had much to do with the efficiency in such position as to avoid tension on the sutures. The best method of treating metacarpal fractures was by a long palmar splint with adhesive strips at the wrist for counterextension and two strips of adhesive applied to the finger after the manner of Buck's extension. The severely crushed finger should be thoroughly cleansed, the soft structures replaced, and a hot bath of 1/4,000 corrosive sublimate applied. There was a great temptation to amputate, but it paid to take time and patience to avoid this. For sprains of the ankle his custom was to apply a plaster cast with the foot at right angles to the leg and follow this later on by strapping after the method of Gibney.

Dr. J. Stacey John of Bloomsburg said that *x*-ray examination in all castes of injuries of the hand and foot was of the gravest importance. In all injuries of the hand and foot an examination should be made to determine if any of the tendons had been severed. If so they should be sutured with catgut.

Dr. A. R. Allen of Carlisle thought the first thing that deserved consideration in these injuries was conservatism. When there was infection there should be free incision and immobilization. In dressing cases of fracture he used a small splint made up of adhesive plaster with a small strip of pasteboard enclosed within it and it answered very well. The application of tincture of iodine to the wound and surrounding tissues produced practically perfect sterilization.

Injuries of the Shoulder and Their Relation to Some Conditions of the Upper Extremity of Obscure Origin.—Dr. T. Turner Thomas of Philadelphia presented this paper. He called attention to the fact that these injuries were more frequently associated with dislocation of the shoulder than with any other definitely established traumatic condition. In those cases in which there was no history of dislocation either it was spontaneously reduced or the tear of the capsule was not extensive enough to permit the humeral head to escape from the glenoid cavity. The diagnosis must depend chiefly upon the statements of the patient as to the nature of the accident and the symptoms. In the early stages there was found severe pain on abduction and external rotation. The condition persisted throughout life often, but even in the oldest cases it could be overcome. Under a general anesthetic the contracted capsule was torn, the arm forced into full abduction and maintained in that position for several weeks. The arm was then allowed to come down to the side and treatment continued by suitable massage. Dr. Thomas had done this with excellent results in every case. More troublesome than the pain was the more or less severe palsy of the limb, due to injuries to the brachial plexus or its roots. There were two types of these cases, one in which the humeral head was maintained at its normal level and the other in which the muscles and ligaments were relaxed and the humeral head fell considerably below the head of the acromion. In the latter variety there was no tendency toward recovery. He believed these flaccid

shoulder joints were not due to injuries of the brachial plexus, but to anterior dislocations of the shoulder. The operation which he did in those cases was to shorten the upper and posterior portion of the capsule and the overlying external rotator muscles.

Dr. William L. Estes of South Bethlehem said that in men who were especially liable to or who had had gout or rheumatism and especially lithic acid involvement of their blood he had noted that they were the ones especially who had this subsequent paresis following injuries to the shoulder.

Dr. S. J. Waterworth of Clearfield agreed with the author of this paper that a large percentage of these cases were caused by forceful abduction, and his personal experience with two operative and about a dozen other cases led him to believe that the paralysis was due to inflammatory products pressing upon nerve tissues. He was thoroughly in accord with the author's method of treatment.

Dr. Edward Martin of Philadelphia said that the argument that subacromial bursitis could not produce the symptoms of a paralytic, painful, and useless shoulder was not convincing to one who had seen these symptoms disappear upon removal of the inflamed bursa. There were indubitably a certain number of cases of crippled shoulder due entirely to traumatic bursitis. Thomas in his splendid detailed study had shown how to cure many cases not at all amenable to the bursitis operation.

Dr. Americus R. Allen of Carlisle said he could not understand why these cases should recover so quickly when there was an involvement of the nerve itself. Therefore he felt there was a condition existing around the shoulder-joint that was due to the inflammation of this bursa, but that not every pain or tender spot around the joint was bursitis.

Some Practical Considerations in the Treatment of Backward Displacements of the Uterus.—Dr. Xavier O. Werder of Pittsburgh said that a simple uncomplicated uterine displacement rarely justified operative treatment, because this malposition was usually a harmless condition. When symptoms accompanied a uterine displacement careful search should be made for some pelvic complications which are usually responsible for the disturbances, and in the absence of such affections careful examination into the general condition of the patient and especially for some manifestation of this trouble should be made. When in doubt, as of necessity one would often be in this class of cases, a temporary correction of the displacement by means of a well-fitting pessary would often determine whether the cause of the ailment could justly be attributed to the uterus or to some derangement of the general health of the patient. Thus the pessary would often prove a valuable diagnostic as well as therapeutic agent.

Dr. Lowell M. Gates of Scranton thought that, while all cases of retrodisplacement of the uterus did not need immediate operation, sooner or later they would. He thought that in time the retrodisplacement would produce symptoms of interference with the proper circulation of the blood in neighboring organs. We must always consider the type of the patient. A phlegmatic woman of the ordinary walk of life would go around for years with a retrodisplacement of the uterus without paying any attention to it, while the neurotic was made uncomfortable. It was not every person who would allow surgery and therefore a pessary came in handy and in some cases cured the disease.

Secondary Repair of the Perineum by the Emmet Method.—Dr. Henry D. Beyea of Philadelphia presented this paper. He said there was much evidence of a widespread tendency to discredit the value of the Emmet operation, the secondary repair of the perineum. It was the purpose of this paper to enter a plea for the continued practice and better understanding of this operation. There was no operation in surgery that was more difficult of understanding, that required more study and surgical skill in its performance than this one. To properly teach this operation practical demonstration by the surgeon himself was necessary. It was essential to practise every detail of the operation as taught by Emmet even to the needle and suture material. As properly practised it stood, as it had for the last twenty-five years, the only anatomically and surgically correct and the most efficient method of restoration of the injured pelvic floor and the relaxed vaginal outlet.

Dr. Theodore B. Appel of Lancaster said that personally in his own work on the perineum the results of the Emmet operation had not been very satisfactory. His object in these cases was to get after the weakest point. Whether one could do that by an operation carried on according to the lines that Dr. Beyea spoke of he questioned.

Dr. J. W. Luther of Palmerton agreed fully with Dr. Beyea in believing that the Emmet operation could not be taught properly without practical demonstration. He thought, however, it was a mistake to try to apply one operation to all cases. If a distinct sulcus laceration could be demonstrated, he thought the Emmet operation, which attacked the point of laceration, was the operation of choice. There were a great many cases of relaxation of the pelvic floor occurring in women either with or without laceration. In those cases in which a distinct sulcus tear could be demonstrated he thought the Hegar operation superior to the Emmet.

Dr. W. Wayne Babcock of Philadelphia said that there was no doubt that Emmet's operation had served a very useful purpose in the development of gynecological surgery. The Emmet operation was a gynecological procedure and not a surgical procedure. One had in the relaxed perineum a condition very similar to that occurring in a hernia. By bringing its walls in apposition one could repair a perineum that was relaxed in just the same way that a hernia was repaired. There was no reason why one should not expose the various layers of tissue and bring them together.

Dr. J. M. Baldy of Philadelphia said that his own impression had been that an operation was always surgical providing the man knew how to do surgery. The trouble with those who criticized the Emmet operation was that they did not know how to do it. They showed this by their criticism. The fault had been with the gentlemen who had tried to modify the Emmet operation. They had not done the Emmet operation. There was no such thing as a relaxed perineum without a laceration.

Dr. R. C. Norris of Philadelphia said that the Hegar operation was suited only to women who would not again bear children, while the Emmet operation was adapted to child-bearing women. The whole difficulty lay in the lack of knowledge of the anatomy. He advised all to go back to anatomy and study the anatomical basis of these operations and then one would learn the true principle involved.

Intussusception in Children.—Dr. A. Ralston Matheny of Pittsburgh read this paper. He said that intussusception in children was usually of the acute type and therefore usually surgical. Early diagnosis and surgical interference were essential to a low mortality in acute cases. The operation should be simplified as much as possible and this could be done only while the invagination was reducible. The mesentery in children was long. Therefore pitching or swinging them violently should be advised against. Digital examination of the rectum was most important in children suffering from acute abdominal pain.

Dr. G. W. Wagoner of Johnstown said it seemed scarcely possible that any other treatment than operation was ever justifiable in these cases. There were many cases in

which the parents refused operation. Lavage and injection into the bowel might be of value during the first 48 hours. There was no question that opium in certain cases relieved the immediate condition. But he was strongly of the opinion that the only scientific treatment was surgical.

Dr. Americus R. Allen of Carlisle said he had seen a few of these cases. The only thing to do was to make an early diagnosis and to operate immediately. Measures which tended to delay should be condemned. One should recommend operation and if it was refused throw the responsibility on the parents.

The Etiology and Surgical Pathology of Impaired and Obstructed Gastric Drainage.—Dr. Levi J. Hammond of Philadelphia said that up to December, 1910, he had treated surgically 70 cases of prepyloric or duodenal, disease, including mechanical obstruction by angulation from adhesion to neighboring organs or viscera, malignant tumors, gastric ulcer, perforating duodenal ulcer, chronic duodenal ulcers, and benign stenosis. In the group of malignant tumors 21 belonged to the inoperable class in which treatment was hopeless so far as a cure was concerned, though he did not recall any instance in surgery where prompt temporary relief could be given, this being accomplished by posterior gastroenterostomy, which should alone be the procedure employed. Medical treatment should not be employed before operation in these malignant cases until it had ceased to be of value, for, if thus delayed, surgery could not contribute its full measure of relief.

Wednesday, September 27—Second Day.

Chairman's Address.—Dr. J. M. Wainwright of Scranton delivered this address. He said that surgeons could very well devote more time to the study of how to avoid operations which must end fatally, how to make all operations safer, and how to diminish postoperative discomfort. In the ideal stage of surgery there would be no postoperative deaths, which now resulted either because the operation had been bungled or else because death was inevitable in spite of operation. In the latter case we had deluded ourselves into thinking that the operation would give the patient the last chance, whereas, in fact, all the operation did was to hasten the end. We needed to make marked improvements in reference to the question of the safety of operating. We must learn among other things how to avoid influencing the blood-pressure and also how to use the anesthetic. Something must be done to make convalescence more pleasant. Patients did not get vitally interested in surgical feats performed while under the anesthetic, but they were vitally interested in the discomfort they suffered after the operation.

Estimation of Vital Resistance of Patient with Reference to Possibility of Recovery.—Dr. J. C. Bloodgood of Baltimore, Md., presented this address, saying that for estimating the resistance of the individual we had very few scientific methods and instruments of precision as compared to those which the engineer possessed. In estimating the factors of vital resistance there were two large problems, one of diagnosis and one of treatment. The patient must be under observation from beginning to end and we must be changing our methods in order to meet the indications. As we had progressed in surgery and eliminated the grosser problems we came to-day to problems of the most minute detail. Now this relief with recovery depended upon the estimation of the vital resistance of the patient before, during, and after operation. When we came to estimate the actual factors in the resistance of the individual science was small as compared to the art. We had to consider, first, the individual; second, the operation, and, third, the disease. Whenever we could estimate that the relief from the burden of the disease was greater than the burden we were going to place upon them by an operation, the chances for a cure were very great. In regard to anesthesia, his personal experience in the last year had demonstrated that operations could be done with nitrous oxide on handicapped individuals, operations of a greater magnitude with the risk tremendously less than the same operation on the same individual under ether. During the operation the surgeon and the anesthetist worked together, estimating the factors of shock, following pulse and respiration, and the surgeon must learn when to stop. There were many operations which need not be finished and Dr. Bloodgood thought careful observation would teach us when to stop in some of these operations of greater magnitude on handicapped individuals and we would perform the operation in two or three stages. The higher cortical centers were the least important things concerned as factors of safety.

Dr. Edward Martin of Philadelphia said that Dr. Bloodgood has so well expressed the general belief and the usual practice of men who had nearest their hearts the interest of the patients and the returning of them to their vocations in the most complete and perfect condition that there was not a great deal of room for suggestion or discussion, and yet there was one point to which perhaps he would take exception, and that was that the higher cortical centers were the least important ones as factors in safety of the patient. The ego, the individual aside from the physical, had an absolute dominating control over every function of the body and by no means the least important part of the attitude of absolute optimism on the part of the surgeon himself, his assistants, and all those professional people who came in contact with that patient. Many a time when the case was evenly balanced the victory had been won by that optimism and belief in recovery by which the patitnt had been properly influenced before and after the operation.

Dr. Harold J. Gibby of Pittston said that one of the most important points aside from the physical condition was the temperament of the individual. The individual who resisted the anesthetic, who was of a depressed nature, was sure she was going to die, was often a very poor subject. Another thing was the importance of diagnosis—to find out just how much had to be done and how much work could be done at the one sitting.

The Influence of Various Anesthetics in Determining Mortality.—Dr. George M. Laws of Philadelphia read this paper. He said that surgical anesthesia was easy to obtain with chloroform, more difficult with ether, and most difficult with nitrous oxide, and statistics showed that their relative safety was in reverse order. At the Hospital of the University of Pennsylvania nitrous oxide followed by ether had been the routine anesthetic for years and a continuance of the favorable results convinced them that ether pneumonia could be eliminated by proper application of this method. Whether or not a general anesthetic should be given when shock was present depended largely upon an accurate estimate of the psychic element. The horror of ether was one of the greatest obstacles to modern surgery as it led the patient to defer operation. Therefore an anesthetic which was not unpleasant to take had much to commend it. Ethyl chloride had about the same range of utility as nitrous oxide, but its mortality rate, which was distinctly higher than that of chloroform, made its use rarely justifiable. Nitrous oxide followed by ether given by the drop method overcame practically all the objections to ether alone.

Dr. William L. Estes of South Bethlehem said that he believed the principal thing in every anesthetic was the person who gave it—"the man behind the gun." This implied that the man or woman of experience would adapt as a rule the anesthetic and the quantity of anesthetic to the patient in hand. The next point in giving the anesthetic it seemed to him was the psychic state of

the patient. He believed that nephritis, especially the chronic kind, was not a contraindication to ether.

Dr. George W. Guthrie of Wilkes-Barre said he believed in ether and yet he was satisfied that the ultimate dangers of ether were sometimes overlooked. The drop method was the best method of giving ether.

How Long Should Patients Remain in Bed After Various Operations?—Dr. Robert T. Miller, Jr., of Pittsburgh read this paper. He said we could not establish any law or precedent that could be safely followed in deciding the question as to how long patients should be kept in bed after operation. It was necessary to eliminate all purposeless effort and have the patient concentrate his whole strength upon the problem of recuperation. This meant absolute rest in bed. This might be required for two days, two weeks, or two months. Exceptions to this were found in the case of elderly people as regards pneumonia and uremia, both of which conditions might be warded off by postural change.

The Prevention and Treatment of Complications in Gastrointestinal Surgery.—Dr. Donald Guthrie of Sayre said that the success in this work depended more upon strict attention to details which were often regarded by some surgeons as minor and unimportant rather than upon any unusual dexterity which might be displayed in the operating room. The results of the surgeon who operated upon another's diagnosis and who never saw his cases after operation could never be as good as those of the man who worked his cases carefully up for himself, who developed a simplified technique of his own, and who carefully watched and treated such cases during their convalescence. The most common complications after operation on the gastrointestinal tract in the order of their frequency were shock, acute dilatation of the stomach, pneumonia, adynamic ileus, embolism, fatty degeneration of the liver, and peritonitis. Important factors in preventing these complications were the development by the surgeon of a technique of his own in the availability of a competent anesthetist. In most of the well run operating rooms the giving of an anesthetic was entrusted to a nurse specially trained and not to the youngest interne, who might be more interested in the steps of the operation than in the patient. The man who had a permanent force in his operating room could do better work in all branches of surgery, especially gastrointestinal surgery.

Dr. William L. Rodman of Philadelphia said he was sure it would be much better for patients if the amount of anesthetic given were reduced after the peritoneal cavity had been opened. He had been in favor of female anesthetists for the past ten years because they were more timid and saw danger quicker than a man. However, he would like to know what would be the legal responsibility of the surgeon whose patient died on the table while the anesthetic was being given by a trained nurse. He did not think the diploma of a trained nurse allowed her to give poisons. The thing that had brought him his best results was the administration of morphine and atropine one hour before operation and the next best was postoperative lavage.

Dr. Charles H. Frazier of Philadelphia said in reference to the question which Dr. Rodman had brought up that he had consulted a lawyer prior to the employment of a female nurse anesthetist at the University Hospital and was assured by the lawyer that the hospital authorities were entirely justified in employing her and would not be liable for damages, providing they realized that in the employment of this special anesthetist they were doing it for the best interest of their patient. We should try to get a woman to give ether and ether alone. It seemed scarcely fair to a professional anesthetist to have cases brought in to her and have her instructed to give the anesthetic before she had had an opportunity to go over them. She should have a list of cases to be operated on the day before operation so that she might see the patient, inquire as to the nature of the operation to be performed, look into the history of the case, and make some examination perhaps of the heart or lungs before the patient was brought to the operating room.

Dr. John B. Roberts of Philadelphia said he believed that women did many things better than men, but he believed that all anesthetists should be those qualified to practise medicine; qualified to determine whether the patient had a good or bad heart, good or bad kidneys.

Dr. Charles S. Thomson of Scranton said that he did not think that all our troubles had ended with anesthetics when we had introduced nurses to administer them, but he thought that they were so far advanced, so much better than anything we had ever heretofore enjoyed that we were making real progress in handing over our anesthetics to trained nurses, that was to nurses who had been trained to give anesthetics.

Dr. George W. Guthrie of Wilkes-Barre said that, as to giving poisons, the nurse was authorized to give hypodermics of atropine and strychnine in the absence of the doctor, whereas the anesthetic was never given unless the doctor was present.

Dr. C. J. Cummings of Williamsport said he would not have it understood that a woman could give an anesthetic better than a doctor. He did not believe that should be accepted. As to the legal aspect of it, that was an entirely different thing which he did not think had ever been decided.

Dr. G. E. Shoemaker of Philadelphia emphasized what Dr. Cummings said and said in addition that this question was a practical one in our hospitals only and did not refer to the trained nurse in general practice giving anesthetics. We could not get our internes to take enough interest in anesthesia to do it right. Therefore somebody must be hired who would stay in the hospital one or two years solely to perform anesthesia.

Dr. J. C. Bloodgood of Baltimore, Md., said it was his feeling that anesthesia was the stepping-stone to surgery, that every surgeon who operated should have had an experience in anesthesia. There was no practical experience which taught the individual the physiology and the problems of physiology which were of the utmost importance to the surgeon in the treatment of respiration better than anesthesia. He thought that men who went into surgery should have their experience of anesthesia and he thought that the anesthesia in most of the clinics where it was possible should be given by the men who ultimately expected to go into surgery.

(To be continued.)

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS

Twenty-Fourth Annual Meeting, Held in Louisville, Ky., September 26, 27 and 28, 1911.

(*Concluded from page* 845.)

The President, Dr. Herman E. Hayd of Buffalo, N. Y., in the Chair.

Cervical Fibroids.—Dr. Lewis F. Smead of Toledo said that fibroid tumors of the cervix and uterine body below the movable peritoneum had not received the attention to which the great technical difficulties of their removal entitled them. The subperitoneal variety were the most troublesome because of their immobility and the obliteration of landmarks caused by them. In fact, they belonged to a class by themselves. Fibroid tumors of the cervix were found in about 5 per cent. of all women who

had uterine fibroids. The tumors might arise in front of, behind, or at the side of the cervix, but the posterior growths were somewhat the most common. The physical characteristics of these tumors were not unusual, but the distortions of the pelvic organs, especially of the vagina and bladder, were common. The cervical tumors, because of their position and their immobility, were very likely to block the birth canal. Small fibroids on the anterior cervix, projecting into the base of the bladder, might simulate almost exactly the male prostate. The bladder was usually enormously elevated and enlarged by being stretched out over the tumor. The vagina was much elongated and crowded out of position. The rectum and vagina were much thinned by pressure atrophy. The ureters might be pushed up by a tumor or pulled up by adhesions. They might also be blocked by pressure or kinking. The rectum and sigmoid were raised up by tumors arising beneath them. One might avoid surprises and lack of preparation by a careful preoperative diagnosis of the relations of the tumors to the pelvis. The position of the upper end of the vagina was usually the key to the situation, and an examination under ether would often locate it. The operative treatment was radical, rarely palliative. The operative removal required the use of special operative maneuvers, such as bisection of the uterus and tumor, enucleation, and excision of a large wedge of the tumor or the classical side-to-side hysterectomy. The principle of the Doyen hysterectomy could often be employed with profit. The cavity left was very liable to infection from the rectum, and would usually have to be drained, although in some cases it might be obliterated and the abdomen closed.

Early Diagnosis of Ectopic Gestation with Report of Fourteen Cases Diagnosed and Operated Upon Previous to the Time of Rupture.—Dr. R. R. Huggins of Pittsburg believed that the time had arrived when the diagnosis should be made previous to the final rupture and collapse in at least 80 per cent. of the cases, provided a physician was called. When a woman whose menstrual period has been regular missed or went beyond her time for menstruation, she would suspect pregnancy. If a flow from the vagina began in a period varying from four or five days to three weeks after the regular time, continuing more or less regularly, accompanied by pains, periodic in character, located in the hypogastrium on either side, extrauterine pregnancy should at once be suspected by the physician, unless some other well-defined condition was present to account for it. The vaginal hemorrhage might be dark colored blood, coagulated at times; at others a blood-tinged leucorrhea; or in some instances bright red. It was sometimes described by the patient as being different from the normal menstrual flow and was therefore atypical. This hemorrhage was doubtless due to a partial separation of the ovum from its cyst wall, or to the separation of the decidua from the uterus. In 95 per cent. of the cases of ectopic pregnancy seen by him the history and local symptoms had overshadowed all others and seldom in the early weeks had there been present the usual general signs of pregnancy. It was true that this did not occur in every instance. In some cases there was no history of either pain or hemorrhage or flow of any kind, the first symptoms being those of sudden severe pain and collapse. Careful study of the history in fifty-two cases which had gone on to rupture in his own experience showed that in all but five there had been some irregularity of the normal flow and pain before the final rupture and collapse.

Interstitial Pregnancy.—Dr. N. Stone Scott of Cleveland stated that there were three subdivisions. First was external interstitial pregnancy, the only one known until recently, but which had been much more frequently observed within the last few years. It was attended with danger, because rupture usually took place into the abdomen before the sixth month. The condition should be treated as a case of ordinary tubal pregnancy. Middle interstitial pregnancy was rare, only four cases having been reported. Internal interstitial pregnancy was frequently overlooked. The use of the curette was the etiological factor in the production of many of them. There were two varieties: The first one of these aborted into the uterus with spontaneous recovery. So-called false perforations of the uterus were frequently interstitial pregnancies. A number of illustrative cases have been reported lately. The second varity began as an interstitial pregnancy, developed into the uterus, and terminated normally. The report of his own case was the first one on record.

Dr. James F. Baldwin of Columbus stated that several years ago at a meeting held in Louisville he read a paper on the same subject, reporting six cases in which he had made a diagnosis of ectopic pregnancy before rupture and operated. At a meeting of the American Medical Association, held at Atlanta, Ga., in 1896, four years before that, during a discussion in the obstetrical section he reported five cases in which he made a diagnosis of ectopic pregnancy before rupture, and took the ground that the essayist had done to-day, that the diagnosis could be made before rupture. At that time no one present had ever made the diagnosis before rupture and operated. Dr. Price of Philadelphia reported one case in which he made a diagnosis; rupture occurred that night; he operated on the woman the next morning, and verified his diagnosis.

Dr. Charles N. Smith of Toledo said that the chief obstacle to early diagnosis in extrauterine pregnancy was the fact that a patient who was not suffering continuously or seriously did not consult a physician until rupture had taken place. If one would listen to the history and analyze it and the local symptoms, as the writer of the paper had said, there could be but little excuse for failure to make a diagnosis in these cases prior to rupture.

Dr. Roland E. Skeel of Cleveland said that many practitioners favored certain treatment in cases of ectopic pregnancy. Surgeons need not break their necks to operate because the primary hemorrhage would probably cease, and if it did they must not delay operation until day after to-morrow, because another vessel might rupture, and they should operate as promtly as possible.

Dr. E. Gustav Zinke of Cincinnati stated that the pathology of ectopic gestation was vast, and he who had not grasped it would fail to diagnosticate cases of ectopic pregnancy or would mistake them for something else. Tubal pregnancy, with normal genitalia, was an entirely different thing from an ectopic gestation occurring in a patient with a pathological condition in the tube, the ovary, and uterus. The symptoms of a tubal abortion were entirely different from those in a case of tubal rupture. In one case, the tubal abortion, the symptoms were not alarming, and the woman might recover, and the diagnosis might remain in doubt; while a case of tubal rupture, with an otherwise normal pelvic cavity, was so typical that no man could mistake it for anything else. Again, there were ectopic gestations which were strictly tubal and remained so from the beginning to the end, and they were the cases that were comparatively free from some symptoms and went on to the end of term with a living fetus, and they were easily removed because they were more or less pedunculated. No adhesions had taken place. In another case one might have tubal rupture and the neighboring structures might become involved, the intestines and omentum, the pelvic organs, and the pelvic peritoneum, and the fetus would go to the sixth or the seventh month, when it would die from lack of nutrition and become encysted. Then there were those cases in which the fetus would undergo solidification, etc.

Dr. Hugo O. Pantzer of Indianapolis stated he would like to add another symptom to the signs and symptoms given by Dr. Huggins which was invariably present, namely, a pulsating tumefaction on one side and not on the other. In rare instances this was attended with marked congestion or with tubal inflammation.

Dr. Charles L. Bonifield of Cincinnati stated that a great many women with ectopic gestation would get well without operation. It was the experience of every operator who had operated on these cases that, after he had examined the specimen, he had wished he had left the patient alone, that nature would have cured her.

Dr. William H. Wathen of Louisville stated that, in looking over his cases, seen in private practice and in consultation, he found he had had approximately 150 of these cases, and of that number had seen but one patient who bled to death, and that occurred about twenty years ago when he was called and reached the patient just as a secondary hemorrhage had caused her death. These patients would not bleed to death if the rupture was between the folds of the broad ligament, and seldom or never if it was a tubal abortion. They might have a rupture. They might have a rupture through the tube into the peritoneal cavity, provided a large vessel had ruptured He thought if we took all the cases of ectopic pregnancy in which rupture had taken place during the last twelve months we would find that not one out of twenty-five had bled to death from secondary hemorrhage.

Dr. Walter B. Dorsett of St. Louis recalled a woman who, in a female hospital of which he had charge, ran up to the third floor on account of plastering that was going on below, fell, and died suddenly from a ruptured ectopic pregnancy. She had not been in the hospital more than two or three hours. The body was taken to the dead house, and a post-mortem examination disclosed the abdomen full of blood:. She had bled to death. This case occurred in 1887. These women would bleed to death more frequently than had been stated by Dr. Wathen.

Dr. A. B. Miller of Syracuse said the general practitioner in many instances was not called sufficiently early to make a diagnosis, and we had heretofore attributed the late diagnoses in these cases to want of knowledge or education on his part, but the general practitioner was not so much to blame. We saw cases of our own where there had not been one symptom suggestive of ectopic pregnancy. These patients expressed themselves as feeling perfectly well, but in six hours thereafter they became desperately ill, showing that rupture had taken place. We could not always make an absolute diagnosis by the symptoms and physical findings.

Dr. D. C. Moriarty of Saratoga Springs believed the diagnosis of ectopic pregnancy was very much the same as in tuberculosis. If one made a diagnosis of tuberculosis early enough to save the life of the patient, he would have to make the diagnosis in 20 per cent. where it did not exist, consequently he thought it was well to operate on these cases of ectopic pregnancy early.

Dr. Miles F. Porter of Fort Wayne said it was not true, as Dr. Wathen had intimated, that none of these women died of hemorrhage. All knew better than that. He would undertake to say that he could find fifty men who would be able to operate on these cases practically as they came to them, and they would have a less death rate than another fifty men who practised the finesse referred to, and that was the reason he was not in favor of this extreme diagnostic finesse.

Dr. William H. Humiston of Cleveland said he had had four cases in his experience on which he had had the opportunity of operating before rupture. As a rule, these patients did not consult a physician unless they were very nervous and were in pain, and that was why a great many of them were not diagnosed before rupture.

Cesarean Section.—Dr. William H. Humiston of Cleveland reported a case of multiple cesarean section, in which he resorted to both the high and low operations, and exhibited photographs of the mother and child.

A Study of a Pseudo-Hermaphrodite.—Dr. H. S. Crossen of St. Louis presented a lantern slide study of a pseudo-hermaphrodite. This individual had dressed and lived as a female forty-two years but, as investigation demonstrated, was undoubtedly a male. The mistaken idea as to sex under which this patient had lived since infancy was due to a condition of hypospadias. The deformed male external genitals presented considerable resemblance to the female external genitalia. The case emphasized forcibly the fact that extreme care should be exercised to determine correctly the sex in every case of anomaly of the genitals in the newborn. The great majority of pseudo-hermaphrodites were really males, hence the rule was that in cases where the sex could not be positively determined in infancy the child should be treated as a male until unmistakable evidence of the opposite sex appeared.

Radiographic Diagnosis of Gastric and Duodenal Lesions.—Dr. Lewis Gregory Cole of New York City, by invitation, presented a radiographic study of motor phenomena of the pyloric end of the stomach and duodenum with a view to the early diagnosis of carcinoma, ulcers, and adhesions in this region, which was illustrated by numerous lantern slides and cinematographic films. He said anatomically and physiologically the first portion of the duodenum had always been considered a part of the small intestine, but normally it was dilated into a triangular cap which surmounted the pylorus and corresponded in size and shape with the stomach, and had absolutely no resemblance to the small intestine. Its motor phenomena corresponded with that of the gastric peristalsis, and it was absolutely free from the small, rapid, peristaltic contractions of the remaining portion of the duodenum. It was probable that the chyme in this portion had not yet been neutralized by the intestinal and pancreatic secretions. This might account for the fact that 90 per cent. of duodenal ulcers occurred in this portion. Personally, he considered the pyloric sphincter as a butler guarding the entrance to the intestines and allowing only that food that was recognized as properly prepared to be served to the intestine, and closing the door to prevent it from falling back into the stomach during diastole. He believed that the relative strength of the butler (the pyloric sphincter) to the cook in the kitchen (the peristaltic contraction of the stomach) was one of the most important factors in functional derangements of the gastrointestinal tract. Dr. Cole projected on the screen four radiograms which showed the thumb marks of carcinoma before the patient was fairly in the grip of the deadly enemy. The diagnosis of gastric carcinoma at an early stage was now accomplished in a very large percentage of cases, and the radiologist was justified either in making a negative diagnosis or stating with certainty that there was either a benign or malignant lesion which required an immediate operation.

Dr. Charles A. L. Reed of Cincinnati followed with remarks on displacements of the stomach and colon, their clinical significance, diagnostic features, and surgical treatment with report of cases illustrated by lantern slides.

Drainage: The Essential Element in the Surgery of the Biliary Tract.—Dr. Charles N. Smith of Toledo stated that cholecystectomy formerly was considered advisable, even necessary, in practically every case of hydrops and of empyema. In present-day practice, however, many a gallbladder cut out from the biliary circuit and rendered practically functionless by a calculus or an inflammatory block in the cystic duct could be restored anatomically and functionally by a drainage operation.

Neither hydrops nor empyema necessarily called for the removal of the gallbladder. In those cases of hydrops resulting from occlusion of the cystic duct by a calculus the gallbladder generally could be restored to usefulness by removal of the stone and subsequent drainage, provided that the bladder walls had not been rendered extremely thin from overdistension by the imprisoned mucus. In practically all of those cases in which the extraction of the calculus was followed by the escape of bile from the duct the gallbladder should be drained rather than removed. In a large proportion of the cases of empyema the gallbladder could be saved and its function restored by drainage. The more acute the process and the shorter its duration the greater the prospect of cure. When suppuration occurred in a gallbladder which previously had been obstructed, the obstruction having existed for a long time, the performance of a cholecystectomy became a necessary procedure. In several instances of perforation of a suppurating gallbladder he had removed the calculus obstructing the cystic duct, drained the gallbladder through the perforation, and had a complete restoration of function in every case. Drainage was recognized as the one dependable procedure in the treatment of localized infections, and it must be looked upon as the essential element in the surgery of the gallbladder and ducts. Natural drainage through the common duct into the intestine could not be depended on as a curative measure even in cases of mild infection. The distal opening of the common duct at the summit of the duodenal biliary papilla averaged, according to Opie, but one-tenth of an inch in diameter. While in its healthy state it afforded free exit for normal bile and pancreatic fluid, it was subject to encroachment upon its lumen by inflammatory swelling, greatly interfering with the rapidity and volume of the discharge through the orifice. The tenacious mucus so abundantly secreted during inflammation of the gallbladder served to delay the onward flow and escape of bile and of itself became an obstructive agent. When an infection involved both the ducts and the gallbladder the mechanical interference from the swelling of the mucosa and the increased viscosity of the bile from the added mucus resulted in a decided hindrance, if not a positive obstruction, to the escape of bile into the intestine. As drainage was essential to the restoration of normal conditions within an infected biliary tract, and as it could not be attained through the natural channels with any degree of certainty, it devolved on surgery to establish and sufficiently maintain that drainage.

President's Address.—Dr. Herman E. Hayd of Buffalo reviewed the early scientific work of the association and referred to some of the epoch-making contributions of the members. He spoke of the evolution, growth, and development of the association. He made reference very feelingly to those fellows who had died during the year, namely, Drs. Montgomery Linville, George E. Goodfellow, Manning Simons, William Warren Potter, C. C. Frederick, and Joseph Price. The speaker then reviewed the progress that had been made in the practice of obstetrics, in gynecology, and pelvic surgery, and said that during the past quarter of a century many great surgical questions and pathological problems had been settled. The treatment of displacements of the uterus was now definite and established. Plastic operations upon the cervix and perineum had been wonderfully successful and satisfactory. Ovariotomy, either for cystic or solid tumors of the ovary, had reached perfection in its technical management. The successful management of extrauterine pregnancy was a crowning tribute to specialized effort. The diseases of the liver and pancreas had been assiduously studied, and the results of timely and well-directed surgery were most satisfactory and encouraging. Diseases of the bladder, ureters, and pelvis of the kidneys had received the closest study and investigation by the modern specialist, but this class of work could only be carried on successfully by men especially trained and who had the time and desire to specialize in this careful and patient line of surgery. The speaker reviewed the work that had been done with reference to dealing with cancer, hernia, and postoperative adhesions. The splendid results of modern medicine, and especially surgery and midwifery, had been in a very great measure accomplished through the efforts and assistance of the trained nurse, and no address would be complete before a body of men whose successful work was so dependent upon these conscientious and devoted women unless it were illuminated by kind and appreciative reference to their services.

The Obese Abdominal Wall.—Dr. Francis Reder of St. Louis stated that a large accumulation of fat upon the abdominal wall, such as was often found in women, was a distinct handicap to the surgeon in his work in removing a small fibroid tumor in an atrophic uterus, a retrocecal appendix, or a small gallbladder tucked away in a deep fossa, with a stone in the cystic duct, or, still worse, a stone in the common duct. To obviate to some extent the embarrassment caused by excessive fat, he had followed during abdominal operations the suggestion of Dr. Kelly, who advised the excision of enough of the obese wall to facilitate intraabdominal work, and from his limited experience gleaned from operations upon five patients, where masses of fat were removed, the intraabdominal work was rendered less difficult; but he could also say that in few of the cases this fat caused considerable trouble which was induced by a late section. It did not require any particular skill to cut enough of the fat away about the field of operation to get a sufficient amount of room for easier work; but it did require some knowledge to so ablate these masses of fat that no untoward consequences might arise. To prevent any postoperative sequelæ, a wedge-shaped mass of fat should be removed, the two incisions converging into one upon the fascial layer. This left no undermined surface as a receptacle for secretions. It did not matter how long the incision was, provided there was no extensive undermining of the fat layer. To be as accurate as possible in excising a wedge-shaped piece of fat, he had found it of service to first carry the straight incision across the abdomen down to the fascia, this incision disclosing the thickness of the fat. By placing the left hand into the incision and against the fat wall, he was able to guide more accurately the right hand in making the upper and lower flaps. After the ablation of the fat had been accomplished, the wound was covered with hot saline cloths, while the intraabdominal work was being conducted. Fat removal was only to be recommended, however, when the mass of fat was a distinct obstacle to the intraabdominal work.

Factors Entering into the Mortality of Acute Intestinal (Mechanical) Obstruction.—Dr. John Young Brown of St. Louis said that, in considering the factors entering into the high mortality of acute intestinal obstruction, we must place at the head of the list late operation; second, treatment received before operation; third, the technique and time of the operation itself; fourth, the after treatment. If we could impress upon those who first see such cases that delay meant disaster, and that a low mortality could only be gotten by an early operation, much good could be accomplished. However, this was not always possible. Not infrequently, although the condition was recognized by the attending physician, the family would refuse to consent to an immediate operation, or it might be possible to get at once a surgeon competent to do this work. This being the case, it became the duty of those who taught to call attention to the harmful nonoperable measures which were commonly employed, with the mistaken idea that they were beneficial. Foremost among

such remedies he might mention cathartics. The symptoms in any case argued eloquently against their use. Nature invariably warned, by the retrograde peristalsis and the persistent vomiting, that she was making an effort to relieve the distended bowel above the block. Cathartics were as harmful in such cases as diuretics would be in a case of retention of urine due to an impermeable urethral stricture; yet we rarely saw a case come to operation that had not been given cathartics varying in strength from calomel to croton oil. If gastric lavage was used in the same routine manner, the profound toxemias found in the cases of three and four days' duration would be far more infrequent. Morphine was another drug the use of which could not be too strongly condemned. Regarding operations undertaken for the relief of such conditions, one must carefully guard against certain errors of omission and commission which added to their danger. As all such operations had for their purpose the relief of the block and second the removal from the bowel of as much as possible of its highly toxic septic contents, all such operations should be preceded by a careful washing of the stomach. Much toxic material could be removed in this manner and the danger of fecal drowning during the administration of the anesthetic was greatly lessened. The administration of the anesthetic should always be entrusted to a careful anesthetist. The operation should be executed as rapidly as possible. When the abdomen was opened, if the bowels were greatly distended, it was far safer to puncture in several places, liberating the gases and draining the bowel. Such small punctures could be rapidly closed with purse-string sutures. It was bad practice to forcibly handle a distended bowel. In cases where resection was necessary, it was of prime importance to carefully drain the bowel above the block. The after-treatment of such cases should consist of frequent stomach washing, the avoidance of opiates, and the use of salt solution, both by the rectum and under the skin.

Personal Observations on Cancer.—Dr. J. GARLAND SHERRILL of Louisville stated that in making a study of the cases of cancer occurring in his private practice he had been able to follow 208 of these cases and trace them to the present time. Among these cases different portions of the body were affected. Of 19 abdominal operations 11 patients were living, 5 past the third year limit, while others had died in from 12 to 18 months. Of 12 vaginal operations, 4 patients were living from 3 to 12 years after the operation; 8 had recurrence, dying within 18 months. Experimental work would seem to show that true cancer tumors might be produced by inoculation, as Langenbeck successfully inoculated a dog. This fact, studied in connection with other reports, and the further fact that metastasis occurred in cases where local disease seemed to be entirely eradicated by operation tended to lead one to the belief that carcinoma was due to an actively proliferating poison or entity; in other words, a living organism. Trauma and irritation were important factors in the determination of the site of a malignant neoplasm. His cases showed 8 per cent. in which trauma was noted, and 18 per cent. in which irritation was a factor. The results in his limited number of cases showed very readily the improvement in end results when radical surgical treatment was applied early. This was the experience of practically all observers. To obtain the best results the patient must, first, apply early for treatment: second, all suspicious growths should be removed. Keen and others went so far as to recommend the removal of all superficial growths lest they became malignant. The serum treatment of cancer had been disappointing. He had used the ascitic fluid of one patient, which was injected into her own tissues, with no marked benefit, although the disease seemed not to progress during the time of its employment. Fulguration had not accomplished much, nor had the *x*-ray done more than the knife or cautery could accomplish in a more thorough and certain way. While it was true that a considerable number of cases of cancer were curable by radical surgical treatment, in a much larger percentage of cases they were hopeless before they came under observation. In view of the supposed infectious character of this disease, it was reasonable to urge the attendants of a cancer patient to avoid allowing the secretions to come in contact with the unbroken surface and to use the most stringent measures of cleanliness in the care of those patients. The room in which a cancer patient lived should be carefully disinfected. Such measures could result in no harm and might be of benefit in the prevention of the spread of the disease.

Sterilized Animal Membranes in Surgery.—Dr. ROBERT T. MORRIS of New York stated that for some years he had been experimenting with the absorbable animal membranes in surgery, and now and then had found some point which he thought was new in connection with this work. One case worthy of report was that of a young man, who, at Princeton, in riding down a steep hill on his bicycle, met an automobile coming up, turned aside suddenly into a bank, and the handle of the bar of his bicycle tore five holes in the ileum. In this case there was so much contusion that he did not know where to resect. He washed out the blood and fecal matter, and decided temporarily to cover each opening with the Cargile membrane in a sort of mechanical way until the patient passed the period of shock, and then to consider the possibility of excision of the bowel if the young man should live. The loops of perforated bowel were thrown about a small central drain, and a large dressing applied, and the young man not only lived, but the speaker did not do any excision of bowel, and that patient was walking in thirty days without any fistula. That, he presumes, was due to the use of the Cargile membrane and to nothing else. He had not anticipated any such result in this case. It was a temporary procedure with a dying boy. Another point he had noticed with the Cargile membrane was that sometimes it did not undergo absorption rapidly. In an automobile accident, the patient having sustained a depressed fracture of the skull, he elevated the skull, separated the adhesions, and placed a large segment of Cargile membrane between the dura and the cranium. In this case there was occasion to do an operation some eight months subsequently for some remaining adhesions, and this membrane had not undergone any change whatsoever so far as he could observe. It remained perfectly free and loose. It had prevented the formation of adhesions over the area he dressed and there were some supplemental adhesions about the periphery. This was an odd thing, and he did not know how to account for it. In many cases he had used the membrane for the prevention of recurrence of peritoneal adhesions as perhaps the favorite resource. In most cases now in which he had occasion to separate extensive peritoneal adhesions he depended upon placing a sheet of this sterilized animal membrane over the area from which adhesions had been separated for the purpose of preventing a mechanical obstacle to the recurrence of adhesions.

The Relation We Bear to Our Patients and What Use Shall We Make of Our Knowledge of the Evil Effects of Venereal Disease.—Dr. ALBERT VANDERVEER of Albany referred to the work early done in the life of the association regarding pus in the pelvis, and especially to the work of the late Dr. Joseph Price, and the earnestness with which the Fellows investigated this subject, a large percentage of the cases being directly traceable to gonorrheal infection. He made a plea for placing before the public more clearly our knowledge of syphilis and gonorrhea. In this manner he believed much suffering would be prevented. Parents were desirous of obtaining information on this subject. Young people were

entitled to know more regarding their reproductive organs and the evils that may follow infectious diseases. While much was being accomplished at the present time in the literature presented by our able representative publications, yet he felt that as a profession we could accomplish much more than we had in the past.

Methods of Skin Sterilization.—Dr. John E. Cannady of Charleston, W. Va., reviewed the history of the iodine methods of skin sterilization. The method he employed was the fractional one. The skin was carefully shaved and cleansed with soap, cotton sponges, and hot water, followed by alcohol. After the skin had dried it was painted with a 2 per cent. solution of iodine and alcohol. This was done the evening of the day before the operation, and when the skin had dried a sterile gauze dressing was applied. Early the next morning the skin of the operation site was again painted and the dressing reapplied. Lastly, while the patient was being anesthetized the skin was painted for the third time. The results had been uniformly good. The scrubbing brush and the bichloride compress were no longer used on the patient. The laboratory findings of Kinnaman showed that iodine was at least one hundred times more powerful a bactericidal agent than bichloride.

Some Factors in Operative Technique and Management Which Make for Success or Failure.—Dr. Walter B. Chase of Brooklyn contributed a paper on this subject in which he emphasized the following points: (1) Ascertain with all possible accuracy any variation from the normal standards of health, functional or organic. This included a precise knowledge of any involvement due to coexisting disease of the circulatory, respiratory, renal, hepatic, digestive, and nervous systems, apart from the special surgical aspect of the case. (2) That the power of hereditary longevity, as related to existence, so often otherwise unexplainable on the chances of recovery after operation, could not be gainsaid. Seek out with scrupulous care the previous history of the patient suffering from serious disease or accident. If such had recovered with little or no impairment, other things being equal, they were safe subjects for operations. He had recently had a most remarkable demonstration of this truth not yet reported where adverse circumstances would ordinarily have forbidden operative interference. (3) The surroundings of the patient must be inquired into. If there was vital impairment, save in imperative cases, one should take all the time needed, in which there should be the best attainable explanation of the lowered vitality of the patient. (4) Too many specialists, having little or no knowledge as general practitioners, fell into the grievous error of operating for appendicitis when the ailment was typhoid fever, for supposed intestinal obstruction in the presence of fecal impaction, or for cholelithiasis where only cholecystitis was present. It was safer and wiser to admit a lack of knowledge on diagnostic points than to act on insufficient data. (5) The emotional nature could not be ignored. The influence of hope and fear, the most powerful motives in the human heart, must be reckoned with. They might be potiential in the domain of surgical procedure. The confidence of the patient must be had in full measure, not in diagnosis alone, but as related to results. These neurotic cases must be saved from the depressing influence of needless delay, when decision had been made for operation. Their knowledge of unfavorable factors must be guarded and self-reliance strengthened. Here might be a legitimate field for the hypnotist. (6) The evil of procrastination on the part of the operator when the plainest evidence demanded immediate operation was a matter of profound regret and was open to severe criticism. There was an imperative need of skilled anesthetists. If the mortality resulting wholly or in part from shock and hypernarcosis from the excessive and unskillful use of anesthetics were known and appreciated, there would be inaugurated new methods in hospitals and private operations, and college and hospital teaching would undergo radical changes. No matter who the operator or where his work was done, those entrusted with the administration of the anesthetic should be the best and not those least qualified for such important work. When such standards of requirement were enforced fewer deaths from causes not well defined would mar hospital and private statistics.

Prevention of Shock.—Dr. J. H. Carstens of Detroit contributed a paper on this subject in which he drew the following conclusions: (1) By simplicity and tact in management before operation much shock could be prevented. (2) The surgeon should have everything ready in the operating room, and the anesthetic should be started immediately. (3) All the necessary ligatures and instruments should be at hand, so that there need be no delay during the operation. (4) One should analyze the case thoroughly beforehand so that he might know exactly what he was going to do, and how he was going to do it, and what complications might arise. (5) Two quarts of salt solution in the form of an enema should be given, or given hypodermically as soon as the operation was finished. (6) The patient should be kept free from pain for twenty-four hours after the operation.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. X. O. Werder, Pittsburgh, Pa.; *First Vice-President*, Dr. Louis Frank, Louisville, Ky.; *Second Vice-President*, Dr. Magnus A. Tate, Cincinnati, Ohio; *Secretary*, Dr. E. Gustav Zinke, Cincinnati, Ohio; *Treasurer*, Dr. Herman E. Hayd, Buffalo, N. Y. Toledo, Ohio, was selected as the place for holding the next annual meeting; time, September 17, 18, and 19, 1912.

MEDICAL SECTION OF THE AMERICAN LIFE CONVENTION.

Stated Meeting, Held at Pittsburgh, Pa., September 20, 1911.

(Special report to the Medical Record.)

(*Concluded from page* 893.)

The President, Dr. Amand Ravold of St. Louis in the Chair.

Blood Pressure and Prognosis.—Dr. Henry Wireman Cook of Minneapolis, Minn., Medical Director Northwestern National Insurance Company, presented this paper which was read by Dr. S. H. Baxter, Assistant Medical Director Northwestern National Life Insurance Company, Minneapolis, Minn. (See page 959.)

Dr. Fred M. Hodges of Richmond, Va., Assistant Medical Director South Atlantic Life Insurance Company, said that they all knew that Dr. Cook was a pioneer in the study of the sphygmomanometer. There was a widespread belief that high blood pressure readings meant disease; but in nearly every instance manifestations of the underlying conditions might not have been made out without the use of the sphygmomanometer; in many instances an accurate diagnosis and prognosis could not be made without the use of this instrument. When attempting to make a standard low and high blood pressure, there were certain elements that must be taken into consideration, such as the occupation of the applicant. The few millimeters of pressure in a laborer did not mean the same as the same number in an office man. A blood pressure of 105 might be very low and one of 145 might be very high. All knew that an increase in the blood pressure meant one or two things. Where there was an increased amount of blood to be handled by the heart, where there was an increased vascular resistance either peripherally or through the splanchnic area, or where there was valvular disease and obstruction to the flow of

blood, or where there was a leakage, a backing up of blood into the cardiac chambers, that all meant that there was an increased amount of energy to be expended and caused an hypertrophy of the musculature of the heart. Again where there was an increased vascular resistance both peripherally and in the splanchnic area, such as one found in cases of nephritis, especially in the interstitial variety, and in patients with arterio-sclerosis and syphilis, there were indications of early vascular disease. There should also be considered in this connection lead poisoning and the gouty tendency. Many application blanks contained the question: "Is the pulse hard or soft or fibrous and full?" Many local examiners reported in the affirmative and further stated that there was an accentuated second sound. The question was commonly asked: "What were the diseases commonly overlooked?" Those that gave a high mortality, and in these the sphygmomanometer in every instance would disclose that further investigations should be made. Chronic interstitial nephritis was the disease that was the most important to them. If the blood pressure readings were high, and if the microscopical examination of the twenty-four hours urine revealed albumin, a diagnosis of chronic interstitial nephritis was made. But when a local examiner examined such a case he would rarely report the existence of an hypertrophied heart or an accentuated second sound; he would not be doing the refined tests called for. As a result many of these cases were overlooked. Dr. Hodges recalled three cases that were above the average; in all the blood pressure was above 108 and in one case it was 210. There was no suspicion that there was anything wrong with these patients aside from the blood pressure readings. In tuberculosis they had the family history, the loss in weight, or something to tell of some impairment. In chronic interstitial nephritis there was the history of headaches; otherwise nothing that pointed to anything being wrong with the patient. Instances of hypertrophied heart were rarely reported. In many of these cases the blood pressure readings would aid the examiner very much. In some cases of autointoxication where an examination of the urine would show indican or an oxaluria, an examination of the blood pressure would cause them to make a urinary analysis. Many cases of syphilis gave no other signs or symptoms of a previous infection except what was found in the blood pressure readings. Dr. Hodges recalled three cases in which the blood pressure readings varied from 166 to 174 millimeters of mercury. The examiner could find no reason for this blood pressure. These people were all declined. Two years ago an individual applied for insurance; he also asked to have Ehrlich's 606 administered. He had no arteriosclerosis and there was but a slight amount of increase in the blood pressure readings. In such a case the increase in the mortality would be higher because of the predisposition to other diseases which might follow. These cases were not often reported by the examining physician. In considering the methods employed in determining the blood pressure, Dr. Hodges said that the auscultatory was the easiest to apply and more information could be thus obtained than in the palpatory method. In the sphygmomanometer they possessed the best instrument for making diagnoses and prognoses. It was an instrument that gave them knowledge of the condition of the cardiovascular system which could not otherwise be obtained; this instrument would help them especially in the substandard cases; it was an instrument easy of interpretation and placed cardiac and renal affections upon the same mechanical basis as the sulphophenol test had placed kidney affections.

Dr. Amand Ravold of St. Louis, Mo., said that all wanted to know the best form of sphygmomanometer to use; what was the best? Any instrument that must be tested every time before using, that must be brought back and tested again, was valueless. He paid $25.00 for an instrument; in one instance it registered 115 millimeters of mercury, but his finger told him there was a mistake. Another instrument used on the same case showed 137 millimeters of mercury. He asked of what use were such instruments. An instrument was needed which would show the blood pressure accurately, one that could be relied upon.

Dr. Alexander M. Campbell of Grand Rapids, Mich. Preferred Life Insurance Company, asked how long one would live with a persistent high tension. He had had patients under observation who had persistently carried a blood pressure of from 200 to 225 millimeters of mercury, and he had found it difficult to say how long these patients would live. This, he thought, was a very important subject for their consideration. There was a desirability of a uniform instrument for use in all companies; some instrument should be made and accepted for use by all insurance companies. On every blank furnished the medical examiner he believed there should be the question: "Are you familiar with blood pressure instruments and are you willing to make yourself familiar with them?"

Nervous Diseases as Applied to Life Insurance.—Dr. John S. Turner, Medical Director of the Southland Life Insurance Company, presented this paper. He said that the relation of nervous diseases to life insurance had been more or less neglected in the past. The importance of the subject was very evident when they considered the rapidity with which these diseases were increasing over the entire civilized world and that the rate of restoration had not kept pace with the rapid increase. Too often the general practitioner and local medical examiner were incapable of diagnosing these diseases in their incipiency, and for this reason the medical director should devote some special attention to this subject. The statistics upon which Dr. Turner based his observations on the increase and curability of cancer were those of New York State, as these had been kept more carefully than elsewhere in this country, although what other statistics were available seemed to show a like increase throughout the country. It was stated that at this time New York State had 362.3 insane persons for each 100,000 general population and one insane male for each 287 of the male population. Thirty-three per cent. of this insanity was due to alcoholism among males and 10 per cent. among females. Paresis was the next great etiological factor, representing 25 per cent. of all deaths. Heredity played a most important rôle in the etiology, representing about 35 per cent. in males and a higher percentage in females. In all mental troubles there was a train of premonitory symptoms that if properly interpreted would have informed the physican that a crisis would ultimately develop. Likewise in purely nervous diseases there were well-marked signposts that if observed would keep many examiners off the rocks of well-deserved criticism from the home office. A pure neurosis was frequently overlooked by the examiner unless the patient was honest enough to tell the examiner of the existence of such trouble. The psychoneuroses were not likely to be overlooked by the most ordinary examiner. In all cases where the applicant gave a history of insanity in the family it was well for the examiner to go carefully over the applicant and secure a full history of any stigmata, physical or psychical, which might be present at the time or which might have been present in the past. He should find out if the applicant has suffered from periods of undue depression, followed by a state of exhilaration or hilarity, whether hysteria had been suspected or manifested, if illusions, delusion, or hallucinations had been exhibited even in mild form, if the applicant had peculiar views particularly of a moral or religious nature. If one

or more of these manifestations were present in a person of marked neurotic tendency and over thirty-five years of age it was well to be cautious about accepting him or her for a long contract, and it was safer to leave such persons entirely alone. In such persons they might expect ultimately mania, melancholia, impulsive or borderland insanity, psychastenia, paranoia, or circular insanity. It did not follow that because mania and melancholia were functional diseases and frequently curable their victims were desirable as life insurance risks. About 75 per cent. of all cases of mania made good recoveries but there was a marked tendency to recurrence, while about 65 per cent. of the cases of melancholia recovered with a decided tendency to recurrences. Mental paresis was a most dangerous disease, particularly so to the life insurance companies because of the delusion of great wealth or business acumen, and the tendency to expand in a business way, and because of the uncertainty of symptoms and the tardy progress of the disease, and third because of the certainty of a fatal termination. Some of the early symptoms which should arouse suspicion were twitching or nervous irritation about various parts of the body, particularly the face, nose, and eyes; parasthesia of various parts of the body; hyperesthesia; irregular pupils; impairment of reflexes; clumsy gait; Jacksonian epilepsy; change in disposition, soon followed by excesses, failure of memory, grandiose delusions. A history of alcoholism or syphilis was frequent in these cases. Subjects of this class were apt to obtain large policies during the incipiency of their disease. Dementia needed only to be mentioned as all examiners recognized this form of insanity and the same was true of idiocy. Pellagra was becoming of importance in the South and it seemed probable that sooner or later other localities would have a knowledge of this disease forced upon them. At this time it was safe to warn all examiners to beware of an undiagnosed skin disease, insignificant though it might seem. While the courts of the country refused to recognize impulsive insanity as a disease the medical profession was bound to do so. This disease imght be continuous or paroxysmal, functional or organic. Kleptomaniacs and pyromaniacs belonged to this class and also dipsomaniacs, oniomaniacs, and demonomaniacs. They were most dangerous because many of them were suicides. Borderland insanity, usually organic, chronic and incurable, was seen in persons regarded as illy balanced. Heredity usually furnished a basis for this instability. It could be recognized in the harmless eccentric character to be found in every neighborhood. Many of these cases took to the excessive use of alcohol, narcotics, or other drugs. Persons of this type being of idiopathic, unstable, nervous organization usually succumbed early to some intedcurrent or exhausting disease. For that reason they were extrahazardous as life insurance risks. Psychasthenia was observed especially at the epochal periods of life. These subjects were exceedingly impressionable and easily fell prey to suggestions of evil which crystallized into delusions. This form of insanity was prevalent among women at the epochal periods of life and therefore women between the ages of 38 and 45 were not good risks for life insurance. Toxic mania, including the use of morphine and the entire list of narcotic and hypnotic drugs, was a condition the examiner must be mindful of. No medical examiner would deliberately recommend one of this class as a standard risk for a life insurance company but symptoms might be overlooked. In this class of cases there were three classes of symptoms—motor, sensory, and vasomotor. The motor symptoms included muscular, cardiac, and visceral weakness, incoordination, tremor, and disturbances of ocular accommodation. Some of the sensory were superficial or deep anesthesias, hyperesthesias, or parasthesias. The vasomotor were diminution of the secretions of the mouth and throat, and of the gastric and pancreatic juices, menstrual flow and urine. Gastrointestinal disturbances and albuminuria were often present. The skin was often cold and wet with a profuse perspiration. Other marked symptoms were the cachexia of the skin, tachycardia, and physical inactivity manifested by loss of memory, etc. Paranoiacs were extrahazardous as insurance risks from several standpoints; (1) They were so taken up with their delusions that they were usually improvident. (2) Believing that they were being persecuted by their neighbors they were often embroiled in personal encounters. (3) As a rule they were short lived, having but poor resisting powers to withstand degenerative and exhaustive diseases. Circular insanity was a form of insanity in which the subject might be accepted by an examiner not fully informed. The attack began with a characteristically acute maniacal explosion which gradually shaded into a distinct attack of melancholia with all its stuporous features from which recovery took place within a few weeks or months. Then a perfectly lucid interval of several months might intervene, when the patient again fell into a maniacal attack and the cycle repeated itself. In these cases the importance of a thorough knowledge of the personal and family history was made manifest and also the importance of a full and complete inspection report. In regard to locomotor ataxia, the most important of all neuroses, the writer said that this was a condition occurring usually in men over forty years of age, usually engrafted upon an unstable nervous system, and was complicated by alcoholism and syphilis as well in 85 per cent. of the cases. The early symptoms were of prime importance. Among these were impairment of muscular and cutaneous and joint sensations, disturbances of coordination, vertigo, and gastrointestinal disturbances. Later this train of symptoms was exaggerated until incoordination became marked, the knee-jerk was lost, Argyll-Robertson pupil was noted, and gastric crises and girdle pains were present. Paresis of the physical type was similar to that of the mental type excepting that premonitory symptoms were of the physical rather than of the mental character and remained so during the course of the disease. Apoplexy was a disease of middle life in which physique and heredity played an important part. All overweights past forty years of age, especially if they had an unfavorable family history, should be tabooed. Some of the earlier symptoms were vertigo, fullness in the region of the vertex, nausea, vomiting, tinnitus aurium, speech and gait disturbance, momentary loss of consciousness, and Jacksonian epilepsy. The author concluded his paper with a description of the different varieties of brain tumors and their symptoms, general and local, and stated that they constituted a grave condition at best and that every precaution should be taken to keep these sufferers off the list of policy-holders.

Dr. J. H. Florence of Brownsville, Texas, Medical Director Great Southern Life Insurance Company, said that after all had been said *pro* and *con*, the Medical Director must bear the brunt of the sins of omission and commission of the medical examiners. In these days of high pressure competition and the mad rush for business he must necessarily be the balance wheel in the protection of his company and any errors of judgment should be favorable to the company. From the mortality standpoint this was a subject of paramount importance. The point made that nervous and mental diseases were on the increase could not be successfully contradicted; hence the higher mortality must be sustained. No medical examiner would recommend these cases in the active stages of the disease, but they were absolutely helpless when individuals appeared with incipient or obscure mental and nervous troubles. Some Medical Directors had boastingly asserted that they accepted syphilitics. The fact remained that they

had some of them on their books and had paid claims as a result and more claims were yet to be paid. Unreported syphilis was the *bête noire* of life insurance companies and they were powerless to guard against it in the large majority of the cases. Their Medical Directors could readily detect physical signs such as nodes, discoloration, scars, enlarged glands and locomotor ataxia; yet, on the other hand, the applicant might have had barely enough treatment to prevent or disguise his symptoms; he even might have arteries ready to rupture. It was very essential that the remote and obscure symptoms be recognized. Stress should be laid upon the insidiousness of these pathological conditions; they came as a thief in the night, so silently that they were unnoticed even by those who were in daily contact with them until the explosion came that no one was expecting; then in looking back he could recall that there was something peculiar in the individual's demeanor which was overlooked. The local examiner would regard this a perfect physical risk but he would write you stating that he thought him a "peculiar man." On inspection the report would probably say that he was a first class risk but that he was known in the community in which he lived as "an eccentric." They could not afford to pass lightly over such seemingly unimportant information. Often it was recorded that "applicant was never sick but suffers occasionally from an irritable stomach." One had been dumfounded when a close inquiry was made into the case to find the applicant was bordering on a nervous or mental collapse, yet he might not have consulted a physician. "Loss of memory" had been mentioned as a danger signal; this was very true, but it should not be confused with "lapse of memory" which was so often noted in applicants whose parents had died of tuberculosis. With regard to the percentage of cures in nervous and mental cases, regardless of the favorable reports of cures in some forms of these maladies, they were undesirable lives for insurance before or after recovery. Some of those who were insane lived to a ripe old age, while others succumbed to apoplexy, paresis and other conditions ensuing from syphilis and alcoholism. More emphasis should be placed on heredity in passing upon an applicant, especially in cases of neurotic or alcoholic parentage. Too much stress could not be laid upon the recent statistics of pellagra. In Texas in 1910 there were 117 deaths officially reported from this disease and during the first six months of this year there were 92 reported. Taking the number of unreported cases, likewise those not diagnosed, added to those officially reported, certainly justified attention to the comments contained in the paper. The general public could be educated as to the danger of tuberculosis and other preventable diseases; but as to mental and nervous diseases there seemed little avenue of escape, at least not in the near future. It remained for them to instruct their local medical examiners to put more stress upon heredity, alcoholism and other hitherto seemingly unimportant phases of the physical, mental and nervous conditions of the patients.

Dr. J. H. WRIGHT of Pittsburg Reliance Life Insurance Company, said that within the past three years there had been a reawakening of things neurological and even bills had been passed providing for one month's observation of acute cases in general hospitals. There was no psychopathic clinic at Johns Hopkins Hospital for the study of mental cases. New ideas had developed and the Wassermann reaction had given a newer conception of the psychoneuroses and the movement was going on towards solving questions regarding the insanities and neuroses. The life insurance companies of course would be benefited by this work. There was a movement to take care of this question such as occurred ten years ago when the State began to care for the tuberculous patients. From a life insurance standpoint it was unfortunate that they could not expect their medical examiners to always recognize nervous or mental conditions and this was probably due to the medical schools not giving a full course in these diseases. Again there was a lack of interest in these subjects on the part of the students themselves. Dr. Wright said that he remembered well when he was a student there was very seldom a full attendance at the clinic for neurological or psychological cases. The students who were now being turned out of the medical schools were better equipped and would give better service. The best they could expect at present was to get a frank statement from the applicant regarding any previous mental or nervous trouble. It seemed to him that more investigations should be made as to the condition of the patella and eye reflexes. He had occasion to examine a man who was carrying much insurance, a total of $250,000. He tried his knee jerks and pupilary reflexes, etc., a thing that had never been done before. This insurance was obtained in the City of Pittsburgh; what could one expect in the country towns? These examinations of the reflexes were very important in ruling out tabes dorsalis and paresis, the two diseases of middle life that were so important. A very important question that concerned the work in the office was that regarding the family and previous history and the history of mental trouble. In the insurance blanks where such a history was inquired into, they usually came back filled in with "nervous exhaustion" or "overwork"; under these conditions he thought it necessary to get first-hand information. Dr. Wright's practice was to write to the local medical examiner asking him to get in touch with the physician who cared for the applicant and to learn further regarding him, and not to rely entirely upon the applicant's statements. The family history as ordinarily shown on the medical blanks did not mean anything; it did not impair the risk to any extent. In hospital practice it was common to find that in cases of insanity there was a previous history of it. In St. Francis Hospital it was safe to say that in twenty-five per cent. of the cases admitted with mental troubles there was a previous history of mental disease in the family. But that was not the kind of information that concerned them as life insurance men. Perhaps in the investigations to be published at the end of this year they might have more light on this subject. What cases could be accepted as standard? He believed that any case of neurasthenia occurring in the early twenties could be considered a safe risk. Cases of individuals simply overworked were safe risks. But great care must be taken when such troubles occurred in middle life for they might be the first signal of an oncoming tabes. Always be careful of cases of transient hemiplegia, another danger signal of an oncoming tabes. Oculomotor palsies called for action; in a large proportion of the cases they were due to cerebral syphilis.

Election of Officers.—*Chairman*, Dr. Ambrose Talbot, Medical Director Kansas City Life Insurance Company; *Vice-Chairman*, Dr. H. A. Baker, Medical Director Pittsburgh Life and Trust Company; *Secretary*, Dr. F. L. B. Jenney, Medical Director Federal Life Insurance Company, Chicago, *Board of Managers*, Drs. Ambrose Talbot, F. L. B. Jenney, Jas. H. Stowell, Whitfield Harral, and Herbert M. Woolen. Place of next meeting not yet decided upon.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

AT a stated meeting held October 11 Dr. D. H. BERGEY read a paper entitled "Preventive Medicine: Present Achievements and Future Fields of Activity." He dwelt on the advances that have been made in the control of infectious diseases, emphasizing especially the importance of isolation and disinfection. He pointed out the success that has been attained in the treatment of diphtheria with antitoxin and the prevention by similar means or by the

employment of attenuated cultures or virus or of emulsions of the dead bodies of bacteria of tetanus, typhoid fever, dysentery, cholera, plague, anthrax, and hydrophobia. He showed how chemotherapeutic agents were successful in the prevention and cure of various diseases, as, for example, quinine in malarial fever, trypan red, trypan blue, and atoxyl in trypanosomiasis, and arsenobenzol in syphilis. Further purification of water supplies by filtration and other means have been useful in diminishing the prevalence of typhoid fever and allied diseases and also in improving the general health. The part played by flies and mosquitos in the conveyance of disease also was adverted to. Dr. JOHN A. RODDY presented a communication entitled "Diphtheria Antitoxin and Anaphylaxis." He pointed out that the reaction observed in guinea-pigs following a second injection of blood-serum soon after a primary injection was not as a rule observed in human beings and he presented statistics showing that unpleasant sequels following the prophylactic or curative use of diphtheria antitoxin are rarely observed in the human subject. It is especially after small primary doses that bad effects are to be expected. At the present time it is the general practice to administer large doses of diphtheria antitoxin, from 12,000 to 30,000 units, in the treatment of recognized diphtheria, and smaller doses, from 3,000 to 6,000 units, as a prophylactic in suspicious or exposed cases. In other words there is little or no danger to be feared from the proper curative or prophylactic employment of diphtheria antitoxin. Dr. JOHN J. GILBRIDE read a paper entitled "A Bacteriological Study of Cultures Made from the Thyroid Gland." He reported the results of observations made in 15 cases, 8 of cystic goiter, 6 of exophthalmic goiter, and 1 of carcinoma of the thyroid gland. The findings were negative in all but two cases, and in these it may be concluded that the presence of the microorganisms was accidental.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

AT a stated meeting held October 4, Dr. ROLAND G. CURTIN read a "Memoir of the late Dr. De Forest Willard." Dr. LEONARD D. FRESCOLN presented a communication entitled "Rabies, with a Report of Cases." He pointed out the antiquity of the disease and emphasized its acceptance as a morbid entity throughout all time. While the disorder had a definite and well-recognized pathology, with characteristic changes in the nervous system, the identity of the causative agent had thus far escaped recognition. Nevertheless the Pasteur method of treatment with graduated inoculation of attenuated virus constituted a reliable therapeutic procedure. It must be employed, however, before convulsive manifestations appear. The best agent for cauterizing the bite-wound was carbolic acid. Dr. Frescoln reported a series of 16 cases, with recovery in those treated by inoculation of attenuated virus. Dr. CHARLES LESTER LEONARD read a paper entitled "Compensation by Displacement of the Thoracic Viscera in Pulmonary Tuberculosis," illustrated by tracings, lantern slides and stereoroentgengrams. He showed how the heart and the great vessels of the chest undergo, not demonstrable by the usual means of physical examination, displacement, in consequence of changes in the lungs and pleura, due to tuberculosis—such as emphysema, pneumothorax, fibrosis, cicatricial contraction, etc. The Committee on Alvarenga Prize announced that the income from the Alvarenga fund, amounting to about $180, was awarded to Dr. Francis D. Patterson for an essay entitled "The Parathyroid Glandules."

Intestinal Obstruction.—R. Morison states that for some years he has taught that the diagnosis of intestinal obstruction is based upon a trinity of signs as follows: (1) spasmodic pain; (2) inability to pass flatus; and (3) evidence of increased peristalsis.—*Edinburgh Medical Journal.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended November 4, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	389	154
Diphtheria	228	19
Measles	113	2
Scarlet Fever	106	3
Smallpox	—	—
Varicella	54	—
Typhoid Fever	94	15
Whooping Cough	46	6
Cerebrospinal Meningitis	8	6
Malarial Fever	—	
Totals	1038	205

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended November 3, 1911:

CHOLERA

Places.	Date.	Cases.	Deaths.
Austria-Hungary: Budapest	Sept. 16-30	3	*1
Prellenkirchen	Sept. 18-24	1	1
Ujpest	Sept. 16-30	17	..
Bulgaria: Sosopolis	Sept. 16-Oct. 7	20	..
France: Marseille	Sept. 21-28	20	†..
Italy: Provinces—Catania	Sept. 24-30	24	‡4
Catania	Sept. 24-30	11	4
Genoa	Sept. 24-30	5	2
Naples	Sept. 24-30	4	1
Naples	Sept. 24-30	11	1
Palermo	Sept. 24-30	3	3
Palermo	Sept. 24-30	14	4
Rome	Sept. 24-30	63	**19
Rome	Sept. 24-30	4	3
28 other Provinces	Sept. 24-30	315	75
Catania	Oct. 1-7	33	15
Catania	Oct. 1-7	17	3
Genoa	Oct. 1-7	1	..
Genoa	Oct. 1-7	3	..
Naples	Oct. 1-7	5	1
Naples	Oct. 1-7	2	..
Palermo	Oct. 1-7	11	4
Palermo	Oct. 1-7	4	2
Rome	Oct. 1-7	23	6
Rome	Oct. 1-7	12	††7
23 other Provinces	Oct. 1-7	225	51
Java: Batavia	Sept. 9-16	15	5
Malta	Nov. 1	2	..
Straits Settlements: Singapore	Sept. 2-9	4	2
Tunis, Regency	Sept. 20-26	509	‡‡368
Tunis	Sept. 20-26	153	69
Turkey: Constantinople	Oct. 1-8	..	128
Dardanelles	Sept. 23-30	..	2

*From Sept. 16-23, 28 cases were reported in scattered territory.
†Number of cases occurring from Sept. 1 to 20 not reported.
‡Total, Sept. 24-30: cases, 454; deaths, 116. Oct. 1-7: 336 cases; 89 deaths.
**44 cases with 12 deaths occurred in an insane asylum.
††6 cases with 4 deaths occurred in an insane asylum.
‡‡Not including cases and deaths in Tunis city.

YELLOW FEVER.

Mexico: Merida	Oct. 14-21	1	1
Hawaii: Honolulu	Oct. 28	1	*..

*Case in quarantine employee detailed as guard on the s. s. Hongkong Maru.

PLAGUE.

Brazil: Rio de Janeiro	Sept. 9-23	2	..
Hawaii: Kapulena	Sept. 28	1	1
Java: Batavia	Sept. 9-16	21	10
Zanzibar: Zanzibar	Sept. 7-14	2	2

SMALLPOX.

Argentina: Buenos Aires	July 1-31	..	35
Brazil: Rio de Janeiro	Sept. 9-23	3	1
Canada: Quebec	Oct. 14-21	..	5
Chile: Talcahuano	Sept. 9-23	16	2
Gibraltar	Oct. 1-8	1	
Java: Batavia	Sept. 9-16	5	1
Mexico: Ciudad Juarez	Oct. 14-21	1	1
San Luis Potosi	Sept. 23-30	2	.
Portugal: Lisbon	Oct. 1-7	3	..
Russia: St. Petersburg	Sept. 23-30	3	1
Turkey: Constantinople	Oct. 1-8	..	1
Zanzibar: Zanzibar	Sept. 9-15	1	..

CHOLERA.

Arabia: Hodeida	June 16-30	* 21	*17
Austria-Hungary		..	†..
Arbe Salle Sampiero	Aug. 21-Sept. 17	6	‡3
Budafolk	Sept. 9-16	1	..
Budapest	Aug. 24-Sept. 16	12	3
Capodistria	July 23-Sept. 10	9	5
Cattaro	July 6-20	4	1
Cittanuova	Aug. 21-27	1	1
Czarp	Aug. 24-Sept. 9	1	..
Krimeja	Sept. 7	1	..
Krizovljan	Aug. 28-Sept. 3	2	..

*Among the civil and the military population. Aug. 5, present among troops.
†Total Austria-Hungary, May 24-Sept. 17, 73 cases, 30 deaths.
‡District of Zara.

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Original Articles.

ONE YEAR'S EXPERIENCE WITH SALVARSAN. BEING A REPORT OF 230 INJECTIONS WITH SPECIAL REFERENCE TO EYE AND EAR COMPLICATIONS.*

BY B. C. CORBUS, M.D.,

CHICAGO, ILL.

PROFESSOR OF GENITOURINARY DISEASES AND SYPHILOLOGY, POST-GRADUATE MEDICAL SCHOOL AND ASSISTANT PROFESSOR OF GENITO-URINARY DISEASES, COLLEGE OF PHYSICIANS AND SURGEONS, MEDICAL DEPARTMENT, UNIVERSITY OF ILLINOIS.

IT is now two years since Professor Ehrlich sent Dr. Konrad Alt some salvarsan for the treatment of syphilitic paralytics, and just one year this month since the Rockefeller Institute received a thousand doses to be distributed in this country for experimental purposes. The questions regarding salvarsan then were the same as now, namely these: (1) Is it an absolute specific for syphilis and does it produce a *therapia sterilisans magna?* (2) Are there any severe organotropic effects?

The time has been sufficiently long for us to draw fairly definite conclusions, but as regards the final solution of the problem we must be content to wait for many years. Already there have been over 60,000 cases treated. The literature is voluminous, mostly from abroad. This is explained by the excellent hospital and clinical facilities in Europe. Those of you who have watched the reports of the application of this remedy must surely agree that salvarsan, if properly applied, is the best aid yet devised to combat syphilis. Here and there in the German, English, and American literature we read adverse criticisms which come from the pens of those who have had little experience, or else, for various reasons, are not willing to concede to salvarsan its merits.

In the literature in this country it is indeed encouraging to read the beginning of the article by Dr. John A. Fordyce,[1] which says: "A more extended experience has not altered my views regarding the value of salvarsan; on the contrary, I am more and more impressed with its extraordinary therapeutic qualities." Also encouraging is the opinion of Faxton Gardner,[2] who says: "Salvarsan has come to stay. Despite all, it is the most powerful agent we have at our disposal against syphilitic manifestations." Still more encouraging is a circular from the War Department,[3] under date of June 3, 1911, authorizing the use of salvarsan in the army, signed by Surgeon-General Towney and approved by the order of the Secretary of War. This, indeed, is the sentiment of all of us that have had any experience at all with the new remedy.

*Read by invitation before the American Academy of Ophthalmology and Otolaryngology, Indianapolis, Ind., September 25, 1911.

In answering the early question, does salvarsan produce a *sterilisatio magna,* we can say that experimentally in rabbits it does, but therapeutically with the dose of 0.6 grams it does not. That it does not produce a *sterilisatio magna* is indeed a blessing, for if it did, it would belittle the infection to such a degree that venereal diseases, instead of becoming less frequent, would increase fifty-fold. As early as the summer of 1910, numerous cartoons and articles appeared in the foreign lay press calling attention to and symbolizing the ease with which syphilis could be cured.

Concerning the second question, we can safely say from the reports of all the cases treated that there are no general organotropic effects in properly selected cases. In an address to the Vienna Society of Physicians, November 18, 1910, Finger[4] expressed some doubts whether the assertion that salvarsan was entirely harmless was justified in view of some of his disagreeable personal experiences in sensory nerves, particularly the optic and auditory nerves. Finger[5] refused to explain the phenomena observed, claiming that it was too early to form a decided opinion, but he called attention to the fact that such phenomena occurred rather frequently and in an unusually early period of lues in patients who are still in the early stages of the disease. He considered it less likely that these cases were independent syphilitic relapses such as would have occurred without salvarsan, because of (1) the possibility of a direct connection of such symptoms with salvarsan; and (2) the possibility of a combined action of salvarsan with lues, in the sense that the remedy created a *locus minoris resistentiæ* in which the lues can be localized.

Schamberg reported in the *Journal of the American Medical Association,* May 20, 1911, all the literature to date in an exhaustive article, citing Finger's cases of optic nerve disturbances and adding reports from Blaschko, Rille, Held, Oppenheim, von Zumbusch, and Fordyce. In the same article he adds Finger's reports in auditory nerve disturbances, also Rille, Kern, Urbantschitsch, Matzenauer, Rusch, Alexander, and others. Werther[6] says that the frequency of such "neuro-relapses" in salvarsan cases is somewhat greater than the proportion to the number of syphilitic cases in general. Risson[7] is astonished that in a small series of patients he observed two cases of optic nerve atrophy. Bettmann[8] insists that these neuro-relapses appear earlier and more frequently than has seemed to be the case before salvarsan. Stern[9] and Waltenhoefer[10] consider their cases toxic. Port[11] thinks that the increased number of such cases makes it little probable that we have to deal simply with relapses, and we must assume a toxic injury to the nervous tissue. Geronne[12] and Gutmann agree with Finger when they say that the number

of such neuro-relapses has increased essentially since salvarsan was introduced, and that the time of the relapses almost without exception has advanced to an early stage. "If in about three hundred cases treated with salvarsan, thirteen neuro-relapses occur, and if these appear mostly four to five months after infection, and six to eight weeks after salvarsan we have evidently something new in the pathology of syphilis which must be brought into causal connection with salvarsan treatment." Nevertheless, these authors accept Ehrlich's view concerning the neuro-relapses. J. Benario[13] was able to prove that the affections in the cerebral nerves observed by the above authors have appeared exactly in the same way under mercury and potassium iodide. He claimed that this settled a part of the question of harm with which salvarsan was charged. At this date, Ehrlich[14] gave the plausible explanation of these phenomena by saying that he considered these forms of the disease as neuro-recurrences of foci, because during the sterilization of the organism some spirochetes had not come under its influence. This in the first place is true of the spirochetes which had settled in the nerves passing through narrow bone channels. These are then principally topographic, anatomical conditions by which are caused the symptoms on the part of the cerebral nerves.

Benario[15] has used all possible means to collect the reports of all the cases of the affections of the cerebral nerves known since the first publication. In this way he has disposed of one hundred and twenty-six single such observations, which occurred in at least 14,000 treated cases. To complete his reports he sent letters to a majority of the authors with a question sheet. From the replies he obtained an abundance of material which permitted a general and convincing exposition of the conditions to be considered. In Benario's[15] question sheet he considered the optic and auditory nerves separately —each in regard to vocation, abuse (such as alcohol or nicotine), through previous ear disease and also whether a previous injection of some other form of arsenic had been given. Numerous other questions were asked, tending to throw sidelights on previous optic or auditory diseases. These reports show that the early secondary stage is particularly predisposed to these neuro-recurrences. He calls attention to the fact that in extragenital primary lesions, especially cephalic chancres, involvement of the nervous system is prone to follow. They occur from a single spirochete focus which had remained from the principal mass at sterilization. This view is further confirmed by the fact that recurrences are found almost exclusively in cases of secondary syphilitics of from two to eight months' standing, where it is well known that a colossal distribution of spirochetes exists. This is substantiated by the following clinical reasons: (1) Long interval between injection and appearance of nervous manifestations. (2) From the nature of the pathological process itself which shows a condition of irritation and inflammation in contrast to atrophic processes observed after other arsenicals. (3) from the fact that the disease appears almost exclusively during a definite period of syphilis. Benario[15] says that it is not fair to charge all recurrences to salvarsan, as we do not realize that the neuro-recurrences occur many times in mercury treatment. Also that we are watching all cases now with greater scrutiny and with a far greater degree of intelligence, knowing well the history of arsenical preparations and especially since Ehrlich warned all observers in regard to the possible neurotropic effect of salvarsan. Benario[15] calls attention to the fact that we must be especially watchful of recurrences in the following classes of cases: (1) Recent secondary states. (2) Extragenital and cephalic chancres, due to immediate proximity to the nervous system. (3) Character of the skin phenomena which are severe from the start. (4) Headaches (invasion into the central nervous system by spirochetes). The above symptoms should serve as a warning for the institution of energetic treatment. He believes that by thus instituting a vigorous treatment with both salvarsan and mercury many neuro-recurrences will be eliminated.

It is true, no doubt, that there are a few limited cases where salvarsan has been productive of harm, but when we consider the enormous number of cases treated and the equally great number of physicians that are administering salvarsan, we wonder that there are not more complications. There is no doubt that the neutral suspension as recommended by Wechselmann has been productive of toxic symptoms, for here the coagulum in some instances has remained in the tissues for months; again careless technique in preparing the alkaline solution both for intramuscular and intravenous administration, both in regard to sterility and excess of sodium hydrate, may be productive of harm. Therefore, before we condemn a substance that has fewer neuro-relapses than there are complications following the administration of choloroform, let us look closely to our technique and have a care that we are perfectly competent to administer the substance.

Indications.—At the present writing, salvarsan is indicated in every case of recent syphilis as the first and most efficient therapeutic agent at our disposal, and in every case where quick action is desired except in diseases of the cardiovascular system, where if it is not possible to obtain a *sterilisatio magna* it is possible to obtain a clinical sterility with one dose, rendering those patients for the time clinically free from their disease-germs. No doubt we could treat the early cases entirely under a salvarsan therapy, but we are not justified in using this exclusive method, especially since salvarsan is a new therapeutic agent and we have such a recognized ally in mercury. From now on salvarsan should be the mainstay of the syphilographer. What its results will be in internal medicine and nervous diseases of syphilitic origin it is not possible to prophesy at present. At best our results cannot be brilliant, as here we have as a rule considerable degeneration of the nervous and cardiovascular system.

In tabes dorsalis, if of only recent duration and accompanied by a positive Wassermann, cessation of further symptoms is possible if the treatment is carried out vigorously by the combined method. What its scope is in ophthalmology, we are not able to tell, as many cases of eye syphilis were in the beginning refused treatment, fearing a neuro-toxic effect of salvarsan. But the administration of salvarsan in syphilitic eye lesions is no longer prohibited. In optic atrophy it is impossible to change the condition by any therapeutic agent once the process has occurred. Care should be used in following up treatment with salvarsan where other arsenicals have been used to any extent, as here a toxic effect caused by some previous application might be laid at the door of salvarsan. Ehrlich's animal experiments indicate that the drug does not exert injurious by-effects upon the optic nerve as do atoxyl

and the related preparations of arsenic. J. Igersheimer[16] considers as the reason for this that salvarsan is not split up in the body into derivatives of phenylarsenic acid, as is the case with atoxyl. Hoppe's[17] investigations showed that salvarsan has only a slight chemical affinity to the nerve tissues, for after three days he could not find any arsenic in the brain, spinal cord, or optic nerve.

Steindorff[18] has recently presented an excellent paper embracing reports on over seven hundred cases on which he bases the following conclusions: He finds that blindness referable exclusively to salvarsan has so far not been definitely determined by anybody. The remedy has a favorable effect in primary and tertiary affections of eyelids and conjunctivæ. In specific dacryocystitis, scleritis, gumma corneæ, and in luetic disease of the orbital bones, salvarsan has rendered good service, at least in the small number of cases observed so far. Parenchymatous keratitis due to acquired lues almost always reacts promptly to salvarsan. In the treatment of parenchymatous keratitis due to congenital syphilis, failures are more frequent than successes. Nevertheless the remedy can shorten the courses of promptly treated cases. In unilateral disease it is only rarely possible to protect the healthy eye. Neuritis, especially if treated early, reacts almost always and rapidly. It is true that the success is sometimes only of short duration and that relapses are frequent. Affections of the choroid and retina are frequently influenced favorably, but sometimes new processes are observed immediately after injection. Very favorable results have been observed in the treatment of specific iritis, especially after the intravenous method. In the treatment of inflammation of the optic nerve and of choked disk, the favorable results of salvarsan predominate. Pareses of the eye muscles are influenced favorably and promptly, but failures are just as frequent. Argyll-Robertson symptom and anisocoria remain unaffected in the majority of cases. In the treatment of syphilitic eye disease then, salvarsan certainly merits attention, especially in combination with mercury and iodine and in cases in which a rapid effect of antisyphilitic treatment is of importance.

Dose.—The dose practically remains the same as at first established, viz., 0.5 gm. for women and 0.6 gm. for men. However, in women I have frequently varied the dose according to the weight, giving sometimes as much as 0.6 gm. and in many, especially in extremely debilitated cases, less than 0.5 gm. Salvarsan can now be obtained in 0.1 gm. ampoules. This is valuable when the substance is to be administered to children, as it insures an exact dose and prevents waste of the product. I am not in favor of fractional doses in adults, except, perhaps, in syphilis of the cardiovascular system, as here the dose must of necessity be small in order not to produce any untoward effects. In primary, secondary, tertiary, and in latent syphilis, I believe the best results are obtained from the largest dose that can be given with safety. As salvarsan acts in two ways, viz., chemotherapeutically and serotherapeutically, we can readily see that if we give a sufficiently large dose of salvarsan and have a large number of spirochetes to combat, our endotoxins will be greater after a large dose than after a smaller one, and in turn will work a greater curative effect in the disease than a smaller dose.

Technique.—The intravenous method has become almost universal on account of its ease of application, the brief inconvenience to the patient, and his rapid recuperation. However, no one method should be used to the exclusion of the others. This is borne out by experience, as in the early cases it is more advantageous to administer the salvarsan intravenously and later to inject it intramuscularly. For the successful carrying out of the intravenous method, some form of a gravity apparatus is preferable, and the more simple of these give the best results.

The method of administering normal saline before and after the salvarsan is recommended only to those who have little experience. Great care should be used to have the saline solution absolutely sterile and prepared fresh immediately before using, as numerous reports[19] have appeared showing a febrile reaction following the injection, which was eliminated entirely by using great care in preparing the salt solution. From the beginning I have not used normal saline solution. The method of preparing the solutions in glass cylinders is vastly superior to the mortar as they are so easily kept sterile. The addition of hot water[20] greatly facilitates the putting of the salt into solution and does not in any way deteriorate its action (Marks). With a two-way cock attachment it is easy to find when one is in the vein. If by chance one has missed the vein the sharp stinging pain and sudden swelling at the point of puncture warns one that he has not been successful. It is an easy matter to stop the solution at once and seek a new point of injection. The resulting extravasated salvarsan, if not too copious, is quickly absorbed without much effect.

In preparing the solution for the alkaline intramuscular method I now use a 2 per cent. solution of sodium hydroxide, giving the injection in the same location as recommended in my previous article. (*Journal of the American Medical Association*, February 25, 1911, page 566.) The method of injecting subcutaneously or intramuscularly in the muscles of the back should be severely condemned. Some of my patients that were injected nine months ago in this way still show large nodular masses. Immediately after the intramuscular injection of the alkaline solution I use hot applications. These are continued for forty-eight hours. The resulting induration and subsequent pain are greatly lessened thereby. All of the alkaline intravenous or intramuscular injections are given in the hospital; except in the severe manifestations the patients are detained only twenty-four hours after intravenous, and forty-eight hours after intramuscular injection.

Oil Suspension Method.—For the large number of clinical patients who cannot afford to go to a hospital, this offers a fair substitute for either the intravenous or the intramuscular injections. The method I am using is as follows: Materials—A large glass mortar and pestle, an all-glass syringe holding 5 c.c., one needle 1½ inches in length, 17-gauge. The needle and syringe are placed in a large test tube with cotton in the bottom of the tube and stoppered with cotton. All the materials are placed in a dry sterilizer and sterilized just before using. Great care should be used to keep all water away from the materials, as the salt on contact with water quickly forms a hard sticky mass that clogs the syringe so that it cannot be injected. Break with a file the ampoule that has been previously sterilized and pour the salt into the mortar. Add about .2 c.c. of 10 per cent. iodipin. This is rubbed in thoroughly until a smooth emulsion is obtained that

is sufficiently liquid to be drawn up into the syringe. This is drawn up and 1 c.c. of iodipin is added, rubbing this up, and this in turn is drawn into the syringe. Then if there is still any salt remaining, a still smaller quantity of iodipin is added and rubbed up. In this way all the salt can be incorporated with the oil; when completed the syringe should hold about 4 c.c. of the finished emulsion. The site of injection (outer quadrant of the buttock) is disinfected by painting with iodine. The needle is thrust in and allowed to remain *in situ* for a minute to see that no vessel is punctured. The connection is made and the emulsion injected, the whole amount being placed in one side. Care should be used to force all of the emulsion out of the needle (by disconnecting and injecting a little air), as any remaining in the fat may produce necrosis. Always cleanse the needle and syringe well with ether (do not use water). The immediate pain after the injection is only slight and there is no shock. How well this emulsion is absorbed will depend upon the thoroughness with which it is triturated. Clinical results with symptoms have been most gratifying in some of my cases. However, on account of its tendency to become encysted, I prefer the other methods.

Prognosis.—With an experience of one year with salvarsan in 124 cases one can begin to draw some definite conclusions. Never in the history of medicine has there been a definite specific that has come into universal use and has, except for a few instances, held its own so well. The more one sees of its remarkable clinical and biological effects the more satisfied one is with having used it. It has come to be the right arm of our therapeutic force, and combined with mercury it works with a swiftness that is truly wonderful. This is especially manifested in primary, secondary, and tertiary lues. The prognosis depends upon our making a prompt diagnosis, for nothing can be so disastrous to a syphilitic as a delayed diagnosis. Here days of procrastination may mean months of treatment. It is so simple to treat the disease at the chancre period, before there is a positive Wassermann present. At this time the first known collection of spirochetes comprises the primary lesion. Comparatively few have escaped into the system. If we bend every effort to make a diagnosis by finding the organism either by the dark field illuminator or india ink stain and apply our treatment vigorously we can limit our disease to a few months instead of years. There is a time-honored idea that it takes many years to cure syphilis, and that we must of necessity spread our treatment out over a long period. As a matter of fact, the duration of the disease is in inverse proportion to the vigor and energy of treatment. The more emphatic the treatment the quicker the cure. I still believe that if we could get a sufficiently large dose of salvarsan and see our primary lesion sufficiently early a *therapia sterilisans magna* would be possible. At first we thought salvarsan was limited to the so-called mercury-fast spirochetes, and those of a severe grade. Yet if it could work wonders here, why pray could it not do equally as well at the incipient stage of the disease. Now the Wassermann is positive in direct proportion to the length of time of the presence of the primary lesion. In other words, it is usually negative when the chancre makes its appearance, and remains so for a short while. As we approach the third week it begins to become positive, and after this it is practically always positive. Here, then, are almost three weeks in which to make a diagnosis. I earnestly beseech everyone to realize the seriousness of the disease and to recognize how simple it is to eradicate the dreaded infection if treatment is instituted early.

Complications.—Since its introduction into general therapeutic use many complications have occurred, far more than have been reported, but on the other hand unquestionably some have been reported which never should have been, as many of the complications are fatalities due to the operator and to a general lack of knowledge of the new therapeutic agent. In the American literature little has appeared in the way of complications and fatalities. In a communication issued May 16 from the Ehrlich[21] institute, eighteen fatal cases are reported following the use of salvarsan. All patients suffered from cardiovascular disease. As a consequence, any patient suffering from aortitis, coronary sclerosis, and endocarditis, should not have the treatment administered. A routine examination of the urine should always be made prior to the injections, as a nephritis may be augmented by the treatment; from the reports of the literature this is a common occurrence. To be sure, if the nephritis is of a syphilitic nature, it may be greatly benefited, as in a case reported by Nador.[22] The great question of whether salvarsan is toxic to the nervous system, especially the nerves of the eye or ear, has been fairly well answered by Benario, of which reference was made in the early part of this article. Undoubtedly the controversy will continue for some time before the subject is settled to the satisfaction of all. In the meantime, we are watching all cases very closely, especially in regard to nervous manifestations both before and after treatment, deriving from this close observation many points that have hitherto gone unnoticed. Here and there in the literature an unfortunate complication or death is reported of some case that seems to have a special idiosyncrasy for the substance. This may follow large doses of any therapeutic agent, and not too much weight should be attached to it.

Abscess and induration are the common complications. These are absolutely avoided by the intravenous injection, and can also be avoided after intramuscular administration, if strict asepsis is carried out, and if the injection is placed in the gluteal region and contains no excess of alkalinity. The method of dissecting out the vein should be condemned, as it is needless and superfluous, tending to complications. A paraphlebitis may occur from a careless and improper technique, but should not prove alarming. Continuing hot applications facilitates rapid absorption. Except for two cases of abscess previously reported, and three cases that developed a paraphlebitis, in 230 injections I have had no unfavorable results. I have repeated the injection as high as five times in one individual; in another four times, and in many cases three times. I have had the eyes examined religiously, both before and after treatment, and up to the present time I have not observed any unfavorable complications.

The Management of Syphilis After the Biological Method.—Soon after the introduction of the Wassermann reaction it was realized that here at last was a tangible guide in the management of syphilitic cases. Attention was called to this fact by Höne,[23] Boas,[24] Purkhauer,[25] Scholtz,[26] Jesionek,[27] and Meirowsky, and by myself[28] in this country in a paper read before the American Medical Associa-

tion in 1910, being a preliminary report on fifty-seven cases treated with mercury from the standpoint of the Wassermann reaction. It is now three years since the observations were begun and the possibility of such a form of treatment is no longer problematical; in fact it is the method recommended by Ehrlich as the only rapid and reliable means of curing syphilis. The efficiency and practicability of the method is recommended by Gavini,[29] Marcus,[30] Letulle,[31] Stumpke,[32] and others, who are the most recent writers upon the subject. Under this form of treatment our aim should be to make a diagnosis as soon as possible and then to begin treatment at once. If we are fortunate enough to begin treatment with a negative Wassermann, so much the better for the patient; if we are so unfortunate as to begin treatment with a positive Wassermann we should bend every effort to get a negative Wassermann as soon as possible and maintain it for at least one year. Many observers think that no matter what the stage of syphilis present one salvarsan injection will be followed by a negative Wassermann. This depends upon two things, namely: (1) the stage at which the disease comes under observation, and (2) the amount of previous mercury treatment. Few observers realize that it takes an extremely energetic form of mercury treatment to change a positive reaction to a negative in a case that has a moderately severe infection. It is true that many recurrences have been reported following the injection of salvarsan. This is not at all surprising when we consider what we are attempting to do. Compare the spirochetes in a patient's body to a room full of flies. Say the room has 500 flies in it and we kill off all but ten. The feeding is good. The room is so large that they are not observed, we think all are destroyed, we close the room and go away for three months. Upon returning we are surprised to find the room as full as it was at the beginning. To have a patient come under treatment and receive one salvarsan injection and to wait for developments is a fatal mistake. If we wish to eradicate his infection we must continue our treatment energetically either with salvarsan or mercury or the two combined, or else we will have a rehabitation of the body by the spirochetes, for a patient that has a positive Wassermann with clinical manifestations of his disease is just as infectious as he was the day he manifested his primary lesion, no matter if it is ten years after the primary infection. The fact is he is in a worse condition, for at this time the organisms, to use Fournier's words, "are anchored in the tissues."

The Combined Treatment.—Fortunately for the syphilitic, salvarsan and mercury work like twin brothers. No matter which one leads or follows, they work with equal efficiency, though salvarsan is, of course, the more powerful agent. We have three recognized ways of giving mercury: rubbings, injections, and internal medication. The method that I have adopted has been rubbings in conjunction with salvarsan. Kromayer, several years ago, devised a mercury mask to be worn at night, basing his idea upon the fact that nurses working in wards where patients were rubbing mercury became salivated. Unfortunately, this mask did not prove practical. By having my patients rub all their mercury into the chest and back and keeping a thin gauze shirt on as long as possible, I believe I get both an inhalation and absorption treatment, as surely some of the mercury is volatilized at the body temperature, and the longer the shirt is worn the nearer it approaches the one-time popular mercury pad and becomes a veritable storehouse for the mercury. I have my patients rub every night; if they desire to take a morning bath I have no objection, but they are instructed not to rub off the mercury. However, twice a week the skin is cleansed with soap and water in a warm bath. In some hands the injection treatment offers the most convenient and best method of carrying out the combined treatment. The pill treatment is only mentioned to be severely condemned. It gives the patient a false sense of security and is nothing short of criminal. From a serological standpoint, basing my views on almost one thousand Wassermann examinations, this form shows the greatest number of relapses.

When Is a Given Patient Well?—At the present time this question is not easily answered. No matter what the stage of the infection, primary, secondary, or tertiary lues, our aim should be: "Get a negative Wassermann in the shortest time possible, but once we get to the negative goal do not stop treatment short of one year; if we do we may have a relapse." In all my cases, as soon as I have attained my goal, I insist upon giving at least one hundred and fifty rubbings and two intravenous injections of salvarsan.

Report of Cases.—All of the following cases have been treated from the standpoint of the Wassermann reaction, regardless of any clinical symptoms. They comprise the following: 1. Chancre. A, before the Wassermann was positive, one case. B, after the Wassermann was positive, four cases. 2. Early secondaries, twenty-three cases. 3. Late secondaries, thirty cases. 4. Latent, forty-four cases. 5. Tertiary, three cases. 6. Syphilis of the nervous system, nineteen cases.

1. A. Before the Wassermann was positive. This case came under observation May 1, 1911, two days after the primary lesion appeared. Wassermann still negative. He received an intravenous injection of 0.6 grams; the local lesion was destroyed. In five days he received an alkaline intramuscular injection of 0.6 grams. During May and June, he rubbed sixty mercurettes, rubbing one in every evening. July 1, he received a third injection of 0.6 grams intravenously and July 17 he received a fourth injection of 0.6 grams intravenously. The treatment in this case I consider to be ideal. It is an intense form of the combined method. He had a maximum amount of treatment for a minimum of infection, with the great advantage of beginning treatment at the earliest possible moment. The patient, based upon my previous Wassermann experience, I considered to be well of his disease forever, but to be absolutely sure I will make the Wassermann examination from time to time during the rest of the year.

1. B. After the Wassermann was positive. In this series there are four cases. The first case was reported February 25, 1911, in the *Journal of the American Medical Association* with picture. November 3, 1910, he received 0.5 grams in alkaline solution intramuscularly. November 28 the Wassermann was negative. December 12, 1910, a second injection of 0.6 gram in alkaline solution intramuscularly was given. He maintained a negative Wassermann test for ten months, the last August 1, 1911. There has been no further treatment of any kind. It was my intention with the other three cases to try a *therapia sterilisans magna*; accordingly each case was given an intravenous injection of 0.6 grams followed in five days by an intramus-

cular injection, alkaline solution method, 0.6 grams. None of these cases ever maintained a negative Wassermann after the first month. All relapsed in four months. Following this, I did not condemn salvarsan, but I did condemn the method; as a consequence all were reinjected and put upon mercury rubbings.

2. Early secondaries. In this series there are twenty-three cases. All have had one or more injections. Fifteen cases have continued under close observation, from five to ten months. Three of these cases are of the original twenty-five cases reported in February. All have had two intramuscular injections after the alkaline solution method, the second injection being given at the sixth or seventh week, on top of a negative Wassermann. These three have remained clinically and biologically negative up to the present time, without any other form of treatment. The remaining twelve have all had three injections, except two cases. Ten have had a negative Wassermann since the second injection. Here the treatment after the second injection has been the combined method, preferably rubbings. The two remaining cases in this series are both instructive and interesting. They were treated in December. Both had lesions (early secondary). They were injected with the alkaline solution intramuscularly, both showed negative blood tests in six and seven weeks. They refused further treatment. In June both patients returned with clinical manifestation and positive Wassermann examination, each having passed from clinical symptoms with positive Wassermann to negative without symptoms and back to positive with symptoms. This shows distinctly how fruitless one injection is in moderately advanced cases.

3. Late secondaries. In this series there are thirty cases. All have been under observation from three to ten months and have had two or more injections except seven cases. The older the infection the more persistent the lesions and correspondingly the more severe the treatment has been; two of the cases in this series have had four injections. One of these cases was not able to obtain a negative result until after the fourth injection; he has had in addition one hundred and fifty rubbings in the last six months. He has since had his fifth injection. Another case in this series with a palmar syphilide of two years' standing with almost continued previous mercury treatment has not been able to clear his clinical symptoms with four injections of salvarsan (two intramuscularly and two intravenously), together with sixty rubbings and twenty injections. The patient has been under observation for six months. Of the remaining twenty cases that continued under my observation, three obtained a negative test after four months with two injections of salvarsan and mercury rubbings. Three obtained a negative after six months with three injections and mercury rubbings. The remaining cases are still positive, all having had two injections combined with mercury rubbings. The reason for this low percentage of negative reactions is attributable to the dilatory attitude of the patients in taking further treatment when all of their lesions were healed and their general nutrition was fairly good. Under this heading I herewith report two cases of syphilis complicating pulmonary tuberculosis, where I administered the first salvarsan injection for Dr. Silvio von Ruck at the Winyah Sanitarium at Asheville, N. C.

H. Pulmonary tuberculosis. Late secondary syphilis, mucous patches. Wassermann positive. April 1, 1911, intramuscular injection of 0.6 gram alkaline solution. Mucous patches healed in one week. After one month, with Wassermann still positive, intravenous injection followed by rubbings for three weeks. One month after the second treatment Wassermann negative. A third injection was given. Wassermann has remained negative. General improvement fair, retarded by digestive disturbances.

L. Pulmonary and laryngeal tuberculosis. Late secondary syphilis. Wassermann positive. Intravenouslar injection of salvarsan April 1, followed by Herxheimer on scalp. One month later Wassermann still positive. Salvarsan intravenously after which Wassermann became negative. There had been a marked general improvement from the first.

4. Latent syphilis. Only manifest by a positive Wassermann. This class comprises the largest number of cases, forty-four. Here occur those infections that have been long forgotten, the so-called skeleton-in-the-closet kind.

Name.	Date of Infection.	Mercury Treatment.	No. of Salvarsan Injections.	Wassermann Test Has Been.
C. E. H.	6 years	Moderately severe	2	Negative for last 5 mos.
J. C.	5 "	Neglected	3	" " " 1 "
D. H. D.	10 "	Neglected	3	" " " 1 "
P. S.	4 "	Severe	1	" " " 3 "
J. K.	4 "	Moderately severe	2	" " " 2 "
D. W. M.	10 "	Neglected	2	" " " 1 "
S. M. G.	7 "	Neglected	3	" " " 2 "
M. S. G.	5 "	Neglected	3	" " " 2 "
H. C. S.	5 "	Neglected	3	" " " 1 "
D. S.	5 "	Neglected	3	" " " 1 "
F. L. G.	7 "	Neglected	3	" " " 1 "
W. E. M.	2 "	Moderately severe	3	" " " 2 "
A. O.	5 "	Neglected	3	" " " 2 "
F. F.	10 "	Moderately severe	3	" " " 4 "
E. H.	14 "	Moderately severe	3	" " " 5 "
J. D. G.	11 "	Neglected	3	Positive
T. G.	14 "	Moderately severe	2	Negative " " 5 "
W. A. W.	11 "	Severe	1	Positive
J. B. S.	9 "	Neglected	1	"
A. R. C.	7 "	Neglected	2	Negative " " 1 "
L. M.	7 "	Neglected	2	Positive
M. J.	8 "	Moderately severe	1	"
F. J.	8 "	Moderately severe	1	"

The above table shows clearly that it is possible in a majority of cases to change a positive reaction to a negative, notwithstanding the fact that the infections have persisted a long time in a latent form. Here the possibility of getting a negative test depends upon three things. (1) duration of the infection; (2) amount of previous mercury treatment; and (3) willingness and ability to continue further treatment. Twenty-three of these cases continued under observation and treatment. It will be seen by the accompanying table that it is possible to get a negative reaction in practically all cases. Of the remaining cases four have had two injections each, but have not been seen for five months. The rest have had one injection and have not been heard of since.

5. Tertiary. Unfortunately the cases in this class, after their lesions had healed have not been heard of; all had positive Wassermanns.

6. Nervous syphilis. In this series there are nineteen cases, comprising the following: (1) Cerebrospinal syphilis occurring during the secondary manifestation. One case. (2) Paresis, two cases. (3) Erb's spastic paralysis, one case. (4) Lateral sclerosis, one case. (5) Spinal syphilis, one case. (6) Tabes. *a*. Incipient, three cases. *b*. Moderately advanced with marked ataxia, three cases. *c*. Far advanced, one case. 7. Syphilitic paralysis, three cases. 8. Syphilitic epilepsy, one case. 9. Optic atrophy, two cases.

1. The first case in this series is greatly improved.

He has since gone back to his work, the nature of which I do not know, as he has moved to the Pacific coast. There has been no other form of treatment administered.

2. Paresis. Both cases came under observation fairly early; one case has grown steadily worse. The other case has received a second injection and is working at present. Wassermann still positive.

4. Lateral sclerosis. This case has had two injections. Wasserman still positive. General nutrition is much improved. There has been almost a cessation of neurotic pain.

5. Spinal syphilis. There have been no recent reports; the last report showed improvement.

6. Tabes. *a*. Incipient. Three cases. One case has gained a negative Wassermann, pain has all subsided, the pupils have always reacted, never any ataxia present. The other two cases show marked improvement in nutrition and neurotic pains and an increase in weight. All have had two injections and rubbings, treatment extending over four months. Wassermann still positive. Argyll-Robertson pupil still present. *b*. Moderately advanced. Three cases. Two cases show general nutritive improvement, neurotic pains absent. Each has had two injections and Wassermann still positive. One case with one injection shows no improvement whatever; Wassermann still positive. *c*. Far advanced. One case. No improvement. Wassermann always negative.

7. Syphilitic paralysis. Three cases. All are physicians. Two have had two injections; all showed general nutritional improvement. Wassermann unchanged.

8. Syphilitic epilepsy. One case; no report has been received.

9. Optic atrophy. Two cases. No improvement.

Professional Infection.—In this report are included the cases of twenty-six physicians that have been treated since last October. All had extragenital lesions except two. The reason for this I attributed to the following: (1) carelessness in handling venereal ulcers; (2) the difficulty of differentiating these ulcers without a miscroscopical examination being made. Consequently every physician should hold every suspicious lesion in the light that it is luetic until he positively finds out that it is not specific. In this way both doctor and patient would derive benefit. As a prophylactic measure, we should not forget the application of mercury ointment where there has been an exposure to a specific infection.

CONCLUSIONS.

1. Salvarsan has come to be the right arm of our syphilitic armamentarium.

2. It has not produced any neurotropic effects in properly selected cases.

3. Combined with mercury, it acts with remarkable rapidity in curing syphilis, both clinically and biologically, and therefore is a wonderful advance over the old method of treating this disease.

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602 Reliance Building.

THE PRINCIPLES AND APPLICATION OF AUTOGENOUS BACTERIAL VACCINES IN THE TREATMENT OF DISEASES.*

By HENRY A. CRAIG, M.D.,

New Brighton, Staten Island, N. Y.

Pathologist and Bacteriologist, S. R. Smith Infirmary.

The agencies of resistance called into play within the human organism by the entrance of pathogenic bacteria are numerous, but the most important, beyond question, is the action by which the white blood corpuscles take the invading bacteria into their substance and ultimately digest them by means of enzymes, thus destroying them. This property of the leucocytes and of some other cells is called phagocytosis. The doctrine of phagocytosis was established in 1883 by Metchnikoff, who claimed that immunity is a cellular process. This theory found but little acceptance at first, as Behring, Ehrlich, and others at this time, demonstrated a great variety of protective substance in the blood-serum of immune animals, antitoxins, agglutinins, precipitins, bacteriolysins, etc., thus claiming that immunity is a chemical process of the body fluids. Metchnikoff realized that the blood-serum played an important part in the destruction of bacteria, but he thought this was due to the fact that the serum stimulated the leucocytes to increased activity. In 1903 (twenty years later) Wright of England discovered in the blood-serum a substance which acted upon the bacteria, causing them to be more easily destroyed by the phagocytic cells. He called this substance opsonin, from the idea that it prepares the bacteria for ingestion by the phagocytes much as we prepare food by cooking. He proved that opsonins are present in normal serum as well as in the serum of patients suffering from some infectious disease, and demonstrated that the leucocytes are not capable of phagocytosis except in the presence of blood-serum

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containing opsonins. That is, Wright's opsonic theory claims that both the formed elements of the body (the body cells), and the body fluids are equally important in producing immunity. The phagocytes ingest and destroy the invading bacteria, but are able to do this only after the bacteria have been acted upon by the opsonins. Immunity, according to this theory, depends upon phagocytosis and phagocytosis depends upon the opsonins. Obviously then, the degree of immunity depends upon the opsonic content of the blood.

Later it was shown that the opsonins normally present are not the same as those developed in the production of immunity to a certain disease. The latter are absolutely specific, *i. e.*, taphylococcus opsonin, developing as a result of a staphylococcus infection or resulting from the inoculation of a staphylococcus bacterin, prepare only staphylococci for ingestion by the phagocytes. Tubercle opsonins prepare only tubercle bacilli, etc. The opsonins normally present show no such specific action, but act upon all bacteria in much the same way. These two kinds of opsonins are very differently affected by heat. Those normally present are quickly destroyed by a temperature of 60° C. Those developing in the production of immunity are very resistant to this temperature. It can readily be shown by absorption tests that opsonins act upon the bacteria and not by stimulating the phagocytes to increased activity; also, by comparative tests, that the opsonic and bactericidal power of the blood serum in an infection do not run parellel, and therefore are distinct entities. Wright developed the idea that these opsonins are very important in combating certain bacterial infections. He proved that the inoculation of a corresponding bacterial vaccine produced marked changes in the opsonic content of the infected individual and showed that it is possible to measure the opsonic power of the blood-serum of such an individual in relation to the normal—the opsonic index.

The present-day management of bacterial infections, outside of hygiene, sanitation, etc., is summed up in the one word, immunity. Immunity means not only the non-susceptibility of an individual to a given disease and the power to resist infection, but also the mechanism by means of which a cure is effected. Passive immunity is produced by injecting protective substances manufactured in the body of another animal, *e. g.*, diphtheria antitoxin. This is an ideal method of treatment, as the immunity is produced immediately if the antitoxin is administered intravenously and after from six to eighteen hours if given subcutaneously, doing in this time what it takes the body, unaided, a week or more to do. Also it requires no effort on the part of the patient. But the immunity is temporary and the treatment is applicable to only a very few diseases. The diseases caused by bacteria that produce soluble extracellular toxins in their growth are the only ones for which antitoxins can be made. Most bacteria produce intracellular toxins, the toxins being firmly bound up in the bodies of the bacteria, and for these antitoxins cannot be made, although bacteriocidal sera can be produced in the bodies of susceptible animals in some cases and used therapeutically, *e. g.*, antistreptococcus serum. Active immunity is the immunity induced by the production of immune or protective substances within the individual. It can be produced in several ways, but here we are only concerned with Wright's method of producing active immunity by injecting into the patient devitalized bacteria. This is called the vaccine or inoculation therapy.

With Wright's method of treating infectious diseases by small infrequent injections of sterile bacterial vaccines consisting of the organisms causing the disease, we have a new and efficient means of immunization of such far-reaching importance that it promises to revolutionize the treatment of bacterial diseases. Just how and why it acts, we may not be able to explain fully. We know it stimulates the immunizing apparatus into activity and that we are copying nature's methods. In any infection it is by autoinoculation from the site of the disease that the body is stimulated to produce the protective substances necessary for throwing off the infection. Massage, poultices, cupping, Bier's hyperemic treatment, and many other forms of treatment act in this way, *i. e.*, increasing autoinoculation. We noted that passive immunity was immediately produced and required no effort on the part of the patient. Active immunity, on the other hand, requires time and effort on the part of the body. The protective substances have to be manufactured by the body cells. Immunity is gradually produced for a week or ten days, continues for a week or ten days, then gradually declines. Injection of bacterial vaccines stimulates the body cells to produce the protective substances. In case the patient has not sufficient vitality to react, the immunizing substances are not produced and the treatment fails. Therefore the earlier in the disease they are given the better will be the results. They should not be left as a last resort when the patient's vitality is exhausted.

Wright's method of treatment is based upon the following principles. In certain localized infections, the body absorbs but little of the products of bacterial growth or antigens. (An antigen is any substance capable of inducing the production of an antibody.) Therefore, the amount of antigen absorbed being small, the amount of active immunity produced is slight. That is, little or none of the specific opsonins are formed, and those normally present are, to a large extent, used up so that the opsonic index is low and the disease tends to become chronic. In such a case, artificially stimulating the production of the immunizing substances by the inoculation of a proper bacterial vaccine greatly assists the recovery. Or the part infected may be so badly damaged by the severity of the infection that the surrounding tissues are unable to react and form the necessary specific opsonins. In this case, the inoculation of the corresponding bacterial vaccine into a part distant from the site of the infection, where the tissues are uninjured, is followed by an abundant elaboration of the specific opsonins which are delivered to the blood current, are taken to the infected part, and reinforce the infected tissues in their fight against the invading bacteria. Again, the whole system may be overwhelmed by a general bacterial infection, so that no specific opsonins are formed and those normally present are rapidly used up. Hence the opsonic index is very low and the body is helpless to resist the infection. Here it has been proved, in many cases, that the subcutaneous injection of carefully graded doses of the corresponding bacterial vaccine can increase the specific opsonins. For it is the connective tissues and particularly the loose cellular subcutaneous connective tissues that are most active in the production of the antibodies. Bacterial vaccines are never given intravenously, for this would not increase the opsonins, but always into the subcutaneous tissues. It is accepted as a fact that when we inject a vaccine into the subcutaneous tissues, the

local cells that come in contact with the vaccine react and produce the antibodies. These tissues being distant from the focus of the disease and uninjured, are better able to respond.

The opsonins are in the blood serum, and naturally they will act most advantageously when the infection is of such a nature that the blood comes thoroughly in contact with the bacteria. Bacterial vaccines work better in deepseated infections than in superficial infections where the opsonins are less able to get at the bacteria. Thus, in acute urethritis, the gonococci are on the surface of the urethra and are but little affected by the opsonins. In abscesses, liberating the pus by surgical means relieves the tension and allows the inflow of serum containing the opsonins. In tuberculous peritonitis, the abdominal cavity is full of serum from which the opsonins have all been used up. By operation the removal of this serum allows the inflow of fresh serum rich in opsonins and other antibodies, with the rapid cure of the disease. In pleurisy with effusion, which is frequently tuberculous, the same condition prevails, and many of these cases are cured by simple aspiration for the same reason as the above. Wright insists that in carrying out the vaccine treatment one should be guided by the opsonic index. But an immense amount of investigation has revealed the fact that the index cannot be obtained accurately enough to be of much use unless the variation is very great, for it may vary 20 per cent. above or below the average in normal individuals. It varies with the leucocytes used and different strains of bacteria differ in their capacity of being opsonized. Besides the opsonic index is not an accurate measure of the total antibodies in the blood serum. From extensive experience the proper average dose and interval between doses is being worked out. With the aid of a general rule clinical symptoms are quite a sufficient guide for carrying on the treatment without the opsonic index, according to many authorities.

Bacterial vaccines consist of a suspension of bacteria in normal salt solution, killed by heat (55° to 60° C. for an hour), carbolic acid one-half per cent. or lysol one-quarter of one per cent. being added as a preservative and standardized by enumeration and dilution, so that a cubic centimeter contains a certain definite number of bacteria, varying according to the dose of the different bacteria. Autogenous vaccines are prepared from the bacteria obtained from the patient under treatment. Stock vaccines are made from bacteria morphologically similar but from other source than the patient treated.

The question of autogenous versus stock vaccines has been given great consideration. That the use of an autogenous vaccine is scientifically correct must be admitted, providing, as it does, a vaccine of exactly the same kind of bacteria as those causing the infection. The best practice is to give a stock vaccine for the first dose and, if possible, to continue the treatment with an autogenous vaccine. Sometimes it is impossible, from the nature of the infection, to obtain a culture from the patient, *e. g.*, appendicitis before operation. Moreover, the gonococci, tubercle baccili, and typhoid bacilli from different cases seem much alike, so that it is customary not to attempt to get an autogenous vaccine of these bacteria, especially as they are difficult to isolate from the patient, require special media, time, etc. But in all other bacterial infections, to get the best results, the treatment should be carried out by an autogenous vaccine whenever possible. There are many strains of each great group of bacteria. Some one has estimated that there are probably as many as seventy different strains of streptococci and nearly as many different strains of the colon group, etc. So in using a stock vaccine, it can readily be seen what a small chance there is of getting the same strain of bacteria as the one causing the infection, even if the right group is diagnosed and a morphologically similar vaccine is administered. In some of the stock vaccines on the market, attempts to obviate this difficulty are made by preparing the vaccines of a number of different strains of the bacteria; these are polyvalent vaccines. Naturally, an autogenous vaccine must contain a strain of bacteria exactly similar to that causing the infection, providing the bacteria at fault grow in the media used.

Many infections are mixed, and one is unable to determine which is the principal offending organism in order to administer a corresponding stock vaccine. But an autogenous vaccine can be prepared containing all the varieties of bacteria present: a mixed vaccine. Moreover, in chronic infections, the bacterial flora may change, the original bacteria dying out and others taking their place. With an autogenous vaccine, one can keep it up to date by making a new one.

During the past three years, bacterial vaccines have been used in thousands of cases, and there is getting a very extensive literature upon the subject. All writers agree that while they have seen cases in which no results were obtained, the cases not being suitable for vaccine treatment, still they have never seen a case in which any bad results were obtained from the use of vaccines. Naturally, there being no foreign serum in a bacterial vaccine, there can be no cases of serum sickness following such as often follow the administration of the various sera.

This paper is based upon eighty-five cases treated by the writer for various forms of bacterial infection, using bacterial vaccines, in most cases autogenous. This has necessitated the administration of several hundred doses of vaccine, without any harm resulting. Sometimes there is local redness and soreness at the site of inoculation for a day or two. In looking over some of the literature the writer found about three thousand cases reported quite in detail and as many more, less in detail. These cover sixty-seven different conditions treated by bacterial vaccines, indicating the tremendous field that vaccine therapy covers.

The best results from vaccine treatment have been obtained in cases of infections due to the pyogenic cocci. In these conditions bacterial vaccines have established their right to first place in treatment, after surgical measures. Fifty of the present series were of such a nature, four of them in diabetics, including cases of cellulitis, carbuncles, furunculosis, septicemia, erysipelas, etc. Twenty of the cases were due to the streptococcus, pure or mixed with other pyogenic cocci, especially the *Staphylococcus pyogenes aureus*. Every case of cellulitis cleared up rapidly no matter how severe. Some of the patients were saved from the necessity of having crippling operations performed upon their hands, etc., in cases of extensive cellulitis of the hands, arms, etc. One case in particular, a man seventy-three years old, received an injury over the knuckle of his right index finger by striking another man in the mouth, a tooth causing the injury. A very severe streptococcus infection resulted with gangrene of the finger, necessitating amputation. The infection, however, spread into the hand, involving the ten-

dons, and above the wrist into the forearm. The patient was septic and in bad condition. Rather than mutilate his only hand (the other had been lost years before), an autogenous streptococcus vaccine was administered several times, which controlled the infection without an incision being made into the hand. He had a perfect result except for the loss of the index finger. Another case is just convalescing from almost an identical condition, excepting that it was not as severe.

A man who had been subjected to amputation of toe, foot, leg, and finally at mid-thigh in an unsuccessful attempt to get above a mixed streptococcus and gas bacillus infection, was finally saved by an autogenous vaccine. Another severe case of streptococcus infection of foot and leg, following operation for osteomyelitis of metatarsal bones of foot was readily controlled by an autogenous vaccine. The infection spread rapidly after the operation, and the patient had a marked fever until it was controlled by the vaccine. He received four doses of the vaccine and obtained a splendid result.

One of the most remarkable cases in the series was a young girl suffering from a very severe streptococcus angina in the course of scarlet fever. When first seen by the writer she had a rectal temperature of nearly 107°, and a pulse of 160, and was profoundly septic. Her throat was greatly swollen and covered with membrane. It looked like a sloughing mass. The cervical lymphnodes were enormously swollen. She was unable to swallow and barely able to breathe. The cultures showed pure streptococcus, no diphtheria bacilli. She was immediately given a streptococcus vaccine made a few days before from a case of acute otitis media following scarlet fever, and the treatment carried on subsequently by an autogenous vaccine. The result was most remarkable. The throat cleared up rapidly and two days later she was asking for something to eat. She received but two doses of autogenous vaccine. A few days later she was desquamating. The swollen lymph nodes in the neck rapidly subsided without suppuration and no infection of the ears followed.

Three cases of erysipelas cleared up in a few days. Cases of furunculosis and carbuncles responded nicely. Several cases of carbuncles in diabetics cleared up in a few days while they gave a history of having had similar carbuncles lasting for weeks. One case in particular, an old lady of seventy, very obese, urine loaded with sugar, started with an ordinary carbuncle of the neck, which was opened in the usual way. The infection spread, however, producing a diffuse purulent infiltration of the subcutaneous tissues extending from the seventh cervical vertebra all the way up to her eyebrows. The scalp was a great boggy mass, with pus exuding in many places. She was treated with an autogenous staphylococcus vaccine and recovered without any incisions being made. The effect of the vaccine was very marked. Another case, a woman with a large number of deep furuncles in her right axilla. The condition had lasted two weeks and was very painful. The patient was worn out by the pain and loss of sleep, her axilla was full of deeply indurated masses, some of them full of pus. She was cured in five days by an autogenous staphylococcus vaccine without any incisions being made into the axilla.

Several cases of empyema were apparently shortened. One case had a pneumococcus empyema following lobar pneumonia, which was treated successfully by aspiration and pneumococcus vaccine. Later it recurred with the colon bacillus as the infecting organism, and was sucessfully treated by drainage and autogenous colon vaccine. The patient finally died of a ruptured aneurysm of the aorta.

A case of colon bacillus septicemia following death of the fetus and a right pyelitis was cured by an autogenous vaccine made from the organisms found in the blood. The prognosis seemed to be very unfavorable at the beginning. In another case of sepsis following abortion the blood cultures were negative, but streptococci were found in cultures taken from the cervix. The patient was treated in the usual way plus the administration of an autogenous streptococcus vaccine and made a very satisfactory recovery. Another case of staphylococcus septicemia in a man following osteomyelitis of the tibia, developed acute endocarditis. An autogenous staphylococcus vaccine brought the temperature down from 106 to normal, but he died very suddenly from embolism of a cerebral artery.

Ischiorectal abscesses were apparently shortened in their course. Even when occurring in patients dying of tuberculosis, they improved. A man, sixty-five years old, came into the hospital at the end of a prolonged spree. He was on the verge of delirium tremens and had a very severe appendicitis. He was in such a bad condition that it was considered hopeless to operate and the last rites of his church were administered. He was given a vaccine made from the interior of an appendix removed the day before from a very severe case of perforative appendicitis, the vaccine being ready for the patient in case he needed it. It consisted of a mixture of streptococci and colon bacilli. The patient made a remarkable recovery, was out of bed in a week and left the hospital four days later. A case of acute otitis media and beginning mastoiditis was treated by an autogenous streptococcus vaccine which soon controlled the infection. The patient had a high fever, but on account of his age (seventy years) and very bad general condition, it was not considered advisable to operate. He made a very satisfactory convalescence. Another man, seventy-six years of age, had been afflicted with lupus for years which had resisted all kinds of treatment. His face was terribly scarred and covered with crusts with suppuration going on underneath. Unable to open his eyes on account of the contracting scars. He was so repulsive looking that his fellow-patients objected to having him around, so that his condition was pitiful indeed. He was treated with an autogenous staphylococcus vaccine for three months, at the end of which time all the ulcers, etc., on his face had healed with the exception of one on the point of his chin, which had become epitheliomatous. He subsequently died of carcinoma of the sigmoid and liver. He had had two different kinds of cancer at the same time.

The treatment is very efficacious in assisting closure of sinuses following operations. A woman operated upon four months before for appendicitis had a persisting sinus that resisted all efforts to make it close. It was treated by an autogenous vaccine, three doses of which caused the sinus to close. Another case, a man, had a similar condition following operation for appendicitis twelve weeks before. Four doses of an autogenous vaccine closed his sinus.

In looking over some of the literature, the writer found 155 cases of local infections reported (cellulitis, abscesses, fistulas, sinuses, etc.). Eighty-one were cured, 55 improved, 19 not benefited. Of 61

cases of postoperative infections 50 were cured, 7 improved, 4 not benefited.

	Cases	Cured	Improved	Not Benefited
Pyemia	14	11	1	2
Septicemia	186	155	10	21
Puerperal septicemia	155	141	4	10

Leary reports forty-seven cases of puerperal septicemia with but four deaths, and of these two were moribund when treatment was begun. Hartwell reports eighteen cases without a death. Van Cott reports eighteen cases with but one death, the last case being moribund when treatment was begun. Martyn's case received three doses of antistreptococcus serum without the slightest effect before vaccine treatment was adopted, which produced rapid recovery. Waters and Eaton report fifty cases with "almost perfect" results, many of which cases had been pronounced hopeless.

	Cases	Cured	Improved	
Pyorrhea alveolaris	76	46	25	5 not helped
Acute ulcerative endocarditis	29	13	8	8 not benefited
Empyema	28	16	4	8 " "
Pyelitis	14	8	3	3 " "
Cystitis	62	42	13	7 " "
Pyelonephrosis	2	1	1	
Furunculosis	156	141	12	3 " "
Carbuncles	24	23	1	
Acne	139	74	48	9 " "
Sycosis	28	13	11	4 " "
Eczema	7	3	4	
Impetigo	2	2		
Otitis media	38	21	13	4 "
Mastoiditis	8	5	2	1 "
Peritonitis	4	3	..	1 " "
Cholecystitis	3	all cured		
Ulcerative colitis	3	cured by	colon va	ccine
Erysipelas	106	101	1	4 not benefited.

The duration of treatment cut into half. Van Cott reports thirty-five cases of erysipelas: two died; one was moribund when treatment was begun, the other was a baby of six months, who died of exhaustion. The average duration of the disease was 4.3 days.

From the laboratory of the Massachusetts General Hospital last year the results of ninety-seven cases treated by vaccines are given. Twenty-four cases of general infection, eighteen of which were puerperal; all recovered. Twenty-two cases of septic abdominal wounds, due to the colon bacillus, staphylococcus and streptococcus; all recovered. In some of the cases where the wounds had remained for some time, improvement seemed to immediately follow the administration of the vaccine. Forty-one cases of local sepsis all recovered, twenty-five of them due to the streptococcus. A number of cases of pneumonia treated by the writer using pneumococcus vaccine have been reported.* Pneumonia is one of the diseases in which the applicability of vaccine treatment is debatable. Those who claim that bacterial vaccines are applicable for local conditions only advise against using it in pneumonia. It is possible to isolate the pneumococcus from the blood in from 50 to 90 per cent. of all cases of pneumonia; therefore this is really a septicemia. All the cases of pneumonia treated by the writer were in an institution for old men (Sailors' Snug Harbor), among a very unfavorable class of patients. Nearly all the inmates are over sixty, 50 per cent. are over seventy, and 11 per cent. over eighty years of age. One patient of ninety recovered. Nearly all have chronic nephritis, bad hearts and arteries; many are alcoholic, etc. The previous mortality for five years had been 66 per cent., as pneumonia always has a high mortality among such patients. The mortality was reduced to one-third what it had been by the use of autogenous pneumococcus vaccine. For over a year, ten consecutive cases, there was not a death in the institution from pneumonia. Then a case complicated by purulent pericarditis, another with acute uremia, acute dilatation of the heart and a very severe case of double pneumonia, who died from the intensity of the infection, spoiled the record and brought the mortality of the series of twenty cases to 20 per cent. Still the contrast with the previous treatment was marked. Only one case died directly from the pneumonia. From the literature 149 other cases were found reported with an average mortality of 13 per cent. Musser and Norris in Osler's "Modern Medicine," in an analysis of 43,455 cases, found the average mortality of pneumonia to be 21 per cent. So that even a reduction of the mortality to 13 per cent. is worth while.

*Medical Record, February 12 and October 15, 1910.

The first use made of bacterial vaccines in typhoid was a prophylactic measure, as advocated by Wright, to make individuals non-susceptible to the disease. A number of governments, especially the United States and England, have taken it up and inoculated many of their soldiers, so that thousands of cases have been so treated. Two or three injections are usually given: first, five hundred million, ten days later one billion, and ten days later another dose of a billion. The result is to greatly diminish the number of cases of typhoid and to diminish the mortality in those that do get it. Among 11,171 men immunized against typhoid, reported by the Surgeon General of the United States army, there were but three cases of the disease and no deaths. England reports 6000 soldiers immunized against typhoid and 6000 not immunized, living in the same environment. There was but one-seventh the number of cases and one-eleventh the number of deaths among the immunized as compared with those not immunized. Leishman of the British colonial army reports 39 deaths per 10,000 soldiers, not protected by inoculation, and but 3.6 deaths per 10,000 immunized soldiers. In the Spanish-American war, one out of every six American soldiers contracted typhoid; in those regiments left in the country, one out of every five. There were 20,738 cases, with 1580 deaths, all in three and a half months. Recently on the Mexican border, 18,000 soldiers have been mobilized for two months and all immunized against typhoid. There was but one case, in a teamster who was not protected by inoculation, and one mild case in a recruit, both incurred before reaching the camp. The treatment of typhoid by bacterial vaccines has given very good results. Callison of the New York Post Graduate Hospital has collected 323 cases so treated, with but seventeen deaths, or 5 per cent. He uses stock vaccines entirely and concludes that the vaccine prevents relapses and lessens complications. Typhoid vaccines may also prove of great value in carrier cases, judging from the small number of cases reported.

A number of writers report excellent results from the use of gonococcus vaccine. As stated before, superficial infections, where the blood does not come into intimate contact with the invading bacteria, do not do as well as deeper infections. Thus, acute and chronic urethritis yield less satisfactory results than in the case of metastatic infections. Especially good have the results been in cases of gonorrheal arthritis.

In the majority of cases, the symptoms are ameliorated and the joint is restored to its former function. Of 246 cases found reported in the literature, 126 were cured, 91 improved, and 29 not benefited In such obstinate infections as gonorrheal vulvovaginitis in children, the gonococcus vaccine has proved to be of great value. Of 211 cases reported, 100 were cured, 104 improved, 7 not benefited. Hamilton reports a contrast of the old method of treatment with the vaccine treatment. By the former, 60 per cent. were cured; by the latter, 90 per cent. were cured. The average length of time for the treatment by the old methods was 10.1 months; by the vaccine treatment, 1.7 months. Gonococcus vaccine has also been used in urethritis, epididymitis, prostatitis, salpingitis, conjunctivitis, and iritis with encouraging results, though the number of cases is small.

When Koch first announced the preparation of his tuberculin, it was enthusiastically taken up as a specific for tuberculosis. As the result of zeal and inexperience, many times too large doses were given, severe reactions occurred, and much harm was done. With this in remembrance, there is a deep-seated prejudice against treating tuberculosis by the inoculation method. But it is gradually coming to its own. In certain German sanatoria, notably that under Hammer at Heidelberg, this treatment is used in practically every case. Not only in incipient cases but even in the advanced cases, where it will at least alleviate the symptoms and prolong life. It is in cases of incipient tuberculosis and so-called surgical tuberculosis of bones, joints, etc., that the treatment is of the most value. Raw of Liverpool reports 1600 cases of surgical tuberculosis and says the results have been successful beyond all expectations. Trudeau, who has used it at the Adirondack Cottage Sanatorium in many hundreds of cases, says it stimulates the defensive resources of the system, is a valuable aid in the treatment of the disease, and the lives of thousands of cases of incipient tuberculosis and even of advanced cases when chronic in type as well as cases of surgical tuberculosis, may, in many instances, be saved or prolonged by this treatment without any change in their environment. It is possible for but 10 per cent. of all cases of tuberculosis to go to a sanatorium. The other 90 per cent. are obliged to stay at home, and should have the advantage of the specific treatment in their homes, as they can be so treated with little interference with their business, according to a number of authorities. There are 10,000 deaths from pulmonary tuberculosis in New York every year and 22,000 new cases reported. Most of these are wage earners and cannot leave home for sanatorium treatment, even if there were enough sanatoria to accommodate such a number. The Massachusetts General Hospital, Boston Consumption Hospital, and Good Samaritan Day Camp of Boston are all treating patients in their own homes in this way, with great benefit. Hawes, from the above institutions, reports 80 cases of pulmonary tuberculosis, 29 incipient, 20 moderately and 31 far advanced. Fifty-four per cent. were cured or arrested, 11 per cent. improved, 11 per cent. unimproved, and 24 per cent. dead—results comparing favorably with the best sanatorium treatment. In this class of patients, without the treatment, practically all would have gone on to a fatal issue. Altogether he reports 143 cases of various forms of tuberculosis; 14 per cent. have died, 11 per cent. have shown no improvement, and 75 per cent. are cured or improved. In no instance was there any harm done.

Denys recently reported 470 patients in all stages of phthisis attending his clinic. Seventy-one per cent. have recovered or improved greatly. He claims that these remarkable results were due to the inoculation treatment, as it was impossible to make any radical change in their mode of living. Trudeau, from the Adirondack Cottage Sanatorium, reports that of the moderately advanced cases treated in the sanatorium for ninety days or more, 6 per cent. are apparently cured by the routine method, while if given tubercle vaccine in addition, 27 per cent. are apparently cured (four and a half times as many). About an equal number are arrested by the two methods. By the routine treatment, 43 per cent. are unimproved, while when given the specific treatment in addition, but 18 per cent. are unimproved. For the incipient cases there is a slight advantage for those receiving the vaccine, but nearly all do well in this stage by either method of treatment. Still relapses are much less frequent among those receiving the vaccine. Pottenger of the sanatorium at Monrovia, California, has used it in many hundreds of cases, and observes that a great percentage of favorable results are obtained, they do not develop as many complications and extensions of the disease, improve faster, thus saving time, and do not suffer relapses nearly as often. He writes that tuberculous laryngitis yields readily, fistula in ano, tuberculous lymph nodes, tuberculous otitis media, and tuberculosis of the genitourinary tract have almost universally been improved and a fair percentage of them cured by tubercle vaccines.

The writer has several cases under treatment by this method, but it is too early to publish results. One case, however, is very interesting. A man of forty, with a very marked tuberculous family history, and who no doubt had had the disease himself a year or more, when first seen by the writer, was having very severe pulmonary hemorrhages and was coughing up great quantities of blood for several days. He had a high temperature, rapid pulse, great loss of flesh and strength, and the prognosis appeared to be hopeless. His lesion was in the upper lobe of the right lung. It was impossible for him to go away to a more favorable climate. Since treatment by tubercle vaccine was begun by the writer, in less than two months, he has gained twenty-eight pounds and has gone back to work, feeling greatly improved. Another case, a woman of twenty-five, whose father and sister have recently died of pulmonary tuberculosis, has marked involvement of the upper lobes of both lungs with beginning cavity formation in the left and sputum loaded with tubercle bacilli. She has been under treatment but a short time, but has already shown marked improvement—less cough, a gain in weight and strength, much less fever, etc.

In tuberculosis of the lymph nodes, this treatment is especially applicable, giving better results than any other form of treatment, especially after a partial operation has been done. The writer has found the following cases reported in the literature of tubercle vaccine:

	Cases	Cured	Improved	Not Benefited
Tuberculous adenitis	162	81	52	19
Renal tuberculosis	24	10	12	2
Tuberculous peritonitis	6	all cured	or impm	ved but one
Tuberculous Cystitis	21	5	13	3
Tuberculous laryngitis	6	4		2
Tuberculous epididymitis	12	6	5	1
Lupus	50	11	31	8
Tuberculosis of bones and joints	105	15	65	24

These latter are more resistant to the specific treatment, as there is so often dead bone present. Thus, of 386 cases of various tuberculous conditions reported by a number of observers, 80 per cent. were cured or improved, which certainly proves the value of the treatment.

In conclusion, although not claiming that the use of bacterial vaccines is a cureall, still, for suitable cases, it makes a very useful addition to our armamentarium in the treatment of bacterial infections, approaching much nearer being a specific than any drugs we have for the same cases. It does not interfere with the methods of treatment at present in use and can but add to the effectiveness of the same, being apparently productive only of good. It would be an excellent procedure in every operation upon an infected case, such as appendicitis, pyosalpinx, cholecystitis, to take cultures at the time of the operation. Then an autogenous vaccine could be prepared in case the subsequent course of the patient necessitates its use, or even given to the patient, in cases where trouble seems imminent, in the hope of so increasing his powers of resistance as to make a general infection improbable. The use of bacterial vaccines is not intended to take the place of surgical measures, but it is often a very useful adjunct to surgical measures. The reports of the vaccine treatment in recent medical literature seem almost invariably favorable. Some have obtained excellent results with stock vaccines, and it sems reasonable to expect much better results from the use of autogenous vaccines. The treatment certainly has the promise of a brilliant future, and doubtless will become our mainstay in the treatment of all bacterial infections. Perhaps even some allied form of treatment will conquer cancer, a disease which as yet baffles control.

42 Franklin Avenue.

TYPHOID FEVER WITH RELAPSE AND MULTIPLE COMPLICATIONS.*

By AUGUSTUS A. ESHNER, M.D.,

PHILADELPHIA, PA.

Incalculable benefit, particularly in the direction of morbidity and mortality, has resulted from the evolution of bacteriology and animal parasitology, and the coincident knowledge of the causative factors of disease, their vital activities, and their manner of dissemination. In the absence of this knowledge, which would have been beyond attainment without enlightened animal experimentation, malarial fever and yellow fever would still be the scourges of tropical and semitropical countries, destroying their thousands annually and rendering impossible the regeneration of Cuba, and the construction of the Panama Canal. For the same reason we have lost fear of an invasion of our shores by such diseases as cholera and plague. Further, we have learned to manage rationally the entire group of infectious diseases and to treat a number of them with specific remedies. Diphtheria and epidemic meningitis no longer engender a feeling of hopeless and impotent dread, and even tetanus can be approached with prospect of cure.

Typhoid fever is no longer looked upon as a pestilential visitation, tamely and complacently to be submitted to, but it has been definitely demonstrated to belong to the group of communicable diseases, and its spread can, in most instances, be traced to neglect of some hygienic observance. From having been one of the commonest diseases of civilized life typhoid fever has, in recent years, become in many communities one of the rarest. A large part of this good result is to be attributed to purification of the water supply, the medium through which infection is most commonly conveyed. In the city of Philadelphia, for example, where formerly each week saw recorded many cases of typhoid fever, with numerous deaths, since the installation and operation of an adequate filtration system the number of both has been enormously diminished, so that for weeks at a time not a case or a death is reported. Typhoid fever may at the present time be placed among the disappearing diseases, and the time is probably not remote when the individual practitioner will have as little experience of this disease as he has of typhus fever and of smallpox.

Typhoid fever is thus the token of hygienic transgression. It thrives where dissemination of typhoid bacilli is permitted, whether by water or by food or by direct transference, and it disappears in proportion as such dissemination is prevented. The disease could be eradicated if the excreta of infected persons and of bacilli-carriers, and the bodies of its victims in fatal cases, were destroyed. Disinfection of stools and of urine and cremation are the logical steps in this direction. Water used for drinking and for domestic and collateral purposes is the principal medium for the conveyance of the causative germ. Boiling and filtration are the most successful correctives in this connection. Protective inoculation with the dead bodies of typhoid bacilli has proved a highly useful prophylactic measure.

The symptomatology of typhoid fever is protean and it has been quite fully written. Its etiology is securely established, its lesions well recognized, and its pathology clearly understood, while its complications are multifarious and may involve any of the structures of the body. An individual case is entitled to record only if it present extraordinary features. The concurrence of nephritis, intestinal hemorrhage, parotitis, neuritis, and hyperpyrexia as complications in the course of an attack of typhoid fever, with persistence of typhoid bacilli in the blood to the twelfth week of the disease, would seem to meet this requirement.

Case.—The patient was a woman, thirty years old, who, when seen on August 26, 1910, had been feeling badly for three weeks and had been in bed for two weeks. She gave a history of having been seized with chilliness, followed by headache, abdominal pain, pain in the chest and elsewhere, with slight nosebleed. The appetite was poor, the tongue coated, though red at the tip, the bowels loose, the stools watery, yellowish, offensive. There was slight cough with scanty, not rusty, expectoration. The temperature range had been for a week between 101° and 104.5°, the pulse 84. A few rose spots were distinguishable on the abdomen, but the spleen was not palpable. The heart and lungs presented no physical abnormality.

When the patient was admitted to the Polyclinic Hospital on the date mentioned the temperature was 102.6°, the pulse 104, the respiration 32. The urine had a specific gravity of 1018 and it contained albumin and granular tube-casts, but no sugar. A blood-serum test made two days later yielded a negative agglutination reaction with typhoid bacilli. The bowels

*Read before the Medical Society of the State of Pennsylvania, at Harrisburg, September 27, 1911.

continued loose and on August 30 a small hemorrhage from the bowel was noted, with an accompanying moderate decline in temperature. On the following days also two stools contained small amounts of dark blood. Likewise on September 2 old blood-clots were detected in two stools. On this day the patient appeared somewhat irrational and she complained of hearing badly. On the next day the right parotid gland was found painful and swollen, and the temperature had risen slightly. By September 5 the temperature had fallen to the 99° level and on the 6th a positive agglutination reaction was obtained. On the latter date the left parotid gland also was painful and swollen, though in lesser degree than its fellow. During the following week the temperature fluctuated between 99° and 102.4°, reaching normal on September 14. Examination of the urine on September 7 disclosed again the presence of albumin and granular tube-casts. On the 9th the urine still contained albumin, but the temperature continued at the normal level until September 18, when it began to rise again, reaching 102.6° on the following day. From this time on it pursued an irregularly febrile course till October 29, when it reached and finally remained at the normal level. During this period it rose to 105° on October 9; to 106.2° (with a chill) on October 18; to 106.6° (with a chill) on October 22. On September 19 the swelling of the right parotid gland increased greatly, as did also the tenderness, the tumefaction extending as far as the tissues about the right eye. The gland felt hard and the overlying skin was discolored. The presence of pus being suspected an incision was made, but no discharge followed. Attempts at culture from the parotid gland yielded negative results. The urine still contained a trace of albumin but no casts.

On September 24 the patient complained of pain over the gall-bladder and in the lower extremities. A positive agglutination reaction was obtained with the blood-serum on September 26, and the leucocytes numbered 8,500. On October 5 there was complaint of severe pain in both lower extremities, particularly in the right popliteal space. The urine was now free from both albumin and casts, although a trace of albumin was detected again on October 15 and October 26. Some edema about the left ankle was noted on October 15, but this was attributed by the patient to an accidental injury. Pain and tenderness persisted in the left popliteal space, the former being increased by extension of the leg. On October 15 the number of leucocytes was 9,000, on the 19th 8,300. Malarial plasmodia could not be detected in the circulating blood. A cutaneous tuberculin test also yielded negative results. A blood-culture on October 29 yielded a pure growth of typhoid bacilli. The patient was dismissed, well, on November 11, after an illness lasting thirteen weeks.

Nephritis.—Albuminuria is a common manifestation of febrile and infectious diseases generally. In the course of typhoid fever it often appears early, generally disappearing with the remission of the symptoms of the disease. Occurring as part of an acute nephritis it usually develops in the second week, persisting for a variable period of time. Rarely acute nephritis occurs as a sequel of typhoid fever. At times it dominates the onset of the disease, constituting so-called nephrotyphoid. Of course, typhoid fever may develop in a person previously nephritic. In a series of 1,500 cases observed in the wards of the Johns Hopkins Hospital acute nephritis was noted clinically in ten cases, and it was found in eight among 105 fatal cases that came to autopsy (McCrae, "Modern Medicine," vol. II, 1907). According to Curschmann the incidence is 1 per cent.

Intestinal hemorrhage occurred in 118 of the 1,500 Johns Hopkins Hospital cases, 7.8 per cent., with 12 deaths, 10.2 per cent; and in 1,641 among 23,271 collected cases, 7 per cent. It was less common early in the disease (first week), and is then due to oozing from the hyperemic bowel. Later it is due to erosion of a blood-vessel in the course of the ulcerative process. It is most common between the second and fourth weeks and relatively rare during relapses. It may take place but once or be repeated.

Parotitis was observed in 14 of the 1,500 Hopkins cases, 0.9 per cent, and in 93 of 12,173 collected cases, 0.76 per cent. It results from infection conveyed either along the duct of Stenson or through the blood. It usually occurs during the third week or later, sometimes during convalescence. One gland alone may be attacked or both may suffer in succession. The swelling generally persists about a week, although it may continue a longer time. Necrosis and sloughing of the parotid gland may result. About 30 per cent. of the cases complicated by parotitis terminate fatally.

Hyperpyrexia.—Dreschfeld in Allbutt and Rolleston's "System of Medicine," Vol. 1, 1905, states that the temperature may be "very high" on the second day of an attack of typhoid fever, particularly if pneumonia supervene. It may reach 105° or 106° toward the end of the second week and recovery ensue, especially in young subjecets. Occasionally the temperature reaches 109° or 110°, generally in the third week, and a fatal issue is the rule. Among the 1,500 Hopkins cases the temperature reached 104° or above in 1,118; between 104° and 105° in 643; between 105° and 106° in 411; between 106° and 107° in 58; and 107° or above in 6.

Neuritis is not a common complication of typhoid fever. It was observed eleven times in the Johns Hopkins cases, 0.7 per cent. It occurred during the latter part of the disease or in convalescence. It may be multiple or local.

Relapse occurred in 172 of the 1,500 Johns Hopkins cases, 11.4 per cent., and in 2,493 of 28,057 collected cases, 8.8 per cent. The apyretic interval between the primary attack and the relapse varied from six to forty-three days. The predisposition to relapse appears to be greater after mild primary attacks, and vice versa. The relapse may be protracted or there may be several relapses, up to five, and the total duration of the illness may then reach one year. Intercurrent relapse is fairly common. It may be protracted and severe. The death rate is higher than that of an ordinary relapse. The frequency of relapses is variously stated by different authorities. According to Dreschfeld (loc. cit.) Murchison places the percentage at 3, Griesinger at 6, Curschmann at from 6 to 12, and Shattuck at 16.

Typhoid Bacilli in the Circulating Blood.—Buxton (*American Journal of the Medical Sciences*, Vol. CXXXIII, 1907) in a study of 1,602 cases of typhoid fever found typhoid bacilli in the circulating blood, in 75 per cent.—in 89 per cent. during the first week, in 73 per cent. in the second week, in 60 per cent. in the third week, in 38 per cent. in the fourth week, and in 26 per cent. after the fourth week; as well as in 80 per cent. of relapses. Accord-

ing to Coleman and Buxton (*Journal of Medical Research*, Vol. XXI, 1909), typhoid bacilli have been recovered from the circulating blood as late as the eighth week of the disease and during convalescence. They explain the presence of the bacilli in the blood during the course of the disease by an overflow from the organs—principally spleen and lymphatic glands—in which they multiply, and they attribute many of the symptoms to the reaction on the part of the host to the endotoxins set free as a result of destruction of the bacteria. As the patient recovers fewer bacteria find their way into the blood-stream, and the symptoms lessen in severity. At the time of defervescence the blood ordinarily contains few bacilli or none. The persistence of symptoms not due to complications is attributed to continued growth of the bacilli, and the occurrence of relapse is explained by renewed multiplication of the bacilli in each instance with escape into the blood.

1019 Spruce Street.

THE WASSERMANN REACTION.

A BRIEF STATEMENT OF SOME OF ITS PROVED PRACTICAL VALUES TO SOCIETY.

By JOHN BETHUNE STEIN, M.D.,

NEW YORK.

PROFESSOR OF PHYSIOLOGY AT THE NEW YORK COLLEGE OF DENTISTRY, INSTRUCTOR IN GENITOURINARY DISEASES IN THE COLLEGE OF PHYSICIANS AND SURGEONS (MEDICAL DEPARTMENT OF COLUMBIA UNIVERSITY).

The diagnosis of syphilis is of vital importance to the individual, the family, and society, but in a large majority of cases is most difficult, as the manifestations resemble those of other diseases or are unrecognizable and latent. In addition to the clinical diagnosis of syphilis and the diagnosis *ex juvantibus* (by palliative therapeutics) three other important methods of determining the disease have recently been discovered. They are in order of their discovery: (1) Diagnosis by means of inoculation experiments; the infection of apes and rabbits by the syphilitic virus. (2) Microscopic diagnosis. (3) Serodiagnosis of Wassermann, Neisser, and Bruck.

The clinical diagnosis is and will naturally remain of the greatest importance. The diagnosis *ex juvantibus*, in which the physician gives the patient antisyphilitic treatment in order to determine by its effect whether or not the disease is present, no longer plays the rôle it did. For this we are indebted to the Wassermann reaction and the detection by means of the microscope, especially the dark field illuminating apparatus, of the *Treponema pallidum*.

Occasionally the diagnosis *ex juvantibus* is made in a doubtful affection, for example, a tumor of the tongue, which is not affected by antisyphilitic treatment although the patient's serum gives a positive Wassermann reaction. A careful microscopic examination before prescribing antisyphilitic treatment would have determined the presence of the *Treponema pallidum*, the tubercle bacillus, or carcinoma cells in the lesion. In such a case we are dealing with a syphilitic individual and a non-syphilitic affection of the tongue, possibly a tuberculous or cancerous tumor of that organ.

The serodiagnosis of syphilis was introduced into the practice of medicine by Wassermann in 1905. It is the application to syphilis of a method for the deviation of the complement which was discovered by Jules Bordet and Octave Gengou in 1901. Widal calls it the "reaction of fixation." The reaction is specific and shows the presence of the syphilitic virus. If the causal agents are destroyed in the host the reaction will sooner or later become negative. The reaction is usually not positive until the seventh week after the appearance of the chancre, although it has been found positive 4 to 6 weeks after the infection.

The non-syphilitic nature of a suspected primary lesion is not proved by a negative reaction. A negative reaction in an untreated suspected case, there being no primary lesion manifest, makes the diagnosis of syphilis improbable, but not positively negative, because it may be broadly stated that only about 95 per cent. of cases of secondary and tertiary syphilis give a positive reaction.

Untreated secondary syphilis usually gives a positive reaction which is stronger than in treated cases. Treated secondary syphilis usually gives a positive reaction if the clinical symptoms are present. There are cases of secondary syphilis giving a negative reaction, which, on repeating the test (7 to 14 days later), becomes positive.

Untreated tertiary syphilis always gives a positive reaction, but in treated cases the reaction may be negative or weaker than in the treated ones. A gumma always gives a positive reaction (at times only moderately strong) by the method of Landsteiner, Müller, and Pötzl.

Latent syphilis often gives a weak reaction: 30 per cent. incomplete, 20 per cent. positive, and 50 per cent. negative. Untreated cases of latent syphilis are more likely to give a positive reaction, whereas with well treated cases the positive reaction is less frequent and weaker. In nervous diseases, including tabes dorsalis, about 10 per cent. are negative, 20 per cent. incompletely positive, and the remainder positive. The fact that tabetic patients who have never been treated for syphilis always give a positive reaction tends to support the theory that syphilis is the only cause of tabes. Cases of tabes where the syphilis has been previously treated give a weak positive or entirely negative reaction.

According to Müller, it is necessary to be very careful in making a diagnosis of lues cerebri, especially if there is a weak positive reaction or even a distinctly positive one. In such a condition of suspected lues cerebri a resort to a diagnosis *ex juvantibus* is necessary, and then a test of the patient's serum again. Both glioma and carcinoma of the liver may give a weak or positive reaction.

With dementia paralytica the reaction is always positive, therefore every paralytic is a "treponema carrier," a statement substantiated by the fact that rarely, if ever, is a primary lesion seen in a paralytic. In congenital syphilis the positive reaction is stronger than in other forms.

Specific treatment makes possible the conversion of a positive to a negative reaction and this is easier in the first stages of the disease (first three years). In dementia paralytica it is impossible to change by treatment a positive to a negative reaction. It should be remembered that if a positive reaction is present with clinical manifestations of the disease these manifestations disappear before the reaction becomes negative. The influence of the treatment upon the reaction is indirect. The reaction becomes negative because of the great destruction of spirochetes. A positive reaction after successive negative reactions has the same meaning as a clinical manifestation of syphilis.

The serum of the patient should be examined at frequent intervals during the course of whatever treatment is employed, in order to ascertain how the treatment affects an important symptom of the disease, viz., the deflection of the complement. If after a thorough course of treatment, however long, the Wassermann reaction is still positive, the treatment must be continued.

It sometimes happens that in a case that has been under mercurial treatment a negative reaction becomes positive. This phenomenon is analogous to those clinical syphilitic manifestations which may appear during the course of treatment. In such cases we are probably not dealing with mercury-fast spirochetes, but it is the method of treatment which is not efficient. After a single intravenous injection of salvarsan the positive reaction becomes negative much more rapidly than after a long course of mercurial treatment.

The prognosis is unfavorable in those cases which, in spite of antisyphilitic treatment, still show persistent positive reactions, such reactions being usually the forerunner of dementia paralytica. It is doubtful whether there are any cases in which the serum, after a proper treatment by mercury or salvarsan, does not give a negative reaction. But a single Wassermann test showing a negative reaction has no prognostic worth. It is only good for the time when it is made. If, however, the reaction remains continuously negative for a number of years, and there are no manifestations of syphilis, the prognosis is favorable, and the treatment may be discontinued. In such cases the patient's serum should be from time to time examined, and if a positive reaction occurs treatment should be at once renewed.

A few instances in which the Wassermann reaction is of great importance are in neurology and psychiatry, where the positive reaction of the blood serum and the cerebrospinal fluid after lumbar puncture, combined with the globulin reaction (Nonne-Apelt) and the cytodiagnosis (Nissl), are considered of great value, in the differential diagnosis of liver and kidney diseases, in cases of aneurysm, especially of the aorta, where the reaction is always positive, in cases of arteriosclerosis and aortic insufficiency, in which in their early stages the reaction is generally positive, and in the differential diagnosis of malignant tumors, tuberculosis, eye lesions, etc. It should be remembered that the Wassermann reaction is not a local but a constitutional reaction and that scrapings or an excised part of the tumor should be examined in addition to the blood serum.

Two old laws have been disproved through the Wassermann reaction, viz., (1) Colles law, that the mother of a syphilitic child is immune to syphilis, *i.e.*, is healthy; (2) the Profeta law, according to which the child of a syphilitic mother is immune to syphilis. But the Wassermann reaction demonstrates that in the former case the mother and in the latter case the child are syphilitic, both giving positive reactions, and therefore only appearing immune.

Syphilitic children often have no obvious symptoms of lues. The Hutchinson triad (notched teeth, otitis, interstitial keratitis) is not often seen. In fact, syphilis in children is often indicated only by a simple anemia or some slight nervousness.

A physician who recommends a wet nurse without first having her blood serum examined may be said to be almost criminally negligent.

The estimate that the death of 33 per cent. of syphilitics occurs prematurely, due to the sequelæ of the luetic infection, indicates the great importance of the Wassermann reaction in life insurance.

In forensic medicine the Wassermann will likely play an important part, for the evidence of the specific reaction of the blood serum or cerebrospinal fluid may be more convincing to a judge and jury than that deducted from a discussion of psychiatrics in court.

Inasmuch as a positive reaction proves the presence of living spirochetes in the patient's body, every individual whose serum shows a positive reaction should be immediately treated for syphilis, not only as a prophylactic measure for himself against the sequelæ of the luetic infection, but also that he may not be a menace to his family and society.

The blood serum of nervous and anemic children as well as, of course, that of every syphilitic about to enter the marriage state should be examined as to its reaction.

The writer's experience in Dr. Rudolph Müller's laboratory, in the Serodiagnostic Station (the first established in the world) at the University Clinic of Professor Finger in the Allgemeines Krankenhaus, Vienna, where, by Dr. Müller and his assistants, over 36,500 cases had been examined up to September, 1911, convinced him that *the great practical value to the masses of the Wassermann reaction can be obtained only by the establishment in the health department and large clinics of our cities of similar central serodiagnostic stations.*

To these stations would be sent for examination the serum of inmates not only of orphan asylums, as in Vienna, but also of insane and other asylums, reformatories, prisons, dispensaries, hospitals, and other similar public institutions, which would be used as controls for cases where syphilis is known or suspected to exist.

Inasmuch as among the inmates of our public institutions sending serum, the existence of many cases of latent syphilis will also be discovered through the use of these controls, the inestimable benefit to society resulting from the operation of such central serodiagnostic stations is obvious.

126 West Seventieth Street.

AMEBIC DYSENTERY.

By ALBERT F. R. ANDRESEN, M. D.,

BROOKLYN, N. Y.

That amebic dysentery is not exclusively a tropical disease has become generally accepted in recent years, and typical cases of this specific form of colitis have been reported by observers as far north as Montreal, Canada, and even Alaska, in patients who have never left their respective communities. It is, therefore, necessary that the practitioner in the more northerly States should become familiar with this disease, and be enabled to afford relief and prevent serious complications in many cases of intractable diarrhea.

The ameba was first suggested as the cause of dysentery by Lambl in 1859, and since that time much discussion has been indulged in concerning the specificity of this organism. As late as November, 1910, Tanaka[1] suggested that there must be an organism which attacks the bowel mucosa first, and prepares a point of lessened resistance for invasion of the ameba, it being a well-known fact that amebæ are found at times in the feces of individuals who have never suffered from any symp-

toms of dysentery.[8] Efforts have been made to differentiate pathogenic from non-pathogenic forms; the former, the entameba histolytica, being described as having a more strongly refractive ectoplasm and a smaller amount of chromatin in its nucleus than the non-pathogenic entameba coli. Most observers are now agreed that this differentiation is unnecessary, pathogenic amebæ being able to remain in the bowels for years without causing dysenteric symptoms, until the bodily resistance is weakened by disease, pneumonia and tuberculosis being often the exciting cause. The ameba has so far not been isolated, as it grows only in symbiosis with other organisms. Contaminated water seems to be the principal carrier of infection, but green vegetables which have been fertilized with human excreta are also a common source of infection.[9]

Amebic dysentery is a colitis characterized by the presence of a large or small number of ulcerations of the bowel mucosa. The ulcers are of different sizes, and the edges are undermined. They are found mostly in the rectum and sigmoid, less frequently in the splenic and hepatic flexures, and even in the ileum. They rarely progress to perforation, and profuse intestinal hemorrhage is uncommon, but in 5 to 10 per cent. of cases infection spreads to the liver, producing amebic abscess of that organ. These abscesses are usually multiple and may perforate into the pleura, pericardium, or any of the neighboring abdominal organs. Other intestinal parasites[4] frequently found complicating amebiasis are strongyloides, cercomonads, teniæ, etc., and may confuse the diagnosis.

The symptoms vary considerably, there being usually a more or less severe diarrhea, but occasionally constipation. The onset may be abrupt or gradual; when abrupt being characterized by frequent purging—as many as six or eight scanty, liquid, mucous, bloody stools in an hour—with severe abdominal pain and tenesmus. There is extreme prostration, the pulse becomes rapid and feeble, and there is a moderate febrile reaction. In these acute cases the patient becomes rapidly emaciated and may die within a week, but such a severe onset is rare. The usual type of case, especially in the northern climates, has a gradual onset, with occasional attacks of diarrhea with or without tenesmus, sometimes alternating with constipation. The stools are very offensive, usually contain mucus, and may or may not contain some streaks or flecks of bright blood. There is not, as a rule, very much loss of weight, but considerable weakness is usually complained of. Gastric symptoms are not often present, the patient being frequently able to eat fairly large meals without discomfort. There may be pain in the region of the liver and occasionally slight jaundice.

Physical examination: Emaciation is not usually extreme, but the skin has a pallor like that of malignancy and has a putty-like feel. The tongue is coated and furred. The abdominal wall is flabby and there is usually tenderness over the colon, worst over the cecum and sigmoid. The liver region may be slightly tender, and there may be some enlargement of that organ, even in the absence of hepatic abscess. Considerable enlargement of the liver, especially where associated with irregular chills and fever, indicates the presence of that dangerous complication. Proctoscopy reveals the presence of ulcerated patches in the rectum and sigmoid, scrapings from which, examined microscopically on a heated slide, will disclose red and white blood cells, epithelium, mucus, and numerous large motile amebæ, many of them containing red blood cells. The same elements may be found in a warm specimen of stool, preferably after a saline cathartic has been administered, but the above method is more reliable. The blood findings are not characteristic, being commonly only those of the complications. The diagnosis of amebic dysentery can be established only by the finding of motile amebæ, some containing red blood cells, in the stool or in the scrapings from the ulcers. It is thus differentiated from colitis due to other causes, such as bacillary dysentery, the diarrhea of nephritis, hepatic cirrhosis, achylia gastrica, and intestinal tuberculosis or malignancy. The diagnosis of the complications does not differ from that where the same conditions are due to other causes.

The prophylaxis is obvious and should be directed toward the improvement of the water supply, the prevention of human fertilization of green vegetables, and the careful disinfection of the excreta of persons known to be infected. Early treatment will prevent complications and should be instituted as soon as the diagnosis has been made. Various methods of treatment have been suggested and excellent results have been reported by the exponents of each method. Deeks and Shaw,[2-3] at the Ancon Hospital, Panama, recommend milk diet, a preliminary dose of castor oil, opium for pain and tenesmus, colonic irrigations of saline solution, and bismuth subnitrate in one-half teaspoonful (one dram by weight) doses every three hours for from three to fifteen days. They claim a large percentage of cures. Hanes[5] of Kentucky has recommended a liberal nutritious diet, opium as necessary, little or no medication by mouth, and pins his faith on filling the large bowel daily with coal oil, three to five pints, preceded by a simple cold enema of quinine solution. Other forms of treatment which have been used are large doses of bolus alba by mouth,[7] kho-sam,[6] the remedy of Cochin China, and all kinds of colonic irrigations. In stubborn cases appendicostomy followed by irrigations through the appendix has been done with good results.[10]

The best treatment, however, and that which has proved most successful in the hands of most clinicians, has been the ipecac treatment, which I shall give in detail. In my limited experience with two cases, in one of which I tried the first two methods outlined above and had recurrences, I have found this treatment to be really wonderful in its results. The ipecac treatment is the one which has been in use in India for many years, and is now in use in the Philippine Islands. It consists in giving large initial doses of ipecac and gradually reducing the dose until symptoms are gone. The patient is best put upon a liquid diet, or a light diet leaving a slight residue, and at first is kept in bed. An initial dose of castor oil is administered, and twice daily cold enemata are given, either saline, quinine solution, 1 to 500, or thymol, 1 to 2,000, being used. The cold enemata greatly relieve the tenesmus and wash out débris, but it is almost certain that antiseptics locally used have no effect on the ameba in the colon. The ipecac is best given in the form of 5-gr. salol-coated or keratin-coated pills. A pill larger than the 5 gr. is very difficult to swallow and will, probably, pass the pylorus with difficulty. The best time for giving the ipecac is in the evening, about 8 o'clock, and nothing should be eaten for four hours before. It is usual to precede the ipecac twenty minutes by a dose of tincture of opium (about

twenty minims). The initial dose of ipecac is large, Simon recommending as much as 40 or 60 gr. I have found that excellent results are obtained with 30 to 40 gr. as the first dose. Although large doses are, strange to say, more readily tolerated by the stomach than smaller ones, it can readily be appreciated how a debilitated patient will feel if told to take a dozen large pills at one time. If the pills are properly coated the patient may not vomit at all, or may vomit a little clear mucus after three or four hours, probably the effect of absorption of the emetine in the ipecac. Vomiting can be combated by ice-bags to the throat, mustard paste to the epigastrium, and morphine given hypodermatically.

The dose is reduced 5 gr. every evening until 10 gr. is reached, when it is well to continue the 10-gr. dose for a couple of weeks. At times there is considerable nausea or vomiting after the smaller doses, and in these cases it is better to give the smallest dose tolerated for the last two weeks. Under this form of treatment the diarrhea stops within a day or two, and scrapings made from the rectum as early as forty-eight hours after the first dose fail to reveal the ameba. The ulcers heal often in less than a week. P. M. Ashburn, U. S. A., at a meeting of the American Society of Tropical Medicine, made a statement that if he can not cure a case of amebic dysentery in one month by the ipecac treatment, it is doubtful if a cure is possible.

After the first two or three weeks of treatment a more liberal diet is allowed and the patient should gradually return to a regular diet. The first week or ten days should be spent in bed, but after that the patient can be up during the morning and early afternoon, retiring about 4 P.M. Where the treatment is thoroughly carried out, complications are rare,[11] and return of the condition after months or years is much less common than after the other methods of treatment. At the present time the ipecac treatment is the one to be recommended, but it is to be hoped that some day, when the ameba is grown in pure culture, a serum or vaccine may be elaborated which will effect a speedy and permanent cure.

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28 SIXTH AVENUE.

The Precancerous Stage.—Parker Syms states that in a very large proportion of cancers there has been a purely and distinctly precancerous stage. By this is meant that one can recognize certain lesions, certain benign growths, and certain abnormal conditions, as the precursors of cancer. This is one of the most hopeful phases of the present knowledge of cancer.—*New York State Journal of Medicine.*

ANESTHESIA DON'TS.*

By JOSEPH E. LUMBARD, M.D.,
NEW YORK.
ANESTHETIST TO THE HARLEM, THE GENERAL MEMORIAL, THE RED CROSS, AND THE LYING-IN HOSPITALS, MEMBER A.M.A. FELLOW N. Y. ACADEMY OF MEDICINE.

General.

1. Don't use ether or chloroform that is not transparent, colorless, neutral in reaction, or which leaves a residue upon evaporation.

2. Don't forget that the selection of the proper anesthetic is as important as its administration.

3. Don't forget that it is always your duty to use the safest anesthetic at your command.

4. Don't use an inhaler which cannot be sterilized.

5. Don't let convenience preclude safety in the selection of chloroform instead of ether, or ethyl chloride instead of nitrous oxide.

6. Don't forget that morphine, if properly used in well selected cases, especially in alcoholics and athletes, is a valuable adjunct to a smooth narcosis, but should be given at least one-half hour before beginning the anesthesia.

7. Don't assume because your patient has been anesthetized once without bad results that you do not have to be on the alert in future administrations.

8. Don't forget there may be danger although the patient has no organic disease.

9. Don't forget that the excessive use of tobacco will often prevent a smooth narcosis.

10. Don't always expect a smooth anesthesia with patients who are "bad travelers" on land or sea.

11. Don't forget that no one anesthetic will do for all cases under all circumstances.

12. Don't be governed by percentages or the amount of anesthetic used, but by the condition of the patient.

13. Don't forget that the respiration is the most important thing to watch, no matter which anesthetic is employed.

14. Don't forget that the depth of respiration is the most trustworthy of all signs.

15. Don't forget that the greatest factor in safety lies with the experience of the anesthetist more than with the anesthetic or inhaler used.

16. Don't forget that there is always a chance for any patient to act badly and possibly die under the anesthetic.

17. Don't forget that oxygen added to ether or chloroform will often make a narcosis safe that would not be so otherwise.

18. Don't forget that it is easier (and much safer) to add to than to subtract from when administering anesthetics.

19. Don't be afraid to give anesthetics in chronic cardiac, pulmonary, and renal conditions.

20. Don't forget that most trouble in the administration of all anesthetics comes from using too much.

21. Don't forget that the color of the ear is a very good guide for the beginning of cyanosis.

22. Don't resort to intratracheal or rectal anesthesia when simpler and safer methods will accomplish the same purpose.

23. Don't expect to relieve mechanical obstruction in the respiratory tract by hypodermics.

24. Don't watch the operation, even if you can do so without neglecting your patient; it does not inspire the surgeon's confidence.

*Read before the Washington Heights Medical Society, October 24, 1911.

25. Don't attempt to secure deep anesthesia in empyema cases; use just as little of the anesthetic as possible.

26. Don't forget that surgical shock may apparently deepen the anesthesia and cause alarming symptoms.

27. Don't forget that it is illegal to have a nurse administer an anesthetic in the State of New York.

Chloroform.

1. Don't let the surgeon hurry the anesthetist, especially when using chloroform.

2. Don't have too much covering on the mask when giving chloroform. Always give the patient plenty of air.

3. Don't administer chloroform with the patient in the sitting posture.

4. Don't advise long or deep inspirations when using chloroform.

5. Don't forget that the majority of deaths under chloroform have occurred during the first period of its administration.

6. Don't forget that while the toxic effects of chloroform often show themselves very suddenly, they may be delayed for days.

7. Don't assume because you have used chloroform with good results in obstetrical cases that you may use it promiscuously in all other cases. Chloroform is not free from danger in obstetrical cases.

8. Don't use chloroform in obstetrical work when the uterine contractions are feeble and the fetal heart cannot be heard.

9. Don't use chloroform in a small room lighted by gas.

10. Don't lose sight of the eye reflexes when giving chloroform.

11. Don't administer chloroform by a closed inhaler.

12. Don't charge a patient up with chloroform, as is so often done.

13. Don't use chloroform for the removal of tonsils and adenoids.

14. Don't forget to add a few drops of ether when using chloroform.

Ether.

1. Don't forget that ether is a stimulant, while chloroform is a depressant.

2. Don't forget that ether usually gives warning of approaching danger which chloroform is not apt to do.

3. Don't forget that ether has a larger latitude for safety than chloroform; but do not abuse it.

4. Don't rely on this comparative safety of ether and allow its administration by a novice unless absolutely necessary.

5. Don't forget, generally speaking, that ether is much safer than chloroform and certainly should have first choice; other things being equal.

Nitrous Oxide.

1. Don't be alarmed at slight cyanosis when using nitrous oxide.

2. Don't forget that jactitation, when using nitrous oxide, calls for more oxygen.

3. Don't forget that nitrous oxide can be given safely at any age.

4. Don't forget that nitrous oxide and oxygen is the safest anesthetic known, but it is not always satisfactory to the surgeon.

5. Don't fail to have a witness when inducing anesthesia, especially when using gas. Many lawsuits have resulted because this precaution was not taken.

6. Don't forget to empty the bladder before giving gas to children, as they often urinate while under its influence.

7. Don't forget that nitrous oxide is the safest anesthetic for short operations and examinations.

8. Don't expect a good anesthesia when using nitrous oxide on alcoholics.

Relation to Patient.

1. Don't starve or purge a weak patient too much prior to anesthesia.

2. Don't forget to secure the patient's confidence before commencing the administration of the anesthetic and begin very slowly and quietly. Allow neither talking nor noise in the room. You will thus contribute to a smooth narcosis.

3. Don't forget to ask the patient if he is accustomed to sleep with his head high or low, and govern yourself accordingly when administering the anesthetic.

4. Don't forget that the nose, mouth, stomach, bowels, and bladder should be empty before beginning anesthesia.

5. Don't forget to have teeth, nose, and buccal cavity clean before giving the anesthetic.

6. Don't forget to keep the patient warm at all times.

7. Don't forget to wash out the stomach when it is full. The anesthetic will act more quickly and more safely.

8. Don't forget that the change of posture may add greatly to the patient's comfort and safety.

9. Don't forget to give a drug fiend his usual dose before anesthetization.

10. Don't worry about the pulse if the respiration and the color of the face are satisfactory.

11. Don't be alarmed when the pulse is a little weak or rapid. Look for the cause and remedy it.

12. Don't go over the safety line in trying to relax the abdominal muscles in acute conditions.

13. Don't forget to withdraw the anesthetic immediately when you have a widely dilated pupil, fixed eyeball and eyelids partly open. This means that too much has been given.

14. Don't forget that a dilated pupil with a moving eyeball means that not enough has been given.

15. Don't forget to drain the mucus from the mouth by means of a gauze wick or suction apparatus.

16. Don't deceive children about to be anesthetized.

Don't forget, first, last, and all the time, to keep your whole attention fixed on the administration of the anesthetic.

Graham Court, 1925 Seventh Avenue.

APHONIA.

By E. HARRISON GRIFFIN, M.D.,

NEW YORK.

Case I.—Mr. A., age 23, accompanied by his mother, was brought to my office by his family physician, who gave the following history. The patient had lost his voice completely and had been unable to utter a word for the past year. The loss of voice had come on suddenly and he had been examined by physicians in San Francisco, Chicago, St. Louis, and New York, who had diagnosed his trouble as paralysis of the vocal cords, laryngeal

phthisis, tumor of the larynx, and various other diagnoses were given.

The patient was a well-built man, had broad shoulders, a deep chest, and the perfect appearance of health. His family physician explained to me privately that the patient was very anxious to recover his voice as he wished to be married. He had applied to every physician whom he knew, had been treated with electricity, cod liver oil, and creosote, and had run the gauntlet of the rest of the pharmacopeia. His larynx had been sprayed, local applications had been made, and still the voice had not been restored. He had run the drift of the physicians of his friends, but still he could not talk.

An examination of his larynx was made with a little difficulty, for he wanted to stop me every moment to write something in the way of an explanation on paper. The examination showed the vocal cords normal in color, with perfect motion, but with a slight defect which I shall describe later. There was absence of any swelling or ulceration, indicating phthisis, syphilis, or cancer. There was no sign of a polypus, papillomatous growth, or of other tumor. The base of the tongue was free from any lingual tonsil. There was no foreign body, and there was no sign of paralysis. In other words, his larynx was normal. The patient complained of pain in the examination, but the condition of the membrane showed that the pain was more mental than actual. By exclusion I diagnosed the condition as one of hysterical aphonia.

I sprayed the larynx and passed probes into it, and, like all the various other medications the larynx had received, all of my efforts were futile. The patient only looked at me with a dogged and vacant stare, as much as to say, "I have tried everybody; what can you do more than the rest?" I was becoming interested in my negative victory. The family physician had told me that the patient wished to be married. I leaned back in my chair, after an unsuccessful medication of his larynx, and suddenly patted my patient on the shoulder; I looked him full in the eye and asked him suddenly if he did not know "a pretty girl, one of those nice girls, one with pretty eyes and pretty mouth;" if he did not want to be married. I had his attention in a moment. I now told him to watch my lips and to say "A." I repeated "A," but the patient was unable to shape his lips to produce any sound excepting a gurgle. I looked my patient in the eye and told him that when he left my office his voice would be as perfect as mine. I told him that I would not see another case and would keep him in my chair all day, but when he left he would leave with a perfect voice. This was rather a strenuous prognosis for a patient whose voice had been lost over a year and whose larynx had received all manner of medication without avail.

I worked with him as if he were a child. I showed him how to form his lips, where to place his tongue, when to take a full breath, and when to try to talk. After one hour I had kept my promise. I had his voice restored, and he was talking to me as perfectly as any one. I wrote a prescription for twenty grains of quinine at bedtime and one-sixtieth of a grain of strychnine after each meal. I was about to dismiss him, when, in the presence of the family doctor, he gave the following history. He had been a "dope fiend," as he called himself, smoking opium and also taking it hyperdermically. He had left New York so as not to disgrace his family and had gone to California, where he was called "the dope." One day he met a Christian girl, with whom he fell in love. He was a Hebrew. She cured him of the morphine habit. He came East to obtain the consent of his parents to his marriage. During his absence his sweetheart got in trouble with another man and, to cover up her mistake, married him. When her former fiancé heard this, the shock made him lose his voice.

The happy therapeutic result may be attributed to the fact that I was positive of my diagnosis, which was made by exclusion in a case that gave a highly colored history, showing an erotic and a neurotic temperament. Hysterical aphonia is a very common affection and is liable to be overlooked. The following case came under my observation some years ago.

Case II.—Miss B., age 22 years, and employed as a seamstress in a cloak factory, had lost her voice suddenly. She had been in the best of health and in the middle of the day had taken a nap on a sofa. When she awoke she was unable to talk. She was a well developed girl and seemed rather phlegmatic than neurasthenic. She was very anxious to regain her voice, she wished to change her occupation to one in which the use of the voice was indispensable. Her voice had been lost for over six months and she had run the gauntlet of the various clinics. Her condition had been diagnosed as paralysis, tumor of the cord, laryngeal phthisis, etc., in fact every every diagnosis had been made in which aphonia might be a symptom. An examination of the larynx was negative. I failed to find any paralysis or tumor, or any sign of laryngeal phthisis; nothing denoting a syphilitic lesion and no manifestation of a cancerous degeneration. There was a slight space between the cords when they closed at the arytenoid commissure junction, a sure sign of hysterical aphonia. She wrote on a piece of paper that she could sing perfectly although her speaking voice had entirely been lost. I asked her to sing and she rendered a little song in perfect time and in the right key and full of harmony. I started to take her history and was rather annoyed at the time she took to write answers to my questions, when I turned suddenly and told her to sing the answers. "Listen," said I, "take this tune." Her answers came almost as quickly as my questions. "Listen," I said again, when I changed my tune, "answer me in the same key." I varied the tone until I had her interested, when I spoke to her in the speaking voice. She answered me in the speaking voice. I shot question after question in this normal speaking voice and was answered in the normal speaking voice. I clapped her on the shoulder. "Fine," I said, "you are speaking splendidly." She stopped on the instant; her voice was lost at the word speak. She wrote on her pad, "I cannot speak."

Here was a case in which the patient was apparently removed to another atmosphere; she could talk without the slightest impediment when she thought she was singing; but at the mere mention of the word "speak" her voice became a blank. I drilled this case for a few visits until this word failed to arouse any terror in her and she regained her voice completely.

Fright will at times produce almost complete loss of voice. Overanxiety will do the same, as illustrated in the following case:

Case III.—Male, age 26, actor, had played

around New York for years, but never in New York, and was solicitous to have his voice in good shape at his first appearance. I examined his larynx at about ten o'clock one morning and he left my office feeling, as he expressed it, "fine." At seven o'clock that evening he came in to see me and in a whispering voice asked me for a note to his manager, stating that he would not be able to play as he had lost his voice. I knew that there was nothing that could produce this sudden loss of voice in his case except fright and overanxiety on his part. I spoke to him rather sharply and said something rather disagreeable. He was provoked in an instant and spoke out in a loud voice, "You are wrong, doctor, you are wrong." I only wanted to show him that he could talk. He asked me to spray his throat. I told him that this was not necessary. He asked me to just look at it. Again I refused. "Will my voice last?" "Certainly," I said. "Go on with the determination that you are going to succeed and you can laugh at the audience. You will not have any trouble." I heard this man open the play that night at eight-fifteen o'clock and every word was as plain as possible. Still at seven he had not been able to say a word.

If these cases are not diagnosed correctly at first the patient instead of improving may lose his voice completely or be able to converse in a very low whisper, when suddenly some shock or responsibility may restore the voice as mysteriously as it disappeared. These cases are all interesting, as they are liable to present themselves to the specialist only after having been labeled with every diagnosis possible except the correct one. The loss of voice becomes a habit and in some cases the voice is restored only after the most strenuous medication. The correct diagnosis is first essential, then we should bear in mind that we have to teach the patient to talk as a parent would teach a child. When the patient notes that he can utter, if only a few words, the rest of the cure is simple.

55 West Forty-seventh Street.

AN IMPROVED SUBMUCOUS KNIFE.

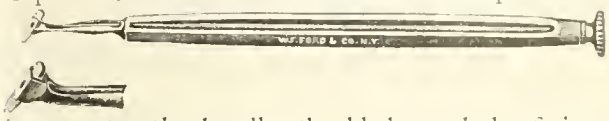
By JOSEPH COLEMAN, M.D.

NEW YORK.

Those who have had considerable experience in the performance of the submucous operation upon the nasal septum have come to regard two steps in the procedure to be of extreme delicacy and at the same time of the greatest importance; namely, the primary incision through the mucous membrane and perichondrium, and later the incision through the cartilage. The performance of these two steps has always been looked upon as a sort of "bugbear" since the inception of the operation, first on account of the importance of making these incisions through just the proper structures, and second on account of the difficulty of their execution. Perhaps the one most important step is the primary incision, for, while probably not so delicate a procedure as the incision through the cartilage, its great importance lies in the fact that if the incision is not deep enough to extend not only through the mucous membrane, but also through the perichondrium and down to the cartilage, the separation of the flap becomes extremely hazardous and difficult, in fact, almost impossible without its consequent tearing.

For the safer and more easy performance of these two steps, the incisions through the membrane and through the cartilage, I have devised a knife, using the principle of the adjustable blade as in the instrument of Dr. John McCoy of New York. A blade that is adjustable to cut to a certain depth, and that cannot possibly cut any deeper, is the greatest safeguard an operator can have. The blade is adjusted according to the thickness of the septum as measured by the fingers or the septometer, being about ⅛ of an inch for the primary incision through the mucous membrane and perichondrium, and 1/16 of an inch for the incision through the cartilage. The essential difference between this knife and the one devised by Dr. McCoy is the absence of the set-screw in the head. It was found that in many cases traumatism was caused by the screw head making the membrane friable and causing bleeding, or it would even cause a second incision, behind and parallel to that made by the blade.

To overcome this, the writer has devised a knife doing away with the exposed set-screw and its consequent disadvantages. This has been done by having the set-screw placed in the handle of the instrument, where it is completely covered and can cause no possible harm. The instrument is composed of



three parts—the handle, the blade, and the fixing rod. The fixing rod fits into the handle, which has been hollowed for it and engages the blade, which fits into a slot made for it in the head of the handle. The head of the handle holding the blade is tilted outward at an obtuse angle from the handle, so that when using the cutting edge of the knife at right angles to the septum the hand of the operator is out of the line of vision. The instrument is made so that every part is readily accessible and may be easily cleaned and dried.

The ordinary method of using a plain scalpel or a knife whose cutting depth cannot be regulated is to be deprecated on account of the danger of the manipulation and the extreme delicacy in its performance. We must remember that the safety of the flaps and the prevention of perforation depend upon this manipulation. The use of a knife such as the writer has devised does away with the extreme delicacy of making the incisions and the liability of perforating the septum or destroying the membranes, and he feels, therefore, that by its use the technique of the submucous operation is improved. The knife has been made for use by the W. F. Ford Co. of New York City.

59 West Ninetieth Street.

Technique and Indications for Gaseous Injections in the Treatment of Pleural Effusions.—Lemoine advocates the use of gaseous injections in pleural effusions and gives the technique and the indications for their use. In serofibrinous pleurisy they are indicated in abundant effusions, when they are to be drawn off. If all the fluid be removed at once the sudden expansion of the compressed lung tissue does harm, but if we partially replace it with air or oxygen the expansion is less rapid. In chronic recurring pleurisy, resulting from tuberculosis, the injection of air has a similar effect to the entrance of air into the peritoneum. In pleurisy, in which a portion of the fluid flows out on aspiration and then the exit becomes clogged, the entrance of gas causes the fluid to begin to flow again. In pleurisy, with large unilateral tuberculous lesions, oxygen introduced has a beneficial effect. In purulent pleurisy it is less useful.—*Le Nord Médical.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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New York, November 18, 1911.

MEDICAL IMAGINATION.

FEW, if any, of our human faculties have been more generally maligned and vilified in the common estimation than that known to psychology as imagination. The reason for this is not far to seek, for the average man thinks of imagination as concerned mostly, if not wholly, with unrealities, with fancies so far from the matter-of-fact as to be wholly false and useless. That many physicians partake in this unscientific way of viewing the function of imagination is inevitable, even though it imply the ignoring of the tremendously productive aspect technically termed creative imagination, mother of much of the world's real progress. Yet it is to a simpler phase of the process that we at present especially refer. Men are beginning nowadays to realize that nearly all medical "education" (referring to the preliminary routine of the schools) is too somatic, too one-sided—had it indeed, for generations not been so, Eddyism could never have received the credit it has sometimes won for stimulating the medical profession to recognize that the patient inevitably, man, woman, or child, has mind as well as body, "fire as well as clay." As the greatest of the world's wise men, philosophers howbeit classed as scientists, have so often emphasized, imagination is a very important element in the advancement of learning, even as it often is dominant in the production and in the cure of disease. To the physician himself imagination, rightly used and adequately, is invaluable. All the marvels of modern electricity, röntgen ray, and optics combined do not equip him for his work as does his own rightly used imagination.

Every kind of scientific understanding that the "doctor" has depends upon some phase of his imagination. Saying nothing about chemistry and physics (how little one could really know of these without imagination!) one learns anatomy, physiology, pathology, physical diagnosis, and all kindred fundamental subjects only as he extends the very limited facts that he can observe and read about with their imagined relations, applications and effects. No medical student "knows his physiology," for example, until he can (in imagination) look directly and with accurate eye to every nook and corner of his body and see just what is going on there —observing the movements both molar and molecular and comprehending their marvelous interdependence. If he use his imagination to the best advantage in doing this he will soon come to the conclusion, whether or not expressed aloud, that the undevout biologist, like the undevout astronomer, is mad. And to realize this is in itself much.

If so obviously important, nay quite essential, in the acquirement of the totalities of wisdom that furnish forth the competent physician, how could we say too much for imagination in the use of this learning? If the medical student requires imagination, the medical practitioner, student always, too, uses it "as hands and feet." The veriest quack that ever made a compelling contract with a newspaper can see the skin of his eager patients as well as the most "ethical" of his old "regular" contemporaries, but he lacks the knowledge by which his imagination can look within the skin and so discriminate a typhoid from a "near typhoid." One sees very great differences in this respect among medical colleagues who, to all intents and purposes, have the same kind and the same amount of professional knowledge, derived from the same books and cases under the same instructors and with essentially the same variety of patients. One of these men or women makes accurate diagnosis nine times out of ten and the other only pretends to do so. The one can look right through the tissues, see the conditions present in each whether right or wrong, and thereupon lay the plan of the case and its needful treatment; the other recalls only facts and principles more or less germane, but never for a single once exactly like those of the case in hand, and therefore never exactly applicable again. Only by the aid of the constructive and reproductive imagination can a physician comprehend the *totality* of conditions, which every case inherently is; only so can he understand and cure the patient rather than the case, as the commencement orator has long been so fond of wisely preaching, the man rather than his disease.

This power of looking through a patient's body systematically and carefully with the eye and ear and finger of imagination is an ability easily acquired by practice and easily retained and perfected by the miraculous facility of habituation. It is a wholly additional faculty, its acquirement taking nothing out of the mind, but rather adding much to it. It is in no sense opposed to the judgment or to the reasoning powers, for properly speaking these are impossible for practical purposes without dependence continually on the imagination; the new combination of things heard aand felt and seen and the new arrangement of these for the benefit of the case in hand. This habit of the systematic viewing of the organism is readily extendible to conditions of the mind as well, and here the practitioner must use his imagination and his practical psychology (knowledge of human nature) more broadly yet and be able to foresee the remote results of agencies producing their effects perhaps deep in the subconscious intricacies of the nervous system—just how a definite suggested idea will act on an over-balanced brain. This is imagination, too. Think of a power of vision able at once to see around corners and to magnify like the most recent oil-immersion objective, adapt this simile to hearing and then to touch, combine them, and let

them penetrate together into the inmost recesses of an organism wholly transparent and one can see (in imagination) something of the ability that this habit in question confers upon the properly equipped diagnosing physician. If the doctor, as an individual, has no imagination, let him acquire some; but if he has one, by all means let him see his privileged duty to use it, always to the common benefit.

FAT EMBOLISM.

It is probable that small quantities of liquid fat find their way into the venous system after every fracture of the larger bones, the veins in the marrow being so arranged anatomically as to remain wide open after being torn through. Usually, however, this occurrence leads to no recognizable symptoms and certainly does not introduce any serious element into the illness. Occasionally, however, whether because of the large amounts of fat entering the circulation or because of some individual differences in patients, fat embolism becomes the dominant complication of accidental or operative fracture. It is a number of such cases that form the subject of a valuable paper by Nils Gröndahl in the *Deutsche Zeitschrift für Chirurgie* (Band III, Heft 1-3).

Gröndahl considers that the cerebral form of fat embolism is the more important clinically, forming a fairly well-defined clinical picture and running no such stormy and rapidly fatal course as massive pulmonary embolism. He describes five fatal and five non-fatal cases of such embolism and deduces the following main points in the symptomatology of the condition. In cerebral fat embolism a free interval occurs between the first shock accompanying fracture and the appearance of cerebral symptoms. This interval varies in duration, extending even over several days, but usually it is not over four to eight hours long. The first symptoms are those of general depression of cerebral activity manifested by loss of memory, drowsiness, disorientation, slowness of mental processes, etc. Not infrequently signs of pulmonary embolism, such as dyspnea, cough, pain in the side, and bloody sputum, appear during this period, termed "the stage of stupor" by Gröndahl. In patients who finally recover, amelioration of symptoms begins at about this time; fatal cases, on the other hand, progress until the next or "comatose stage," which is marked by loss of somatic reflexes, deep stupor, and manifestations of cerebral irritation, such as spasms, contractures, and convulsions. Death is usually ushered in by deepening of the coma, development of paralysis, and gradual failure of respiration and circulation.

There are several possible cerebral complications of an accident such as fracture that must be differentiated from the cerebral form of fat embolism. Concussion is easily differentiated by the development of symptoms in immediate sequence upon the occurrence of the accident, a free interval not being present. Contusion and laceration of the brain usually show signs of focal irritation, which develop very early after the accident and are fully manifest almost from their onset. Compression of the brain, especially that consequent upon an extradural hemorrhage, is difficult to differentiate from embolism because of the well-defined free interval in this condition. The main symptoms here, however, are those of increase of intracranial pressure, shown by slowing pulse, irregular respiration, and especially progressive edema of the optic nerves, disclosed by the ophthalmoscope. Other pressure symptoms are likewise of gradual and progressive development, while fat embolism is characterized rather by the general lowering of cerebral functions than by symptoms of focal pressure. Diabetic coma, uremia, etc., should, of course, be excluded by examination of the urine for sugar, albumin, acids, etc., and by the absence of other signs of severe diabetes or nephritis.

In connection with the clinical study, sketched above, Gröndahl contributes a valuable pathological research, shows the occurrence of fat embolism in various minor injuries, and notes the distribution of fat in the various organs with the microscopic appearances encountered. So far as therapy is concerned, he is inclined to favor the suggestion made by Wilms that a thoracic duct fistula should be made as soon as the stage of stupor appears to be developing toward coma. He believes that the most dangerous fat emboli, because of size and quantity, reach the circulation through the lymphatics and may be stopped by the operation proposed. Gröndahl's interesting paper should stimulate clinical and pathological study of this condition, which is too often dismissed as too rare a complication to deserve serious consideration in the occurrence of cerebral symptoms after fractures.

EXPERIMENTAL APPENDICITIS AND RHEUMATISM.

The theory that in many instances appendicitis is caused by rheumatism was advanced by Beverley Robinson in the Medical Record, September 14, 1895. This theory was based on the observation that some of the milder symptoms of rheumatism occurred in patients who had had one or more attacks of appendicitis; that others had reported the occurrence of acute articular rheumatism either directly preceding or following evident signs of appendicitis; that rheumatism frequently attacked the pleura and pericardium, and might similarly attack the peritoneal covering of the appendix; that the suddenness of onset of rheumatism was characteristic also of appendicitis; and that antirheumatic drugs frequently relieved the symptoms of appendicitis. This hypothesis was based solely on clinical observation. Nevertheless, subsequent laboratory investigations seem to have shown that this relationship between appendicitis and rheumatism is not a fanciful one.

In 1901 Adrian was able to demonstrate, both clinically and experimentally, that appendicitis may be the result of a general blood infection. By means of intravenous injections of streptococci, staphylococci, typhoid bacilli, pneumococci, and colon bacilli, he succeeded in producing appendicitis in rabbits. In one of his experiments he isolated the pneumococcus from the inflamed organ.

F. J. Poynton and A. Paine (*Lancet*, October

28, 1911), to whom is accredited the discovery of the so-called *Diplococcus rheumaticus,* in continuing their investigations on the subject of rheumatism, have succeeded in producing appendicitis by means of intravenous inoculations of the diplococcus. The organism was isolated from the synovial fluid of the distended knee-joint of a boy suffering from rheumatism. Bouillon cultures of the diplococcus were injected into the veins of young rabbits. In addition to the production of multiple arthritis and mucous diarrhea, these inoculations, in the case of many of the animals, set up an inflammation in the middle two-fourths of the appendix. This was the only obvious alimentary lesion. There was no concretion or foreign body in the appendix, and the inflammatory process began deep in the wall of the latter. Histological study showed the earliest stage of hematogenous infection. The first changes appeared in the mucous and submucous layers, but chiefly in the lymphoid follicles of the latter. Small foci of polynuclear cells surrounded the minute capillaries, and every stage of inflammation was present, to the extent of complete destruction of normal tissue. The phagocytes contained diplococci in various stages of destruction.

It is pointed out that the experimental lesion elects the same portion of the appendix that is so frequently the seat of stricture in man. In one of the animals inoculated there occurred an early peritonitis with living diplococci in the peritoneal fluid, although there was no perforation. Poynton and Paine suggest that the association of arthritis, mucous diarrhea, and appendicitis has an important bearing upon the problem of autointoxication in the etiology of arthritis in human beings. This association would seem to indicate that rather than arthritis being the primary factor, all the lesions may be the result of the primary cause circulating in the blood. The diplococcus may not be the only offending agent. At any rate these investigations show that the very frequent association of rheumatism and appendicitis may be more than a mere coincidence.

Viability of Hookworm Eggs.

In the summer of 1910 Drs. Charles W. Stiles and Harry M. Miller of the Public Health and Marine Hospital Service began a series of experiments to test the viability of eggs of hookworms and of eelworms in feces allowed to decompose in water. Experiments in the same direction had been undertaken by Stiles and Gardner and reported on. From these experiments and from previous ones by the same investigators, it was found that in fecal material kept in water for 68, 117, 144, 317, 333, 349, 357, and 388 days, all the hookworm eggs identified were dead. The longest period of time after which the experimenters have thus far been able to find hookworm eggs under the conditions described has been 70 days. The longest period after which thus far they have been able to find live eelworm eggs under the conditions described have been 117 to 121 days. It seems, therefore, fairly well established that fermentation for four months kills all the hookworm eggs and that fermentation for three months, as suggested by Stiles and Gardner, will kill nearly if not quite all.

The Modern Treatment of Nephritic Colic.

Surgery, either operative or instrumental, is gradually appropriating to itself the treatment of most diseases, internal or external, barring only the epidemic affections of infective origin. In *La Clinique* of September 1, 1911, Georges Luys urges catheterization of the ureter in cases of the engagement of a renal calculus in this canal. The treatment of this condition hitherto has been almost wholly medical—chiefly administration of anodynes and a resort to the hot bath and other means to induce relaxation. Such treatment, Luys says, is vague and empirical and utterly unjustifiable in view of the powerful therapeutic measures now at our command. He insists that catheterization of the ureter through which the stone is passing should be employed methodically as a part of the treatment of nephritic colic. Why leave nature to do its work badly instead of assisting her in her effort? The calculus tends to descend through the ureter, so why not facilitate its migration, the more so that very often a calculus with rough edges may be retained for a long time inside the ureter, giving rise often to serious complications? Consequently, Luys recommends the passage of a cathether into the ureter as the routine treatment of nephritic colic, and he cites an example of a patient suffering from this complaint treated thus by him with complete success.

News of the Week.

Health of the Canal Zone.—The report of Colonel Gorgas for the month of September states that the total number of deaths from all causes among employees was 57; from disease, 42, and from violence 15, giving the annual average per thousand of 10.63 and 3.80, respectively. Among employees for the month of September of each year the annual average death rate per thousand was as follows:

1904	14.31	1908	12.78
1905	32.00	1909	12.76
1906	57.34	1910	11.47
1907	28.63	1911	14.43

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employees and civil population, for the month of September of each year, was as follows:

1905	52.31	1909	19.01
1906	54.54	1910	21.60
1907	32.93	1911	21.56
1908	24.91		

In segregating according to race, the annual average death rate per thousand from disease among employees was: For whites, 5.95, and for blacks, 12.24, giving a general average for disease of 10.63. For the same month during 1909 the annual average death rate per thousand from disease among whites was 11.95, and blacks, 8.25, giving a general average of 9.08; and in 1910 from disease among whites, 3.58, and blacks, 0.46, giving a general average of 7.89. Among employees during the month, the deaths from the principal diseases were as follows: Chronic nephritis, 4; [illegible]ntery, clinical, 1; hemoglobinuric fever, 3; [illegible] neumonia, 14; tuberculosis, 5; typhoid [illegible]ver, 1; leaving 14 deaths from all other diseases [illegible]s from external violence. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

The Mortality in New York City during the week ending November 11 was 13.30 per 1,000 of the population, a decrease of 1.13 of a point compared with the corresponding week of November, 1910. The mortality from diphtheria and croup for the past week was lower than for any other week in the month of November in the history of the city, there being only 12 deaths reported as against 30 for the corresponding week of last year. The mortality from typhoid fever was 50 per cent. lower, the diarrheal diseases showed a decrease of about 33 per cent., the mortality from pneumonia was 12 per cent. lower, and that of tuberculosis 15 per cent. lower. Two groups of diseases showed an increase, viz., the circulatory and the digestive, these two groups being typified by the heart and liver diseases.

Army Medical Corps Examinations.—The Surgeon-General of the Army announces that preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held on January 15, 1912, at points to be hereafter designated. The essential requirements are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as an interne after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received in order to lessen the traveling expenses of applicants as much as possible. The examination in subjects of general education (mathmatics, geography, history, general literature, and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools, or high schools, or of graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School. Applications must be complete and in possession of the Adjutant-General at least three weeks before the date of examination. There are at present sixty-four vacancies in the Medical Corps of the Army. Full information can be procured upon application to The Surgeon-General, U. S. Army, Washington, D. C.

The State Civil Service Commission will hold examinations on December 9, 1911, for the following positions: Bacteriologist, under Health Officer, Port of New York, $1,200; Physical Instructor, women only, $45 per month and maintenance. Application blanks must be filed on or before December 1, 1911. For detailed circular and application blank address State Civil Service Commission, Albany, N. Y.

A Ten-Mile Endurance Test for Naval Officers.—Beginning with the new year, every officer of the U. S. Navy, whether afloat or ashore, will be obliged to take a ten-mile walk once a month to prove his fitness for continued service. The walk must be completed within four consecutive hours. Before taking the first monthly walk in each year the officers will be examined by a medical board who will determine whether or not they may take the exercise without danger. If the officer is physically fit he will start on the walk and within three hours, if practicable, after the walk is completed the same medical board will again examine him to determine what effect the exercise has had. Officers serving in the tropics will be obliged to take a walk of only six and two-third miles instead of ten. Any officer who is found by the medical board to be unfit to take the walk or who fails to complete the ten miles, for physical reasons, will be ordered before a retiring board.

A Medical Lord Mayor.—Sir Thomas Boor Crosby, M.D., was inaugurated Lord Mayor of London on November 9. His term will be the 723d Mayoralty of the city, and, as he is 81 years of age, he is one of the oldest, if not the oldest, citizen ever to occupy the office. He is also the first medical man honored in this way. He was knighted in 1907. He is a Fellow of the Royal College of Surgeons and ex-President of the Hunterian Society. At one time he was Demonstrator in Anatomy and House Surgeon at St. Thomas's Hospital.

The Harvey Society Lecture.—The fifth lecture in the seventh course of the Harvey Society lectures will be given by Prof. W. T. Sedgwick of the Massachusetts Institute of Technology on November 25 at 8.30 at the New York Academy of Medicine. His subject will be "Illuminating Gas and the Public Health."

Red Cross Christmas Seals.—The State Charity Aid Association, which has taken charge of the sale of Red Cross Christmas seals in New York State, has appealed to the school principals in five hundred villages to assist by organizing local committees to sell stamps. The sales of the stamps in New York State, outside of New York City, amounted last year to about $32,000. It is hoped that by interesting the schools this amount may be trebled this year.

Prizes of the College of Physicians and Surgeons.—Notice is given that an Alumni Prize of $500 will be awarded at Commencement, 1912, for the best essay on any medical subject, written by an alumnus of the college, and embodying the results of original investigations made by the writer. The essay must be submitted, typewritten, to the secretary of the Alumni Association on or before April 1, 1912. The Cartwright Prize, the requirements of which are the same as those of the Alumni Prize, excepting that it is open to universal competition, will be awarded in 1913.

Railroad Fatalities.—According to the report of the Inter-state Commerce Commission for the year ended June 30, 1911, there were 10,396 persons killed on the railroads of the United States, and 150,159 injured. Of the number killed only 386 were passengers and more than one-half the total number were trespassing upon railroad tracks or stealing rides.

Street Accidents.—The National Highways Protective Society reports that 89 people have been killed and 855 others seriously injured in automobile accidents in the streets of the Greater City of New York since January 1. Of the 89 fatalities 35 were children, and 207 of those injured were children. Col. Edward S. Cornell, Secretary of the National Highways Protective Society, in criticising the carelessness of those operating automobiles also scores hospital ambulances for tearing through the streets at a speed far too high for safety.

Montefiore Home.—At the twenty-seventh annual meeting of the directors of this institution, which was held on November 4, it was announced that the new home would be completed in about eighteen months. It occupies four city blocks, and

provides room for 480 patients. The report asks for $500,000 which was needed to free the home from indebtedness. During the past year, 1,109 patients were cared for in the home and the country sanatorium.

Gifts to Charity.—At the annual meeting of the Hospital for Deformities and Joint Diseases it was announced that Alfred Heinsheimer had given $15,000 for the purchase of two houses in East 123d street, adjoining the rear of the present two houses of the hospital. Mr. Heinshimer also gave $10,000 for the maintenance of a room. Two other gifts of $500 each were also announced. The will of James C. Atwater leaves $3,000 to the Brooklyn Homeopathic Hospital. Mrs. Francis D. Colburn has given $500 to the hospital of Milford, Mass. The will of the late Benjamin F. Stanley leaves the Anna Jaques Hospital of Newburyport, Mass., $500, and the same amount to the Homeopathic Hospital.

The Robert Dawson Memorial Hospital, which has been erected at a cost of $125,000, will be ready for occupancy on January 1. It is situated on land adjacent to the Boston University Medical School and connects with the Massachusetts Homeopathic Hospital. This hospital was erected for the purpose of clinical research and for the furtherance of preventive medicine.

A Hospital for Walla Walla.—The Sisters of Charity of the House of Providence are about to erect a $200,000 hospital for this city. This organization has just completed a hospital at Vancouver and operates a majority of the Roman Catholic hospitals on the Pacific Coast.

Sellers of Bad Food Convicted.—Sixty-five offenders against the pure food laws were recently arraigned in the Court of Special Sessions last week and practically all of those tried were convicted of selling adulterated or unwholesome foodstuffs and were fined.

Antivaccinationist Sues.—Herbert A. Thorpe, a resident of Staten Island, has brought suit against the Board of Education of New York City for $10,000 damages for attempting to compel his two children to be vaccinated. Some time ago Thorpe was summoned to the police court for violating the compulsory education law but no charge was entertained against him on his representation of his antivaccination principles. The case will be heard before the Supreme Court sitting in Richmond.

Dr. Robert E. Coughlin has been appointed Chairman of the Medical Association of the Greater City of New York, for the Borough of Brooklyn, in placed of Dr. J. Scott Wood, resigned.

Prof. Wilhelm Wein of Würzburg University has received the Nobel prize for physics.

Canadian Census.—The population of Canada is announced as about 7,150,000, according to the last census, instead of the eight millions for which its loyal inhabitants were wishing. The increase in the last decade was less than two millions.

The Burke Foundation.—The appraisal of the estate of the late John M. Burke of New York shows that over two million dollars will be available for the Winifred Masterson Burke Relief Foundation, which is designed to aid and help the worthy poor who shall have been ill, especially during convalescence from serious illness. The Servants of Relief for Incurable Cancer receive a bequest of $2,500.

Deutsches Zentralkomitee für ärztliche Studienreisen.—The general secretary of the committee, Herr Dr. A. Oliven of Berlin, sailed in the steamship *Cleveland* for New York on October 3, for the purpose of making arrangements for the medical students' tour of America next year, in connection with the International Congress of Hygiene in Washington in October, 1911.

For Purer Candy.—As the result of a conference between Dr. Wiley and the dairy and food officials of Pennsylvania, it is probable that the manufacturers of confectionery will be required to change the coating on some of their Easter novelties and candies. Much of this coating has been condemned as varnish, while the coloring is said to be due to iron rather than chocolate. As two-thirds of the country's supply of these goods is produced in Pennsylvania, there is general interest in the action there.

Appropriation for Health Work.—The Budget Committee of the Board of Estimate of this city has increased the allowance for the Board of Health by over half a million dollars, an increase of 20 per cent. over the budget of 1911. A large proportion of this is for the work among school children and among tenement mothers and children. The examination of school children now confined to the public schools is extended to parochial schools and the corporate and other free schools. The largest increase is for milk depots. The Health Department estimates that the experiments in this regard the last year saved 16,000 infant lives, and it is now proposed to put this work on an all-year basis. Forty additional milk stations are to be established next year, and for this purpose $126,000 additional is provided, making a total of $165,655 for milk depots in 1912. It is proposed to increase the total allowance for other work in the Division of Child Hygiene from $344,340 to $459,990.

Protest Against Quarantine.—Gen. J. Franklin Bell, commander of the Department of the Philippines, has lodged a protest against the health officials of San Francisco who quarantine United States Army transports bringing troops from Manila for several days, sometimes as many as five, whereas merchant vessels from Manila are usually released at the end of twenty-four hours. The quarantine authorities allege as the cause for discrimination against army vessels that the soldiers are gathered from all over the Philippines, while the other steamers usually carry passengers picked up principally from Manila.

The Pure Food Law in Louisiana.—At a meeting of the Louisiana State Board of Health in October a resolution was passed making the pure food laws of that State uniform with those of the United States Government, except in cases where the government laws might conflict with those of the State Legislature.

Against a State Grant to a Medical School.—The Illinois State Homeopathic Society has brought suit against the State Auditor to restrain him from paying to the University of Illinois $60,000 appropriated by the last assembly for the maintenance of the school of medicine of that institution located in Chicago.

College Assessment for Medical Attendance.—The students at the Kansas Agricultural College in Manhattan, Kan., have entered into an arrangement whereby by the payment of 50 cents a term, or $1.50 a year, they will be entitled to the services of a physician and of a visiting nurse when ill.

A Fee Bill.—The Montgomery County, Ill., Medical Society has adopted a new fee bill as fol-

lows: Office fee, minimum $1. Day visits in city, $1.50; night in city, $2; day visits in country, $1.50 plus 50 cents a mile; at night in country, $2 plus 75 cents a mile; consultation fee, minimum (with mileage above), $5; obstetrical cases (uncomplicated) with mileage as above, $15; same with instruments $25; surgical cases requiring anesthetics, $10 and up; administering anesthetics, minimum, $5; insurance examinations (not fraternal), minimum, $5; visits to contagious diseases, mileage extra, $5.

County Medical Society Sued.—Dr. Louis Anton Ewald has brought suit against the Medical Society of the County of New York to compel the society to amend its records to show that he resigned last December and consequently could not have been expelled in April.

The Medical Society of the State of Virginia at its annual meeting held in Richmond, October 24 to 27, elected the following officers: *President,* Dr. Hugh M. Taylor, Richmond; *Vice-Presidents,* Drs. Samuel Lile of Richmond, Joseph Grice of Portsmouth, and S. B. Moore of Alexandria; *Secretary,* Dr. Paulus A. Irving, Farmville; *Treasurer,* Dr. Grear Baughman, Richmond.

Obituary Notes.—Dr. John Lombard Dale of Springfield, Mass., a graduate of the University of Pennsylvania, Department of Medicine, in 1872, died October 30 in his sixty-second year.

Dr. John Bunton Palmer died at his home in this city on October 30. He was a graduate of the New York Homeopathic College in 1892 and was professor of diseases of the nose and throat at the New York Medical College and Hospital for Women and attending laryngologist to the New York Ophthalmic Hospital.

Dr. Israel G. Heilman died of heart disease at Philadelphia on October 26, at the age of 65 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1873.

Dr. C. B. Bates, for many years a practising physician of Santa Barbara, Cal., died at his home in Nahant, Mass., on October 13. He was born in England in 1842 and went to California in 1862. He studied medicine at the California State University and in Philadelphia, and practised in Santa Barbara from 1869 until about nine years ago, when he moved to Boston.

Dr. William N. Swift, a graduate of the Medical School of Harvard University, Boston, in 1881, died at his home in New Bedford, Mass., after an illness of several weeks, aged 58. He was a member of the American Medical Association.

Dr. Edward D. Hooker, a graduate of the Medical School of Harvard University, Boston, in 1884, died at his home in Arlington, Mass., October 31. He was a member of the American Medical Association.

Dr. Lewis E. Morgan, a graduate of the Medical School of Harvard University, Boston, a practising physician in Cambridge for many years, died at his home in Hanover, Mass., October 27, aged 48. He was a member of the American Medical Association.

Dr. Samuel McCurdy, a graduate of the Cooper Medical College, San Francisco, Cal., in 1872, died October 25, in Berkeley, Cal., aged 64.

Dr. Josephine Griffith Davis, a graduate of the Woman's Medical College of Pennsylvania in 1877, died at her home in East Orange, N. J., November 8, aged 72.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE "GAG" OF THE BILL—SLEEPING SICKNESS—SARCOMA OF TIBIA—THYROID MALIGNANCY—LEAGUE OF MERCY—ELECTION TO GENERAL MEDICAL COUNCIL—OBITUARY.

London, October 27, 1911.

Parliament has resumed after its recess, and the Government has determined to force the insurance bill through by means of the "gag," or, as it is also called, the guillotine. The premier says this is necessary in order to make it an act before Christmas. With curious logic, there scarcely being time even with the gag, he mentions half a dozen other measures which he is determined shall pass. The chancellor pretends that his conferences during the recess have satisfied the interests involved. If so, I still hear objurgations from friendly societies. Then the doctors cannot be said to have accepted the bill until the meeting I told you of has taken place, and the British Medical Association has not withdrawn its demands, although some fear that their leaders are weakening. They can scarcely venture to give way on the wage limit, however, angry as the societies may be, and they must insist on this limit being inserted in the bill. Mr. Lloyd George should be made to understand that the profession will make no arrangements with his insurance authorities to attend people with more than £2 weekly income. This and two other points have been accepted by the House of Common as reasonable, and that by a large majority. The Government should be plainly told that any further trifling with these and the profession will refuse to have any more to do with his scheme. A strong party would welcome this result, which would end the contract system, and that party considers the opportunity of doing so might have been seized at the outset. They would be supported now by those politicians who denounce the gag in a more extended way than ever as being introduced to form a precedent for still more autocratic encroachments on parliamentary discussion.

Another commission on sleeping sickness is shortly to leave for central Africa, under the auspices of the Royal Society and the British Government. Col. Sir D. Bruce will be in charge and Lady Bruce goes with him. Captain Hamerton, R.A.M.C.; Professor Newstead of the Liverpool tropical school, Major Harvey, R.A.M.C.; Staff-Sergeant Gibbons, and Mr. James Wilson, are the other members. The work will be confined to Nyassaland, where forty cases have been reported since 1909, and the question whether in that country the carrier of the disease is other than the tsetse will be one of the first for investigation. It has been very positively asserted that the *Glossina palpalis* is not met with in Nyassaland, and therefore suggested that the parasite may not be the same which causes the disease in other parts of Africa. The commission will also examine what proof there may be in the suggestion that sleeping sickness in Nyassaland is due to the presence of big game, or any wild animals. It is certain that several species of tsetse can convey trypanosomes to domestic animals. In Uganda sleeping sickness has been most studied and definitely traced to the *Trypanosoma gambiense*, but in Nyassaland it has some difference, and has been termed *rhodesiense*. The difference, however, is

not very great, and one observer speaks of it as a mere "freak." These parasites are not rare in some countries. Dr. Chagas found trypanosomes exceedingly common in Brazil. One form, he said, could be found in most of the infants there during their first year. Many, it seems, succumb to the infection, but the others become immune. It has been reported that the parasites have been detected in fishes in the Norfolk Broads and in calves in England.

Sir David Bruce's commission may be expected to settle many of the questions suggested by the varying statements which have been made. His first attention will be directed to decide whether the *T. rhodesiense* frequently exists in the lower vertebrates as well as in man. Then whether the animal sickness (nugana fever) can be communicated by *Glossina palpalis,* as well as by the *G. morsitans.* You will remember that on some small islands in Uganda lakes Professor Minchin reported there were swarms of tsetses where no game and no human beings were within their reach, and they seemed to live on the blood of birds. Perhaps they are less dainty than has been supposed.

At the opening meeting of the R. S. M. Sir F. Eve showed in the clinical section a case of myeloid sarcoma of the tibia of six months' duration in a girl of eighteen. The diagnosis was confirmed at operation, which was then further proceeded with. The upper third of the tibia, containing the tumor, was resected, and the articular cartilage of the femur also removed. Then six inches of the fibula were sawn off, carefully preserving the periosteum. A hole was bored into the end of the femur and another into the tibia, and the piece of fibula bolted into these holes, the ends of the two bones being separated for 1¾ inches. Primary union followed, radiographs taken from time to time showing that new formation of subperiosteal bone increased the size of the transplanted fibula and the interval between the femur and tibia diminishing. It was mentioned that experiments lately made by Axhausen and Lobenhoffer showed that when transplanted bone is covered with periosteum the osteal substance dies, but periosteum and endosteum live. Hence, in operations where fixation of graft is required the periosteum must be carefully preserved. It was remarked, too, that myeloid sarcoma does not recur after local removal. Sir F. Eve said he had seen within the week two cases showing this, one eighteen years, and the other four and a half years after operation.

Mr. Elmslie showed a case of general thyroid malignancy in a woman of sixty-one. Pain in the wrist, treated at first as rheumatic, was followed by swelling which a skiagram showed to be endosteal of the lower part of the shaft of the radius. Suspected to be sarcoma, a portion was excised last July, but it was found to be composed of thyroid tissue, not evidently carcinomtaous, but resembling an adenoma of the fetal type of thyroid. Later the left lobe of the thyroid was found large and hard, but not fixed, though the patient said it had been so for years. The veins on the left side of the neck had become distended; movements of the vocal cords were unaffected. The whole skeleton had been examined by skiagraphy, but no other bony tumor discovered.

The grants made by the League of Mercy to extra-metropolitan hospitals for 1911 amount to £2,200, making a total of £9,861 given to hospitals outside London in counties which called for the league. To King Edward's Fund for the London hospitals the league has contributed since its origin £153,000. At a meeting in support of the league on Tuesday Sir J. Crichton-Browne affirmed it would be a national calamity if the Government took over the hospitals, for it would certainly withdraw them from the all-pervading intimate interest which vitalizes them, make their organization rigid instead of plastic, and impair their usefulness as centers of medical science and teaching. The insurance bill, too, he felt, unless greatly modified, would cripple the hospitals. Mr. Lloyd George admitted it would cause temporary irritation. The risk was that it would induce permanent hardness of heart. Mr. George professed supreme faith in the goodness of human nature. But there would come to many a time when it was necessary to reduce expenditure, for honesty required a man to pay his way before indulging in charity.

Electioneering *re* the General Medical Council is already going on. Two members whose terms expire next month are candidates again, and one as the first additional representative which has been granted. The British Medical Association is, as usual, first in the field, and its ruling clique is urging in the name of the association the election of their three nominees, and that not only in the journal, but through the branches and by circulars. Discontent is natural, for we are not satisfied to commit every movement to the control of a body of which the previous record is not creditable. There are three other candidates to oppose the three whose only disqualification is that they are nominees of the British Medical Association. If this association is always to monopolize the representation the election will become a farce.

In the death by "suicide during temporary insanity" of Dr. A. P. Hillier, M.P., the profession loses an able representative in Parliament, although he had retired from practice. Born in 1858, he served with the colonial forces in the Kaffir war of 1878-9, and was a member of the Johannesburg Reform Committee in 1895-6. He had taken B.A. at the Cape University in 1877. In 1882 he took M.B. Edin., and proceeded to M.D. in 1884. He became a member of the Association for the Prevention of Tuberculosis, displayed great interest in the open-air treatment, was a consultant of a sanatorium, and held other important offices, including the presidency of the South African Medical Congress (1893), and was a delegate to the Berlin Tuberculosis Congress, 1899. He wrote "South African Studies," "The Commonwealth," "Tuberculosis: Its Nature, Prevention, and Treatment," and other works, as well as journal articles, and for a time edited *Tuberculosis.* In January, last year, he was elected M. P. for Hitchin, and has been working hard ever since, both in politics and otherwise. At the inquest yesterday, when the verdict cited above was found, it was shown that he had no troubles, either financial or domestic. He rather worried about the illness of his son in India and was the subject of some heart disease which had interfered with sleep lately, but had never shown any delusion until just before the sudden attack which proved so fatal. It is evidently one of those cases of sudden breakdown in very active persons who have been overworking. His brother stated that he did the work of two men.

Dr. John Breakey, R.N., inspector-general of hospitals and fleets (retired), died on the 21st of

October. He became surgeon in the navy in 1854, staff surgeon in 1863, fleet surgeon in 1876 and inspector-general in 1886, retiring in 1889. He served in the Baltic during the Russian war, 1854, and was present at the bombardment of Bomarsund. In the China war of 1857-8 he also served and was awarded both the China and Baltic medals.

Col. Michael Cogan, R.A.M.C. (retired) has died at the age of seventy-one. He qualified at the two royal colleges in Dublin, 1862-3, and joined the army medical service the following year. He was in the Afghan war of 1878-80, for which he held the medal. He retired in 1897.

The death is reported by cable of Surgeon-Major Campbell Dykes of the Indian Medical Service. He took the double qualification and M.B. Lond., in 1897, and entered the service in 1899, reaching the rank of surgeon-major last January.

Dr. Stanley Smith, physician to the Railway Fund, etc., died on the 25th of October, after a short illness, aged fifty-nine. He qualified in 1877 at the London College of Surgeons, and added Edinburgh, 1882. In 1895 he joined the College of Physicians in London and took M.D. Durham.

Dr. George Thorn, J.P., consulting surgeon to the Royal Albert Hospital, Devonport, died there on the 8th of October after a few hours' illness. He was sixty-six years old and had been a magistrate for many years.

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

PYORRHEA ALVEOLARIS, ORIGIN, AND LOCAL AND GENERAL CONSEQUENCES—LOCAL TREATMENT OF SYPHILIDES OF THE TONGUE—DIFFERENT SORTS OF PSYCHOPATHIC PAINS, THEIR SIGNIFICATION AND THEIR ROLE—TUMORS OF THE PITUITARY BODY—VALUE OF THE TESTIMONY OF THE INSANE IN COURTS OF JUSTICE—DEATHS OF PROFESSOR DIEULAFOY AND PROFESSOR CHARPY.

PARIS, Sept. 20, 1911.

THE second French Congress of Stomatology was opened during the early days of August at the Faculté de Médecine, Paris, with Professor Landouzy as president. The question which was the order of the day was pyorrhea alveolaris, its origin and local and general consequences. Tellier of Lyon presented the paper. The author defined the pyorrheic state as a chronic pathological state characterized by the progressive destruction of the fixing tissues of the teeth and the almost constant appearance of suppuration, due to constitutional or local causes, lessening of the resistance of the tissues and favoring the local affection. This results in the falling out of the teeth and may be accompanied or followed by general complications.

The local treatment of syphilides of the tongue was considered by Hallopeau. The author believes that with 606 or hectine we can positively arrest syphilis in its evolution; but we should not at the same time neglect local treatment, for the multiple functions of the tongue aggravate the specific lesions in this situation. We can cause the ulcerations and mucous patches to disappear by touching with acid nitrate of mercury. But if the lesions are extensive it is desirable to transform the buccal cavity into an antisyphilitic medium by the frequent sucking of pastiles containing a milligram of corrosive sublimate or a centigram of hectine.

The second congress of alienists and neurologists opened at Amiens on August 1, under the presidency of Deny of Paris. Three subjects were submitted to the members of the congress. The first was the different kinds of psychopathic pain, their significance and their rôle. Maillard distinguishes four groups of psychopathic pains; hallucinatory pains, due to hallucinations; hysterical pains, due to autosuggestion; paranoiac pains, determined essentially by delirious interpretations, and cenesthopathic pains, which consist in abnormal painful sensations of which the persistent duration affects the patient. Picqué of Paris endeavored to state what should be the conduct of the surgeon in the presence of these pains. When there exists an important lesion, such as a cancer or tumor, the surgeon should operate; but if the surgeon does not find any such lesion he should abstain from interference. The second question was tumors of the pituitary body. Cortellemont of Amiens read a paper. Primary tumors of the pituitary body are important and relatively frequent. From the size of a nut to a cherry they may attain the size of a hen's egg or a mandarin; these tumors are for the most part glandular. The symptoms determined by tumors of the pituitary body are first mechanical, those of cerebral compression: headache, vomiting, vertigo, nervous depression, and especially ocular troubles. The dystrophic states determined by tumors of the pituitary body are the deformities of acromegaly or gigantism, hypophyseal adiposity, or genital dystrophy. The diagnosis should be very reserved; it should be positive only when the clinical picture is complete. As treatment opotherapy appears to be only symptomatic; on the contrary, radiotherapy appears to have given functional and physical results that are very acceptable. Sainton of Paris insisted on the especial characteristics which glycosuria takes on in tumors of the pituitary body. The sugar content is very high; it is accompanied by symptoms of true glycosuria. The third question was the value of the testimony of insane persons in a court of justice, by Lalanne. All psychopaths are capable of being mistaken or of lying; the dements make false statements on account of failure of memory and attention; maniacs by malevolence; melancholics by ideas of culpability; the persecuted by the hope of vengeance or defense; the intoxicated by oneirism; the hysterics by mythomania; the epileptics by lacunæ or absences. All the testimony of the insane should be subject to careful examination.

The next congress of alienists and neurologists will be held at Tunis in 1912, president M. Mabille. The principal questions are psychoses of paludism, instinctive perversions, and assistance for colonies of the insane.

Professor Georges Dieulafoy, of world-wide renown, has died prematurely. Among great contemporary physicians Dieulafoy was remarkable above all for his brilliant qualities as professor and educator. His professional probity, his scruples in regard to the duties of the physician, the respect in which he was held by his patients, the additions he made to medical achievement, the devoted affection which he gave to his pupils attracted the admiration of all who knew Dieulafoy. He was a marvelous professor of internal pathology; all medical questions, even the most arduous, he made accessible and attractive to all. He was the author of that famous "Manual of Internal Pathology" which from its first appearance went through sixteen editions, which in France instructed several generations and carried abroad the renown of French clinical medicine. Dieulafoy was the favorite pupil of Trusseau and

his teaching clearly reechoed that of his master. One could not say what was to be admired most: his alert and vigorous style and clinical acumen or his marvelous eloquence. The great amphitheater of the Hôtel-Dieu, where he lectured so long on clinical medicine, was always too small to hold the crowd of his admirers. With Dieulafoy disappeared one of the most eminent masters of French medical science.

Charpy of Toulouse has also died prematurely. He was one of the celebrities of French medical science. He studied at the Medical Faculty of Lyons. Later he was made professor of anatomy at the Medical School of Toulouse, where he remained a long time. The character of his teaching was simple, clear, luminous, illustrated with many careful figures and schemata. His two volumes on the "Anatomy of the Central Nervous System" and the "Anatomy of the Genitourinary Organs" are a revelation of his brilliant qualities as a professor and savant. Later he published with the late Professor Poirier the "Treatise on Human Anatomy." Recently there appeared the résumé of the work under the name of "Anatomy Abridged." Death seized him at the moment when he was working on a third edition of the "Treatise on Anatomy."

COLORED PHOTOMICROGRAPHS.

To the Editor of the Medical Record:

Sir:—Referring to the article on "Photomicrographs in Natural Colors" appearing in the October 7 number of the Medical Record, I would say that ever since the advent of the Lumière Autochrome plates I have been frequently called upon to produce photomicrographs in their natural colors, and can say from experience that the difficulty of producing positives on glass by this process is not much greater than the production of ordinary lantern slides. When, however, it is desired to reproduce these photomicrographs upon paper in their natural colors the difficulty is somewhat increased, as use must then be made of the three-color process. However, a little experience will soon enable a person familiar with photography to obtain three negatives from the autochrome in their correct color values, and, with these, several methods are then available for their impression upon paper.

James H. Stebbins, Jr.

New York.

Progress of Medical Science

Boston Medical and Surgical Journal.

November 2, 1911.

Circulatory Disease. Its Prevalence in New England, Massachusetts and Boston. E. W. Dwight.
Factors Involved in the Production of Arterial Blood Pressure. Physiological and Pathological. W. B. Cannon.
Remarks on High Blood Pressure and Arteriosclerosis. J. M. Jackson.
Treatment in Circulatory Disorders. H. D. Arnold.
An Experimental Study of the Cause of Death in Acute Intestinal Obstruction. F. T. Murphy and B. Vincent.

Prevalence of Circulatory Disease.—By E. W. Dwight. (See page 1044.)

The Production of Arterial Blood Pressure.—W. B. Cannon emphasizes the necessity of keeping in mind both the discharge from the heart and the constriction of peripheral vessels as determinants of arterial pressure. A low pressure may be due not to vasodilation but to a weak heart; and any agency used to increase vasoconstricto: tone under these circumstances is likely to stop the heart at once. The author's attention has recently been called to a case of precisely this character, in which the administration of adrenalin to raise the low tension was followed by instant death—the laboring heart was overburdened by the sudden increase of load and stopped immediately. Until the part played by each of the two factors therefore—the heart and the arterioles—is clearly discriminated, the intelligent treatment of any disturbance of normal arterial pressure is impossible.

High Blood-Pressure and Arteriosclerosis.—J. M. Jackson states that the causes of arteriosclerosis may be summed up under the heads: (1) toxic—*e.g.* lead, infections of all sorts, excess of certain internal secretions, such as adrenalin, and absorption from the intestinal tract of certain putrefactive products; (2) senile or quasi-senile, in which would be included the wear and tear from overwork; and (3) heredity.

Treatment of Circulatory Disorders.—H. D. Arnold states that the determination of the blood pressure in many of these cases indicates the general line of treatment. If a relatively weak heart struggles against a high pressure the best drugs to administer are digitalis and strychnine, used cautiously and often in very small doses. When given in this way digitalis does not increase the blood pressure. Nitroglycerine should be used to lower the blood pressure. Rest is of cardinal importance. Hydrotherapy is not useful in this condition, but high-frequency currents are efficient in reducing high blood pressures. The most important factor in the treatment is the proper regulation of the diet. The essential feature of this dietetic treatment is the limitation of the amount of protein in the food.

Cause of Death in Acute Intestinal Obstruction.—F. T. Murphy and B. Vincent conclude that interference with an obstructed intestine is the vital factor in the production of the typical symptoms of acute ileus. The obstruction of the venous return is the most important element in this circulatory disturbance. The acute symptoms are caused by the absorption of a toxic substance which is found in the obstructed intestine. This toxic substance is destroyed by boiling. It is not soluble in water and will not pass through the Berkefeld filter. The formation of this substance probably is not dependent on any vital secretion of the mucous membrane of the intestine. The rapidity of absorption varies, dependent on the patency of the lymphatic channels in the mesentery and the permeability of the intestinal wall. This toxic substance is purely bacterial in origin, and the living bacteria with their endotoxins, and not the putrefactive products nor the chemical poisons, are directly responsible for the profound symptoms and death in acute intestinal obstruction.

New York Medical Journal.

November 4, 1911.

The Evolution of the Operating Table. W. S. Bainbridge.
Heredity and Tuberculosis. G. B. Sweeny.
Bronzed Diabetes (Hemochromatosis). G. Blumer.
Routine Postoperative Röntgenization in Cancer. C. Edward Skinner.
A Case of Dural Endothelioma Involving the Frontal Lobes. N. J. Dynan.
The Diagnosis of Gastric Catarrh. J. A. Work.
Acute Dilatation of the Stomach Following a Herniotomy Done under Local Anesthesia. H. H. M. Lyle.
Tubal Sterilization as a Prophylactic Measure. M. A. Werner
Surgical Measures *versus* Palliation in Epididymitis. F. C. Walsh.

Evolution of the Operating Table.—W. S. Bainbridge discusses this subject and traces the development of the surgical table from the wooden household table of former centuries to the up-to-date enameled adjustable table, in which drainage, universal adaptability, simplicity of mechanism, and the requirements of asepsis are the objects in view. The author has devised a table with a nickel top which will not chill the patient like glass, which will not break like the latter, nor stain like baked enamel, nor chip like porcelain-enameled iron. This table has the following attachments: an anesthetist's screen, foot brakes, side extensions for the arm, leg holders, a perineal instrument

tray, a swinging instrument rack with detachable tray, shoulder supports, a foot-supporting plate, a goiter attachment, and an elevating bridge with hip and heel stirrups.

Heredity and Tuberculosis.—G. B. Sweeny believes that, while tuberculosis is not inherited, nevertheless there is a constitutional tendency to this disease.

Bronzed Diabetes.—By G. Blumer. (See MEDICAL RECORD, July 22, 1911, page 200.)

Postoperative Röntgenization in Cancer.—By C. E. Skinner. (See MEDICAL RECORD, October 21, 1911, page 846.)

Dural Endothelioma.—N. J. Dynan reports a case of this condition occurring in a man aged seventy-two years. The tumor involved the frontal lobes.

Gastric Catarrh.—J. A. Work states that a large percentage of cases of chronic catarrhal gastritis accompany other more general diseases. Gastritis is a definite pathological entity, not a neurosis. A careful examination of the stomach contents will differentiate it from a neurosis. The presence of mucus with incorporated epithelial cells and evidence of diminished secretory activity are valuable points in the diagnosis. Diagnosis in doubtful cases must be reserved until several stomach analyses have been made. In carcinoma the reduction of free acid and of peptic power is an early symptom, while in chronic gastritis it appears late. The marked chronicity of gastritis and the rapid course of cancer are important distinctions. The pain of gastritis is milder and more diffuse than that of ulcer. There is no hematemesis in a pure gastritis, though evidence of minute hemorrhagic erosions may be found in the contents of vomitus. The three most trustworthy points in making a positive diagnosis are microscopic or cytological analysis, reduced zymogen and hydrochloric acid secretion, and abundant formation of mucus.

Acute Gastric Dilatation.—H. H. M. Lyle reports a case of this condition following a herniotomy done under local anesthesia. This case indicates a possible cause of acute dilatation. In all probability the removal of a portion of the omentum profoundly altered the circulation and possibly the nervous mechanism of the stomach, thus causing a temporary muscular paralysis.

Tubal Sterilization.—M. A. Werner notes that the conditions warranting this procedure as a prophylactic measure are the following: tuberculosis, heart disease, marked pelvic contraction, and psychoses in which a tendency to suicide is manifested during pregnancy.

Section of the Epididymis.—F. C. Walsh recommends this procedure as a rapid means of relieving pain, shortening convalescence, preventing recurrence, and decreasing the tendency to sterility, in the treatment of gonorrheal epididymitis.

Journal of the American Medical Association.

November 4, 1911.

Streptothricosis (Actinomycosis of the Lungs. N. Bridge.
Rickets in Its Early Stages and Best Treatment to Prevent Deformities. J. W. Cokenower.
Intestinal Parasites Found in Individuals Residing in the Northwest. Frequent Presence of Protozoa in Patients Who Have Never Been in Southern Countries. W. E. Sistrunk.
The Relative Value of Physical and Functional Signs in the Management of Failing Circulation. E. Schmoll.
The Relation of Cardiac Irregularities to Treatment. A. W. Hewlett.
The Effect of the Digestive Secretions on the Activity of Digitalis and Allied Drugs. W. Hale.
Some Factors in the Treatment of Myocardial Lesions. W. W. Kerr.
The Treatment of Gastric Ulcer. W. J. Mallory.
The Dust Menace and Municipal Diseases. H. S. Anders.
Banti's Symptom-Complex. With Report of a Case. J. F. Hultgen.
The Pathogenesis of Cardiac Hypertrophy and Myocarditis. L. Loeb and M. S. Fleisher.
Diffuse Septic Peritonitis from Appendicitis. Statistics of 194 Cases. R. S. Fowler.
A Source of Error in the Test for Occult Blood in the Feces. W. A. Newbold.
Deep Perineural Injections of Beta-Eucain Solutions in Sciatica. A. J. Caffrey.
A New Tonsil Hemostat. A. M. Corwin.
A New Conception of Immunity. Its Application to the Cultivation of Protozoa and Bacteria from the Blood and to Therapeutic Measures. C. C. Bass.
Absence of Appendix. G. F. Shiels.
Strangulated, Pedunculated, Subserous Fibroid Complicating Pregnancy at Four and One-half Months; Operation, Recovery with Delivery of Child at Term. F. M. Lazard.

Streptothricosis of the Lungs.—By N. Bridge. (See MEDICAL RECORD, July 1, 1911, page 47.)

Rickets.—By J. W. Cokenower. (See MEDICAL RECORD, July 8, 1911, page 108.)

Intestinal Parasites.—W. E. Sistrunk states that the common belief that intestinal protozoa are seen only in persons who have lived in or visited the South or tropics is erroneous. They are frequently found in persons who have always lived in the North and, when seen in great numbers, are generally found associated with chronic diarrheas, obscure abdominal pains, or anemias. Many infected cases are probably overlooked; first because parasites are not suspected, and, hence, not looked for; second, because poor technique is used in examining the specimens. Of the animal parasites found in patients who had never been in the South, protozoa were more frequently seen than all the other varieties. *Entameba tetragena*—a pathogenic ameba recently separated from *E. histolytica* and *E. coli* by Viereck—was often found in persons who had never been in the South. It is probable that this organism accounts for many of the chronic diarrheas seen in persons living in this part of the United States.

Management of Failing Circulation.—E. Schmoll divides heart diseases into two groups, one including all of a rheumatic origin and the other characterized by progressive arterial disease. The common signs of failure in the first group are râles at the base of the lung posteriorly, a gain in weight, enlargement of the liver and edema of the ankles. It is in these cases that digitalis deserves its reputation. In those of the second group, though the symptoms may closely resemble those of the first, digitalis will only aggravate the condition. Not only is the heart diseased, but almost every other vital organ is affected by deficient blood-supply, which is especially the case with the kidney. Here a salt-free low-protein diet is indicated, supplemented by free use of diuretics. In studying the physical changes in one organ in all these cases on must not overlook the secondary changes elsewhere.

Cadiac Irregularities and Treatment.—A. W. Hewlett states that each form of irregularity has its own problems. With regard to treatment these have been in part solved, but for the most part they still await solution. To accomplish this there is needed more experimental evidence having direct bearing on the use of drugs in cardiac irregularities, and especially concerning the effect of drugs on the irritability of the heart muscle, for abnormal irritability seems to play an important part in the causation of extrasystoles and auricular fibrillation. Finally, there are needed more accurate studies on the effect of cardiac remedies on patients with heart disease.

Digestive Secretions and Digitalis.—W. Hale has noted that the acid of the gastric secretion invariably causes some diminution in the action of the glucosides of digitalis and strophanthus. The rate of deterioration appears to be about 25 to 35 per cent. in three hours. The action of the decomposition products of these glucosides must be considered, and it is possible that certain of the untoward effects of digitalis medication may be due to them. It would seem advisable, therefore, to prevent such decomposition if possible, and it is suggested that this might be done by requiring the official galenical preparations to be neutral and in practice by prescribing an alkali along with the digitalis. Ignoring the specific irritant action of these bodies on the intestinal tract, it would also seem advisable that the drug should be given between rather than at meals when the gastric acidity is at the maximum. Such a procedure might possibly not cause undue irritation if a large quantity of fluid were taken at the same time.

Treatment of Myocardial Lesions.—W. W. Kerr states that recent researches have suggested that accumulation of lactic acid in the tissues is responsible for a considerable proportion of the cases of myocardial distress. So far as they relate to the heart he suggests that the

muscles of the whole cardiovascular system may be poisoned by a very slight increase in th amount of lactic acid in the tissues. The author speaks favorably of the use of calcium chloride as advised by Lauder Brunton for the purpose of maintaining the heart's action when failure is imminent.

Gastric Ulcer.—W. J. Mallory states that at present the medical treatment of ulcer of the stomach is far from satisfactory. Until the pathogenesis of the condition is made clear and a treatment based on etiology is possible, one's chief hope for better results must rest on earlier diagnosis, and this will be attained when one depends less on objective symptoms and uses more generally the tests for occult blood in the feces.

Dust and Municipal Diseases.—By H. S. Anders. (See MEDICAL RECORD, September 30, 1911, page 699.)

Banti's Symptom-Complex.—J. F. Hultgen states that the diagnosis of Banti's disease rests on the presence of the splenomegaly, the anemia with leukopenia, and the ascites. Any case with hematological findings leaning repeatedly toward leucemia should not be included under splenic anemia. The prognosis of the Banti symptom-complex is fairly good as to life as long as it retains its special character. The therapy should be conservative, though Sutherland and Burghard, as well as Banti, advise splenectomy.

Cardiac Hypertrophy and Myocarditis.—L. Loeb and M. S. Fleisher refer to their method of producing hypertrophic and myocarditic changes in the heart of the rabbit by intravenous injections of adrenalin. They do not think that this drug causes a constriction of the coronary vessels and by this action produces a myocarditis. They also exclude a direct toxic action on the heart and hold to their former theory of mechanical strain with its physicochemical sequels as the true cause. Applying these experiments and theories to certain pathological conditions in man, they find practically the same conditions in many respects in the human heart as in that of rabbits, though there is less prominence of the parenchymatous degenerative changes in the muscle-cells in the rabbit.

Diffuse Septic Peritonitis.—R. S. Fowler presents a review of 194 cases of acute septic peritonitis due to appendicitis. He believes that the ideal treatment, *i.e.* the Fowler position, the keeping of the stomach empty by withholding all nourishment, or if the stomach fills through retroperistalsis, by lavage with siphoning dry of the stomach, and the administration of saline by the Murphy method of proctoclysis, should be carried out in the majority of cases. In addition he suggests that a culture be taken at each operation and a vaccine be immediately prepared and given.

Occult Blood Test.—W. A. Newbold reports a case in which examination of the stools revealed the presence of minute portions of a material that looked like blood but proved to be watermelon pulp. Experiments proved that the coloring matter of watermelon pulp would give the characteristic chemical tests for blood, and the expressed juice of the melon also gave a similar color reaction but less intense. Watermelon is so common an article of food during the heated season that this possible source of error should be considered.

Sciatica.—A. J. Caffrey reports a series of cases illustrating the good effect of deep perineural injections of beta-eucaine in the treatment of sciatica.

Tonsil Hemostat.—A. M. Corwin describes a new instrument of this kind that he has devised.

Immunity.—C. C. Bass presents a new theory of this subject.

Absence of Appendix.—G. F. Shiels reports the case of a young woman in whom a diagnosis had been made of chronic appendicitis with predominance of epigastric symptoms and constipation. At operation there were found numerous adhesions in the region of the cecum. No appendix, however, was present. There was no evidence of inflammatory obliteration of this organ. The author regards the case as one of congenital absence of the appendix.

Fibroid Complicating Pregnancy.—By F. M. Lazard. (See MEDICAL RECORD, July 1, 1911, page 50.)

The Lancet.

October 28, 1911.

Acute and Chronic Suppuration of the Nasal Accessory Sinuses; Etiology, Diagnosis, and Treatment from the Point of View of the General Physician and Surgeon. H. Tilley.
The Treatment of Diabetes Mellitus. E. I. Spriggs.
On Post-Nasal Catarrh in Children and Some of Its Consequences. Eustace Smith.
A Further Contribution to the Study of Rheumatism: The Experimental Production of Appendicitis by the Intravenous Inoculation of the Diplococcus. F. J. Poynton and A. Paine.
Notes on the Etiology of Scarlet Fever. R. W. C. Pierce.
Torsion of the Funis as a Cause of Death of Twins. H. A. Lediard.
The Action of the Products of Homogeneous Fetal Autolysis on Malignant Tumors in Man. Preliminary Note. G. Fichera.

Suppurations in Nasal Accessory Sinuses.—H. Tilley states that 6.8 per cent. represents the average of sinus suppuration in the general mass of the population. As regards danger to life antral disease may exist for years and the patient may appear in perfect health. In other cases it may be the cause of gastric disturbances, mental depression, and a host of other symptoms which render life intolerable. Between these extremes are intermediate cases. The antrum is far removed from vital structures. In dealing with the frontal, ethmoidal, or sphenoidal sinuses—or, what is very frequent, a combination of these sinuses in a state of suppuration—the mere fact of chronic suppuration being present in one of these sinuses in a patient whose general health is good, in whom there are no local symptoms of importance beyond a slight discharge of pus or muco-pus from the nose, does not warrant the surgeon in advising radical operations until simpler measures have been tried and there are cogent reasons for passing to severer ones.

Treatment of Diabetes Mellitus.—E. I. Spriggs discusses the dietetic treatment of this disease when diacetic acid is not present in the urine.

Post-Nasal Catarrh in Children.—Eustace Smith states that of late years he has been in the habit of examining the fauces of all children who have been brought to him suffering from loss of appetite, gastric derangements, spasmodic conditions of the air-tubes, and obstinate coughs. In a very large number of these cases he has found the patient to be suffering from a more or less intense post-nasal catarrh. This catarrh is often confined strictly to the nasopharynx, and does not pass into the nasal passages. While thus limited it may give rise to none of the usual signs of "a cold" in the nose, such as snuffling, sneezing, and external discharge, or even to a throaty quality in the voice. It may therefore remain latent and escape notice for weeks, or even months, together unless the throat be inspected in a good light. Complete loss of appetite is one of the commonest consequences of persistent post-nasal catarrh. Active disturbances of the stomach, laryngismus stridulus, otitis, cervical adenitis, and general infections such as meningitis may all be secondary to post-nasal catarrh. The treatment of this condition consists chiefly in the use of local antiseptic and astringent applications by means of a throat-brush.

Experimental Appendicitis and Rheumatism.—By F. J. Poynton and A. Paine. (See page 1031.)

The Etiology of Scarlet Fever.—R. W. C. Pierce reports a series of cases which he believes tend to confirm his opinion that a fair proportion of the patients admitted into hospitals as suffering from scarlet fever, although presenting signs which are indistinguishable from those of true scarlet fever, have not in fact necessarily contracted the infection from a previous case of the disease.

Torsion of the Umbilical Cord.—H. A. Lediard reports the case of twin stillborn fetuses, in which he attributes the death of both to torsion of the cord in one.

Products of Fetal Autolysis and Cancer.—G. Fichera based his investigations upon the following facts: Spontaneous malignant tumors are extremely rare in young rats. By previous injections of embryonic tissues rats acquire a marked resistance to the inoculation of neoplasms Homogeneous embryonic or fetal tissues, when subjected to autolysis, by hypodermic injection or by local application bring about the involution of the inoculated neoplastic elements, which always reproduce themselves and prove fatal. This fact strengthens a belief in the existence of substances which are generated by the special tissues during the process of autolysis, which when injected into the organism act on tumors in a way similar to that brought about by the preventive injection of embryonic or fetal emulsion. The author, acting upon these principles, injected into human beings affected with cancer definite and repeated doses of homogeneous fetal autolysates. Of 18 cases in which the treatment was carried out with regularity there were 10 in which the beneficial effects were evident. Three of these cases were cancer of the breast with multiple metastases, one was a cancer of the lower end of the rectum, and one was an adenocarcinoma of the thyroid. The process of involution, studied by successive microscopic examinations, was a diffuse cytolysis of the neoplastic cells, with pronounced phagocytosis and connective tissue infiltration, and with final transformation of the tumor substance into adult connective tissue.

British Medical Journal.

October 28, 1911.

Medical Education, Past and Present. R. Saundby.
Certain Clinically Obscure Malignant Tumors of the Nasopharyngeal Wall. W. Trotter.
Deviations of the Nasal Septum and the Submucous Resection Operation. Records of One Hundred Cases. J. W. Wood.
A Case of Tonsillar Calculus. J. M. McCarthy.
The Treatment of Pulmonary Tuberculosis by Inducing an Artificial Pneumothorax. H. Rhodes.
A Note Upon the Mechanical Effects of a Massive Left-sided Pleural Effusion. N. C. Rutherford.
Creatin and Creatinin in Animal Metabolism. W. H. Thompson and T. A. Wallace.

Medical Education.—R. Saundby reviews the developments in medical education during the past generation. He notes among the modern tendencies too much teaching and too little thinking; the student's time is so monopolized by classes that he has insufficient time and perhaps insufficient stimulus to work things out for himself, for the latter is a most important part of every educational process if the result is to be more permanent than the passing of examinations. Medical education has become less homogeneous, and is broken up into compartments in which the student perhaps attends too exclusively to the subjects in which he will shortly be examined, and regards each examination as an end in itself without recognizing its relation to his profession.

Malignant Growths of Nasopharyngeal Wall.—W. Trotter classifies these as follows: (1) Teratoma. (2) Tumors originating in lymphoid tissue: lymphosarcoma, myxoma, myxosarcoma. (3) Periosteal growths: nasopharyngeal fibroma and fibrosarcoma. (4) Sarcoma of the pharyngeal well: homogeneous forms; round cell, spindle cell, etc.; alveolar, endothelioma. (5) Carcinoma of mucous membrane: squamous, columnar. The author discusses the anatomical considerations in connection with these tumors, and the subjects of diagnosis, prognosis, and treatment.

Deviations of Nasal Septum.—J. W. Wood discusses this subject and describes the operation of submucous resection.

Tonsillar Calculus.—J. M. McCarthy reports the case of a man aged 30 years from whose right tonsil was removed a calculus consisting of calcium phosphate, and having a diameter of about 1 inch. The patient had experienced but little discomfort from the presence of this calculus.

The Induction of Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis.—H. Rhodes states that the indications for this treatment are: (1) Pulmonary tuberculosis limited almost, if not entirely, to one lung; (2) recurrent hemoptysis if at all severe; (3) continued fever, cough, and general increase of disease on one side, while the other lung is healing, or only slightly affected. Slight inactive disease in the fairly sound lung is not a contraindication.

Mechanical Effects of Left-Sided Pleural Effusion.—N. C. Rutherford reports a case illustrating these effects, which included displacements of the thoracic and abdominal viscera.

Creatin and Creatinin in Metabolism.—W. H. Thompson and T. A. Wallace, as the result of their experiments, are inclined to believe that creatin is probably concerned with the liberation of energy from carbohydrate material in muscle, and that creatinin is an end product of this metabolism in mammals.

Berliner klinische Wochenschrift.

October 23 *and* 30, 1911.

Hodgkin's Disease.—Ziegler refers to the notable advances in our knowledge of malignant growths of the lymphatic system. These are anatomo-pathological in character, for we are still ignorant of the causal moments. Conditions once known as pseudoleucemia and lymphosarcoma seem to be retiring in favor of more clearly characterized affections. The great majority of conditions hitherto thus designated are now classed under granulomata of a malignant character. The author has recently published a monograph on Hodgkin's disease as thus conceived, and the present article represents a synopsis of it. This disease is a chronic infection attacking and peculiar to the lymphnodes and lymphoid organs like the spleen and thymus. It is spread essentially through the lymphatics, but terminally is capable of infecting all the tissues through the blood. It occurs at all ages, but is most common between 20 and 35 and twice as common in males after the tenth year of life. It may, therefore, bear a definite relation to man's mode of life. It occurs without predisposition and the robust are by no means exempt. It may begin in any isolated group of lymphnodes, and even in the lymphoid structure of ordinary tissues (nasopharynx, mouth, intestine, lacrymal and salivary glands); also in the spleen, thymus (as persistent thymus). As a rule the only reaction caused at first is that due to compression of neighboring structures; but in some 12 per cent. there is a distinct general reaction characterized by cutaneous and mucous irritation, as shown by itching, exanthems, cough, diarrhea, and disturbances of sight and hearing. The local lymph swellings may persist unchanged for years and even retrograde. The natural tendency, however, is to generalization. Eventually fever, anemia and cachexia supervene. A more or less characteristic blood count develops and this differentiates the affection from true lymphosarcoma, which further never causes visceral metastases.

Diet in Nephritis.—Kakowski writes largely in the interest of tomatoes as a dietetic article in the various forms of chronic nephritis. The main reliance is placed on the following foods: Milk, milk porridge, butter, black and white bread, macaroni, potatoes, oatmeal and analogous substances. The tomato is abundant, cheap, and easily preserved. It may be prepared in a great variety of dishes —may be eaten raw in substance and juice, made into sauces, soups, etc. Canned tomato soup is specially recommended. This is sometimes falsified or intentionally combined with pumpkin, pears, etc., and coloring matter added to simulate the full tomato color. The product, however, is not injurious. Tomatoes are recommended for gout as well as nephritis. The composition of the fresh article

shows that it is remarkably poor in nitrogen, and contains but a little over 6 per cent. of solid matter, over half of which is sugar. The acidity is due to citric and malic acids. Tomatoes are very poor in saline matter and this poverty in salts and nitrogen is believed to render them of value in nephritis. No definite ration is prescribed beyond the fact that the substance should be eaten three times daily in company with bread. Beside their food value they give zest to insipid foods like bread and macaroni, and are even believed to have alterative powers.

Action of H_2O_2 on Digestive Enzymes.—Walbum has recently investigated this subject, which is timely, since H_2O_2 and other superoxidized substances are sometimes prescribed inwardly. He found that weak solutions (0.08 per cent.) destroy the salivary diastase, but do not in the least interfere with the activity of pepsin or trypsin. On the other hand the rennet enzyme is completely destroyed by a certain concentration, the great sensitiveness of this and the diastase to the action of H_2O_2 standing in marked contrast with the complete immunity of the proteolytic enzymes.

Chemotherapy of Pneumococcus Infection.—Morgenroth and Levy have already published some results obtained in treating pneumococcus infection in mice with an alkaloid of the quinine series, ethylhydrocuprein. They succeeded in both preventing and arresting the infection by this means. This means nothing less than this—for the first time science has been enabled by internal exhibition to destroy bacteria in animal tissues without prejudice to the integrity of the latter. In addition to the drug in question both hydroquinine (methylhydrocuprein) and quinine itself were employed for the same purpose; but these fell far short of the first named in bactericidal quality. The power of quinine as a prophylactic in this respect is both feeble and inconstant. While ethylhydrocuprein might logically be expected to secure a much higher type of results as a prophylactic than as a curative remedy, the authors found that if exhibited at an optimum of time—about five or six hours after infection was apparent—a cure was obtained of a surely lethal disease in about 90 per cent. of all cases. This figure even exceeds the percentage of favorable results obtained in prophylaxis.

Treatment of Surgical Tuberculosis with X-rays.—Baisch, assistant to Prof. Wilms—who is well known for his advocacy of conservative measures in the treatment of surgical tuberculosis—publishes a series of successful results, chiefly in the various forms of diseased lymphnodes. The technique used was that recommended by Iselin last year and undoubtedly contributed much to the results obtained. The rays alone are often sufficient to cause the disappearance of simple enlarged nodes. In much enlarged and confluent nodes the result may consist only of a notable diminution in size, a paquet of glands being re solved into its individual members. When after prolonged radiation the nodes refuse to dwindle further, it is safe to assume that central caseation has already begun. A small incision is therefore made, pus if present is evacuated, and the caseous matter curetted; after which radiation is continued. In ulcerated and fistulous glands the rays are useful as an accessory.

Coli-Infection of the Urinary Passages.—Franke states that despite the great amount of work done in this field we are still unable to explain the pathogeny of many cases, especially in males. So-called spontaneous infection is often seen in the latter. It is known that the normal activity of the compressor urethræ safeguards the male from upward migration of urethral germs. It has also been shown abundantly that some lympathic communication may exist between the colon and the kidney and that an apparently descending type of coli-infection may complicate various intestinal diseases and disturbances. In some cases a hematogenous infection of enteric origin is probable, since coli bacilli are also found in many localities other than the urinary passages.

Cancer of the Prostate.—Posner shows by figures that cancer of the prostate is far more frequent than was formerly believed. When we bear in mind the frequency of enlarged prostate even as it comes to operative intervention and then note the incidence of cancerous enlargement of the organ—Mansell-Moulin's 25 per cent., Young's 20 per cent., etc.—we realize that the latter must be relatively frequent and that cancer of the organ is responsible for a large number of prostatectomies. Much effort has been expended of late years in regard to differiential diagnosis between hypertrophy and cancer in the early period of the enlargement. The best and in fact sole certain criterion is a trial excision through the perineum.

Deutsche medizinische Wochenschrift.

October 26, 1911.

Animal Tuberculosis and Human Pulmonary Consumption.—Kossel shows as a result of sputum examination that in 709 consumptives the bacilli in two—possibly in three—cases were of the bovine type alone. In a single case bovine and human bacilli were found side by side. In 705 cases the human type was alone present. These figures tend to show that Koch's view as to the pathogenicity of the bovine bacillus to man is essentially correct. His belief was that for all practical purposes man was infected from man and not from cattle. Were the latter all destroyed the incidence of human tuberculosis would not be affected.

Azöospermia and Syphilis.—Scheuer writes briefly yet monographically on this subject. The existence of a purely syphilitic azöospermia has been virtually denied, whether attributable to syphilis of the epididymis or to cachexia. A coincidence between a congenital or acquired azöospermia and a syphilitic history is of course possible. Casper and Fürbringer have each reported cases in which a gonorrheal epididymitis could not be wholly excluded. Remains of such were not palpable. The author has recently shown beyond doubt by means of Posner and Cohn's diagnostic testicular puncture that a syphilitic deposit, not palpable, could in all probability be properly held responsible for obstructive azöospermia. The puncture in question revealed the presence of healthy spermatozoa in the testicle, yet the seminal fluid contained none. There was a very emphatic history of syphilis with unusual localizations. The patient had come to consultation to learn whether his syphilis of two years' standing but apparently cured would forbid the procreation of children. After diagnosis he was placed for some months on the mixed treatment and at the expiration of the period—after some negative results—his semen was found to be normal. The hitherto positive Wassermann had become negative.

The Question of Sexual Abstinence.—Näcke expresses himself on this subject as follows: It is taken for granted that the libido and potency are normal. Under such circumstances temporary or even if not absolute abstinence in the full sense of the term is chiefly harmless. If the impulse to coitus is not excessive, and the mind well occupied, general health being good, the only drawback to permanent continence is the nocturnal pollutions. On the other hand marked sexual desire in a neuropathic will if not gratified aggravate the mental state by inducing phobias and imperative concepts. Actual psychoses, however, cannot originate thus. These neuropaths should marry. If this is impossible a compromise with venery or occasional masturbation, which will be the natural outcome, is not to be condoned by the practitioner as a generally applicable resource. Rather should all attempts be made to cure the neurasthenic state by appropriate general treatment.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

Respiratory System.—The examiner cannot be urged too strongly to question the applicant closely and definitely in regard to any affection of the respiratory tract admitted by him, whether trivial or severe, since so large a proportion of deaths in adult life are brought about by these diseases. Probably, in this class of cases more than any other the examiner will experience difficulty at times in getting an accurate history, owing to the well-known reluctance of the average man to acknowledge or even believe that there was any suspicion of tuberculosis during some certain disturbance in his lungs or that there might be any liability to the development of this condition later on as a result of the attack in question.

Chronic or Persistent Cough, or Hoarseness.—Ascertain the date, duration, severity, and cause of each attack. Always ask specifically as to whether there was any suspicion of tuberculosis or spitting of blood. The applicant cannot be relied upon to help the examiner in this even if he is inclined to be honest, as an individual who has suffered from a pulmonary complaint often has a propensity to view his case in a too favorable light, a propensity so strong, in fact, that he may not deem it worth while to mention it to the examiner. When a cough or hoarseness lasting some length of time is acknowledged, the examiner is depended upon to question the applicant very closely, as well as to make an extra careful examination, in order to discover the cause and nature of the illness and assure himself that the disturbance was due to simple nasal catarrh, to an ordinary congestion of the fauces and pharynx with excess of mucus, to granulations in the vault of the pharynx which get dry and cause irritation, to a long uvula, or to a nervous or sympathetic influence, conditions common in America and of little consequence unless severe; or, on the other hand, as to whether the habitual cough or hoarseness was excited by some more serious involvement of the air passages. The applicant should be asked to describe the form of treatment followed at the time and also whether he resorted to a change of climate for a cure.

Spitting or Coughing of Blood.—Ascertain the exact date of each attack and the source of the hemorrhage. Every case of blood spitting should invariably be reported, no matter what the alleged source may be or how far the applicant is convinced that it was of no consequence. The examiner should remember that nearly every individual who has raised some blood is ready to explain that it came from the nose, gums, or "throat," from anywhere, in fact, but the lungs. The presumption, however, is always that the hemorrhage originated in the lungs, thereby giving the company the benefit of the doubt.

We have to admit, nevertheless, that blood may come from the lungs when there is no tuberculosis present, as a result of traumatism or some violent effort, but an hemoptysis should not be looked upon as accidental unless distinctly coincident with some injury inflicted or some violent physical exertion made at the time, and it should also be borne in mind that, even if it did occur with unusual exercise, the hemoptysis may have been caused by the breaking down of tissues weakened by disease and which would have withstood the shock if they had been in a healthy condition.

Again, there are cases in which the hemoptysis was an early symptom of tuberculosis, but the attack proved abortive and the applicant apparently recovered, the process of recovery consisting in an encapsulation of the diseased tissue, which, as is usual in such instances, contains tubercle bacilli, and the condition should, therefore, be termed one of latency rather than of recovery. The danger of autoinfection in such a patient is so great that the risk will not be insurable until many years have elapsed if at all.

If there is a history of the typical rusty sputum of pneumonia, the full details will be wanted at the home office, especially the duration of the attack and the nature of any complications, so that tuberculosis can be positively excluded.

The practice usually observed in acting on cases of blood spitting is to accept them after a period of about ten years has elapsed since the attack, provided that there was no suspicion of tuberculosis, that the applicant has not been subject to other disturbances in the respiratory tract, and that the physique and family history are satisfactory. This action is based upon the assumption that the hemorrhage was accidental or from some source outside of the lungs, and that ample time has been allowed for any tuberculosis present in the beginning to assert itself. Among the cases acted upon in this way there will possibly be an occasional one of the doubtful variety already referred to, in which the preliminary attack of tuberculosis aborted, leaving only a small scar extremely difficult or even impossible to discover in the physical examination.

Bronchitis.—Ascertain the number of attacks with the date, duration, and severity of each one, and investigate carefully as to whether there was any hemoptysis or suspicion of tuberculosis. If it is certain that the attack was due to an ordinary cold, it may be considered unimportant unless other attacks have occurred. Frequently recurring bronchitis, even if not complicated by tuberculosis, naturally impairs the expectation of life and will usually afford grounds for postponement or rejection.

Pneumonia.—Give the date, duration, and complications of each attack. It is not a good practice to accept these risks unless from six to twelve months have elapsed since the attack, and the applicant has fully regained his former weight and health and has not suffered from serious complications or other recent attacks. The length of the period of postponement will depend largely upon the season of the year. If winter is coming on it is wiser to delay the acceptance of the risk until the following spring, but if the applicant has the summer immediately before him he may be safely insured in six months after the pneumonia, everything else being favorable.

Pleurisy.—The approving officers at the home office will not be in a position to act finally on a case in which there is a history of pleurisy until the date, duration, and severity of the attack are known, what form it assumed and whether there was any suspicion of tuberculosis. It cannot be contested that the tubercular nature in a large percentage of the cases of pleural effusion and even dry pleurisy has been established, and that pleurisy may sometimes be the first expression of tuberculosis. If the exudate was purulent the problem

usually to be considered is the amount of impairment of the lung from collapse with the subsequent lowering of the vitality of the individual. The permanent damage to the lung and the consequent falling of the chest wall are apt to be more pronounced and bronchial affections are more common in after life, if the empyema occurred after the age of twenty.

The examiner should be suspicious when a history of pleurodynia or intercostal neuralgia is admitted, as in many of these cases the real disease was pleurisy, dry or with a small effusion. The writer has just had occasion to review a death claim in which it appears that the attending physician at first attributed the symptoms to intercostal neuralgia; soon, however, he changed his diagnosis to one of pleurisy and the patient died at the end of eighteen months from pulmonary tuberculosis.

Consumption.—A history of pulmonary tuberculosis will always lead to rejection even if the applicant has fully recovered.

Asthma.—Give the frequency, duration, cause, and severity of the attacks, and the date of the last attack. Also ascertain whether the spasms are growing milder and less frequent. If it occurs only during attacks of hay fever this fact should be reported, as the disorder is not seriously considered in such cases. All these data are necessary before intelligent action can be taken at the home office.

Dyspnea.—The applicant should always be asked if he has had any shortness of breath and, if so, the date and circumstances under which it took place. The causes are so numerous and well known that the enumeration of them is not necessary.

Prevalence of Circulatory Diseases.—E. W. Dwight states that the most serious problems which present themselves to-day to the medical side of life insurance companies are in connection with the subject of circulatory disease. While statistics show a great improvement in mortality as a whole, the increase in the expectation of life has taken place among the younger ages. While the proportion of individuals reaching the age of thirty has increased, the proportion of those of that age who live to be seventy has not only relatively, but also actually, diminished. Census statistics show an increased death rate from circulatory diseases with the exception of pericarditis, which belongs more properly in the infectious group, in which there has been a diminution in the death rate. Between 1904 and 1908, in the entire country, there has been an increase in deaths from circulatory diseases of 7 in 100,000 population. Statistics compiled by an insurance company with which the author is connected, which company has been in business since 1843, show that 54 per cent. of the deaths of policy-holders in that company occurred from the following five diseases: heart disease, arteriosclerosis, pulmonary tuberculosis, pneumonia, and nephritis, in the order given. There has been a progressive increase in the deaths from circulatory disease from 10 per cent. in the first decade (1844 to 1854) to 45 per cent. in the last six years (1904-1910). For the entire period from 1844 to 1910 New England leads the list of mortality from circulatory diseases. Insurance companies decline about 10 per cent. of those who apply to them, and during the year 1910 of those who were declined by the author's company one-half were declined on account of circulatory diseases. New England surpasses all other sections of the United States not only in the actual mortality from circulatory diseases, but also in the relative increase in such diseases during the past few years.—*Boston Medical and Surgical Journal*, November 2, 1911.

Injuries of the Abdomen.—Richard v. Hippel continues his consideration of this subject. He says that the stereotyped description of dullness in the right flank as due to injuries of the liver and of that in the left flank as due to injuries of the spleen is not at all applicable to all cases. The dullness due to the blood effusion may be found anywhere, according to the various positions of the body assumed after injury. Liver dullness at first is unchanged; soon after injury it may be increased because of the collection of blood near the liver, later it may diminish because of the developing meteorism or dislocation of the liver itself. With the development of peritonitis liver dullness progressively diminishes. The same signs may accompany injuries of the spleen. Fortunately, however, it is not important to decide which organ is the seat of injury and hemorrhage, for an abdominal section is indicated in any case. Surgeons, too, should not be so inclined to wait until the symptoms of shock have entirely subsided. Shock will usually disappear with the cessation of hemorrhage, and frequently this stilling of hemorrhage can only follow an operation.

Injuries of the stomach usually give signs of free air in the peritoneal cavity and a metallic percussion note or simple hyperresonance, changing in site with change in position of the patient, should be diligently sought for. Circumscribed dullness, if found, should be immediately marked out on the abdominal wall; it may be due to an exudate and the increase in size may clinch the diagnosis. Larger areas of dullness usually mean perforation of the small intestine with the infection of the peritoneal cavity by a considerable quantity of fecal material. Of course, none of these signs may be present in any given case. If, a short time after injury, the pulse is quickened, tenderness and reflex spasm of the abdominal muscles have appeared, there is spontaneous pain on deep inspiration, and the patient has become somewhat restless, injury of the intestines must be suspected, if there are no signs of extensive internal hemorrhage.

Ruptures of the urinary bladder are usually accompanied by fractures of the pelvis. Direct injury may rupture an overfilled bladder and this usually happens in drunkards. Vesical tenesmus, ineffectual or resulting only in the appearance of a few drops of blood at the meatus, is a very frequent symptom. Catheterization usually confirms the diagnosis; the difficulty is in deciding whether extraperitoneal or intraperitoneal rupture has taken place. V. Hippel closes his lengthy paper with the urgent advice to send all patients in whom an intraabdominal injury is suspected to a hospital, so that immediate operation may be performed if the suspicions are confirmed by further study of the symptoms.—*Zeitschrift für Versicherungsmedizin*, September, 1911.

The Liability of Farm Laborers to Accidents.—A systematic investigation into the causes and prevention of industrial accidents, carried on in Germany during the past twenty-five years, has revealed what would be without further explanation the rather surprising fact that agriculture suffers more from accidents than any other occupation. Of the total number of mishaps resulting in temporary disability, 45 per cent. occur in agriculture, 9 each in iron and steel trades and in building operations, and 8½ per cent. in mining. Modern methods also increase the risk of the occupation, for Canadian records show that the percentage of deaths following accident increased steadily from 11 in 1904 to 20 in 1909, while in mining there had been much fluctuation, but apparently no permanent increase. The fact is, however, that these figures are misleading, for the number of agriculturists in Germany is nine times that of men engaged in the building trades, so that actually those in the building trades suffer four times as many accidents as farmers—as would naturally be supposed.

Society Reports.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-Seventh Annual Meeting, Held at Nashville, Tenn., October 17, 18, and 19, 1911.

THE PRESIDENT, DR. ROBERT H. BABCOCK, CHICAGO, IN THE CHAIR.

AFTER an invocation by Rev. James I. Vance, Pastor of the First Presbyterian Church, addresses of welcome were delivered by Dr. George H. Price of Nashville on behalf of the local medical profession, and on behalf of the citizens of Nashville by Mr. W. R. Cole.

These addresses were responded to on behalf of the association by Dr. Albert E. Sterne, Indianapolis, Ind.

Pellagra; Its Epidemiology.—Dr. R. M. GRIMM of the Marine-Hospital Service stated that an investigation was made during August, 1911, in the counties of Whitley, Knox, and Bell, Kentucky. Time was spent in visiting and in studying the cases clinically; in studying the economic and sanitary conditions on which the pellagrins were living; in determining the topographical environment of the homes of the pellagrins; in making inquiries regarding the water and food supply; the relation to other cases and to heredity, and regarding any condition or circumstances which at the time seemed pertinent. The total number of cases of pellagra in the three counties, as he found it in August, 1911, and the number which he included in his official report to the Surgeon-General, was as follows: In 102 cases the diagnosis was positive. In 20 cases the diagnosis was probable, and in 18 cases of pellagra there were three deaths. The cases were diagnosed positive only when the three cardinal syndromal symptoms were present, or when there were definite histories of them. Of the 140 cases, he was able to see only 51. Of these 51 he was able to find only 16 who were then living in the homes in which they resided at the time when they noticed the first symptoms of the disease. With one exception the families of the 16 pellagrins gave a history of using surface or spring water. No observations were made in this investigation which would lead one to suspect that the disease was hereditary. So far as he was able to determine, corn products, in one form or another, had been used exclusively by all of the pellagrins. The corn meal used by the families of the miners in this region was obtained almost exclusively from the stores of the coal-mining companies. The corn meal was not of the best quality.

The Prevention and Eradication of Bubonic Plague.—Dr. W. C. RUCKER of San Francisco, Cal., said that plague was primarily a disease of rodents and secondarily and accidentally a disease of man. Man's safety from the disease lay in the exclusion of the rodent and its parasites. This was the basis of all preventive and eradicative work. If man could live in rodent-free surroundings he need have no fear of plague, because if there were no rodents, there could be no rodent parasites, and for all practical purposes the flea might be considered as the common vector of the disease from rodent to rodent and from rodent to man. The eradication of bubonic plague, therefore, meant the eradication of rodents. Dr. Rucker then discussed plague eradication and plague prevention. In the city the fight was directed against the rat and its parasites, and aimed to prevent the spread of the disease from them to man. In the country all measures followed the same general lines as in the city and were modified only to meet the existing conditions, such as the species of the rodent to be combated, the density of the population, and the different character of the buildings. The work of prevention was directed against the rodent and its parasites lest they imported and nourished the seeds of pestilence, later to distribute them to mankind. He described the various measures to be employed for the extermination of rats.

Preventive Vaccination Against Typhoid Fever.—Dr. W. S. HARPOLE of Chicago reviewed the history of typhoid vaccination, some of the results of vaccination against typhoid fever, and discussed the application of it to the practice of medicine. Recently in this country vaccination had been done in many hospitals and asylums, where nurses, patients, doctors, had been protected. Notable were the experiences of Richardson and Spooner in the Massachusetts General Hospital. They stated that from 1902 until 1906 twenty-six nurses contracted typhoid fever, and that for each case of typhoid fever treated a nurse contracted the disease. In 1909 and 1910, under vaccination, no cases of typhoid fever occurred among the nurses of the Massachusetts General Hospital. The experiences of our army and of hospitals and asylums were sufficiently convincing of the value of this vaccination. Typhoid vaccination was done by the injection of killed cultures of the typhoid bacillus. The germs were usually killed by heat. All persons who were in contact with typhoid cases, as physicians, nurses, hospital attendants, and laboratory workers, should be vaccinated. Children and young people going to the country for the summer should be protected.

The Medical Aspect of Chronic Typhoid Infection.—Dr. WILLARD J. STONE of Toledo, Ohio, stated that not only should individuals who were typhoid carriers receive appropriate vaccine treatment, but all individuals, including physicians and nurses, whose duties required the attendance and care of typhoid cases should receive immunizing treatment. By this procedure many individuals otherwise destined to become chronic carriers might secure protection which would prevent in themselves the possibility of cholecystitis or other late manifestations as well as avoid the possibility of becoming a source of danger to others. Such treatment had been found efficient and productive of little discomfort. Nurses, orderlies and physicians should be regularly immunized at intervals of two or three years, as should all others exposed to endemic or epidemic outbreaks. When typhoid bacilli had produced clinical or bacteriological evidences of cholecystitis, it was doubtful whether vaccine treatment would of itself be of avail, surgical drainage of the viscus then being indicated. On the other hand, appropriate vaccine treatment in individuals showing evidences of intestinal or urinary tract perpetuation of the bacilli, without cholecystitis during convalescence from disease or subsequently, should be given the opportunity of vaccine treatment. Not all would be cured, but the bacilli would disappear in some instances. Chronic carriers who had been treated by vaccines should be under the control of the local board of health and furnished employment, if necessary, which would not require the handling of food products.

Diseases Produced by the Colon Bacillus; Diagnosis and Treatment.—Dr. FENTON B. TURCK of Chicago said the etiology of diseases did not sufficently interest the American physicians and surgeons, hence remedial measures were directed to the treatment of symptoms, and frequently the surgeon was content with the removal of gallstones, appendices, and ulcers, etc., without sufficient interest in the causes of these complaints. Consequently many discouraging reports of the end results of many of these abdominal operations were published. In his experiments in producing peptic ulcer in dogs, by daily feeding them with large bouillon cultures of the *Bacillus coli communis*, he found that not only peptic ulcers were formed in the stomach and duodenum, but lesions in the liver, gallbladder, kidney, cecum, and other organs, while, at the same time, none of the microorganisms was found in the blood or the tissues. The colon bacilli developing in the intestines broke down and set free their endotoxins which entered the circulation and acted as a reducing agent; hence, autolysis and erosions appeared, resulting in peptic ulcer in the stomach and duodenum, and also initiating

gallbladder disease, pancreatitis, appendicitis, pyelonephritis, cystitis, and other surgical diseases which were already recognized clinically as caused chiefly by the colon bacillus. Not only surgical diseases, but many medical diseases masquerading under various names were now recognized as colon bacillus diseases. The treatment was directed to, first, the reduction of the virulency of the colon bacillus in the intestines by dietetic measures and the restoration of the functions of the stomach and intestines, especially the motor functions, and, second, to the increase of the means of defense by increasing the antibodies in the blood and tissues of the patient. Autogenous vaccines introduced subcutaneously, intravenously, by mouth, colon, or into the bladder or pelvis of the kidney as the case might require, should be employed. Modified vaccines, made by injecting the cultures into fetal pigs, incubating twenty-four hours, expressing the serum fractionally sterilized, and injected into the patient, were an active, valuable treatment in certain stubborn cases. *Bacillus coli* serum was the most active and was useful in small doses in connection with vaccines. Cases reported of ulcers of the stomach and duodenum that had had one or two previous operations were cured by these combined methods; also cases of gallbladder disease that had been operated upon without relief; others that had had appendices removed and still complained of general distress and pain in the cecal region were completely cured. Patients with ulcers that were too weak for operative procedure were cured as well as ordinary medical ulcer cases; neurasthenia, migraine, and a number of cases of epilepsy. Cases of pyelonephritis were cured by the combined direct and indirect methods, by injection subcutaneously and directly into the pelvis of the kidney through the ureteral catheter. It was over three years since this combined method of treatment was first used, and it had proven that the cures were permanent where the treatment was completely carried out.

Diagnostic Aids in Surgery of the Renal Pelvis and Ureter, with Special Reference to Pyelography.—Dr. W. F. Braasch of Rochester, Minn., spoke of the value of the radiograph and the necessity for further data to interpret correctly the *x*-ray plate. The value of shadows of abdominal viscera was not great. The data gained through the use of the cystoscope aided in interpretation. Through meatoscopy one might see evidence of stone, but secretion was often misleading. One might obtain evidence by means of the ureteral catheter. Obstruction by stone in the ureter was found in over two-thirds of the cases, and stones were passed in one-half of the cases. The stylet in the ureteral catheter when radiographed might be of value, but it might give an erroneous impression and often be insufficient. With pyelography one might be able to demonstrate changes in the outlines of the pelvis and ureter which accompanied most surgical conditions of the kidney and ureter. Hydronephrosis might be accurately determined by the pyelograph. It was particularly valuable with small distension and with marked constriction of the ureter. Inflammatory dilatation varied in extent from slight changes of pyelitis to those of pyonephrosis. By using these data one was able to identify renal shadows by inflammatory changes seen in the pelvis and ureter. Stone in the ureter was recognized by the mechanical dilatation above it. Deformity caused by tumor of the kidney might be demonstrated in about two-thirds of the cases. One should also use methods to differentiate tumors existing in other viscera. Congenital anomalies, such as duplication of pelves or ureter, horseshoe kidney, etc., could be demonstrated clinically. There was not as yet a widespread adoption of the pyelograph, largely because of a lack of technical facilities. There was never permanent injury resulting from its use. The diagnosis in urinary tract conditions should be a part of the general abdominal diagnosis.

Dr. John T. Geraghty of Baltimore said he had used this method of examination for about a year and a half, and had found it of the greatest value in a certain class of cases. It gave a most graphic and striking illustration of the stomach, dilatation of the calyx, twists of the ureter, etc. So far as the kidney and pelvis itself were concerned, he had not been able to get as much information from it as Dr. Braasch had done. With the use of the ureteral catheter, with the employment of the pyelograph to estimate the renal function, and with the chemical and microscopical characters of the urine, one could place kidney surgery on just as accurate a plane as any other branch of medicine or surgery.

Dr. Braasch, in closing, said that, with reference to the use of the pyelograph in estimating renal function, Dr. Geraghty had misunderstood him in some respects, because all realized the value of the various functional tests, particularly the phenolsulphonephthalein test, and he did not use the pyelograph as a routine measure with which to estimate the renal function.

The Diagnosis of Prostatic Obstruction.—Dr. Bransford Lewis of St. Louis outlined the conditions very briefly which gave rise to obstruction at or near the vesical neck. He had been in the habit of considering the following features as essential in the diagnosis of such conditions, not only for the analytical study of the case, but as a working basis for treatment: 1. Hypertrophy or not. 2. If so, was it causing obstruction? 3. The amount of obstruction so produced. 4. The form and nature of the condition producing the obstruction. 5. The physical and functionating condition of the allied organs, particularly the kidneys and cardiac system. All of these points should be considered and determined accurately before attempting to decide as to the treatment or operation, except for such measures as emergency treatment might call for to relieve acute retention or sepsis, etc. There were two chief modes of studying a case for arriving at a diagnosis: analysis of the history and symptomatology and the physical examination. Of the two, the physical examination was by far the more important and enlightening. There had been no more brilliant or satisfying achievements in the whole field of medicine than had been wrought by surgery of prostatic obstruction in the past decade. It had brought order out of chaos, had turned misery into comfort for the aged prostatic, and it had been a well-rounded and precise diagnosis that had been largely instrumental in attaining these results.

Cancer of the Prostate.—Dr. Robert C. Bryant of Richmond, Va., said that at present there were several tests for cancer which were being tried out and perfected in the laboratory. Some of the more significant were: 1. The hemolytic tests which were being investigated particularly by Crile. 2. The meiostagmin reaction (Ascoli) consequent upon a diminution of surface tension of solution of the serum of the patient when the extract of carcinoma was added to it. 3. The antitryptic power of the blood. 4. Colloidal nitrogen of the urine. None of these tests was final and absolute, and until they were we could never hope to be able to diagnose clinically these precancerous cases. Primary cancer of the prostate might follow one of two general types, namely, the scirrhous and the glandular. Cancer was not infrequently associated with beginning hypertrophy; it might originate in a normal and atrophic gland, or in an organ which had been the seat of a chronic prostatitis. One lobe or the entire gland might be involved. The infiltration might form foci so small as to be detected only by the microscope. Carcinoma of the prostate did not result as a degeneration of a previously benign adenomatous process. In every case of senile prostatic hypertrophy the fact of the possible existence of carcinoma must be constantly borne in mind. The prostate itself caused no symptoms in the early stages of carcinoma.

The subjective symptoms were referable to the bladder and pelvic organs; the invasion of the disease was so gradual, and the symptoms were so progressive, that there was an unconscious adjustment of the patient to the condition. The treatment was divided into preventive and curative. Medical treatment was not to be entertained. There would seem to be also but little virtue in the *x*-ray, Finsen or radium therapy. The author quoted Künmell as maintaining that bilateral castration was the operation of choice. In 22 cases of 26 operated upon the prostate was removed and the patients regained the bladder functions. The suprapubic operation was to be condemned as the prostatic urethra came away and gave an unusually good opportunity for the escape of carcinomatous juices. In the second stage of carcinoma of the prostate the operator exercised his judgment for surgical attack upon the degree and type of pathological invasion.

The Influence of Stricture of the Urethra on the Development of Hypertrophic Changes in the Prostate.—Dr. Hugh Cabot of Boston discussed the theory of the relation between stricture of the urethra and absence of hypertrophy. He spoke of the importance of the recognition of the absence of hypertrophy of the prostate in cases of stricture. He drew the following conclusions: 1. That stricture of the urethra was markedly antagonistic to the development of hypertrophy of the prostate, owing to the long-standing chronic prostatitis which it caused; that, therefore, no case of stricture of the urethra in later life, in the presence of enlargement of the prostate, might be assumed. 2. That the recognition of this fact was important in the management of retention of urine in later life, and that it had not been sufficiently understood. 3. That the management of retention of urine, due to stricture, and that due to the prostate were radically different and had a markedly different prognosis. He reported thirteen cases.

Dr. E. G. Mark of Kansas City, Mo., stated that we could still further add to the comprehensive diagnosis of hypertrophy of the prostate by means of bimanual palpation. Where there was obstruction, be it from hypertrophy or contraction at the neck of the bladder, one should get away from the idea that the residual urine was increased. In contraction of the vesical neck we were dealing with a neck below the age of those patients in whom we dealt with hypertrophies. We had a compensatory hypertrophy of the musculature of the bladder, and, therefore, a lessened residuum.

Dr. L. W. Bremerman of Chicago said it was not difficult to make a diagnosis of carcinoma of the prostate. If the pathological process had broken through the capsule, it would produce ulceration in the bladder, with hematuria and the other cardinal symptoms, and it was then too late to carry out any operative procedure which would benefit the patient. In these cases of contraction at the neck of the bladder malignancy should be suspected, and the patients should be kept for further observation.

Dr. Henry J. Scherck of St. Louis said it was important to know when to operate upon a case of hypertrophy of the prostate. He had seen a number of instances where a very large prostate which could be palpated through the rectum produced very slight symptoms of obstruction. It was not always a large prostate that caused obstructive symptoms. Not long since he unfortunately removed a man's prostate, thinking the obstruction was due to enlargement of that organ, but the obstructive symptoms did not disappear. Subsequently it was found that this man had arteriosclerosis of the spinal cord, as determined by a neurologist, which produced the bladder symptoms, and impaired the expulsive power of the bladder.

Dr. William N. Wishard of Indianapolis said that, with reference to the value of the cystoscopic findings, he could not refrain from calling attention to the fact that the cystoscope might become a clumsy instrument in the diagnosis of prostatic hypertrophy. All were confronted by the fact that the prostate changed and increased; that the urethra was usually elongated; that it also changed its angle, and in the introduction of the cystoscope, whose shaft was straight, the end of the shaft where the window of the cystoscope rested must be passed far beyond the vesical orifice and above the obstruction, or it was hard to get any view at all. If the cystoscope, with a straight shaft, was introduced into the bladder there was inevitably a considerable degree of displacement of the vesical orifice backward. The canal which, before the introduction of the instrument with a long shaft was curved, was now converted into a straight canal because of the presence of the cystoscope, and, on account of the displacement of the vesical orifice, there was produced a certain amount of bulging which was misleading. Moreover, the appearances observed through the cystoscope from time to time in some cases varied greatly.

Dr. W. F. Braasch of Rochester, Minn., called attention to the value of urethroscopic examination in the diagnosis of hypertrophy of the prostate. He was in the habit of using a flexible instrument. It was also of value in the diagnosis of carcinoma involving the prostatic urethra. Carcinoma of the prostate in the majority of cases could be diagnosed by rectal palpation.

Dr. William Britt Burns of Memphis said that Dr. Cabot had called attention to the lack of enlargement of the prostate in the presence of stricture of the urethra. This was a point that had escaped his attention, and he would like to know how that could be verified. A short time ago he had a patient with a very tight stricture of the urethra. He was not able to introduce the smallest filliform bougie. He resorted to suprapubic cystotomy, and in going through the neck of the bladder and opening the urethra in that direction he was struck with the size of the prostate and debated for a short time as to the advisability of removing the prostate, but on account of the condition of the patient he did not do so. In that case there was a large and strong annular stricture at the neck of the bladder.

Dr. John T. Geraghty of Baltimore had been interested in studying both the hypertrophied and carcinomatous prostate, and he had found on examination that carcinoma of the prostate did not arise from a degeneration of the hypertrophied tissue, but it occurred in the portion of the prostate that was left behind. The posterior commissure never underwent hypertrophy, and one would find there a plateau of tissue when cancer came, and when associated with hypertrophy he would find cancer on the posterior surface. This was a point of practical importance. When one was doing perineal prostatectomy and had to cut through a dense layer of tissue before he came to the typical hypertrophied lobules, he might be sure he was dealing with cancer because it was the only condition which would give that picture, and it would help him in making a diagnosis if he had not done so before operation.

Dr. William Billington of Birmingham, England, said, with regard to the operative treatment of hypertrophy of the prostate, that in England the suprapubic method was practised more extensively than the perineal. Very large, soft adenomatous prostates could be easily enucleated through a suprapubic incision, and the patients did well. The cases of small carcinomatous prostates, and those with contraction at the neck of the bladder, presented grave difficulties if one attempted to enucleate them by the suprapubic route. He should, on his return to England, give more serious attention to the perineal route for the removal of the enlarged prostate.

Operative Treatment of Gonorrheal Epididymitis.—Dr. Francis Hagner of Washington, D. C., said he did

not advise operation on every case of gonorrheal epididymitis, as the milder forms often recovered promptly under appropriate expectant treatment. Until operative procedures were resorted to in acute gonorrheal epididymitis very little seemed to have been known of the gross pathological appearance of this condition. In some cases on exposure of the epididymis multiple abscesses could be distinctly made out before puncture; in others abscesses could not be made out until punctures were made. Eighty per cent. of his cases had had pus present in the epididymis, varying from a few drops to one and twelve drams, and yet the textbooks on surgery stated that gonorrheal epididymitis very rarely went on to suppuration. At the line of juncture of the epididymis and testicle, an incision from six to ten centimeters long was made through the skin and parietal layer of the tunica vaginalis. After the serous membrane was opened all the fluid was evacuated and the enlarged epididymis examined through the wound. The testicle with its adnexa was delivered from the tunica vaginalis and enveloped with warm towels. The epididymis was then examined and multiple punctures made through its fibrous covering with a tenotome, especially over those portions where the enlargement and thickening were greatest. The knife was carried deep enough to penetrate the thickened fibers of the capsule, and entered the infiltrated connective tissue. When the knife was through the thickened covering of the epididymis a very marked lessening of resistance would be felt. If pus was seen to escape from any of the punctures the opening was enlarged and a small probe inserted in the direction from which the pus came; then by a backward and forward motion of the probe the opening was enlarged and the pus was allowed to escape. By this method he believed there was less danger of injuring the tubes of the epididymis than by cutting with a knife. If the probe was passed in pus would be evacuated by light massage in the region of the abscess and a fine-pointed syringe was used in washing out the cavity with a one to one-thousand bichloride of mercury solution followed by physiological salt solution. The testis was then restored to its normal position, and in every case the tunica vaginalis was thoroughly washed with a one to one-thousand bichloride of mercury solution, followed by normal salt solution. The incision of the tunica vaginalis was lightly closed with a running catgut suture, a cigarette drain of gauze was then passed through the lower angle of the incision in the tunica vaginalis down to the epididymis, the skin being brought together with a subcutaneous silver wire suture; silver foil and a sterile dressing were now applied and the parts supported by a wide T-bandage. Dr. Hagner and his assistant had operated on sixty-one cases by this method, and he stated that the more experience he had with the operation the more he felt that all severe cases should be treated by epididymotomy. The average time that his patients had been confined to bed had been about four days.

Dr. J. W. Handley of Nashville said he had had occasion several times to make incisions in the tunica vaginalis in cases of gonorrheal epididymitis, and had given his patients relief, but he had had very little experience with the operation which had been described by the essayist.

Dr. Hugh Cabot of Boston said he had operated on about thirty cases by the method described, with gratifying results. He laid stress upon the results to the gonorrheal process by drainage of the epididymis, because it had seemed clear that in a certain proportion of cases—he should say 25 per cent.—drainage of the epididymis very definitely shortened the attack.

Dr. Joseph Rilus Eastman of Indianapolis said he would like to know whether Dr. Hagner had found the colon bacillus in any of his cases of gonorrheal epididymitis. He had found colon bacilli in abscesses which ensued upon what seemed to be a gonococcal epididymitis.

Dr. Perry Bromberg of Nashville stated that shortly after Dr. Hagner described his method in the "Annals of Surgery," in 1908, he tried it on one case, and the relief afforded was so great that he had since adopted it as a routine method in teaching. He had done the operation now more than twenty-five times, and his results had been everything Dr. Hagner had claimed for the operation.

Dr. Hagner, in closing, and in replying to Dr. Eastman, stated that he had not found the colon bacillus in a single case of gonorrheal epididymitis, but he did not deny that it may have been found by others.

Calculous Anuria.—Dr. Dean Loree of Ann Arbor, Mich., read a paper on this subject in which he reported a case on which he had operated. The interesting points in it were: 1. The operation confined the anuria to the period of forty-seven hours. 2. The patient had passed through a short tolerance period and had come to operation shortly after the first symptoms of uremia had appeared. 3. The Röntgen ray plates proved of no value in the diagnosis, or in the selection of the less occluded side. 4. This was in all probability a case of bilateral calculi with simultaneous occlusion, for the following reasons: Two attempts at ureteral catheterization had resulted in failure, the catheters having been passed about the same distance each time. Another reason was that following the second nephrotomy the wound discharged freely until the passage *per urethram* of the third calculus which occluded the left ureter and subsequently the passage of the fourth calculus, which in all probability occluded the right ureter.

Relation of Renal Activity to Surgical Operation.—Dr. E. O. Smith of Cincinnati stated that the success or failure of a major operation depended largely upon the activity of the kidneys, barring faulty technique, and bad surgical judgment of the operator. The functional activity of the kidneys might be influenced by the shock incident to a major operation, by the anesthetic, by trauma to one or the other kidney, by calculi, or by urethral obstruction from any cause. There were three distinct periods of every surgical case that required special care and attention. The preoperative period, the operation, and the postoperative period. It was best to make a further study of the functional activity of the kidneys before operation. This was based upon the observations that normal kndneys removed the circulation of certain products that had been introduced within a certain time, and that marked deviations from this time represented abnormal kidneys. Numerous tests had been suggested, but only three were now looked upon as being reliable. They were phloridzin, indigo carmine, and phenolsulphonephthalein. The most reliable and valuable of the three was the phenolsulponephthalein test as developed by Rowntree and Geraghty. Operation should be done as rapidly as consistent with good work, for the longer the operation the greater the shock, and the greater the shock the greater the circulatory disturbance, in consequence of which the blood supply to the kidney was diminished, a very apparent cause of renal activity. The surgeon should not waste any time lecturing or demonstrating an operation to bystanders the same as if he had a cadaver before him. The surgeon's duty to the patient did not end with the introduction of the last suture. A great deal could be done in the next few hours to sustain the renal activity and to prevent urinary suppression. Immediately following the anesthetic the patient should be given oxygen inhalation. In old people and bad risks this should be continued for several hours. Hiccough and persistent vomiting following operations were indicative of diminished renal activity, and should be looked upon as symptoms or a note of warning rather than an independent complication calling for special treatment. If shock and the anesthetic were reduced to a minimum and proper care taken of the patient before, during, and after operation, anuria would develop only in the desperate cases. When

anuria did occur, the best treatment was fluid introduced into the veins, sweating, and morphine. He had always used saline solutions, but he believed that Fischer's solution was very much better. Alkaline solutions were far more effectual. One must not give up if the effect produced seemed transitory, but repeat it often enough to keep up the effect until the normal output had been produced and sustained.

Dr. William N. Wishard of Indianapolis said a study of the urine prior to operation, where it was found to be abnormal, was considerably influenced by the various preoperative or preparatory measures to which Dr. Smith had called attention. The specific gravity of the urine and the percentage of urea and the general condition of the urine were helpfully influenced by drainage. In a certain class of cases in his own work he drained the bladder, where it was possible, prior to operation. He inserted a drainage catheter and left it in for two or three days or longer, if necessary, and encouraged the drinking of water, and, if necessary, the use of water that was boiled. He did not always estimate the importance of shortening the period of anesthesia in its relation to renal function, as should be done. This feature was not considered as important as it really was by the average practitioner.

Dr. Hugh Cabot of Boston asked Dr. Smith whether he gave spinal anesthesia in cases where the kidney was known to be damaged, and where he was in doubt the influence of the anesthetic would subject the kidneys to a strain which was undesirable. In his practice in the last two years in operations upon the prostate he had resorted to spinal anesthesia as the anesthetic of election where the kidney function was below a fair standard, and that fair standard was a matter of personal equation, and many patients had recovered who he felt would not have recovered under general anesthesia. He had used gas and oxygen with excellent results, and in cases of damaged heart that anesthetic was to be preferred.

Dr. Charles E. Barnett of Fort Wayne, Ind., believed that we got toxemia from absorption from the colon and from distension of gas in these cases, and more attention should be paid to these things. He believed also that the genitourinary surgeon should educate the general surgeon regarding the value of preoperative treatment in operations where the kidney had been traumatized on account of disease.

Dr. Smith, in closing, said, in regard to spinal anesthesia, he had had very little experience with it. Nitrous oxide and oxygen had been so satisfactory in the desperate cases that he had not found it necessary to resort to spinal anesthesia.

Pathology and Complications of Cholecystitis.—Dr. H. M. Richter of Chicago said that the terms cholecystitis and gallstones were not to be used interchangeably; that stone formation followed infection as an end result. When found in what was supposed to be a first attack of gallbladder disease they meant an overlooked earlier infection. There was either an ascending infection from the intestine by way of the common and cystic ducts, or a descending infection from the vascular system by way of the liver. Infection reaching the bile was enabled to exert its pathogenic action on the gallbladder wall by being kept in contact with it for a prolonged period of time. The normal reservoir-like action of the gallbladder was a sufficient factor, and it was not necessary to presuppose a pathological degree of stasis. The constant flow of bile in the ducts accounted for marked infrequency of early infection of the latter. Acute inflammation of the gall-bladder might be mild, with but slight involvement of the bladder wall, mainly the mucosa, causing the pouring out of an excess of mucus, and an excessive desquamation of its epithelium. These were the important factors in cholesterin formation and deposits, and hence the primary factor in gallstone formation. The more severe grades of inflammation were analogous to those found elsewhere, but the suppurative type was most common. Gangrene might result from severe infection or from overdistention from blocking of the cystic duct. Local traumatism by the stone with infection was the cause of ulcer formation. The extension of the stone and false diverticulum was rare. Papillary epithelial outgrowths and malignant epithelial changes occurred with sufficient frequency to be properly regarded as caused by the precedent pathological condition. Gall-tract infection, especially with stones, bore a direct causal relation to pancreatitis. Local peritonitis was the cause of adhesions involving the neighboring structures, stomach, duodenum, and colon. There was a reciprocal relation between gallbladder and appendix infections. A stone large enough to cause intestinal obstruction might pass through the gallbladder and intestinal walls by a process of ulceration and extrusion. Large stones could, however, pass by way of the greatly dilated cystic and common ducts. This true mechanical obstruction must not be confounded with the ileus of acute cholecystitis.

(To be continued.)

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held October 23, 1911.

The President, Dr. F. McKernon, in the Chair.

West Side Hospitals.—Dr. John A. Wyeth said that three years ago Roosevelt Hospital had discontinued its ambulance service and the New York Polyclinic Hospital, looking for a new location, decided to move to the West Side and to cover this district. They had purchased property on West Fiftieth and Fifty-first streets and had built a hospital at a cost of $700,000, intending to take up an ambulance service which should cover the district from Forty-second to Ninety-second streets. The Board of Managers of the New York Hospital has since purchased property with the intention of building at Fifty-second street and Eleventh avenue. It seemed to Dr. Wyeth that it would not be for the best interests of the people to have three hospitals so near together and he thought that the Board of Managers of the New York Hospital should be asked to reconsider their decision.

Dr. J. Riddle Goffe offered a resolution embodying Dr. Wyeth's suggestions, which was seconded.

Dr. E. Eliot Harris, Chairman of the Committee of Legislation, moved that the matter be referred to the Committee on Hospitals and Budget of the City of New York. This motion was seconded and carried.

Revision of the Constitution and By-Laws.—Dr. Charles H. Richardson presented the report of the Committee on the Revision of the Constitution and By-Laws. This report was not read as it was soon to be published and a copy sent to each member of the Society.

Nominations.—Nominations were made of Officers, Censors, and Delegates to be elected at the One Hundred and Sixth Annual Meeting to be held November 27, 1911.

X-Ray Examination in the Diagnosis of Gastric Diseases.—Dr. L. Kast read this paper. He said that, while the *x*-ray did not enable them to see the stomach itself, the contents gave an image of the outline and the changes during peristalsis and served to indicate a number of facts which might be called röntgenological symptoms. Like all other symptoms they must be based on comparison with the normal conditions of the organ. The technique consisted of giving the patient bismuth, preferably the subcarbonate, in water, or as a paste, or in a capsule, or mixed with some food like rice or apple sauce. Each of these methods should be used according to the particular diagnostic problem. The best method of examination at present was to examine with the fluoroscope

and at the same time to take pictures. If they examined the stomach of a normal person while taking a bismuth meal, they noticed that the food entered gradually, met with apparently some resistance, glided down the upper curvature, and finally rested on the lower curvature at about the level of the umbilicus. Upon becoming sufficiently filled the shape of the stomach became visible and was either hookshaped or bullhorn, both of these being physiological varieties. The shape of the stomach depended upon the height of its contents, the support given through the abdominal walls, and the tonus of the gastric musculature. There were different degrees of tonicity that occurred in individuals without digestive disturbances. These degrees were designated as hypertonic, orthotonic, hypotonic, and atonic.

There was no standard time for the evacuation of a given amount of food. Different types required normally different lengths of time for complete evacuation. Probably many cases of beginning pyloric stenosis remained unrecognized because they had only one standard for all kinds of stomachs. A dislocation of the stomach to the right or left was a röntgenological symptom indicating some pushing or pulling force and might be meteorism, ascites, tumors, or shrinking adhesions. Distortion of the pyloric portion to the right indicated adhesions as they occurred after ulcers of the pylorus or duodenum, pericholecystitis, or malignant adherent tumors in that region. A rolling up of the stomach on its shortened upper curvature was a symptom in favor of an ulcer on that part of the stomach. Another röntgenological symptom was the relation of the stomach to points painful on pressure. The differential diagnosis of abdominal tumors received valuable assistance from the following röntgenological symptoms: 1. If the tumor was outside the gastric shadow, and could be displaced without effect on the position of the gastric shadow, the tumor was extragastric. 2. If the tumor was partially or entirely within the gastric shadow and they could be separated from each other, the tumor was an extragastric one. 3. If the tumor was partially or entirely outside of the gastric shadow, but remained in spite of change of position, and was constant in relation to the stomach, the tumor might be either gastric or extragastric and adherent to the stomach. 4. If the tumor was the cause of an incomplete filling of the stomach, the borderline would help in determining the character of the tumor. An irregular indentated border signified a nodular tumor within the stomach; a smooth borderline evenly curved toward the stomach convexity signified an impression of a tumor on the gastric wall. Radiological symptoms regarding the filling of the stomach with bismuth were: (1) The constant so-called hourglass constriction which might be the effect of an old ulcer, or of a carcinoma, or of both. The ulcer usually caused a constriction with the center of the traction at the small curvature while the carcinoma more often showed the center of traction between the two curvatures. (2) An indentation of the larger curvature which was of transitory character occurred so frequently with ulcer of the small curvature that it was considered by some radiologists as pathognomonic of gastric ulcer. This transitory contraction had at times led to the diagnosis of hour-glass contraction which the surgeon could not find. (3) The significance of incomplete filling of the stomach had been considered in connection with palpable tumor. At times the tumor could not be palpated except under the guidance of the fluoroscope. Again the incomplete filling might be due to gastric or perigastric infiltration. The niche symptom of Handek, which was of recent date, was one of the most valuable symptoms and was pathognomonic of penetrating ulcers. It was characterized by a bismuth spot outside of the borders of the stomach usually near the small curvature, but in direct communication with it. It was a defect in the substance of the liver or pancreas and moved freely with the stomach but less freely than under normal conditions. As a rule it corresponded to a sensitive point. In some instances the niche symptom did not appear after the bismuth meal but became evident after the stomach was empty; the patient rested for a few minutes on his left side and then took bismuth water while lying on his right side. The following röntgenological symptoms regarding motility were useful: (1) Antiperistalsis was a reliable sign of an organic affection at the pylorus. (2) The flattening or the stoppage of the wave at a certain point was a sign of an organic lesion. (3) Increased tonus, increased force, and increased frequency of the waves were a possible sign of pyloric stenosis. The röntgen examination also enabled them to test the motor power of the stomach. The test for the evacuating power of the stomach with *x*-rays was finer and of higher value than the test with the tube excepting microscopical retention. In the opinion of the writer the niche symptom was the only one which was pathognomonic, all others must be taken in connection with collateral signs of disturbed health. It was possible to group the röntgenological symptoms in such a way as to gain valuable röntgenological symptom-complexes. By some such complexes it was possible at times to make a diagnosis purely on *x*-ray examination. This method of examination was not yet thoroughly worked out but it appeared reasonable that it should take its place among other diagnostic methods. It was well enough established to reduce the number of unnecessary explorations and to increase the number of necessary operations at an early stage of the disease.

Dr. G. E. Pfahler of Philadelphia said, in opening the discussion, that Dr. Kast had so thoroughly covered the ground that there was little left for discussion. From a fairly large experience in this line of work he could truthfully say that the more he did the more enthusiastic he became and the more confidence he gained in his findings. He also observed more possibilities of error and if these errors could be eliminated he felt sure that they could place the diagnosis of gastric disorders on a definite basis. While he believed that they could obtain more information in regard to gastric disorders by means of the röntgen examination, this did not mean that they should neglect other evidences of disease of the stomach. They should combine this method with others in order to arrive at a correct diagnosis. Dr. Kast had referred to the work of Clairmont, who had made a careful study of one hundred cases and in not one of them was a single error found at operation. In his own experience Dr. Pfahler had made the diagnosis of carcinoma of the stomach in seventy-five cases and in only one was his diagnosis not confirmed at operation. In this instance he had made a diagnosis of gastric carcinoma and at operation an ulcer of the stomach with spasmodic contraction was found. At that time, four years ago, they did not recognize the appearances of spasm of the stomach with the contraction; this closely simulated the hour-glass contraction which was due to gastric carcinoma. Dr. Pfahler closed his discussion with a lantern slide demonstration.

Dr. Eugene Caldwell said that only röntgenologists realized how frequently plates were misinterpreted; very accurate judgment was necessary to get much from the *x*-ray in stomach examinations. It was absurd for one with a limited experience to attempt to draw fine conclusions. The Germans had done much more than they had in this field of work. The fault lay with clinicians and also with medical journals which frequently did not make a careful selection of articles on this subject. They seldom published articles which were the result of laboratory work on hundreds and hundreds of these examinations. Dr. Caldwell presented a number of lantern slides.

Dr. Samuel Lloyd said that the fluoroscopic examination of the stomach with the bismuth contents and the

study of the peristaltic waves were very interesting. Whenever it was possible he took the opportunity of looking at a stomach that was coming to operation and it was surprising how much one could learn regarding the position of the stomach and the suggestions that could be obtained for operative treatment. If they were going to do a gastroenterostomy, to unite the jejunum to the stomach beyond a certain point, they were going to drain that stomach too early and would not get complete emptying of the stomach. He had been led to the conclusion that when the stomach was not occupying the position that it should occupy, but was in a more perpendicular position, the place for doing a gastroenterostomy was at the junction of the middle and pyloric third. If this operation was possible they would not get the pain and the unpleasant experiences met with after the operation formerly used.

Dr. John F. Erdmann said that one year ago he reported several cases of cancer of the stomach and he made the statement then that the *x*-ray was of little value except to inform one that the bismuth paste passed through or did not pass through the pylorus. When it did not pass through it meant that there was an obstruction which might be either from a malignant growth or from a stenosis. When the bismuth paste passed through the pylorus into the duodenum it merely indicated that the pylorus was not sufficiently stenosed to cause a complete obstruction, and it did not show whether or not a malignant growth was present. To-day, however, he was heartily in accord with Dr. Kast's statements and those demonstrations proved to him that Dr. Kast was on the right track and that one without question obtained much aid by the *x*-ray.

Dr. Max Einhorn spoke of the marvelous way in which röntgenology had progressed. He believed that whatever was not accomplished by it now would be later on. Twenty-three years ago he had attempted to transilluminate the stomach and later he had succeeded in mapping out tumors which interfered with the stomach's function. At that time he could do this only when the tumors occupied but a part of the stomach. Now tumors could be diagnosed even if they could not be palpated. In previous work the introduction of a tube into the stomach was necessary but the *x*-ray had obviated the necessity for this procedure. Dr. Einhorn said that he had examined many patients by this method during the past few years and he could corroborate all that the gentlemen who had preceded him had said. With the assistance of Dr. Cole he had taken pictures of stomachs that were filled with air and by this means they had been able to diagnose tumors that were so small as to be obscured by the bismuth.

Dr. Willy Meyer said that he considered the *x*-ray a great aid in defining and refining the clinical diagnosis of diseases of the stomach. It was important, however, to approach a case as if they were not in possession of the *x*-rays, viz., to make a diagnosis with the help of the many other methods at their disposal. Then the subsequent radiographic diagnosis should be compared with the previous findings. So far as the cardia was concerned they had to deal with strictures only, either malignant or benign, the latter due to cardiospasm or organic disease. Here by means of the sound and esophagoscope, together with the removal of a piece of the growth for microscopical examination, they could clear up a case. In malignant cases the *x*-ray could merely corroborate the presence of the stricture. The shadow would show the esophagus either partially or totally filled up according to the quantity of bismuth swallowed. Thus far the *x*-rays had not enabled them to tell what kind of a stricture they had to deal with. Probably they would yet learn to read this, for the *x*-ray was a very recent addition to their diagnostic means in these cases. The *x*-rays were of greater value in diseases of the esophagus above the cardia; there they showed a great deal of detail. Personally he would not do without them in such cases and he considered a stereoscopic view of particular value. Dr. Meyer related the history of a case on which he had operated for benign cardiac stenosis by means of thoracotomy, stripping both pneumogastric nerves off the lower end of the esophagus for several inches and infolding the walls by a single row of sutures. The case illustrated the difficulties of rendering exact diagnosis with reference to the nature of the stricture, even with the help of operative procedure, for although the sound had passed the cardia when it was clearly under the eyes of the operator and under his fingers for manipulation, the functional results were not perfect; the patients still had difficulty in swallowing and evidently did not suffer from cardiospasm, as diagnosed, but from organic stricture, due to ulceration at or near the cardia. He now expected to do an intrathoracic cardioplasty according to the method of Heineke-Miculicz, the method in use for benign stricture of the pylorus, which was a feasible procedure on account of the mobility of the cardia.

Dr. Henry H. M. Lyle made a plea for intelligent cooperation between laboratory workers, internists, röntgenologists, and surgeons, as this was essential to success and would lead to practical results.

Dr. Anthony Bassler said that Dr. Kast had shown four types of stomachs taken from *x*-ray observations made in the upright position showing the bismuth suspension in the lower region of the organ with a straight line to its upper level and a clear space beginning with a straight line below to represent the empty stomach capacity above it. According to the fluoroscopic observations of a number of stomachs this straight line of demarcation was only uncommonly seen, for the suspension splashed up or was worked around by the stomach motility toward the fundus so that this line was seldom produced as sharply as in the plates shown. Great care must be exercised in making diagnoses of extragastric tumors pressing upon the outer part of the stomach when the indentation was uniform and round. In practically all of his plates in which this was seen it was due to gases that had risen from the descending colon and collected in the splenic flexure pressing upon a low stomach. All over the country Dr. Bassler had seen these moving pictures and also foreign-made plates of the stomach motility, and he was not convinced that they represented the normal stomach and not a hypermotility. He felt sure these pictures were very much exaggerated. He advanced this opinion only after the examination of several hundred normal persons. The *x*-ray examination of gastrointestinal conditions was today the most valuable means they had, but there was the danger of mistake in that certain conditions that one would suppose must be seen were not seen, and that certain findings that looked like serious conditions were not present in the patient. With good technique the danger of these mistakes was minimized, but it was always present. The trouble was that there was a tendency with certain men to read too much into the plates in the way of imagination. They must remember that the rays traveled in straight lines, and that the anatomy must be changed in definite ways and a set of conditions must be found always present in a series of observations if they were to be of value in clinical work.

Pathological Society of Philadelphia.

At a stated meeting held October 26, Dr. Alfred Gordon exhibited a specimen of "Tumor of the Brain." The patient was a man, 28 years old, who presented symptoms of cerebellar tumor, headache, vomiting, vertigo, deflection to one side in walking, impaired vision and double choked disk. Autopsy disclosed a tumor in the left temporal lobe appar-

ently involving also the island of Reil and the third frontal convolution, although there had been no speech-defect. Drs. J. Earle Ash and Frederick C. Potter demonstrated a specimen of "Cerebellar Tumor Associated with Hypernephroma of the Kidney." The patient was a man, 32 years old, who suffered from headache, impaired vision, double choked disk and an inability to maintain himself in the erect posture. In addition to a tumor of one kidney exhibiting histologic characters of hypernephroma, a growth was found in one lobe of the cerebellum with structural characters of a glio-sarcoma. Dr. Frank A. Craig reported "A Case of Carcinoma of the Breast with Extensive Lung-involvement," and he demonstrated the specimen. The patient was a woman admitted to the Phipps Institute for Tuberculosis, with a history of carcinoma of one breast removed five years previously. She complained of cough, with watery expectoration, loss of flesh and irregular elevation of temperature, and varying dullness of one side of the chest. A diagnosis of secondary carcinoma of the lung and pleura was made, and this was confirmed at autopsy, the lung and pleura being involved in extensive and widespread new growth. Dr. Jay F. Schamberg gave a "Demonstration of the *Spirochæta pallida* by the Burri Method." A slide was prepared from the throat of a young man in a school in an interior town, a small amount of secretion being mixed with distilled water and then a solution of India ink being added, and the preparation dried. The spirochetes showed beautifully as delicate white, tortuous structures on a black background. From having been present in large numbers at the primary examination, the spirochetes greatly diminished within twenty-four hours of the intravenous injection of arsenobenzol. Also, the pain previously present largely subsided within ten minutes of the injection.

Dr. George W. Outerbridge exhibited "A Cystic Appendix Occurring in Conjunction with a Large Ovarian Cyst." The patient presented characteristic symptoms of ovarian cyst, and on operation this formation was found adherent to an enlarged and cystic vermiform appendix. The question arose whether the two processes were independent or in any way related, as both showed similarity in histologic structure. Dr. Thomas W. Hunter demonstrated sections from an enlarged lymphatic gland removed from the left supraclavicular region, the carcinomatous nature of which permitted a diagnosis of carcinoma of the stomach to be made. A mass was palpable in the left hypochondrum. Free hydrochloric acid was absent from the gastric secretion, but lactic acid was not present, nor were Oppler-Boas bacilli.

Drs. Paul A. Lewis and I. Kaufman presented a communication entitled "An Attempt to Influence the Bacterial Flora of the Intestinal Tract Specifically." The work was undertaken with a view of solving certain problems in anaphylaxis and of determining whether carriers of pathogenic bacteria are subjects of a chronic mild infection or the bacteria persist in some other relation. The bacillus pyocynaeus was employed in the experiments, but the results yielded were entirely of a negative character.

Dr. J. Earle Ash presented a communication entitled "Wassermann and Allied Reactions in the Blood and Spinal Fluid of the Insane." In a considerable number of cases of paresis, cerbrospinal syphilis, tabes, and other forms of nervous and mental diseases, with and without history of syphilitic infection, the reaction of the blood to the Wassermann test and of the cerebrospinal serum to the Wassermann test and to the Noguchi modification, and the cellular content of the serum was studied. While the results obtained from examination of the blood-serum alone were more uniformly positive than those from examination of the cerebro-spinal fluid, the most satisfactory results were secured from a combination of the several modes of examination.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners of the State of Oregon.

July, 1911.

ANATOMY.

1. Name and give the nerve supply of each of the muscles that move the eye.
2. Name the foramina found in the base of the skull. State the bone or bones in which each is found.
3. Describe the occipital bone.
4. Describe the formation and give the branches of distribution of the brachial plexus of nerves.
5. Through what vessels and openings would a blood corpuscle pass in going from the vermiform appendix to the lower horn of the right lateral lobe of the thyroid gland.
6. Name the structures that would be severed in an amputation of the thigh at the apex of Scarpa's triangle.
7. Give the course and distribution of the branches of the celiac axis.
8. Give the structure of the urinary bladder, and give the vessels from which it receives its blood supply.

PHYSIOLOGY.

1. Describe the different forms of muscles in the human body and where each form is found.
2. Describe the act of respiration.
3. Give the functions of the liver.
4. Describe the process of digestion.
5. Give the functions of the blood.
6. Name the most important ductless glands in the body.
7. Give normal quantity of urine passed in twenty-four hours; (*a*) give composition of normal urine; (*b*) when carbontes occur in urine is it alkaline or acid?
8. Describe osmosis, endosmosis, and exosmosis.

HISTOLOGY.

1. Give the histological structure of a long bone as seen in a cross section.
2. Name in order the histological structures concerned in the process of the formation of urine from the blood and its delivery to the pelvis of the kidney.
3. Name the corpuscular elements found in normal human blood, and give the relative number of each variety of corpuscles.
4. Give the microscopic structure of a lobule of the liver.

PATHOLOGY.

1. How would you differentiate chlorosis and pernicious anemia?
2. Give pathology of acute lobar pneumonia.
3. Describe the changes taking place in chronic interstitial hepatitis (cirrhosis of the liver).
4. Give pathology of acute infectious osteomyelitis

CHEMISTRY.

1. How would you detect the positive pole in a galvanic battery, and how would you know the negative pole in a faradic battery?
2. What is meant by the equivalence of an atom?
3. What is chlorine? What is its symbol? What is its atomic weight? What is its molecular weight? What is its specific gravity?
4. What are the antidotes for poisoning with the alkaline caustics?
5. For what is Trommer's test used, and how is it used?
6. For what is the Petenkofer test used, and how is it used?
7. What is the ultimate origin of urea in the human body, and how much is the normal daily excretion?
8. What is an alkaloid, and what is a general chemical antidote for poisoning with alkaloids?
9. What are ptomaines? Name three ptomaines? Are all ptomaines poisonous?

DIAGNOSIS.

1. Give the differential diagnosis between acute miliary tuberculosis and typhoid fever, without the Widal test. (*b*) What are the symptoms of intestinal perforation in typhoid?
2. How would you distinguish acute poliomyelitis anterior, in which the lesion involves the face and hand centers, from tubercular meningitis?
3. Give a complete picture of acute gastric ulcer.
4. What symptoms would lead you to suspect chronic interstitial nephritis without examining the urine?

5. Give symptoms of diabetes mellitus without urinary findings.
6. What symptoms would lead you to suspect abscess of the liver?
7. Give the symptoms of hyperhydrochlorydria.
8. Give physical signs of fibroid phthisis.

MATERIA MEDICA AND THERAPEUTICS.

1. Give antidotes for the following poisons: (*a*) Oxalic acid. (*b*) Corrosive sublimate. (*c*) Arsenic. (*d*) Gelsemium. (*e*) Copper sulphate. (*f*) Iodine.
2. What are the physiological effects of ether inhalations?
3. Name the incompatibles of silver.
4. Name two drugs classed under the following: (*a*) Vesicants. (*b*) Irritants. (*c*) Escharotics. (*d*) Rubefacients. (*e*) Diaphoretics. (*f*) Diuretics. (*g*) Anthelmintics. (*h*) Cardiac depressants.
5. What are the physiological effects of digitalis?
6. Give the therapeutic uses of aconite.
7. How do drugs classed as emmenagogues differ from ecbolics?
8. How much cocaine would you use for a 3 per cent. solution in a two-ounce mixture?

PRACTICE OF MEDICINE.

1. Describe the rash and give the morbid anatomy of scarlatina.
2. Give the etiology and pathological nature of acute endocarditis. If the patient recovers, what permanent pathological condition results?
3. Give the morbid anatomy of acute lobar pneumonia.
4. Differentiate neuritis from neuralgia.
5. Differentiate diphtheria from follicular tonsillitis.
6. Give the period of incubation and of eruption of the exanthemata.
7. On what symptoms would you base a diagnosis of typhoid fever?
8. Differentiate embolism and thrombosis.

DISEASES OF CHILDREN.

1. Give etiology, symptoms, prognosis, and treatment of retropharyngeal abscess.
2. Define tetanus; give causes, symptoms, and prognosis.
3. Define pericarditis, myocarditis and endocarditis. (*a*) Give causes of each. (*b*) Give diagnostic points of each.
4. How would you differentiate between pleurisy, lobar pneumonia, and empyema?
5. State the capacity of stomach in infant one day old.
6. Give etiology, pathology, symptoms, and treatment of acute gastroenteritis.
7. Having made diagnosis of a case of diphtheria, what instructions would you give to prevent spread of disease and give treatment of case.
8. Give etiology, symptoms, and treatment of membranous croup.

NERVOUS DISEASES.

1. Define thrombosis, an embolus, a cerebral hemorrhage.
2. Name a disease having its morbid lesion in (*a*) the anterior columns of the cord, (*b*) the lateral columns, (*c*) the posterior columns.
3. Give symptoms of labioglossopharyngeal (bulbar) paralysis when fully developed.
4. How would you diagnose a case of epidemic cerebrospinal meningitis?

SURGERY.

1. Bound Scarpa's triangle; mention the vessels and nerves in it, and tell how you would ligate the superficial femoral artery.
2. In an amputation of the forearm three inches above the wrist, what arteries will it be necessary to tie, and of what are they barnches?
3. What surgical landmarks of the elbow-joint would aid you by their position in diagnosing between a fracture of the upper end of the radius and a posterior dislocation of the ulna?
4. What is genu valgum? State how it should be treated.
5. What structures are divided in the operation for strangulated femoral hernia?
6. What symptoms follow division of the radial nerve?
7. Give the differential diagnosis of pelvic peritonitis and impaction of feces.
8. What are the chief surgical diseases of the groin?

OBSTETRICS.

1. Describe the development of the chorion.
2. What is the connection or relation between ovulation and menstruation?
3. Give differential diagnosis between pregnancy and ascites.
4. What is the characteristic symptom of placenta prævia? What is the proper management of the case?
5. What is meant by the term Crede's method?
6. What is the proper method of procedure, in a case of arrested labor, when the arrest is caused by interlocked twins?
7. What procedure would you follow in a case of asphyxia neonatorum?
8. What is meant by the term, and what are the causes of icterus neonatorum?
9. What are the indications that would induce you to perform podalic version, and how would you perform the operation?

GYNECOLOGY.

1. Describe in full the operation for abdominal hysterectomy.
2. Give the causes and treatment of non-specific vaginitis.
3. Symptoms and treatment of cystocele.
4. Describe operation for rectocele.
5. What benefit is derived from intrauterine applications? (*b*) What harm may follow the above treatment?
6. What are the physical signs and treatment for a prolapsed ovary?
7. What is meant by the following terms: menorrhagia, metrorrhagia, metrorrhea, amenorrhea?
8. Give treatment for menorrhagia; for amenorrhea.

EYE AND EAR.

1. Acute otitis media; give cause, symptoms, complications, and treatment; indications for opening the ear drum, give landmarks of ear drum, point of selection in paracentesis, and dangers attending the same.
2. Cause, diagnosis, complications, and treatment of acute mastoid abscess.
3. Give the symptoms, prognosis, and treatment of acute glaucoma, differentiate between acute glaucoma and iritis.
4. Give cause, symptoms, complications, and treatment of ophthalmia neonatorum.

LEGAL MEDICINE.

1. Under what circumstances may a physician be justified in producing an abortion, and how is the operation performed.
2. Give the symptoms of arsenical poisoning? How would you demonstrate that arsenical poisoning had been the cause of death in a given corpse?
3. A corpse is presented, death being caused by hypodermic injection of morphine. Tell how you would demonstrate the fact before a court?
4. A person having died from an over dose of strychnine, tell the various steps and methods you would employ to enable you to testify intelligently to the facts before a court.

ANSWER TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF OREGON.

July, 1911.

ANATOMY.

1. *Muscles that move the eye:* Rectus superior, rectus inferior, rectus internus, rectus externus, obliquus superior, and obliquus inferior. Of these the external rectus is supplied by the abducens, the superior oblique by the trochlear, and the others by the motor oculi.
2. See Cunningham's "Anatomy" (1909), page 166; or Gray's "Anatomy" (1910), page 123.
3. See Cunningham's "Anatomy" (1909), page 108; or Gray's "Anatomy" (1910), page 70.
4. The *brachial plexus* is formed by the union and subsequent division of the anterior divisions of the fifth, sixth, seventh, and eighth cervical and the first dorsal nerves. The union of the fifth and sixth makes the upper trunk; the seventh forms the middle trunk, and the eighth cervical and first dorsal make the lower trunk. Each of these trunks is divided into an anterior and a posterior branch. The anterior branches, from the upper and middle trunks, make the upper or outer cord of the plexus; the anterior branch of the lower trunk becomes the lower or inner cord; the three posterior branches unite to form the

posterior or middle cord. The plexus lies between the Scalenus anticus and medius.

And see Cunningham's "Anatomy" (1909), page 624; or Gray's "Anatomy" (1910), page 1031.

5. The blood corpuscles would pass from the appendix through the appendicular vein, superior mesenteric vein, portal vein, hepatic vein, inferior vena cava, right auricle of heart, through the right auriculo-ventricular opening and the tricuspid valve into the right ventricle, through the pulmonary opening and pulmonary semilunar valve into the pulmonary artery, then through pulmonary capillaries, pulmonary vein, into left auricle of the heart, through the left auriculo-ventricular opening and mitral valve into the left ventricle, through the aortic opening and aortic semilunar valve into the aorta, then into innominate artery, right subclavian artery, thyroid axis, and inferior thyroid artery.

6. Skin; fascia; muscles: Sartorius, rectus femoris, tensor vaginæ femoris, vastus externus, vastus internus, crureus, adductor magnus, adductor longus, adductor brevis, pectineus, iliacus, gracilis, biceps, semi-membranosus, semi-tendinosus, gluteus maximus. Arteries: Profunda femoris, femoral. Veins: Femoral and saphenous. Nerves: Anterior crural, obturator, sciatic, external cutaneous.

7. See Cunningham's "Anatomy" (1909), page 843; or Gray's "Anatomy" (1910), page 660,

8. See Cunningham's "Anatomy" (1909), page 1156; or Gray's "Anatomy" (1910), pages 1365 and 1367.

PHYSIOLOGY.

1. Muscles are divided into two great classes: Voluntary and involuntary. *Voluntary* muscle is striated, has long narrow fibers with cross striations and many nuclei beneath the sarcolemma. *Involuntary* muscle is non-striated, has spindle-shaped fibers, one nucleus centrally located, and no sarcolemma. The great exception is cardiac muscle, which is involuntary and also striated. *Voluntary muscle* is found in all the skeletal muscles, pharynx, diaphragm, larynx, external ear, and eye. *Involuntary muscle* is found in the alimentary tract from the middle third of the esophagus to the anus, in the ducts of glands, in the trachea and bronchial tubes, within the eyeball, the internal urinary and genital systems, circulatory (except the heart) and lymphatic systems, and the capsules of some organs.

2. *Respiration* is the process by which an interchange of gases takes place in the lungs; so that oxygen is introduced and carried to the tissues, and carbon dioxide is expelled. See Gray's "Anatomy" (1910), page 423.

The changes produced in the *air* by respiration are:

	INSPIRED AIR.	EXPIRED AIR.
Oxygen	21 per cent.	16.6 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	0.04 per cent.	4.4 per cent.
Other gases	Rare.	Often present.
Watery vapor	Variable.	Saturated.
Temperature	Variable.	That of the body.
Volume	Varies.	Diminished.
Bacteria	Always present.	None.
Dust	Always present.	None.

3. The *functions of the liver* are: (1) The secretion of bile, (2) the formation of glycogen, (3) the formation of urea and uric acid, (4) the manufacture of heat, and (5) the conversion of poisonous and harmful into inert material.

4. *Digestion* is the process by which food is converted into material suitable for absorption and assimilation.

The different stages of digestion are: (1) *In the mouth*, where the food is crushed, mixed with saliva, and reduced to a pulp; a certain amount of starch converted into maltose and rendered slightly alkaline. Fats and proteids are unaltered. (2) *In the stomach*, where the contents are rendered acid, conversion of starch into sugar ceases, connective tissue of fats is dissolved, and fats are set free. Proteids are dissolved and peptones formed. The albuminous foods are dissolved for the most part, and a grumous mixture of peptones, liquid fats, and starches is formed, which is termed chyme, and is gradually passed through the pylorus into the intestine. (3) *In the intestine*, where the chyme mixes with the bile, pancreatic and intestinal juices, becomes alkaline, conversion of starch into sugar recommences, emulsifying of fat begins, and the undissolved proteids are converted into peptones. The diffusible peptones and salts enter the portal vein, the fat in a fine state of division entering the lacteals. In the large intestine the liquid chyme becomes more and more solid, is rendered acid by fermentative changes, and acquires the odor of feces. (From Ashby's *Notes on Physiology.*)

5. FUNCTIONS OF THE BLOOD: The *red blood cells* carry oxygen from the lungs to the tissues. The *white blood cells:* (1) Serve as a protection to the body from the incursions of pathogenic microorganisms; (2) take some part in the process of the coagulation of the blood; (3) aid in the absorption of fats and peptones from the intestine, and (4) help to maintain the proper proteid content of the blood plasma. The function of the *platelets* is not determined; it is possible that they take some part in the coagulation of the blood. The *plasma* conveys nutriment to the tissues; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys.

6. *The ductless glands are:* The spleen, thyroid, thymus, parathyroids, suprarenals, carotid, coccygeal, pituitary, and pineal glands.

7. The normal amount of urine passed in twenty-four hours is about 45 to 50 ounces.

The following table (from Dunglison's "Medical Dictionary") gives the average composition of normal urine:

	(PARTS IN 1000.)	
Water	950.00	
Urea	28.00	Organic matter 37.60
Uric acid	0.60	
Hippuric acid	0.35	
Creatinin	0.65	
Extractives	8.00	
Sodium chloride	8.00	Inorganic matter, 12.40
Phosphoric acid	2.00	
Sulphuric acid	1.25	
Lime (CaO)	0.25	
Magnesia (MgO)	0.30	
Potash (K_2O) and soda (Na_2O)	0.60	
Total	1000.00	

When carbonates occur in the urine it is alkaline.

8. *Osmosis:* "If two different liquids are separated from each other by a porous partition, a current sets in from each liquid to the other. The strength of these currents depends on the facility with which the liquids are imbibed by the partition and the tendency the two fluids have to mix with each other; the fluid which soaks most rapidly into the partition—*i. e.* that which wets it most readily—passes through it most rapidly. If a bladder be filled with syrup and immersed in water, the water will pass into the bladder more rapidly than the syrup passes out, and may so far raise the pressure in the interior of the bladder as to burst it. The water is said to pass into the bladder by *endosmosis*, and the syrup to pass out by *exosmosis.*"

HISTOLOGY.

1. See Cunningham's "Anatomy" (1909), page 71; or Gray's "Anatomy" (1910), pages 37 and 38.

2. See Cunningham's "Anatomy" (1909), page 1139; or Gray's "Anatomy" (1910), page 1352.

3. (1) Red corpuscles, about 5,000,000 to the cubic millimeter. (2) White corpuscles, about 7,000 to 10,000 per cubic millimeter; (of these, there are: Small mononuclears, about 20 per cent.; large mononuclears, about 8 per cent.; polynuclears, about 70 per cent.; and eosinophiles, about 2 per cent.). (3) Platelets, about 400,000 to the cubic millimeter.

4. A lobule of the liver is about 1-20 to 1-12 inch in diameter. It has a darkish red center and a lighter circumference. The center is occupied by an intralobular vein which collects the blood from the capillaries of the lobule, and flows into the sublobular vein, which latter opens into the hepatic vein. Around the lobules are the interlobular veins; these are branches of the portal system; capillaries passing from the circumference to the center of the lobule connect the interlobular and intralobular veins. Between the network of capillaries in the lobule the hepatic cells are packed.

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), pages 518 and 521; or Osler's "Practice of Medicine" (1909), pages 722 and 726.

2. See French's "Practice of Medicine" (1910), page 154; or Osler's "Practice of Medicine" (1909), page 170.

3. See French's "Practice of Medicine" (1910), page 843; or Osler's "Practice of Medicine" (1909), page 557.
4. See Rose and Carless' "Surgery" (1908), page 570; or Da Costa's "Surgery" (1908), page 440.

CHEMISTRY.

1. *To determine the positive pole in a galvanic battery:* Use the battery for the electrolysis of (acidulated) water; oxygen is given off at the positive pole.
2. By the *equivalence of an atom* is meant its saturating power as compared with that of an atom of hydrogen.
3. Chlorine is a gaseous, halogen element; symbol is Cl; atomic weight, 35.5; molecular weight, 71; specific gravity, 2.45.
4. The antidotes for poisoning with the alkaline caustics are dilute vinegar, milk, neutral oils.
5. *Trommer's test* is a copper reduction test for sugar in the urine. Add to the suspected urine about one-eighth of its bulk of 10 per cent. solution of NaOH or KOH, then two or three drops of 10 per cent. solution of $CuSO_4$, and heat to boiling. In the presence of sugar a yellow precipitate is formed, which becomes darker and reddish on boiling.
6. *The Pettenkofer* test is used for the detection of biliary acids. *Method:* "Add to the pure aqueous solution of the acids or their salts one or two drops of a solution of cane sugar (1 to 4); agitate; float this liquid carefully upon concentrated H_2SO_4; a turbid zone is formed at the junction of the two layers, soon replaced by a deep purple zone which gradually extends upward and downward." (Witthaus' *Essentials of Chemistry.*)
7. Urea is formed in the liver chiefly, also in other organs; the daily excretion of urea is about 500 grains.
8. Alkaloids are basic, nitrogenous, organic substances, alkaline in reaction, generally of bitter taste, and capable of combining with acids to form salts in the same way that ammonia does.
A *general chemical antidote for alkaloids* is tannic acid in solution.
9. *Ptomaines* are basic, nitrogenous organic substances produced from protein material by the bacteria which cause putrefaction. *Examples:* Putrescin, cadaverin, neuridin. Some ptomaines are poisonous, and some are not.

DIAGNOSIS.

1.

ACUTE MILIARY TUBERCULOSIS.	TYPHOID FEVER.
Temperature curve is irregular.	Temperature curve is characteristic.
Diarrhea is not common.	Diarrhea is common.
Roseolar eruption not common.	Roseolar eruption is generally present.
No typhoid bacilli in blood, urine or feces.	Typhoid bacilli in blood, urine, and feces.
Tubercles may be found in the choroid.	No tubercles in the choroid.
Pulse and respiration are usually much more rapid.	Pulse and respiration rapid.
Epistaxis is rare.	Epistaxis is common.

See French's "Practice of Medicine" (1910), page 87; or Osler's "Practice of Medicine" (1909), page 82.
2. See French's "Practice of Medicine" (1910), pages 1068 and 348; or Osler's "Practice of Medicine" (1909), pages 915 and 302.
3. See French's "Practice of Medicine" (1910), page 765; or Osler's "Practice of Medicine" (1909), page 473.
4. See French's "Practice of Medicine" (1910), page 927; or Osler's "Practice of Medicine" (1909), page 697.
5. See French's "Practice of Medicine" (1910), page 965; or Osler's "Practice of Medicine" (1909), page 414.
6. See French's "Practice of Medicine" (1910), page 853; or Osler's "Practice of Medicine" (1909), page 564.
7. See French's "Practice of Medicine" (1910), page 784; or Osler's "Practice of Medicine" (1909), page 492.
8. See French's "Practice of Medicine" (1910), page 380; or Osler's "Practice of Medicine" (1909), page 336.

MATERIA MEDICA AND THERAPEUTICS.

1. ANTIDOTES. For *oxalic acid*, chalk or lime; for *corrosive sublimate*, white of egg, or milk; for *arsenic*, freshly prepared solution of ferric hydroxide; for *gelsemium*, ammonia, strychnine, or digitalis; for *copper sulphate*, potassium ferrocyanide; for *iodine*, starch.
2. *Physiological effects of ether inhalations:* "Ether when inhaled produces at first faucial irritation, a sense of strangulation and cough; then a stage of excitement (cerebral intoxication), in which the face is flushed and the respiration and pulse are accelerated. A tetanic convulsive stage generally follows, the face being cyanosed, the muscles rigid, and the respiration stertorous. This soon subsides, and complete insensibility is established, the muscles being then relaxed, the reflexes abolished, and the cerebral functions suspended, the lower centers in the medulla carrying on the processes of respiration and circulation. If the inhalation be continued, these also become paralyzed, death usually resulting from slow paralysis of respiration, the heart pulsating long after breathing has ceased. If the inhalation be discontinued before the lower centers are affected, the patient gradually emerges from the condition of insensibility, and, as the narcosis subsides, vomiting is usually experienced." (Potter's *Materia Medica*, etc.).
3. *Incompatibles of silver:* Alkalies, and their carbonates; alkaloids; solutions of arsenic and tannin; most of the mineral acids and their salts; all bromides, chlorides, iodides, and phosphates; practically, all drugs except opium and hyoscyamus.
4. *Two vesicants:* Cantharides, and iodine; *two irritants:* Ammonia and silver nitrate; *two escharotics:* Nitric acid and phenol; *two rubefacients:* Mustard and menthol; *two diaphoretics*: Alcohol and nitrous ether; *two diuretics*: Potassium acetate and juniper; *two anthelmintics!* Pelletierine and santonin; *two cardiac depressants:* Aconite and antimony.
5. *Physiological effect of digitalis:* It is a gastro-intestinal irritant, it slows the rate of the heart, prolongs diastole, increases the force of the heart, it contracts the blood-vessels and causes a rise in blood-pressure, it also acts as a diuretic.
6. *Therapeutic uses of aconite:* For fevers, some inflammatory conditions, in high arterial tension, in nervous palpitation of the heart, and congestive dysmenorrhea; also externally for neuralgia, pruritis, herpes, chilblains, etc.
7. *Emmenagogues* are supposed to act on a non-gravid uterus; *ecbolics* are only used in pregnancy. *Emmenagogues* if given in too large a dose are apt to have *ecbolic* properties.
8. Two ounces = 960 grains; a 3 per cent. solution will therefore contain 28.8 grains.

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), pages 316 and 318; or Osler's "Practice of Medicine" (1909), pages 132 and 131.
2. See French's "Practice of Medicine" (1910), pages 577, 578, and 581; or Osler's "Practice of Medicine" (1909), pages 785, 786, and 787.
3. See French's "Practice of Medicine" (1910), page 154; or Osler's "Practice of Medicine" (1909), page 170.
4. In *neuritis* the pain is continuous, is always worse after use of the nerve, and does not vary in situation; painful points are present; the nerve trunk is tender, and the pain can be increased proportionately with pressure; it is not limited to sensory nerves, and trophic disturbances, wasting, and alterations in the electrical reactions are very apt to appear.
In *neuralgia* the pain is paroxysmal and intermittent; it is independent of the use of the nerve; it may vary in situation; painful points are not often present; the nerve trunk is not particularly tender, and a light pressure along the nerve trunk may cause as much pain as a heavy pressure; neuralgia only affects sensory nerves, and wasting and trophic disturbances only rarely occur.
5. In *diphtheria* the onset is more gradual; the temperature rises to about 101° to 103° F.; the tonsils are not much enlarged; there is an exudate of a thick, grayish membrane which is very adherent, is removed only with difficulty, and leaves a bleeding surface; this membrane soon reforms and may be found on the fauces and pharynx as well as on the tonsils; in the exudate the Klebs-Loeffler bacilli may be found. In *follicular tonsillitis* the onset is more sudden; the temperature may be a little higher than that of diphtheria; there is no membrane, but the tonsils are red and swollen, and in the crypts are seen white, cheesy spots or plugs, which consist of broken-down epithelium, and are easily brushed away; Klebs-Loeffler bacilli are never found.
6.

EXANTHEM.	INCUBATION PERIOD.	ERUPTION PERIOD.
Cerebro spinal meningitis.	Unknown.	2nd to 4th day.
Erysipelas.	Few hours to 3 or 4 days.	First day.
Measles.	10 to 12 days.	Fourth day.

EXANTHEM.	INCUBATION PERIOD.	ERUPTION PERIOD.
Rotheln.	7 to 17 days.	Second day.
Scarlet fever.	1 to 21 days.	1st or 2nd day.
Typhoid fever.	5 to 30 days.	7th to 10th day.
Typhus fever.	4 to 12 days.	3rd to 7th day.
Varicella.	4 to 14 days.	First day.
Variola.	8 to 14 days.	About fourth day.

7. See French's "Practice of Medicine" (1910), page 101; or Osler's "Practice of Medicine" (1909), page 93.

8. See below, NERVOUS DISEASES, Question 1.

DISEASES OF CHILDREN.

1. See Rose and Carless' "Surgery" (1908), page 872; or Da Costa's "Surgery" (1908), pages 137, 151, and 142.

2. See Rose and Carless' "Surgery" (1908), pages 124 to 128; or Da Costa's "Surgery" (1908), pages 204 to 209.

3. See French's "Practice of Medicine" (1910), pages 567, 576, and 619; or Osler's "Practice of Medicine" (1909), pages 775, 785, and 824.

4. See French's "Practice of Medicine" (1910), pages 711, 713, and 171; or Osler's "Practice of Medicine" (1909), pages 649, 651, and 188.

5. The capacity of the stomach of an infant one day old is about one ounce.

6. See French's "Practice of Medicine" (1910), page 798; or Osler's "Practice of Medicine" (1909), page 504.

7. See French's "Practice of Medicine" (1910), pages 194 and 195; or Osler's "Practice of Medicine" (1909), page 207.

8. See French's "Practice of Medicine" (1910), page 188; or Osler's "Practice of Medicine" (1909), page 202.

NERVOUS DISEASES.

1. See French's "Practice of Medicine" (1910), pages 25, 27, 1107, and 1115; or Osler's "Practice of Medicine" (1909), pages 966 and 977.

2. (*a*) A disease with morbid lesion in the anterior columns of the cord: Progressive muscular atrophy; (*b*) in the lateral columns: Spastic spinal paralysis; (*c*) in the posterior columns: Tabes dorsalis.

3. See French's "Practice of Medicine" (1910), page 1080; or Osler's "Practice of Medicine" (1909), page 904.

4. See French's "Practice of Medicine" (1910), pages 142 and 146; or Osler's "Practice of Medicine" (1909), pages 160 and 163.

SURGERY.

1. Scarpa's triangle is bounded *above* by Poupart's ligament, *externally* by the Sartorius, and *internally* by the inner margin of the Adductor longus; its *apex* is formed by the junction of the Adductor longus and Sartorius. The *floor* is formed, from without inward, by the Iliacus, Psoas, Pectineus, Adductor brevis, and Adductor longus. *Contents:* The femoral vessels pass from about the center of the base to the apex, the artery being on the outer side of the vein; the anterior crural nerve lies to the outer side of the femoral artery; the external cutaneous nerve is still further external, lying in the outer corner of the space; just to the outer side of the femoral artery, and in the sheath with it, is the crural branch of the genito-crural nerve.

For ligation of superficial femoral artery, see Rose and Carless' "Surgery" (1908), page 340; or Da Costa's "Surgery" (1908), page 423.

2. The arteries to be tied are: The radial, ulnar, anterior interosseous, and posterior interosseous. The radial and ulnar are continuations of the brachial; the anterior and posterior interosseous are branches of the interosseous, which is a branch of the ulnar artery.

3. THE ELBOW. "The more important normal landmarks are: (*a*) The two condyles of the humerus and the tip of the olecranon process form an equilateral triangle when the arm is flexed to a right angle. When the arm is extended they lie in a straight line. (*b*) The head of the radius can be felt to rotate below the external condyle of the humerus. (*c*) An angle is formed by the radius and ulna with the humerus when the hand and forearm are held in a supinated position, which is known as the *carrying angle*.

If the two condyles of the humerus lie in their normal relation to the olecranon process as determined by palpation, this will exclude a dislocation of both bones of the forearm, a fracture of either condyle or a fracture of the olecranon process.

If the head of the radius can be felt to rotate in its normal position this will exclude a fracture of the neck or head of the radius and a dislocation of the radius." (Eisendrath's *Surgical Diagnosis.*)

4. See Rose and Carless' "Surgery" (1908), page 443; or Da Costa's "Surgery" (1908), page 661.

5. *Structures divided in the operation for strangulated femoral hernia* are: Skin, superficial fascia, cribriform fascia, crural sheath, septum crurale, subserous areolar tissue, and peritoneum.

6. *Division of the radial nerve* would be followed by: Loss or impairment of sensation in the dorsal aspect of thumb, index finger, and radial side of middle finger as far as the second phalanx.

7. See French's "Practice of Medicine" (1910), pages 885 and 882; or Osler's "Practice of Medicine" (1909), pages 586 and 582.

In *fecal impaction*, there is a history of long continued and increasing constipation, feeling of languor and depression, anorexia; the abdomen becomes distended gradually, and the symptoms develop slowly; pain comes on gradually, and later becomes continuous; there is usually a tumor in sigmoid flexure or cecum, it is doughy and firm; constipation is absolute.

8. The chief *surgical diseases of the groin* are: Hernia (inguinal, femoral, and obturator), aneurysms, tumors, abscesses (psoas, glandular, and from hip disease), cysts, ulcers, sinuses, enlarged glands, undescended testicle, prolapsed ovary.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), page 102; or Hirst's "Obstetrics" (1909), page 110.

2. The connection between ovulation and menstruation is not yet definitely settled, but the two functions seem to be closely associated. It has been held that ovulation is dependent upon menstruation; also that menstruation is dependent upon ovulation; it has also been proved that each may occur without the other, and it is possible that they are both dependent upon some common (and as yet unknown) cause.

3. *Differential diagnosis.—Pregnancy:* The tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other signs of pregnancy are present. The rate of growth of the tumor, and the general condition of the patient's health may also help in arriving at a diagnosis.

Ascites: Absence of the signs of pregnancy; the abdomen is distended, but the shape varies with the position of the patient; on lying down there is bulging at the sides; the tumor fluctuates, and percussion shows dullness in the flanks, with resonance in the median line, but the dullness varies with the position of the patient.

4. The *characteristic symptom* of placenta prævia is: Sudden hemorrhage (accompanied by syncope, vertigo, restlessness, and feeble pulse). *Treatment:* Stop the hemorrhage by a vaginal tampon; this must be tight and thorough. *Accouchement forcé* is indicated; this consists of dilatation of cervix, version, and immediate extraction of the child.

5. See Williams' "Obstetrics" (1909), page 298; or Hirst's "Obstetrics" (1909), pages 343 and 435.

6. See Williams' "Obstetrics" (1909), page 360; or Hirst's "Obstetrics" (1909), page 566.

7. See Williams' "Obstetrics" (1909), page 846; or Hirst's "Obstetrics" (1909), page 939.

8. See Williams' "Obstetrics" (1909), page 350; or Hirst's "Obstetrics" (1909), page 949.

The cause of icterus of the new-born is not known. It is found most often in premature and weakly infants, and in those born in maternity hospitals. The following theories have been held as to its etiology: "(1) *Obstruction to the outflow of bile* by (*a*) plugs of mucus in the common bile duct; (*b*) partial blocking of the bile ducts by desquamated epithelium, the result of hyperemia and catarrh of the ducts following on the changes in the circulation which take place at birth; (*c*) congenital narrowing of the bile ducts; (d) inability of the ducts to carry off the secretion of bile, which is considerable at first; and (*e*) delayed ligature of the cord. (2) *Pressure on the ducts from without* by (*a*) the portal and hepatic veins becoming distended in consequence of the changes in the circulation following birth; (*b*) swelling and edema of Glisson's capsule, the result of engorgement of the umbilical and portal veins—hence the jaundice is hepatogenous. (3) Closure of the umbilical vein, which leads to such a lowering of blood-pressure in the capillaries of the liver that reabsorption of bile takes place. (4) The ductus venosus, which should close from the second to the fifth day after birth, remains open longer than this, and thereby allows some portal blood, which contains bile, to pass through it and enter the inferior vena cava."—(From *Aids to Diseases of Children*)

9. See Williams' "Obstetrics" (1909), pages 435 and 437; or Hirst's "Obstetrics" (1909), pages 827 and 830.

GYNECOLOGY.

1. See Rose and Carless' "Surgery" (1908), page 1283.

2. *Vaginitis* is a condition of inflammation of the vagina. It is characterized by redness, swelling, pain, heat, irritation, and increased secretion. There may be frequent and painful urination. *Treatment* consists in rest, cleanliness, douches, the application of soothing lotions, and removal of any cause; salines and anodynes are also indicated.

3. *Cystocele* is a hernia of part of the bladder into the vagina, covered by the mucous membrane of the anterior vaginal wall. *Symptoms:* A dragging sensation in the lower pelvic cavity; a feeling of distention at the vulva; loss of power in urination; tumor of anterior vaginal wall more apparent on straining; prolapse of uterus.

For radical cure of cystocele: "The patient is placed in dorsal position. The posterior vaginal wall is kept out of the way with a weighted speculum. The cervix is drawn down with a bullet-forceps. With a pair of tenacula the sides of the prominence are drawn together in the median line in order to see how much of the wall is redundant and these points are marked with small nicks. Next, the whole surface is put on the stretch between four pairs of forceps —one at each of the sidemarks, one near the cervix, and one at the transverse ridge at the inner end of the urethra. With a pair of scissors curved on the flat, a strip about ¼ inch wide is cut out of the mucous membrane. Similar strips are removed on both sides until an oval is denuded. Finally a running suture of chromicized catgut is passed under the whole pared surface, uniting the edges from side to side." If necessary, a perineorrhaphy should be done at the same time.

4. *Operation for rectocele.* The operation of posterior colporrhaphy is thus described by Sutton and Giles: "The patient is secured in the lithotomy position, and the vagina thoroughly exposed with retractors. An elliptical incision, one end of the major axis being close to the cervix, the other near the vulvar orifice, is made in the mucous membrane of the posterior vaginal wall, taking care not to cut deeper than the recto-vaginal septum, lest the bowel be opened. The vaginal mucous membrane is then cautiously dissected off; the amount to be removed is estimated by the laxity of the parts and the degree of narrowing which the operator regards as necessary to meet the needs of the case. After removing the vaginal wall and securing the bleeding vessels the cut edges of the mucous membrane are brought into apposition by a continuous silk suture on interrupted suture of silk-worm-gut, or such other material as the operator thinks well to employ. The patient is kept in bed for at least two weeks; her bowels are regulated, and the bladder should not be allowed to become overdistended. The sutures should be removed in about ten days."

5. Intrauterine applications are not, as a rule, in much favor. After a curettage, or miscarriage, application of iodine or carbolic solution may be beneficial in preventing sapremia or sepsis; and in severe uterine hemorrhage application of adrenalin chloride may be used.

The danger in intrauterine application lies in the fact that the cavity of the uterus communicates by the Fallopian tubes with the general peritoneal sac, and that peritonitis and death have resulted from intrauterine injection.

6. *Prolapse of ovary:* "Downward displacement without displacement of the tubes and uterus may result from prolonged congestion, inflammation, subinvolution, elongation, and stretching of the ligaments, or violent strain. The symptoms are constant with severe pain, which is increased by movement and at the menstrual period, nausea and indigestion, headache, and nervous disturbances. Bimanual examination reveals enlargement, tenderness, and the abnormal position of the ovary. In uncomplicated cases the ovary may be restored to its proper position by directing the patient to assume the knee-chest posture for ten minutes two or three times daily, or the infundibulo pelvic ligaments may be shortened through an abdominal incision. Pelvic congestion will require the use of saline laxatives, hot vaginal douches, the application of iodine to the cervix and vaginal vaults, and the use of glycerin tampons. Diseased ovaries should be removed and uterine displacements should be corrected."—(Gould and Pyle's *Pocket Cyclopedia.*)

7. *Menorrhagia* is a condition characterized by excessive loss of blood at the menstrual periods.

Metrorrhagia is a hemorrhage from the uterus at other than the menstrual periods.

Metrorrhea is any discharge from the uterus, such as mucus, pus.

Amenorrhea is absence of menstruation during the period of sexual activity.

8. *Treatment of menorrhagia:* Remove the cause, if possible; treat abnormal conditions that are present; vaginal douches, tampons, and curettage have been recommended; also ergot, hamamelis, hydrastis, and viburnum prunifolium; rest in bed is necessary. Intrauterine applications of astringents or of adrenalin have been used.

Treatment of amenorrhea: This consists in (1) Removing the cause, if possible; (2) general treatment by means of proper hygiene, rest, diet, bathing, attention to the bowels, exercise, etc.; (3) drugs reputed to be emmenagogues such as iron, manganese, aloes, strychnine, apiol, oxalic acid, savine, rue, and tansy.

EYE AND EAR.

1. For *otitis media*, see Rose and Carless' "Surgery" (1908), pages 880, etc.

Indications for opening the ear drum Undue distention in otitis media, hyperemia and infiltration of the membrana tympani, or for purposes of exploration.

Landmarks of ear-drum: (1) The short process of the malleus; (2) the manubrium or long process of the malleolus and umbo; (3) the light spot.

Point for paracentesis: In the posterior and lower portion of the tympanic membrane.

Dangers of paracentesis: The point of the knife may strike the stapes or the long process of the incus, and the hearing may be damaged; sepsis.

2. See Rose and Carless' "Surgery" (1908), page 885.

3. *Glaucoma* is a diseased condition of the eye, produced by increased intraocular pressure, and resulting in excavation and atrophy of the optic disc, and blindness. It is due to increase of the contents of the eye, hypersecretion, retention, old age, gout, rheumatism, nephritis. *Symptoms:* Visual disturbances, increased ocular tension, hazy and anesthetic cornea, sluggish and dilated pupil, shallow anterior chamber, ciliary neuralgia, cupping of optic disc, blindness. *Treatment:* Myotics, such as eserine or pilocarpine; massage of the eyeball; mydriatics are contraindicated; operative treatment may include paracentesis, iridectomy, or sclerotomy. *Prognosis:* This is unfavorable; unless proper treatment is at once instituted blindness results.

	GLAUCOMA.	IRITIS.
Age	Over forty.	Any.
Tension	Plus.	Normal.
Congestion	General, especially scleral.	General, especially circumcorneal.
Cornea	Cloudy and steamy surface.	Cloudy.
Anterior chamber.	Shallow.	Unchanged.
Pupil	Dilated, oval.	Contracted, synechiæ.
Pain	Severe, continuous.	Especially at night.
Vision	Much reduced.	Somewhat reduced.
Treatment	Eserine, pilocarpine, iridectomy.	Atropine.

(From Alling and Griffin's *Diseases of the Eye and Ear.)*

4. OPHTHALMIA NEONATORUM. *Causes:* The gonococcus or some other pyogenic microorganism; the secretions of the mother contain the infecting agent, and transmission may occur directly during parturition, or indirectly by the fingers of physician or nurse, cloths, instruments, etc. *Symptoms:* Swollen eyelids, with copious purulent discharge; ulceration of the cornea may ensue. *Complications:* Corneal ulceration, perforation, and panophthalmitis. *Prophylaxis:* Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of such eye one drop of a 1 per cent. solution of nitrate of silver, immediately after birth. *Treatment:* Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be isolated, and all cloths and compresses used must be burnt.

LEGAL MEDICINE.

1. *Conditions warranting the induction of premature labor:* (1) Certain pelvic deformities, (2) placenta prævia, (3) pernicious anemia, (4) toxemia of pregnancy, (5) habitual death of the fetus toward the end of pregnancy,

(6) hydatidiform mole, (7) habitually large fetal head.

The methods that may be employed are: Partial dilatation of the cervix and the introduction within the cervix (and vagina) of a tamponade of sterile gauze; (2) dilatation of the cervix; (3) puncturing the membranes; (4) introduction of a soft rubber bougie into the uterus; (5) intrauterine injection of glycerin, water, or some other fluid.

2, 3, and 4. The evidences of poisoning depend upon (1) the symptoms; (2) the post-mortem appearances; (3) the results of chemical analysis, and (4) circumstantial evidence. The general practitioner can report on (1) and (2); he had better leave (3) to an expert chemist. But to aid this latter he should preserve certain parts of the body for analysis: "The alimentary canal from the cardia to the middle of the rectum, *unopened,* and the contents enclosed by ligatures at the esophagus, duodenum, and lower end of gut; the liver, including the gall-gladder; one kidney; the spleen; a piece of muscular tissue; the brain, and any urine which may remain in the bladder. Any suspected food articles, and any obtainable vomited matter, are to be also preserved. They are to be placed in *clean* and *new* glass jars, closed with glass or cork covers or stoppers. Jars with metallic caps should never be used. Tapes or cords should be tied about the jar and cap, to which they should be attached by sealing wax bearing impressions of a seal, in such a manner that access can only be had to the interior after breaking the seals or cutting the tapes or cords. Great care must be exercised that no sealing wax can get into the jars. Each portion should be placed in a jar by itself." (Witthaus.)

2. In *poisoning by arsenic: Symptoms:* "In acute cases the symptoms usually begin in from twenty to forty-five minutes. Nausea and faintness. Violent, burning pain in the stomach, which becomes more and more intense, and increases on pressure. Persisting and distressing vomiting of matters, sometimes brown or gray, or streaked with blood, or green (Paris green). Purging. More or less severe cramps in the lower extremities."

In *chronic cases:* "Inflammation of the conjunctivæ, with intolerance of light. Irritation of the skin, accompanied by an eruption (eczema arsenicale). Local paralyses. Great weakness and emaciation. Exfoliation of the cuticle and falling out of the hair." (Witthaus.)

Post-mortem appearances: "These are confined to the stomach and intestines. The stomach is inflamed, whether As has been taken by the mouth or by other channels of absorption. The mucous surface is coated with a layer of mucus, tinged with blood or bile, and sometimes containing white crystals of As_2O_3 or green particles of Paris green. The color of the mucous membrane is brownish red, interspersed with darker streaks or patches between the rugæ. The small intestines are sometimes inflamed throughout their length but more usually the inflammation is limited to the duodenum (Witthaus' *Essentials.*)

3. *Symptoms of poisoning by morphine:* "At first there is usually a period of excitation, marked by restlessness, great physical activity, loquacity, and hallucinations. The patient then becomes weary, dull, and drowsy; he yields to the desire for sleep, from which at first he may be roused. The lips are livid, the face pale, the pupils contracted, and the surface bathed in perspiration. The condition of somnolence rapidly passes into narcosis. The patient cannot be roused, and lies motionless and senseless, with completely relaxed muscles. The pulse, at first full and strong, becomes feeble, slow, irregular, and easily compressible; the respiration slow, shallow, stertorous, and accompanied by mucous râles. The patient rapidly becomes comatose, and, in fatal cases, dies in from forty-five minutes to fifty-six hours, usually in from twelve to eighteen hours. In cases of recovery after the stage of narcosis the pulse and respiration gradually return to the normal, and the condition of coma passes into one of deep sleep, lasting twenty-four to thirty-six hours." (Witthaus.)

Post-mortem appearances: The brain may be congested, the cerebrospinal fluid increased in amount, the urine in the bladder may contain morphine or some of its oxidation products, the intestine may be ulcerated.

4. The *symptoms of poisoning by strychnine* are "a sense of suffocation, thirst, tetanic spasms, usually opisthotonos, sometimes emprosthotonos, occasionally vomiting, contraction of the pupils during the spasms, and death, either by asphyxia during a paroxysm, or by exhaustion during a remission. The symptoms appear in from a few minutes to an hour after taking the poison, usually in less than twenty minutes; and death in from five minutes to six hours, usually within two hours." (Witthaus' *Essentials.*)

Post-mortem appearances: There is frequently well marked rigidity of the muscles, with incurving of the soles, and the hands may be clenched, but often the muscles are relaxed immediately after death and become rigid later.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended November 11, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	347	139
Diphtheria	248	12
Measles	116	4
Scarlet Fever	122	4
Smallpox	—	—
Varicella	129	—
Typhoid Fever	92	14
Whooping Cough	36	2
Cerebrospinal Meningitis	3	—
Malarial Fever	—	
Totals	1093	175

Typhoid Fever Ushered in with Renal Manifestations.—Lesieur reports the case of a 14-year-old girl in whom typhoid fever began suddenly with the manifestations of inflammation of the kidneys, including renal pain, cephalalgia, hematuria, and hypertrophy of the left kidney.—*Bulletin et Memoires de la Société Médicale des Hôpitaux.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended November 10, 1911:

Places	Date	Cases	Deaths
CHOLERA			
India: Madras	Sept. 23–20	6	3
Indo-China: Saigon	Sept. 10–17	5	5
Java: Batavia	Sept. 16–23	18	6
Russia: Astrakhan	Sept. 13–30	24	11
Don	Sept. 13–30	1	1
Kuban	Sept. 13–30	23	15
Rostov on Don	Sept. 13–30	7	5
Saratov	Sept. 13–30	22	9
Simbrisk	Sept. 13–30	3	5
Ufa	Sept. 13–30	2	..
Servia: Belgrade	Oct. 7–14	2	1
Drazevze	Oct. 2	1	1
Grditze	Oct. 3	1	..
Kagujevatz	Oct. 10	1	1
Krushevatz	Oct. 14	1	..
Semendria	Oct. 4–13	12	3
Stubline	Oct. 4–10	4	4
Urovtzi	Oct. 4–13	9	7
Yabutchye	Oct. 12	1	1
Turkey: Constantinople	Oct. 7–22	.	62
Turkey in Asia: Basra	Sept. 23–30	16	13
Kerassund	Oct. 1–7	5	2
Tripoli		.	.
To Sept. 29, 69 deaths.			
YELLOW FEVER			
Brazil: Manaos	Oct. 1–14	3	..
Mexico: Merida	Oct. 22–29	5	1
Venezuela: Caracas	Sept. 23–Oct. 7	4	..
PLAGUE			
Canal Zone: Panama	Oct. 17	1	1
Arrived from Guayaquil and detained at quarantine.			
Egypt: Port Said	Sept. 16–23	3	1
India: Bombay	Sept. 23–30	11	11
Karachi	Sept. 23–30	2	1
Rangoon	Sept. 9–23	..	27
Indo-China: Saigon	Sept. 10–17	4	1
Java: Batavia	Sept. 16–23	20	8
Venezuela: Caracas	Sept. 23–Oct. 7	3	..
Zanzibar: Zanzibar	Sept. 14–21	..	1
SMALLPOX			
Canada: Ottawa	Oct. 7–21	4	..
Quebec	Oct. 21–28	4	..
Canary Islands: Santa Cruz de Tenerife	Oct. 7–14	.	4
Chile: Talchuano	Sept. 23–Oct. 7	10	.
Valparaiso	Sept. 23–30	45	..
China: Hongkong	Sept. 9–23	3	3
Egypt: Cairo	Sept. 16–23	1	.
France: Paris	Oct. 1–7	1	.
India: Bombay	Sept. 23–30	1	1
Madras	Sept. 23–30	8	2
Rangoon	Sept. 16–23	.	2
Indo-China: Saigon	Sept. 10–17	1	1
Java: Batavia	Sept. 16–23	4	.
Malta: Valetta	Oct. 7–14	1	.
Mexico: Chihuahua	Sept. 24–Oct. 9	1	2
Juarez	Oct. 21–28	2	..
Porfirio Diaz	Oct. 7–28	.	3
Tapachula	Sept. 1–23	3	6
Portugal: Lisbon	Oct. 7–14	5	..
Russia: Libau	Oct. 7–15	2	..
Omsk	Sept. 27–Oct. 3	1	.
Riga	Sept. 23–30	1	.
Vladivostok	June 13–Aug. 28	16	10
Spain: Valencia	Oct. 7–14	3	1
Turkey: Constantinople	Oct. 7–22	.	4
Saloniki	Sept. 1–30	.	5
Turkey in Asia: Beirut	Oct. 7–14	12	3
Zanzibar: Zanzibar	Sept. 14–21	..	

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Original Articles.

TRAUMATIC LESIONS OF THE EAR.*

BY GORHAM BACON, M.D.,

NEW YORK.

PROFESSOR OF OTOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, COLUMBIA UNIVERSITY.

IT would be impossible in the short time at my disposal this evening to enter into a discussion of the many injuries that may involve the auditory apparatus, so that I shall refer briefly to the more important lesions, and report a few of the more interesting cases that have come under my observation.

While a slight blow on the ear may cause a serious lesion of the labyrinth and nervous apparatus, leading to permanent deafness, a more violent blow may cause simply a rupture of the drumhead, which will heal in a short time, leaving the hearing but little, if any, impaired. In other words, if the injury is such that the drumhead is ruptured we are much less likely to have a serious involvement of the inner ear. A slight blow on the ear, causing a sudden condensation of air in the external ear, may so expend itself upon the drumhead and ossicles that the stapes is suddenly forced inwards, increasing the intralabyrinthine pressure, and in this way a serious condition of affairs follows, so that permanent deafness and tinnitus are likely to result.

Of the traumatic lesions affecting the membrana tympani, another frequent cause, besides blows and falls, is the bad habit on the part of some individuals of using hairpins, toothpicks, etc., to scratch the auditory canal on account of itching, and accidentally such instruments are pushed in too far.

A patient came to me some years ago with a serious rupture of the membrana. He had just sharpened a pencil, and while trying to scratch the auditory canal with the point, to relieve the itching, some one accidentally pushed his elbow and the point was driven through the drumhead.

A number of years ago I reported a case of injury to the drumhead which was caused by the twig of a branch entering the auditory canal of a man who was walking through a forest. Too forcible inflation of the ear by Politzer's method or the rapid rarefaction of air by means of Siegle's otoscope may produce a rupture.

If the Eustachian tube is obstructed so that air in the middle ear cannot easily escape, when condensation of air in the external auditory canal follows a blow, we are likely to have a rupture of the membrane. Changes in the drumhead, such as atrophy, chalky deposits, etc., favor a rupture.

Ruptures are frequently caused by inexperienced practitioners attempting to remove foreign bodies from the canal without proper illumination. One case which came under my observation was that of a man who was brought to the infirmary with a severe laceration of the canal and middle ear, due to an attempt to remove a supposed foreign body by means of forceps. In addition to a severe laceration of the canal, the drumhead had been destroyed and the ossicles removed. During the summer months diving in salt water occasionally causes a rupture, besides permanently impairing the hearing in a great many instances. Sea bathers should always be advised to protect their ears, not only on account of the liability of such an accident, but also owing to the fact that those who constantly dive and swim under water, when young, are frequently deaf later in life, and such deafness is due to thickening of the drumhead, anchylosis of the ossicles and the formation of exostoses in the external auditory canal.

The membrana may also be injured by a syringe with a long and fine point in the hands of an inexperienced person. In snow-balling, a rupture occasionally follows. By the introduction of a bougie through the nose and Eustachian tube the point may be pushed through the membrana, and when, a few years ago, electrolysis was advocated so strenuously on the part of some writers, such an accident was occasionally reported.

Another cause of rupture is fracture at the base of the skull, giving rise to copious bleeding from the auditory canal, and the escape of cerebrospinal fluid if the labyrinth is involved.

When a rupture follows the sudden condensation or rarefaction of air in the external auditory canal, it may be due not only to blows or falls, but also to loud explosions, the firing of cannon. It occurs in caisson workers and aviators, especially if there is some obstruction in the Eustachian tube.

Injuries of the canal and membrane are occasionally due to the instillation of hot fluids, the use of hot vapors, and of drops for earache, suggested by anxious friends. When St. Jacob's oil was in favor a patient came under my care with a serious middle ear inflammation due to its use, it having been suggested as a good remedy to put into the ear for earache.

Injuries of the auricle occur, such as contusions, stab-wounds, etc., which, as a rule, are more frequently seen by the general surgeon, and in boxers othæmatoma of the auricle is of frequent occurrence, and causes marked deformity if not properly treated. A number of years ago I reported a case of gunshot wound of the mastoid.

Symptoms.—When a rupture occurs from a direct injury, *i. e.*, by the introduction of an instrument in the auditory canal, much depends on the size and nature of the instrument. The canal may be lacerated, and the rupture is generally found in the anterior half of the membrane. Wet or dried blood is observed around the margins of the rup-

*Read at a meeting of the Practitioners' Society, October 13, 1911.

ture as well as in the canal. The wound may heal, leaving but little deafness, but usually severe reaction follows, and inflammation and suppuration lead to more or less permanent deafness.

The symptoms usually complained of are a loud report in the affected ear, followed by severe pain, dizziness, tinnitus, faintness, vertigo, and hemorrhage. As a result of a direct injury the stapes may be dislocated, causing serious dizziness, tinnitus, and permanent deafness, and following suppurative inflammation, permanent openings in the membrana may remain, or adhesions may follow, and the ossicles may be anchylosed, leading to permanent deafness.

In ruptures due to the sudden condensation or rarefaction of air the symptoms usually are not so severe. At the time the patient feels great pain and hears a loud report. He is seized with dizziness, and frequently reels and complains of tinnitus. When the membrana is examined, fresh or dried blood is found around the margins of the rupture, unmistakable evidences of traumatism and coagula may be found in the canal. The impairment of hearing is less marked in these cases than in those due to direct injury, and when the patient is very deaf it is generally due to involvement of the labyrinth. When the membrana is ruptured, the force of the blow is felt on the membrana, and the labyrinth usually escapes.

Politzer says, "if, on the other hand, the membrane remains intact, the greater part of the force of the blow is exerted upon the labyrinth, inasmuch as the chain of ossicles, suddenly forced inwards, causes a concussion and paralysis of the endings of the auditory nerve: as a consequence of this severe deafness and continuous noises remain. According to the author's observations the prognosis of these cases is always unfavorable."

Some years ago a child was brought to my office who did not talk, and from an examination proved to be a deafmute. On close questioning I finally elicited the information that, when a baby, she had fallen, striking on her head.

A traumatic rupture generally closes in from three or four days to two weeks, if left to nature, and all local applications are omitted. Syringing the ear, and the use of all drops, should be carefully avoided. The canal may be wiped out carefully with cotton on an applicator moistened with a disinfectant, and afterwards dried. Then a strip of sterile gauze or cotton should be reinserted in the canal. After this the healing should be left to nature. When the labyrinth has not been affected, and the traumatism of the membrane has been due to a sudden condensation or rarefaction of air in the external auditory canal, closure of the membrane usually occurs. According to Politzer, "cicatrization often begins in the mucous membrane layer, inasmuch as, several days after the rupture, a grayish-yellow membrane forms over the opening from within, while the edges of the tear in the cutis are still visible for some time." Suppuration of the middle ear may result from such ruptures, but less frequently than in cases due to direct injury.

The *prognosis* of cases of deafness due to slight concussions of the labyrinth is usually favorable, although a constant tinnitus may remain after the hearing has been restored. On the other hand, violent concussion of the labyrinth from explosions, etc., is usually followed by marked deafness, which is apt to be permanent, and a distressing tinnitus. Patients are apt to complain of a feeling of fulness in the head, as well as dizziness, and marked hyperesthesia acustica. They are frequently very nervous and at times hysterical.

Serious complications, not only involving the middle ear and labyrinth, but also the meninges and brain, have been reported from attempts made to remove foreign bodies from the external auditory canal, so that it is a most unwise procedure for one inexperienced in the use of the speculum and head mirror to undertake to remove a foreign body from the canal.

Many cases of severe traumatism, according to my observation, have occurred where attempts have been made to remove a foreign body which was not present—so that we should never be satisfied with the patient's word until we can, by good illumination, actually see the foreign body. Frequently this is quite difficult owing to the tortuous condition of the canal.

The following cases are interesting ones on account of the nature of the injuries:

Case I.—*Lacerated Wound of the Auricle.*—Theo. S., Austrian, 39 years old, a stableman, was brought to the Infirmary December 20, 1910, in an ambulance, suffering from a severe laceration of the right auricle. The patient was working in an elevator, and fell, striking his head against a wagon. The lower third of the auricle was almost torn off and the wound extended into the cartilaginous canal and tragus. The patient refused to take an anesthetic. I had to put in fifteen or twenty sutures, which brought the edges of the wound nicely together. The cartilage was not included in the sutures—only the integument. Sterile gauze was placed over the auricle and a bandage applied. On December 24 the sutures were removed and the wound healed by first intention. (Figs. 1 and 2.)

Case II.—*Removal of a Bean in the External Auditory Canal, by Displacing the Auricle Forward.*—P. R., a boy, aged 8, came to the Infirmary on November 15, 1909, with the history of having gotten a bean in the left ear during the morning. He was seen by four doctors before coming to the hospital, who attempted to remove it, but simply pushed it beyond the isthmus against the drumhead. On the following day, when the boy was anesthetized, I found it necessary to displace the auricle forward as it was impossible to remove it otherwise. I made an incision over the mastoid process, close to the auricle and down to the bone, and pushed the posterior portion of the cartilaginous canal forward so that I could remove the foreign body from the bony auditory canal. The wound was sutured and healed by first intention, and the patient left the hospital in a week's time.

Case III.—*Rupture of the Drumhead and Probable Fracture at the Base of Skull.—Mastoid Operation.*—R. R., aged 18, a student at Princeton, on October 18, 1905, fell on the tiles of the bathing-pool, striking the right side of the head about an inch above the upper border of the auricle. He was unconscious for about five minutes. There was immediately a small swelling at the point of injury. There was no dizziness, but bleeding from the right ear. He was put to bed and kept quiet for a week. On October 26 I was called in to see him, as he had a severe earache followed by a profuse serous discharge, and a temperature of 102 deg. F. The watch was heard close to the ear, and the voice was fairly well

heard. There was a perforation in the upper posterior quadrant, and I made a diagnosis of probable fracture through the petrous bone. The secretion from the auditory canal was examined under the microscope, and no pus cells were found. Staphylococci and a few streptococci were found. Tests made with the tuning-fork showed that the auditory nerve had not been affected. There was slight tenderness over the mastoid antrum on October 26, but on November 1 it was very marked, and also extended over the lower half of the mastoid bone. At this time, November 1, the discharge was a little less, but still profuse. From October 26 to November 1 the temperature varied from normal to 100.8 deg. F. I advised a mastoid operation, which I performed on November 2, and after opening the mastoid cells in the usual manner found very extensive softening and pus throughout the entire mastoid bone. The latter was of the pneumatic variety, and contained cells running very deep posteriorly and behind the tip, also in the zygomatic fossa. The contents of the mastoid were entirely removed, and the cavity was irrigated with a saline solution. The wound was packed with sterile gauze and partly sutured above and below. The patient made an excellent recovery.

Fig. 1.—Lacerated wound of the right auricle, before operation.

Fig. 2.—Same as Fig. 1, after operation.

Case IV.—*A Case of Acute Suppurative Inflammation of the Middle Ear and Mastoid Cells, Due to a Blow from a Tennis Racket.*—Esther L., 24 years of age, consulted me November 17, 1908, and said that she had been struck on the right mastoid process with a tennis racket ten weeks ago, and a week later the ear began to discharge. The pain has been severe in the ear and the mastoid region since the accident. At times she has felt chilly, and she has had some fever. There is a distinct fluctuation in the soft tissues over the mastoid process. Under ether anesthesia I opened, on November 18, the subperiosteal abscess and found a sinus in the outer wall of the mastoid process at the tip. The mastoid was filled with pus and granulations, with deep cells extending posteriorly and below. The dura and sinus were not exposed. After removing the contents of the mastoid the wound was irrigated with a saline solution and packed with sterile gauze, and the upper and lower edges of the wound were sutured. The wound healed in eight weeks' time, as well as the drumhead, which was considerably thickened. The hearing was: Right ear, watch, 33 inches; left ear, 49 inches. Whispered words were fairly well heard on the left side, but not quite so well on the right side. There was some thickening and retraction of the left drumhead.

Case V.—*A Case of Rupture of the Drumhead, with Labyrinthine Involvement, Following a Boiler Explosion.*—Peter D., 38 years old, married, was sent to me October 30, 1910, on account of deafness of the left ear. Eleven days ago a boiler exploded where he was working, and five men were killed, who were near the boiler. He happened to be in another part of the room, where he had gone to open a window, and in this way escaped death. The right ear was directed toward the window, while the left one was exposed to the boiler. He was rendered unconscious for about ten minutes and on regaining consciousness escaped through the open window. He had two ribs broken. He was burned about the back, his left ear and auditory canal. He had vertigo immediately after the accident, with extreme deafness, and ringing and buzzing sounds in the left ear, which have gradually diminished. An examination showed that there was some diffuse thickening and retraction of the right drumhead. On the left side there were burns on the auricle and external auditory canal. There was dried blood on the anterior half of the membrana, and some on the inferior wall of the canal, with an undoubted rupture of the drumhead along the handle of the malleus. Left ear.—Loud voice was heard at 12 feet. Watch, 0. Acoumeter, contact. Gallon whistle, 5.5 at a distance of 20 feet. Tests carefully made with tuning forks showed some impairment of the labyrinth, especially for the lower tones. The hearing has improved somewhat since the accident, and the ringing noise is less. On November 14 the hearing for the acoumeter was ½ inch, but on the 21st the hearing was not so good, and the evidences of labyrinthine disease were more marked. Pilocarpine treatment was commenced to-day. On November 30 he seemed better in every way. Hearing improved, noises less, and pain about the ear, which he had complained of for some time, had disappeared. December 10.—Pilocarpine treatment has been continued. He complains again of severe pain about the ear and temple. Noises make him nervous. His wife had to stop using a sewing machine on his account. March 11.—He has

had constant pain in the ear ever since last visit, with some tinnitus at times. His hearing remains improved. He has been employed as a watchman, as he tried to work in the shop, but could not stand the noise. When using the hammer he said he had severe pain in the ear, and the buzz-saw caused a distressing tinnitus. After this visit he passed from observation, and I understand has brought suit for damages against the company.

Case VI.—*A Case of Labyrinthine Disease Following a Fall.*—N. O., a boy, 8 years old, was brought to my office on November 15, 1907, with the history that on November 5 he had fallen off a railing about 12 feet in height, striking the left side of his head against the concrete. An ambulance surgeon dressed the scalp wound, which was two or three inches above the upper border of the auricle. The boy was unconscious about twelve hours, and bled profusely from the left side of the nose for six hours. He vomited blood for nine hours after the accident. The vomiting continued the next day, but without blood. He cannot apparently hear anything, and he can only be made to understand by writing. There has been no dizziness, nor staggering gait. He eats and sleeps well now. He feels a slight sound when a vibrating tuning fork is placed on the mastoid bone. On examination there was found slight redness along the handle of each malleus, and on the upper walls of the external auditory canals. There was no rupture of either membrana tympani, and the seat of the trouble was in each labyrinth.

The subject of injuries of the ear is a most important one, and I have been able only in a brief way to refer to some of the most important points.

I would emphasize particularly the following conclusions:

First, and above all, don't rely on the patient's statement, but be sure, with good illumination, that a foreign body is present, and in most cases a syringe and warm water will be all that is necessary to remove it, unless it has become swollen or impacted. So many injuries are due to the inexperienced attempting to remove foreign bodies with instruments. Then, again, syringing the ear, the use of drops, etc., in traumatic ruptures of the drumhead are always contraindicated, and many a case of rupture of the membrane would have healed if left to nature.

Finally, the medicolegal question is a most important one, and the difficulties are great in deciding as to whether an injury is due to traumatism, unless seen immediately or very soon after the supposed injury.

Many years ago I reported a case with the late Dr. Roosa, in which we were called to court for the defendant, who had slapped a boy's face for maltreating his children. The suit was brought for $10,000 damages. The boy had adenoids and enlarged tonsils, and his hearing was affected on both sides, and was proved to have been due to the presence of adenoids and tonsils and not to the alleged blow. Where the drumhead has been ruptured, the presence of blood in the canal and on the edges of the opening are characteristic, while the mucous membrane of the middle ear will appear normal, if it can be seen through the perforation. On the other hand, if the injury has been followed later by a purulent discharge it is impossible to state that the supposed injury is the cause of the disease. In such cases the edges of the perforation are swollen and red, as well as the mucous membrane of the middle ear.

A diagnosis of involvement of the labyrinth can be made by means of the tuning-fork. We find diminution or loss of bone conduction as shown by the tuning-fork, together with symptoms of sudden deafness, tinnitus, dizziness, a staggering gait, a feeling of fulness in the head, and nystagmus. The drum membrane is usually intact in such instances, but it remains for the patient to prove that an injury, fall or explosion was the cause of such labyrinthine symptoms, and that his hearing was good before the supposed accident, as involvement of the inner ear may be due to other causes.

47 West Fifty-fourth Street.

PEDIATRIC MEMORANDA.

PNEUMOHYPODERMA (EMPHYSEMA CUTIS). SCLEREDEMA NEONATORUM.

By HERMAN B. SHEFFIELD, M.D.,

NEW YORK

Pneumohypoderma.—With antitoxin treatment of diphtheria, and intubation, instead of tracheotomy, in laryngeal stenosis, nowadays there is rarely the opportunity to observe as severe a case of subcutaneous emphysema as the one here reported. (See Fig. 1). In this instance rupture of pulmonary alevoli and escape of air into the subcutaneous tissues occurred in consequence of violent coughing during an attack of bronchopneumonia complicating measles. The little girl was three and a half years old and up to the present illness in good health. Her parents were Italians of the old school and firm believers in having the windows tightly shut. To be doubly protected against a draught, the windows and doors were fortified by heavy draperies. As I approached the patient I

Fig. 1.—Emphysema Cutis.

was startled by a ghastly sight. Deeply imbedded in a mass of soft pillows, there lay a waxy, rotund face with bluish black lips, which were rapidly but rhythmically flapping back and forth with inspiration and expiration. The child's features were entirely effaced, and its Kalmuck-shaped, congested eyes were deeply sunken between the highly puffed lids. On lifting the feather bed and blankets I noted the marked contrast between the emaciated lower extremities and the inflated trunk and upper extremities. On palpation a distinct purring (crepitation) was transmitted to the fingers, and on gentle compression of the almost bursting skin it imparted a sensation very much akin to that experienced when touching a tense toy balloon. The patient coughed violently and was in great distress gasping for air. The respirations ranged between eighty and ninety per minute; the pulse was weak and rapid, about 150 per minute) and the heart impulse was effaced. The temperature was 102.5° F.

There was no difficulty in arriving at a correct diagnosis. The total freedom of the lower extremities and the absence of pitting readily ex-

Fig. 2.—Scleredema Neonatorum.

cluded renal or cardiac dropsy; and the acute onset and the distinct purring on palpation eliminated the possibility of edema following compression of large intrathoracic blood vessels by a growth or by large tuberculous bronchial glands.

The prognosis was given with a great deal of reserve, but thanks to the assiduous and skillful care on the part of the attending physician, Dr. F. Fortunato (who kindly consulted me on the case), the child recovered completely within four weeks. Medicinally, the treatment consisted in the administration of small doses of codeine, to arrest the cough, and infusion of digitalis to sustain the heart.

Edema Neonatorum.—This case is of particular interest because it failed to reveal the usual etiological factors of the disease. That is, the child was born at full term; weighed eight pounds; was not asphyxiated; was apparently free from congenital syphilis, and showed no local infection. The baby seemed well up to the sixth day, when a slight edema was noted. Six days later I saw her in the hospital with marked edema, especially of the lower and upper extremities, including the soles of the feet and palms of the hands, face and lower part of trunk. The skin was bluish white and shiny. The edematous portions were doughy to the touch and left a deep impression when pressed upon with the finger (See Fig. 2). Careful and repeated examinations of the urine failed to disclose any kidney lesion, except for a trace of albumin which is commonly met in the newly born. The quantity of urine was greatly diminished, but this was probably in part due to refusal of the child to take nourishment. The temperature, per rectum, was 97° F. The heart's action was weak, and somewhat irregular. No heart lesion could be elicited.

In its differentiation from sclerema adiposum, for which scleredema is apt to be mistaken, I was guided by the following differential points:

Scleredema.	*Sclerema Adiposum.*
Color of skin, shiny, mottled.	Dirty yellow.
Parts exempt, chest.	Genitals; palm of hands; soles of feet.
Facial features, quite normal.	Marbleized.
Pitting on pressure, marked.	Absent.

The edema disappeared entirely in about six weeks on the administration of two grains of postassium acetate and ten drops of infusion digitalis every four hours, and regulation of diet.

127 West Eighty-seventh Street.

SOME SUGGESTIONS REGARDING THE MEANS OF DETECTING ADVERSE SELECTION.*

By ARTHUR B. WOOD, F.I.A., F.A.S.,

MONTREAL.

ACTUARY SUN LIFE ASSURANCE COMPANY OF CANADA.

Of the various factors on which the success of a life assurance company depends, none can be regarded as of more vital consequence than the care exercised in the selection of risks. That the mortality experienced should fall within that predicted by the table on which the premiums are based is of fundamental importance.

The usual standard mortality tables prescribed for valuation purposes and generally employed as the basis of premium calculations are derived from the past experience of assured lives accepted at ordinary rates, and can therefore be relied upon as safe guides for the future, provided that reasonable care be exercised in the selection of lives. As a matter of fact, owing to the gradual improvement which has taken place in recent years in the methods of medical selection and our constantly increasing knowledge of the mortality prevailing in various classes of lives, every well managed company in these days succeeds in obtaining an aggregate mortality considerably lower than the expected according to such standards, or in other words a substantial profit from mortality is realized and is looked for as a mark of successful management. Consequently, to obtain a proper conception of a company's death rate, comparison should be made, not with the expected deaths by such a table as the American or the H^{m}, but by a standard "Select" mortality table, that is, one which shows the rates

*Read at the annual meeting of the Association of Life Insurance Medical Directors, October 4 and 5, 1911.

of mortality according to years of assurance, or, in other words, which makes allowance for the benefits expected to be derived from medical selection. In the present state of our knowledge the margin provided in the premium rates should be sufficient to safeguard the interests of any company. As a rule, the greater degree of leniency exercised by some companies than by others in the acceptance of lives merely has the effect of somewhat reducing the amount of profit derived from mortality.

Every medical referee naturally desires to obtain a low mortality rate for his company, and it is, of course, important that a normal profit from this source be maintained, especially in these days when competition is being directed so strongly along the lines of paying large dividends. At the same time he should not permit his anxiety to realize large profits from mortality to influence him to be unnecessarily severe in the rejection of applicants. He should bear in mind that an extremely low mortality is but one mark of successful management and that undue strictness may work against the company through the dissatisfaction caused in the agency staff as well as in other ways. Then again, the duty of a life assurance company towards the public should not be overlooked. To best justify its existence a life assurance company should endeavor to extend the advantages of protection to all who can reasonably be granted assurance, even if a somewhat smaller profit for mortality be realized than would obtain if none but unquestionably gilt-edged lives were accepted. The medical referee should therefore aim at striking a happy medium and should endeavor to reject as few lives as possible which are really deserving of assurance. The so-called border-line cases should be treated with as great a degree of leniency as is consistent with safety and the maintaining of a reasonable amount of profit from mortality. The commendable practice of devising plans for assuring lives that are clearly under the average should also be encouraged, for no class in a community is in greater need of the benefits of protection. The realization of this fact is to a large extent responsible for such undertakings as the Specialized Mortality Investigation of 1903 and the Medico Actuarial Investigation now in course of preparation. The latter is without exception the most extensive work ever undertaken along these lines, and the information which it will supply should result in a wide extension of the benefits of life assurance. Many companies will probably see fit to make marked changes in their methods of selection, and the practice of assuring under-average lives should also become more common.

But while in justice to the company, the agents, and the public, the medical referee should endeavor not to be unnecessarily severe, it is equally important for him to bear constantly in mind that if a risk be of a speculative nature it should be declined, no matter how good the physical examination may appear to be. Experience teaches us that in spite of the most careful examination many lives find their way to the books of the company which, in the light of subsequent events, should never have been accepted on any terms. These are the lives involving the so-called moral hazard. If proper precautions be taken to eliminate all such undesirable cases the company's mortality may be substantially improved without causing injustice to anyone. Many companies could probably well afford to be more lenient with deserving cases if more pains were taken to guard against risks of a purely speculative character. As these lives manage to escape notice, in spite of the medical examination, other means of detecting them must be adopted, and the object of the present paper is to direct attention to some of the classes of lives in which the element of adverse selection is especially noticeable, and to certain characteristic features which serve as danger signals to place us on our guard. I am inclined to think that some medical referees do not give to this phase of selection the prominence it deserves, and I wish to emphasize the importance of paying as close attention to these other features as is given to the physical examination and family history.

VALUE OF MEDICAL SELECTION.

All insurance officials are fully alive to the value of the work performed by our medical departments. It is true that we sometimes hear it said that selection by medical men might be dispensed with, and occasionally we meet with an agent who claims that he is quite as capable of judging of the eligibility of an applicant for insurance as the medical examiner. It is possible that under certain conditions and by adopting proper safeguards to eliminate the element of speculation, a fairly satisfactory mortality might be obtained without medical examination. For example, in the early days the British companies simply demanded a certificate of health and required the applicant to appear before the Board of Directors, when he was accepted or rejected according as they took a favorable view of his case, or otherwise. This practice was continued by the Amicable as late as the year 1855. As a matter of interest and to illustrate the effect of these early methods of selection, I have compared the experience of the Amicable prior to 1841 with the Institute of Actuaries H^m table. The actual deaths were 798 and the expected 815, giving a ratio of actual to expected of 98 per cent. The mortality, although much heavier than would be experienced under modern methods, was nevertheless satisfactory as compared with the premiums charged in those days. But we must remember that in those days the amount of business transacted was small and the field of operations limited in extent. Such methods would hardly be practicable under present day conditions. Still, the results achieved by the companies in the early days of life assurance impress upon us the effectiveness of the personal inspection on the part of the directors. A certain proportion of the lives would, undoubtedly, have been rejected under a strict medical examination, but on the other hand the personal inspection probably was the means of eliminating most cases of a purely speculative nature.

To illustrate the benefits derived from medical selection we need merely compare the rates of mortality in a body of recently selected lives with the corresponding rates in the general population. For example, according to the British Offices O (m) table the rate of mortality at age 35 at entrance during the first policy year is but 3.61 per thousand as compared with 11.27 by the English Life Table No. 3 (males), a ratio of but 32 per cent. and even in the tenth year after acceptance it has risen to but 11.89 per thousand, while by the English No. 3 table the rate is 14.86, the ratio being 80 per cent.

If further evidence were needed, an even more effective argument might be based upon the after history of the rejected lives. Owing to the difficulty of keeping such lives under observation little information regarding them is obtainable, but an inter-

esting paper appears in the *Transactions of the Actuarial Society of America*, vol. iii., p. 225, where Mr. Walter S. Nichols has compared the average death rate amongst 13,042 lives declined by the Prudential Insurance Company with the general death rate of the company. The after history of the rejected lives was followed by means of prior existing policies on those lives. During the five years immediately following rejection 1440 deaths occurred among the declined lives, while according to the average general death rate of the company during the same period there would not have been more than 443 deaths. Among the declined lives the death rate was therefore 325 per cent. of the general death rate of the company. Even in the six months immediately following rejection, the death rate was about 52.1 per thousand as compared with the company's general death rate of only 17.7 per thousand. The author says, "The explanation of such an excessive mortality immediately following upon the rejection must probably be sought in the fraudulent efforts to select against the company by applicants who knew that their lives were uninsurable." The high death rate among the rejected lives is a forceful illustration of the value of the medical examination.

GOOD FAITH ESSENTIAL.

The contract of Life Assurance is based on the assumption that the applicant shall observe the utmost degree of good faith and shall state all matters within his knowledge which may have a bearing upon the risk. This responsibility, however, is very lightly regarded by many applicants, as we all know from experience; many persons apparently consider that their duty ends with presenting their own case in the most favorable light, leaving the company to discover the unfavorable features, if any, as best they can. The desire to profit at someone else's expense is so deeply ingrained in human nature that a life assurance company must be constantly on its guard against adverse selection.

POWER OF SELF-SELECTION.

The common method of illustrating the power of self-selection and its relative importance to medical selection is to compare the mortality among annuitants with the corresponding mortality in a body of assured lives, and again to contrast both with the death rate according to a table derived from general population statistics. As an example, I give below the rates of mortality for age 35 at entry, according to years of assurance, by the British Offices Male Annuitants Table and the British Offices O (m) Table for assured lives. The corresponding rates by the English Life Table No. 3 are also given as representing the mortality in the general population.

RATE OF MORTALITY PER 1,000.

Policy Year	Attained Age	ANNUITANTS		ASSURED LIVES		General Population
		B. O (am).	Per cent. of Eng. No. 3	O.(m)	Per cent. of Eng. No. 3	Eng. No. 3
1	35	3.81	34	3.61	32	11.27
2	36	5.08	44	5.64	49	11.56
3	37	6.59	55	6.55	55	11.87
4	38	8.12	66	7.22	59	12.21
5	39	9.30	73	7.85	62	12.57
10	44	11.38	76	11.89	80	14.86
15	49	14.65	81	14.65	81	18.07
20	54	19.38	83	19.53	84	23.36

Among both annuitants and assured lives the mortality is permanently much lower than in the general population and is exceptionally low in the early years of assurance. Contrasting the mortality among annuitants with that of assured lives we see that the power of self-selection exercised by annuitants in their own favor is fully as strong and may be even stronger than that of medical selection.

As the self-selection by annuitants is revealed by the light mortality during the early policy years, so also the adverse selection exercised against the company by applicants for insurance manifests itself in the experience of many classes of risks by an excessive death rate, especially during the early policy years. When this feature is observed in any body of lives accepted as apparently first-class risks, it is evident that adverse selection has been more powerful than that exercised by the office. This point will be illustrated as I proceed.

INSURABLE INTEREST.

I would, however, first direct your attention to the question of insurable interest, for this is of fundamental importance in the selection of lives. The contract of life assurance is designed to protect the beneficiary against loss occasioned by the death of the assured, but it does not fall within the scope of the contract that persons without any interest in the event insured against should be permitted to profit thereby. All risks in the nature of gambling transactions are invalid as being opposed to the spirit and purpose of the contract as well as against public policy. It is by no means an easy matter to define what will in all cases constitute an insurable interest, so as to take the contract out of the class of wagering policies; but to quote from May *On Insurance*, "to have an insurable interest in the life of another, one must be a creditor or surety, or be so related by ties of blood or marriage as to have a reasonable anticipation of advantage from his life. Whenever there is such a relationship that the insurer has a legal claim on the insured for service or support, or when from the personal relations between them the former has a reasonable right to expect some pecuniary advantage *from the continuance of the life of another*, or to fear loss from his death, an insurable interest exists." For example, every person has an insurable interest in his own life; a married woman in the life of her husband; a child in the life of a parent of whom he or she is dependent for support; a creditor in the life of his debtor; a partner in the life of a co-partner; and, generally speaking, any one person has an insurable interest in the life of another whose death would result in financial loss to him. On the other hand, under English law at least, a husband is not presumed to have an insurable interest in his wife's life, but if he is dependent upon his wife for support, or is in receipt of an income which would cease at her death, an insurable interest clearly exists. Lack of insurable interest should of itself be regarded as a sufficient reason for rejecting a risk.

To determine the question of insurable interest, truthful answers must be obtained to questions such as these:

Who will actually benefit by the policy applied for?

Will the beneficiary sustain any financial loss by the death of the assured?

From what source are the premiums to be paid?

If these inquiries reveal the fact that the assured's death will not result in financial loss to the beneficiary, but on the contrary the assurance will be an

actual source of profit, the case should be declined as speculative. I wish here to lay particular stress upon the importance of ascertaining who really intends to pay the premiums. If they are to be paid by the beneficiary the risk is seldom one which the company should assume.

The apparent existence of an insurable interest does not, however, always justify the acceptance of a risk. Although every person has a right to effect an insurance on his own life, if the intention is to assign the policy to a third party who has no insurable interest and who really intends to pay the premiums, the risk should be regarded as speculative. It is therefore important to inquire whether any assignment is being contemplated.

CREDITORS' POLICIES.

A creditor undoubtedly has a legal right to insure the life of his debtor, but such policies as a class have been found to be unsatisfactory, particularly if the creditor is paying the premiums. It is not at all uncommon for creditors to effect assurance upon the lives of their debtors, in cases where the recovery of the debt is considered hopeless. The existence of the debt is probably sufficient to constitute a legal interest in the life, although it is quite obvious that in such a case the creditor's real interest must be in the death of his debtor. A person who under such circumstances is willing to risk the life assurance premiums in addition to an existing debt has probably some good reason for believing that his debtor will not live his alloted span. The point to be emphasized is that a strict legal interest may co-exist with a thoroughly speculative assurance.

The objection to creditors' policies does not apply to the same extent where the assured is personally paying the premiums, but it is often difficult, and frequently impossible to obtain accurate knowledge of the real nature of the transaction. All such cases should therefore be regarded with suspicion, and subjected to a careful investigation. It should also be remembered that this class of lives consists chiefly of persons in financial difficulties, subject to severe mental and nervous strain, which is not conducive to longevity.

FINANCIAL CONDITION

The relation of the amount of assurance applied for to the applicant's financial condition furnishes a valuable clue to the presence of adverse selection. If the amount appears unreasonably large, careful inquiries should be made to ascertain whether the applicant's income justifies his assuring for such a large sum. If a satisfactory explanation be not forthcoming, the case must be regarded with suspicion. Adverse selection under policies for large amounts is well illustrated by the experience of Class I of the Specialized on policies of $20,000 or over on one application. The following synopsis of the results is exceedingly instructive:

POLICIES OF $20,000 OR OVER.

PERCENTAGE, ACTUAL DEATHS OF EXPECTED BY ACTUARIAL SOCIETY STANDARD—INSURANCE YEARS

Age at Entry	1–5	6–30	1–30
15–28	118.6	81.0	100.7
29–42	105.1	103.4	104.2
43–56	107.3	105.8	106.2
57–70	130.7	120.6	125.4
All ages	110.5	105.8	107.8

The mortality as a whole is unsatisfactory, the total actual deaths exceeding the expected by 7.8 per cent. If, however, we examine the experience according to separate groups of entrants, and according to duration, we are warned where to be particularly on our guard in dealing with policies for large amounts. In the age group 15 to 28 at entry, the mortality for all durations combined was almost exactly normal, 100.6 per cent, but the actual deaths during the first five years of assurance exceeded the expected by 18.6 per cent; after five years the mortality was favorable, being only 81 per cent. of the expected. Although the number of lives contained in this group is not very large, I think we are nevertheless justified in concluding that the heavy mortality during the first five years of assurance was due to the speculative risks which the companies did not succeed in eliminating. In the age groups 29 to 42 and 43 to 56, the principal ages at which assurances are taken out, there is no marked difference between the ratio of the actual to the expected deaths during the first five years and thereafter, but the mortality was somewhat above the normal throughout. When, however, we come to the old lives aged 57 to 70 at entrance, we find a ratio of actual to expected of 130.7 during the first five years, and 120.6 per cent. thereafter. The mortality in this group of entrants was excessive throughout the whole duration of the policies, but was considerably heavier during the first five years of assurance than subsequently. It is evident that many lives of a speculative character succeeded in obtaining assurance in spite of the most careful medical examination. These results impress upon us the necessity for exercising unusual care with every application for a large amount, but we are particularly warned to be on our guard if the applicant be either very young or advanced in years. Not merely is it necessary to examine with more than usual scrutiny the physical qualities of such risks, but it is of even greater importance to ascertain in each case whether there is a valid reason for the insurance. Does the object for which the assurance is being taken out commend itself to our judgment? And is the applicant personally able to pay the premiums without assistance from any other source?

In considering the relation between the amount applied for and the applicant's financial condition, account must also be taken of any existing assurance. A considerable amount of assurance recently taken out should arouse our suspicions, but a large amount of existing assurance taken out at intervals, extending over a number of years, is a favorable indication.

Applications for further assurance shortly after the issue of a policy for a moderate amount should also be carefully investigated. Instances are known where the first application has been submitted merely as a test case, and being for a small amount has been accepted without hesitation, whereas if the larger sum had been applied for originally, the company's suspicions would have been aroused. It is also important to inquire whether any application is being made at the same time to any other company.

AGE AT ENTRY.

The important bearing of the age at entry on adverse selection is observed not only in connection with policies for large amounts, but also in the general experience of most companies. Adverse selection appears to be constantly at work both at the

young and at the advanced ages. Most published experiences exhibit a heavy death rate among persons entering at the young ages, 15 to 25. I do not propose to quote any more figures than are necessary for the purpose of illustration, but will merely take as an example the Institute of Actuaries' experience H^m on lives entering at ages 15 to 25. The actual deaths in this group were 1,631 as compared with 1,410 expected by the H^m table itself, the ratio of actual to expected deaths thus being 116 per cent. The mortality was excessive both during the first five years of assurance and thereafter. The same feature is observed to an even more marked degree in the Thirty American Offices' experience, as well as in that of many individual companies. It is evident that we must be unusually careful at the young ages. Defects in the personal or family records of these young applicants should be regarded as of much more serious consequence than in the case of persons more advanced in age, and special attention should be paid to the object for which the assurance is being taken.

On lives entering at the advanced ages, some companies have had a very satisfactory experience, while, on the other hand, many instances can be cited in which these old entrants have proved very unprofitable. The experience of the Equitable Life Assurance Society on lives entering at ages over 60 is given by Mr. Hann in the *Transactions of the Actuarial Society of America*, vol. vi., p. 54, the actual deaths being compared with the expected by the American experience table, and in the discussion of the same paper appear the corresponding figures for the Connecticut Mutual Life and the Mutual Benefit Life combined. The percentages of actual to expected deaths are as follows:

AGES OVER 60 AT ENTRY.
PERCENTAGE ACTUAL OF EXPECTED DEATHS BY AMERICAN TABLE

Years of Assurance.	Equitable	Conn. Mutual and Mutual Benefit
1–5	97.25	67.94
6–10	98.75	76.93
11 and over.	93.44	94.05
Total	96.87	78.98

The difference in these experiences is very marked. During the first five years of assurance the ratio of actual to expected deaths was 97.25 per cent. in the first-mentioned company, while in the other two it was only 67.94 per cent., or allowing for the benefits of selection, merely normal. The ratio is also much heavier during the years of assurance 6 to 10 in the first company than in the other two. Mr. Hann remarks: "Medical selection is evidently at its worst in dealing with proponents for assurance at advanced ages. The most careful attention should be paid to their family history, habits, financial standing, and general environments. Where there is any doubt on any material point, our motto should be 'Decline.'"

I would add that the importance of ascertaining the real motives prompting the assurance cannot be too strongly emphasized. Careful inquiry should be made to determine whether there is a legitimate reason for the assurance; and also the source from which the premiums are to be paid. If, for example, the beneficiary be a grown-up son or daughter, and the premiums are to be paid by the beneficiary, the risk should be treated as speculative, and should be declined for this reason if for no other.

Some companies take the position that all risks over 60 years of age should be rejected. This is undoubtedly a safe course, but would appear to be entirely too drastic. Many men at these advanced ages have persons dependent upon them who really need the protection of a life insurance policy, and if proper safeguards are adopted to insure the acceptance only of those cases where a real need for the assurance is shown to exist, all others being declined, I am satisfied that a favorable mortality can be obtained in this class.

PLAN OF ASSURANCE.

Investigations of the mortality under different plans of assurance have proven that we may always look for adverse selection under cheap forms of policy. The mortality appears to vary inversely with the premium. The most striking illustration of this point is found in the British Offices' experience 1863-1893. In the *Transactions of the Actuarial Society of America*, vol. vii., p. 117, Mr. Arthur Hunter has compared that experience with an Assumed American Standard, which can be regarded as conforming approximately to the experience of the average company on this continent. The following ratios of actual to expected deaths by the Assumed Standard are exceedingly instructive.

BRITISH OFFICES EXPERIENCE, BY PLAN OF ASSURANCE.
RATIO OF ACTUAL TO EXPECTED DEATHS.—INSURANCE YEARS.

Class of Insurance.	1–5	All Years Combined.
Term Assurances	131%	123%
Whole Life, without Profits	139%	127%
Whole Life, with Profits	98%	110%
Limited Payment Life Policies	71%	76%
Endowment Assurances	70%	81%

Adverse selection is clearly indicated by the heavy mortality under the Term and Whole Life, Non-participating plans, the ratio of actual to expected in each of these classes being considerably higher during the first five years of assurance than for all years combined. On the other hand, under the higher-priced policies, such as the Limited Payment Life and Endowment Assurance plans, an exceedingly low rate of mortality was experienced both during the first five years and subsequently. It is but natural that persons who have little confidence in their prospects of longevity should desire to get the maximum amount of protection for the least money. They therefore select the cheaper forms of policy. Consequently, such applications should be criticised with unusual care, and we should look with suspicion upon even minor defects which, in the case of the investment form of policies, might be regarded as of practically no importance.

FEMALE LIVES.

The practice of insuring female lives has increased rapidly in recent years with the entering of women into various business pursuits. There is undoubtedly a legitimate field for assurance among women, but at the same time there is probably no class of lives in which the risk of adverse selection is more prominent. The mortality among female lives furnishes a most interesting field for study. According to general population statistics, the mortality among females is on the whole even lighter than among males, and in some tables is slightly lower even between the ages of 20 and 45. If, however, the statistics be divided into single and married persons, respectively, it will be found that among single females the rate of mortality is some-

what lower than among single males, while among married females the death rate for ages up to about 45 is considerably higher than among married males and is lower during the latter half of life. Turning to life companies statistics, we find that among female annuitants the mortality is very light, making it necessary to charge females higher rates for annuities at all ages than males. On the other hand, in most general experiences of female assured lives, the death rate exceeds that of male assured lives. The explanation is apparent. The great majority of those who purchase annuities are single women and all are self-selected lives who have every confidence in their prospects of longevity. The higher death rate under female assured lives is probably due to the fact that the proportion of married women accepted is larger than exists in the general population, and that many of the female risks have been of a speculative character. The selection exercised against the companies by female lives is powerfully shown by the experience of the British Offices. In Mr. Hunter's paper, previously referred to, it is shown that the mortality among women who were accepted on the Whole Life with profits plan was exceedingly heavy, especially during the first five years of assurance. The ratio of actual to expected deaths by the Assumed American Standard was 132 per cent. during the first five years, and only 114 per cent. for all years combined. The importance of the plan of assurance is seen by comparing with the above figures the mortality under female lives accepted by the British Offices on the endowment plan. The experience is not given by years of assurance, but only in the aggregate. However, I find that while the actual deaths were 303, the expected by the full American experience were 447, the ratio of actual to expected being only 67.7 per cent. The mortality was evidently very favorable at all durations among women who insured on the endowment plan.

A great diversity of practice exists among companies in dealing with female lives. Some accept them freely on the same terms as men. Others accept only certain classes and under special regulations, while others do not accept them at all. Whether a company's experience will be favorable or unfavorable will depend entirely on the nature of the precautions taken to weed out the undesirable lives. While the normal extra risk for married women during the child-bearing period can be covered by a moderate premium, it is practically impossible to fix an extra which will be a sufficient protection to cover speculative risks. The all-important point to determine is the real motive prompting the insurance. We must satisfy ourselves that a legitimate reason for it exists. The importance of giving careful consideration to the question of the person who is to benefit by the assurance and the source from which the premiums are to be paid, is well illustrated by the experience of the New York Life as given by Mr. Hunter in his paper on "The Mortality among Women" (*T. A. S. A.*, vol. xii., p. 446), from which the following extract is taken:

Class.	Ratio of Actual to Expected Deaths by Compound Progressive Table.
Married women with children, premiums paid out of own income, children beneficiaries	90%
Married women with children, husband paying premiums, husband beneficiary	113%
Married women, no children, husband paying premiums, husband beneficiary	126%

In the first class where there is a legitimate reason for the insurance the mortality was very favorable indeed, but in the other two classes where the husband was the beneficiary and paid the premiums it was decidedly unfavorable, especially where there were no children.

Where the applicant is an unmarried woman earning her own livelihood, a valid reason for the insurance exists, and such business can safely be accepted on the same terms as apply to male lives. If the applicant be a married woman, and an insurable interest is shown, the risk can be regarded as acceptable, at least with a small extra premium to cover the risk during the child-bearing period, but policies on the lives of married women, payable to their husbands, should be rejected, unless it is proven to the satisfaction of the company that the husband has an insurable interest in her life, and would actually suffer financial loss by her death.

Other undesirable classes of female lives are young women dependent on others for support, and applying for cheap forms of policy, and also elderly women assuring in favor of grown-up sons or daughters. If a company exercises wise discretion in selecting female lives and adopts regulations restricting the business to those classes in connection with which a valid reason for the insurance is proven, or to investment forms of policies, a very satisfactory experience should result.

OCCUPATION.

In certain occupations the risk due to adverse selection is especially noticeable. Persons whose occupation brings them in contact with vice, such as saloonkeepers and gamblers, are very undesirable risks, for however good such individuals may be physically they are constantly subject to influence unfavorable to health and habits.

All investigations into the mortality among persons engaged in the liquor trade show a heavy death rate, and this is usually provided for by charging a suitable extra premium. The specialized mortality investigation showed an excessive mortality even among the most favorable classes of persons engaged in such occupations. For instance, among wine or liquor sellers who warranted that they were abstainers, the ratio of actual to expected deaths was 106.6 per cent. during the first five years and 127.6 per cent. thereafter; and this class, it must be remembered, comprised only cases carefully selected by the companies, and accepted without extra premium. Although abstainers when first assured, many apparently developed bad habits subsequently.

The necessity for charging an extra premium for persons engaged in the liquor trade is, of course, universally recognized, but the point which I desire to emphasize is that selection against the company is more to be feared in this class of lives than among persons following any of the ordinary occupations. No company can afford to accept risks of a speculative character, even with an extra premium. In most investigations of the mortality in the liquor trade the results are given in the aggregate only and therefore throw little light on the question of adverse selection, but in a paper presented to the Fifth International Congress of Actuaries in 1906, Mr. J. Macdonald has given the experience of the Prudential Insurance Co. of London, England, among persons engaged in the liquor trade, under the Whole Life and Endowment Assurances respectively and according to years of assurance. The actual deaths are compared with the expected by

the British Offices' Om Table and the ratios as follows:

Ratio of Actual to Expected Deaths by Om Table.

Plan.	First 5 Years.	After 5 Years
Whole Life	249%	188%
Endowment	163%	185%

Among those who insured on the Whole Life plan, the ratio of actual to expected deaths was 249 per cent. during the first five years, but only 188 per cent. thereafter. Under endowment assurances, on the other hand, the ratio was but 162 per cent. during the first five-year period and 185 per cent. thereafter. We naturally expect a heavy mortality among persons following these occupations, but the lesson to be drawn from statistics such as the above is that speculative risks are to be looked for among those who apply for cheap forms of policies. We have little to fear if the Endowment plan be chosen, but such cases can, as a rule, be safely accepted with the ordinary extra to cover the occupation risk.

There is also a special hazard attached to lack of intelligence. A man who cannot sign his name is hardly in a position to comprehend the full import of the question asked in the application and medical reports, and cannot have a proper conception of the responsibility imposed upon him to act in perfectly good faith. As an illustration I would refer to the experience of the Specialized on Common Laborers. These were found to be very unprofitable risks, as the following synopsis shows:

COMMON LABORERS.

Ratio of Actual to Expected Deaths by Actuarial Society Standard.—Insurance Years.

Ages at Entry.	1–5	6–30	1–30
15–28	113.2	82.0	98.3
29–42	132.1	109.1	119.7
43–56	172.9	129.7	145.6
57–70	208.9	129.2	167.7
Total	139.6	110.6	123.9

Except among the young entrants the mortality was exceedingly heavy throughout. In each class of entrants it was much heavier during the first five years of assurance than afterwards, and the ratio of actual to expected deaths becomes greater the older the age at entry. That adverse selection is very powerful in this class of lives is clearly indicated by the heavy mortality, especially during the first five years of assurance.

Other instances might be given, but the preceding examples are sufficient to illustrate the importance of the factor of occupation.

HABITS.

The necessity of making a thorough investigation into the habits of an applicant where the case is of a suspicious nature is so well understood by every medical referee that I need merely refer to it here.

BUSINESS FROM OUTSIDE SOURCES.

Another class of undesirable business consists of cases not actually canvassed by an agent of the company, but which have come to him through some outside source. If an applicant voluntarily applies to have his life assured, his case is one which needs watching. Careful investigation will generally reveal something of a suspicious nature. Business which is offered by agents of other companies is also doubtful, for usually these are cases which the agent feels that for some reason or another his own company will not accept.

The answer to the question in the agent's report, "How long have you known the applicant?" often serves as a warning to hold the case in abeyance until a thorough investigation has been made.

Applications from persons residing in a locality where the company is not established and actively soliciting business are also undesirable as a class. Some such cases are the result of personal friendship between the applicant and the agent and may therefore be thoroughly satisfactory, but in the absence of satisfactory explanations it is better to refuse all business of this class, rather than run the risk of accepting some speculative cases. We can never be sure that we are acting on thoroughly reliable information.

METHOD OF HANDLING DOUBTFUL CASES.

It is exceedingly difficult in many instances to absolutely satisfy ourselves that the moral hazard is such as to justify us in declining the application outright, and it is especially hard to convince the agent that a case apparently a good average as far as the medical examination, family and personal history are concerned shall not be granted assurance. Still we should not permit ourselves to be unduly influenced against our better judgment. A satisfactory method of endeavoring to eliminate or at least to minimize the risk of adverse selection in such cases is to offer the applicant a short-term endowment policy, say of twenty years. If he can be persuaded to pay the higher premium on the strength of personally deriving benefit from the policy in the event of his surviving the endowment period, his willingness to do so can reasonably be accepted as evidence of good faith on his part. If the death benefit is what particularly appeals to him, he will probably refuse the policy in the hope that he will yet succeed in obtaining the plan he desires from some other company.

As against this practice it might be argued that in Class 3 of the Specialized Investigation, which comprises cases in which a different form of policy was issued from that applied for, the mortality was unsatisfactory. The experience shows a ratio of 119.6 per cent. of the expected during the first five years of assurance, and 107.6 per cent. thereafter. Such a contention would not be justified, however, without further knowledge of the reasons for the changes of plan. As a matter of fact, it has been quite a common practice among American companies to change the plan and grant endowment assurances to certain classes of somewhat impaired lives, and Class 3 probably consists largely of such cases. If the types of impairment treated in this way are those under which a heavy mortality is anticipatel at the outset, decreasing thereafter, as for instance in the case of an applicant with a consumptive family history, combined with light weight or other unfavorable features, the experience of Class 3 is merely what we would naturally expect. Cases changed to the Endowment plan solely because of a suspicion regarding the moral hazard would probably show quite a different mortality.

There are other unfavorable features to which attention might be called, but I have merely endeavored to bring to your notice some of the most important. In estimating the value of a risk there is probably no factor more difficult to determine than that of moral hazard. There is probably none

where actual experience counts for so much or where the exercise of sound judgment is more needed. The suggestions offered will, I trust, serve to emphasize the importance of adverse selection and may prove of some value, especially to those who are connected with some of the smaller companies. During recent years a vast number of new companies have sprung into existence and such institutions are particularly liable to be imposed upon. They have not the benefit of long-time experience on the part of their medical referees, nor have they the same opportunities of obtaining information regarding doubtful risks as their older competitors. Then again, in the struggle for business, a tendency toward undue leniency in selection is natural. Some young companies also labor under the delusion that as all their business is comparatively new they can afford to be more liberal and still maintain a low death-rate, but, as a matter of fact, losses which would have little effect on the general mortality of an old company with a large volume of existing business might even prove disastrous in their case.

The importance of adopting every precaution to guard against risks of a purely fraudulent nature should be realized by all companies in these days when the incontestible clause has been made so liberal. It is generally understood that fraud will vitiate a contract at any time, but there is a danger of the courts ruling otherwise after the incontestible period has expired, and furthermore most companies would hesitate to contest a claim under such circumstances from the fear of the bad effect it might have upon their business. The wise course is to endeavor to avoid all disputes in the settlement of claims by eliminating the undesirable lives at the outset, even if an occasional good risk may be lost through the adoption of somewhat stringent rules.

A CASE OF RECOVERY FROM PROLONGED BLINDNESS. THE RESULT OF HEMORRHAGE INTO THE VITREOUS.

By DAVID WEBSTER, M.D.,
NEW YORK.

Dr. F. M. H., age 39, married, nose and throat specialist, of Montana, came under my care at the Manhattan Eye, Ear, Nose, and Throat Hospital the first week of March, 1904. He had lost the sight of his right eye, at the age of seventeen, by a sword thrust while fencing. The eye was of normal size. There were total atrophy of the optic nerve and divergent strabismus. On February 22, 1904, he was reclining on a sofa and when he arose he noticed black spots floating before his left eye. He could see the ground the next day, Tuesday, and by noon the Sunday following he had lost all objective vision. He at once started for New York, and arrived at the hospital as aforesaid. Upon examination we found that on attempting to see the fundus we simply looked in darkness. The field of perception was good, the tension was normal, and the pupil responded promptly to light and to accommodative effort. The presumption was that an extensive hemorrhage had occurred and that the vitreous chamber was filled with blood, though no red color could be seen through the pupil by oblique illumination. He experienced photopsia and chromopsia, but no pain. He was apparently cheerful and confident that he would recover his vision, basing his hopes on his quick perception of light and his perfect field of perception. He was taken into the hospital, put to bed, and given pilocarpine sweats for several weeks. Mercury and iodide of potassium were administered *ad nauseam;* also radium was applied several times.

He came to my office September 24, 1904, when I made the following note: The photopsia has grown less; the chromopsia is variable. A dark wave, red and black, comes over from the nasal side and encircles the whole eye. The black spots seem just the same only that they appear farther away. Something seems to have got in between him and them. With the ophthalmoscope a moving, floating mass can be seen. A faint red reflex appears at the nasal periphery of the fundus. No limited or well defined exudates are visible. He counts fingers correctly at the temporal side of the field.

He was under treatment at the hospital until January, 1905, when he went to Virginia. Under date of April 28, 1905, he wrote: "My vision has improved to 20/70 and has so remained for a month. I can go about fairly well and can tell a house from a cow. Yesterday I hung up the card to see what improvement had taken place. Not noticing any change I was about to accept things as they were, when I chanced to pick up a pair of field glasses; looking through them the card loomed up and I could see 20/20 as clear as a bell. I am still blind at night and have a slight amount of photopsia in the dark. There is a large floating body that crosses my field ten times a minute."

On May 11, 1905, I saw him again at my office. His vision was 20/40 and he read J. No. 1 slowly and with difficulty. Ophthalmoscopic examination showed that much absorption of the opaque material in the vitreous had taken place so that the fundus could be indistinctly seen. There were large floating masses in the vitreous. He said he had been working hard on the farm, and secreted large quantities of uric acid. When the uric acid began to diminish, the sight began to improve. The real improvement began about March 15. He had stopped all medication about a month before.

May 11, 1909. He left New York in June, 1905, and opened an office and went to work January, 1906. Worked the whole of 1906 about three hours a day. In 1907, during January and February, he took on more work, and in May commenced to do some walking. All this time there was a mass that floated over his vision. He walked up a neighboring mountain about two miles, and pretty steep, every day for one hundred consecutive days. On September 21, 1907, had as perfect vision as at any time since the trouble began. At 1:30 P. M. noticed some specks like black ink. Within five minutes only perception of light remained. Eleven weeks later he sat down in a little parlor, with only perception of light. After sitting there in a condition of abstraction for an hour, he opened his eyes and to his surprise saw a photograph across the room, and soon was able to see everything in the room just as before this period of blindness. He walked from that chair to the bathroom and was as blind as before. After that, after lying down three or four hours, would see, and on stirring around again would be blind. These periods of vision continued until June, 1908, when he opened an office again. All this time he has had "fire-works" especially at night. A white cloud often would flash up before the eye and then as suddenly subside. Exaggerated phosphenes, no pain, nor headache. Eye normal in external appearance. V=20/20—

(2 letters). Reads J 1, with + 0.75 D. Optic nerve looks healthy. Some delicate floating bodies are seen. In the vitreous, situated about midway between the optic disk and the periphery of the fundus, is a large, fixed, grayish, opaque mass, the anterior portion of which can be distinctly seen through a + 10. D. Several small blood-vessels ascend from the nasal part of the retina to this mass, while from the opposite sloping side a single, large, very dark vein runs down and becomes a retinal vein about one and a half disk diameters from the optic papilla. No retinal hemorrhage or exudation.

May 12, 1909, V = 20/20 and reads J. 1 W. + 0.75 D.

September 19, 1910, V = 20/20.

Ophthalmoscopic appearance unchanged since last examination.

This patient was presented at the New York Ophthalmological Society while his vision was at its worst. At least two members of the society had met with similar cases, in which vision had been recovered, and this encouraged us to hope for a good result. Such cases are so rare that I think they ought to be placed on record.

308 Madison Avenue.

THREE NEW PLASTIC OPERATIONS ON THE NOSE AND THROAT.*

By JOHN EDMUND MACKENTY, M.D.,

NEW YORK,

SURGEON, NOSE AND THROAT DEPARTMENT, MANHATTAN EYE, EAR, AND THROAT HOSPITAL; LECTURER ON OTOLOGY, NEW YORK POLYCLINIC POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

It is my privilege to present for consideration and judgment three new plastic operations on the nose and throat. The first is for the relief of the various obstructions of the anterior nares. The second is for the correction of septal deformities in children without sacrificing the septum. The third attempts to cure atresia of the soft palate to the nasopharyngeal wall by a surgical procedure. The work on the first and second of these covers a period of five years; on the third, of less than one year.

AN OPERATION FOR THE RELIEF OF THE VARIOUS OBSTRUCTIONS OF THE ANTERIOR NARES.

The problem of relieving obstruction in the anterior nares is constantly presenting itself to the rhinologist. Collapse of the alæ nasi has been and is the *bête noir* of this class of cases. For the sake

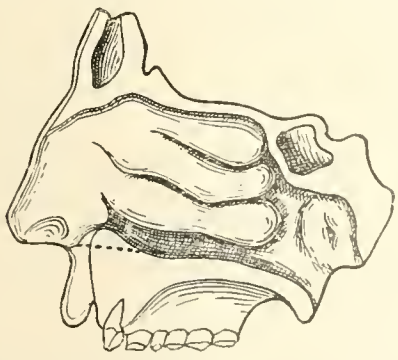

Fig. 1.

of brevity I shall not allude to the literature on this subject as it is scanty and unsatisfactory, but shall go directly to its clinical consideration. The following is what we frequently observe: (1) A narrow nose with weak, flaccid alæ. (2) Thickening of the septal base in its anterior part. (3) A great redundancy of the soft parts below and anterior to the cartilage. (4) The floor of the nostril just beyond the entrance is sometimes observed to rise from 1/8 to 1/6 of the total distance to the apex of the opening, thus forming an obstructive ridge at a right angle to the meatus. Thus from the inner and outer sides and from the floor the lumen of the nostril may be encroached upon. In the above deformities prenatal conditions combine with defective nasal breathing during the growing period to produce the picture. (5) The traumatic nose with broken down, piled up cartilage and distorted, irregular anterior floor.

The better to understand what follows, I shall give you a brief description of the anatomy bearing upon this operation. In the desiccated skull the nasal openings resemble an ace of hearts inverted. With the lower boundary of this opening we are concerned. You will observe that it presents a sickle-shaped edge, more or less sharp and more

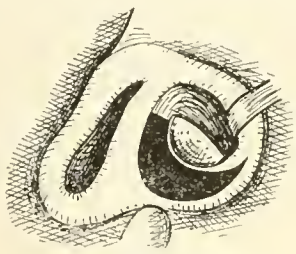

Fig. 2.

or less raised above the floor of the nasal passage behind. If the floor level behind be carried forward we find that this edge in many skulls is from ½ to 2/3 cm. above it. Now if we examine a nostril *intra vitam* we shall observe that this edge lies about 1 cm. behind the junction of the upper lip and nasal opening, and that the direction of this portion of the nostril floor inclines upward to meet at the apex of the ridge the upward inclined plane of the metal floor behind (Fig. 1). This crescentic ridge then forms the highest portion of the floor, which might be represented thus

Forward of the ridge, and on the floor and inner aspect of the nostril, are loose, areolar tissue and fat covered by skin and mucosa. The bulk of this subcutaneous tissue varies in different individuals. In some it encroaches materially upon the lumen of the opening. The lower inner boundary of the opening

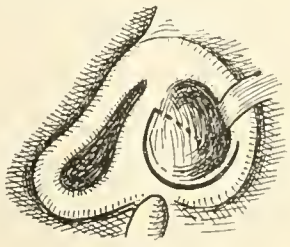

Fig. 3.

is formed by the anterior nasal spine and intermaxillary crest joined above by the quadrilateral cartilage. These are sometimes thickened and distorted and encroach upon the opening from the inner and lower margin. My operation aims to place the floor of the nasal opening on a level with or below that of the meatal floor behind, and to widen the opening at its lower and inner aspect by removing the bony ridge, part of the anterior nasal spine and

*Presented, as candidate's thesis, to the Triological Society, at Atlantic City, June, 1911.

intermaxillary crest, and all redundant soft tissue from the floor and septal side.

An incision begun well up on the septal side and a little to the skin side of the rounding edge of the nostril is carried down to and across the floor and up into the ala. (Fig. 2.) It is better to include all the subcutaneous tissue, as it strengthens the flap during the subsequent manipulation. The dissection is continued backward, using scissors and scalpel, until the ridge of bone on the floor is reached. Here the periosteum is incised and, as the dissection continues backward over the ridge, is included in the raised flap. With small chisels and Kerrison's bone forceps the bony ridge is removed over the full width of the opening and downward until the whole floor of the nasal cavity lies on the same plane. Then with a sharp, straight chisel the base of the septum (nasal spine and intermaxillary crest) is shaved down, beginning well forward and extending well back of the crescentic ridge, but the whole thickness of the septum must not be removed. Then the flap, which is quite thick in front, is thinned down by removing all the fat and areolar tissue from its under surface until nothing but the true skin and mucous membrane remain.

Now if the work has gone successfully we find that the new nasal floor lies about ½ to 2/3 cm. below the old one, and that the skin and mucous membrane flap is too short to lie upon it. In my early cases I incised the flap from before

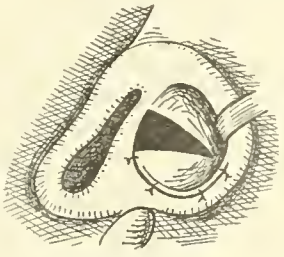

Fig. 4.

backward along the center of the floor and laid the severed portions on either side, but this brought the line of contraction in the worst possible place, so it occurred to me that by placing the bare area (necessitated by bringing the flap down to the newly made floor) on the septum a minimum amount of contraction might be secured. The flap is therefore incised (as seen in Fig. 3) as high as possible on the septal side, the incision being directed backward and downward toward the floor, which it meets at the farthest back point of denudation.

The flap is lowered to the new floor and stitched in place with fine iodized catgut (Fig. 4). Either vaseline gauze or a molded guttapercha splint, made to fit the case, holds the flap gently but firmly in position. The splint is made in the usual way by molding dental guttapercha. For these cases I cut the splint so that a flange projects forward and downward over the upper lip, to which it may be fastened by adhesive plaster. This prevents the splint slipping too far into the nose and tends to better keep the flap firmly against the new floor. A splint should be worn for ten days constantly, and then at night only for some time longer. It should be so made that its backward projection is sufficient only to hold it in place and keep the nostril well open.

This operation has been done by me on fourteen cases: For thickening of the anterior nasal floor due to fracture, in one case; for congenital high placement of the anterior nasal floor, in two cases; for encroachment on the nasal opening, from a combination of thickened septum, high nasal floor,

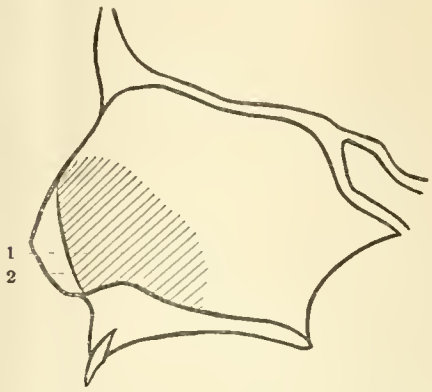

Fig. 5.—Lateral view. 1, Area of deformity. 2, Primary incision.

and redundancy of the soft parts, in three cases, and for collapse of the alæ nasi, in the remainder. The degree of alar collapse in these cases varied from a mild interference with inspiration to a marked falling in. The operation does not open the nostril over the point of collapse. It enlarges the nostril downward and inward. The current of air thus has a free access and the alæ are not sucked in on each inspiration. In this way indirectly the collapsed area above stands more open during inspiration. All the cases were much benefited by the operation.

The operation may be done under cocaine, but it is difficult to anesthetize the bone. Ten of my cases were done under general narcosis. The operation is difficult, first on account of bleeding, and second on account of the careful dissection necessary to raise the periosteum from the ridge and behind the ridge, without buttonholing it. On the integrity of the flap depends the result of the operation, since cicatricial contraction is fatal to its success.

A PLASTIC OPERATION FOR THE RELIEF OF SEPTAL DEFORMITIES IN CHILDREN.

This procedure is also applicable in adult cases where the septal deformity is so near the front that

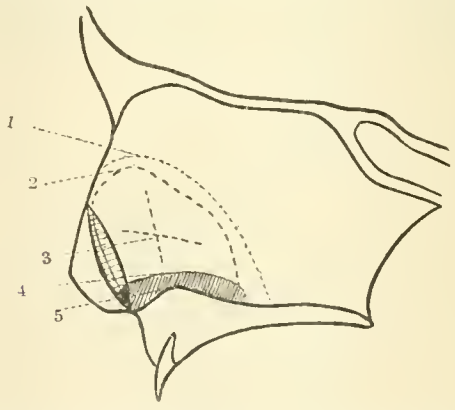

Fig. 6.—Lateral view. 1, Occasional line of incision above and behind the mucous membrane flap. 2, Line of incision through the cartilage under the mucous membrane flap. 3, Lines indicating possible angulations of deformity. 4, Anteroposterior incision through the cartilage to the distal mucous membrane. 5, Area of cartilage removed.

the ordinary submucous resection would endanger the contour of the nasal tip. It has been too much the custom to leave the septal deformities of children until about the fifteenth year before attempt-

ing their correction. Two reasons are uppermost in bringing about this delay. The first is fear of stunting the development of the nose. The second is the difficulty encountered in internasal work in

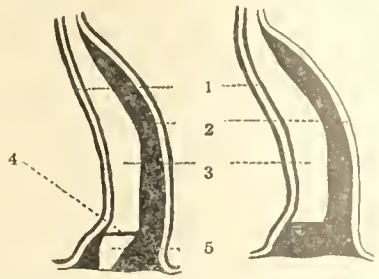

Fig. 7. Anteroposterior view. 1, Distal mucous membrane. 2, Proximal mucous membrane. 3, Deformed cartilage. 4, Anteroposterior incision through the cartilage to the distal mucous membrane. 5, Area of cartilage to be removed.

children, since the work must usually be done under general anesthesia and must, by the older methods, be followed by weeks of after-treatment on an unwilling subject. These reasons certainly do not weigh against the paramount necessity for proper nasal breathing during the developmental period of childhood. I need but hint at the long train of deformities and diseases attendant upon obstructed nasal breathing during this period, to convince you that in every case of nasal obstruction in childhood corrective treatment should be undertaken just so soon as the condition is discovered.

The type of septal deformity most commonly met with in children is a marked and angulated deviation of the cartilaginous septum. This may occupy any portion of the cartilage. I would remind you that the cartilage occupies a proportionately greater area of the septum in children than it does in adults. Here the angulation is sharp, often well forward, and may be both in the horizontal and perpendicular directions.

I would set the following requirements in any septal operation on children: (1) The removal of only sufficient cartilage or bone to allow the remainder to fit into the nasal frame without overlapping or crowding. (2) The destruction of no mucous membrane. (3) The maintenance of a perfectly straight cartilage without the necessity of splinting for more than four or five days. This means that all points of leverage should be carefully cut at the time of operation. (4) The operation should be so done as to require practically no after-treatment more irksome to the child than an occasional inspection.

All the crushing operations on the nasal septum are even more ineffective in children than they were

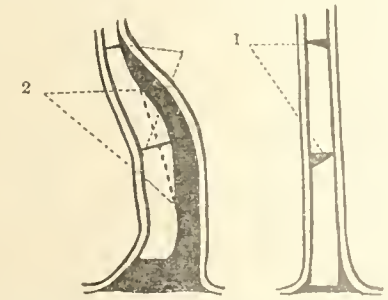

Fig. 8.—Anteroposterior view. 1, Incision in the cartilage at the lines of angulation. 2, Line of possible shaving.

in adults before the advent of the submucous resection. They are quite on a par with the gunshot prescription in medicine. The poor ultimate results and the long and irksome after-treatment urged me to try the following plastic procedure. The results when the operation was accomplished, as described below, have been satisfactory. I have observed no return of the deformity or interference with the normal development of the nose. In children under 12 years chloroform or ether anesthesia is used. Chloroform is preferred, as it engenders much less bleeding. In children over 12 and of phlegmatic temperament I have used, occasionally, local anesthesia. When general anesthesia is given bleeding adds tremendously to the difficulty of the operation. I have had in some cases a fairly dry field by packing the nose with adrenalin on cotton for 15 minutes before the anesthetic is given. In a few recent cases I have raised the flaps under cocaine anesthesia and completed the operation under ether.

The operation: An incision is made well forward of the deformity, beginning as high as possible on the septal side and extending down and across the floor to the external nasal wall. (Fig. 5.) The mucous membrane and perichondrium are then elevated all over the face of the deformity and well behind and above it. (Fig. 6.) So far the procedure is exactly the same as that used in the ordinary submucous resection. Then the cartilage is incised to the mucous membrane of the other or distal side, from before backward, the whole length of the deformity and at an elevation of

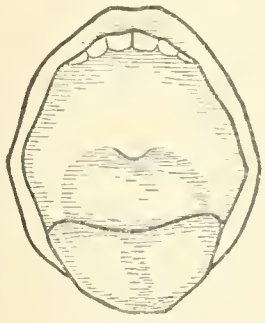

Fig. 9.

about one-quarter to one-third of an inch from the nasal floor (Figs. 6 and 7). This strip of cartilage is removed flush with the floor, taking with it the intermaxillary spine. Care must be exercised not to separate the mucous membrane from the remaining cartilage on the opposite or distal side. An angular knife is introduced under the mucous membrane flap to a point behind the deformity (proximal side) and an incision is made extending upward to the junction of the cartilage with the nasal bones, then forward along the upper border of the deformity to the tip of the nose. This incision goes to, but not through, the mucous membrane of the opposite side. Occasionally this incision is made behind and above the mucous membrane flap, thus cutting through the mucous membrane and cartilage on the proximal side wall behind and above the farthest point of denudation. This latter incision limits, to some extent, the blood supply to the flap from behind and above, but leaves it still attached to the floor, where it receives sufficient nutriment.

Now, it will be observed, we have the area of deformity separated *en masse* from the rest of the septum, being attached to it only by the mucous membrane of the opposite (distal) side and by the soft tissues at the skin margin in front of the septum. Through these two points the loosened area of cartilage receives its blood supply. This sepa-

rated plate of cartilage may now be moved over to the median line, swinging upon its upper margin as a hinge. As it swings to the center its lower margin approximates the floor, filling in partially

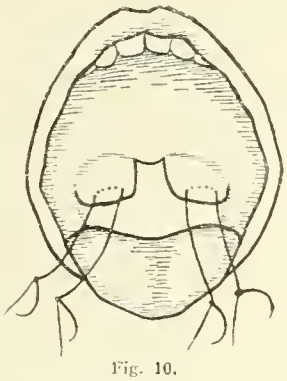

Fig. 10.

or wholly the space from which the strip of cartilage has been removed.

Often, unfortunately, the surface of the loosened cartilage occupies two or more planes, so that when brought to the center, as described above, it still, by its various angulations, does not form a perfect plane with the septum behind. (Fig. 8.) To remedy this, incisions are made at the junctions of these planes through the cartilage to the mucous membrane of the opposite side. This divides the cartilage into two or more pieces, which can then be readily adjusted so as to occupy but one plane in the central line. (Fig. 8.) The cartilage may be thinned by shaving it. The original incision in the mucous membrane is stitched. A molded gutta-percha splint is introduced on the side of the deformity and worn for four or five days. No further splinting is necessary. When the operation is properly done the cartilage should occupy the center with no tendency to revert to the old position. If any point of leverage is left uncut no amount of later splinting will prevent the deformity from partially or totally returning.

When the deformity involves the bony septum it is generally in the shape of a ridge or angular deviation extending upward and backward. To remedy this a small hole is made in the cartilage where it joins the bone. A mucous membrane elevator is introduced through the opening to the distal side and separates the mucosa from the concavity of the ridge. On the proximal side the mucous membrane is also elevated from the convexity of the ridge. The strip of bone thus exposed is removed. Then with flat bone forceps the upper and lower segments are broken over to the center line. Their

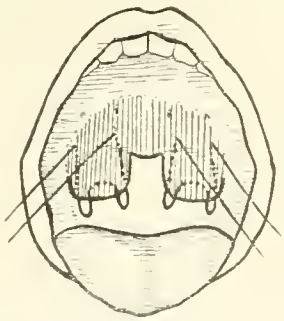

Fig. 11.—The points of emergence, a, b, c, d, should be higher than indicated in the diagram; as e, f, g, h.

convergence fills in the space formerly occupied by the bone removed, thus neither crowding nor overlapping occurs, and the septum tends to remain in the center without splinting.

I devised this operation five years ago and have done it over 100 times. The earlier cases were not all successes. In one case the loosened piece of cartilage sloughed out, but in my later cases I have had no failures. This I attribute to the greater care exercised in reducing all points of leverage by complete incision (Fig. 6) and by better conserving the blood supply to the partially severed cartilage.

A PLASTIC OPERATION FOR THE RELIEF OF ATRESIA OF THE SOFT PALATE TO THE POSTERIOR NASOPHARYNGEAL WALL.

Many procedures have been brought forward for the relief of this very obstinate deformity. The only ones that deserve mention are those of Nichols and Roe. Nichols' operation was some advance upon the older methods of divulsion and of incision with retention splints. Its principle is to cicatrize the external angles of the nasopharynx by retained silver wires or silk prior to cutting the nasopharynx open. Roe announced last year a new operation setting forth the correct principle which is to cover the posterior surface of the soft palate with a mucous membrane lining. He accomplishes this by taking a flap from either cheek and sewing them to the posterior surface of the soft palate. I did this operation on a case of syphilitic atresia with adhesions extending one-half an inch up the posterior wall. It was further

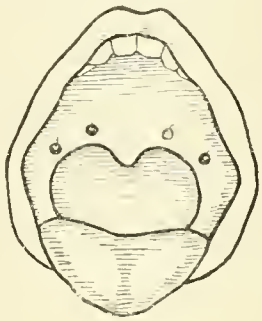

Fig. 12.

complicated by having had two former operations fail, one a simple incision and the other Nichols' wiring at the angles. The result was good. Dr. Roe, in his paper, gave the scantiest details of technique. I attempted the operation under ether anesthesia but got no further than an inspection of the field. It seems to me utterly impossible of performance except under local anesthesia. Even under local anesthesia it is so difficult a procedure that I was prompted to look about for some more simple method of procuring the necessary flaps. This led me to devise the following operation:

In all the cases of atresia that have come under my notice the mucosa covering the anterior surface of the palate is continuous with that covering the posterior pharyngeal wall. These two mucous membranes are so fused that all lines of demarcation have disappeared. On either side the pharyngeal pillars are dimly outlined, giving the lateral boundaries of the original nasopharynx. In the center we generally find a small opening, sufficient to admit a probe, leading up into the nasopharynx. With a bent probe in this opening it is possible to outline the extent upward of the atresia. (Fig. 9.) The principle of my operation is to line the posterior surface of the palate with two flaps, one for each side, taken from the posterior wall of the pharynx below the original curve of the soft palate. These flaps should be taken off as far down the pharyngeal wall as the atresia extends up the naso-

pharyngeal wall, so as to completely cover the denuded area.

The technique is quite simple. A curved needle armed with a fine silkworm gut is introduced into

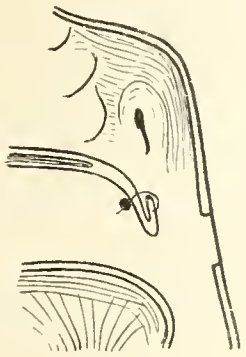

Fig. 13.

the mucous membrane of the posterior pharyngeal wall just to the outer side and about 1 to 2 cm. below the central opening mentioned above, and carried laterally to emerge at the edge of the posterior pillar. A similar stitch is taken on the other side. The points of entrance and emergence are about 1½ cm. apart. (Fig. 10.) With a sharp scalpel the flaps are now outlined, beginning at the outer side of the points of emergence of the stitches, curving downward and inward, then upward to end at the entrance of the small probe opening into the nasopharynx. Then with an angular knife or a curved scissors introduced through the opening into the nasopharynx, the atresia is separated out to the lateral pharyngeal walls and downward to the outlined flap incisions. The stitches are held as traction sutures, keeping the tissues taut while the flaps are being separated from the pharyngeal wall.

Now we will observe that the nasopharynx lies wide open and from the lower margin of the soft palate hang two flaps transfixed near their lower margins by two sutures. All that remains to do is to turn these flaps backward and upward against the raw posterior surface of the palate and stitch them in position. Four ends of sutures project from the mouth. Each end is threaded on a sharply curved needle. The needle is held in a special holder which grasps the needle parallel with the long axis of the handle. The needle is passed well up behind the palate and its point drawn forward through the palate above the raw area on the posterior surface. Similarly each of the four needles are brought through on a line with their relative places in the flap. (Fig. 11.) By drawing them taut the flaps ascend and take their positions against the posterior surface. Fine perforated shot are threaded on each suture and clamped in position near the anterior surface of the palate, care being taken to allow for considerable postoperative edema. (Figs. 12 and 13.) The contraction which takes place on the posterior pharyngeal wall, from which the flaps are taken, is negligible, since the surface is soon covered by a mucous membrane graft from the edges. The stitches are removed in four or five days. Two weeks after the operation the finger is passed into the nasopharynx. This is repeated every four or five days for a month. Then (if deemed advisable) the patient is given a dilator to use at home, to be passed by him twice a week for three or four months. This dilator is a cone set at a right angle upon a handle and made in sizes to suit the individual case. Three patients have been operated on by this method. They are all cured. The nasopharyngeal opening shows no tendency to contract.

43 West Fifty-fourth Street.

A PRELIMINARY REPORT ON THE USE OF NEOFORMANS VACCINE IN THE TREATMENT OF CANCER.

By ALFRED POTTER, M.D.,

BROOKLYN, N. Y.

ASSISTANT ATTENDING DERMATOLOGIST TO THE KINGS COUNTY HOSPITAL.

The constant increase in the number of cases of carcinoma, and the hopelessness for a cure which we may expect from any form of treatment as yet offered makes any new remedy gladly welcomed which will either check the progress of the disease or in any way relieve the distressing symptoms and make the life of the patient more endurable. The number of cases of inoperable carcinoma in the dermatological service of the Kings County Hospital is large and in the last few years most of the better known remedies have been used to relieve the suffering and distress of these poor patients. About one year ago I received from Parke, Davis & Co., a supply of neoformans vaccine for the treatment of cancer. This remedy has been used in twelve cases with such gratifying results that they seem worthy of record.

It might be both interesting and appropriate before reporting the results to give a brief history of Doyen's *Micrococcus neoformans* and his vaccine. Doyen in 1886 sent a preliminary report to the Academy of Sciences at Paris recording his observations in malignant and other growths of small spherical mobile bodies, which he regarded as microorganisms. In 1901, in a communication to the Academy of Medicine of Paris, he corroborated his earlier findings and stated further that he had isolated by culture a microorganism from practically all new growths whether malignant or benign. This microbe was regarded by Doyen as the specific cause of cancer, as he was able by inoculation experiments on rats to produce characteristic lesions. He accordingly named the organism *Micrococcus neoformans*. Doyen sent a similar report to the Surgical Congress in Berlin in 1902. In 1904 in a second communication to the Academy of Sciences at Paris, Doyen announced the preparation of anticancerous vaccines from attenuated cultures of the *Micrococcus neoformans*. He had also prepared from toxins an antitoxin from the horse. With these measures and operative procedure combined Doyen treated 126 cases of malignant and benign growths and 21 he regarded cured. In a later report he recorded 116 cases treated, with 42 cured.

While most investigators do not acknowledge that the lesions produced by the inoculation experiments of Doyen with the *Micrococcus neoformans* are new growths and are not willing to accept his statement that the organism is the specific cause of cancer, they, nevertheless, confirm his statement that a characteristic microbe, the *Micrococcus neoformans*, can be obtained by culture from tumors. Among the first to confirm the existence of the organism was Metchnikoff and also several of Wright's fellow workers at St. Mary's Hospital, London. Jacobs and Geets, who have done an enormous amount of work in this con-

nection, after making a careful study of the subject and as a result of their own investigations, claim that all investigators, including Metchnikoff, who have sought for the organism according to methods of Doyen have found them, and the cultures of the different laboratories are identical. In their experiments they were able to cultivate the organism in 90 per cent. of cases and in 30 per cent. have produced tumors by inoculating young and vigorous cultures in mice and white rats.

The *Micrococcus neoformans* closely resembles the *Staphylococcus albus* on culture media. The two organisms take the same stain and are morphologically alike. The *Micrococcus neoformans* has a tendency to grow in bifurcating chains (Y). When a portion of cancerous tissue is placed in broth, it does not usually begin to show signs of growth for 48 hours. A well-marked growth occurring earlier than this is likely to be the staphylococcus. The colonies of *Micrococcus neoformans* die easily when growing on gelatine and do better on broth cultures. They are of white color, which they maintain even when old. They stain well with Leischmann's (Romanowski's) stain and take the Gram stain when young. The two most distinctive characteristics are the tenacious nature of the growth a few days old, which draws out in strings when taken up by the platinum loop, and the fact that it agglutinates with normal serum in a dilution of 200 to 500. This last feature distinguishes it from the staphylococcus. The cultures are most likely to be found pure in the advancing margin of a tumor or in the newly infected gland.

While Doyen claimed to have obtained good results from the use of his serum and vaccine, most observers failed to do so. Upon the publication of Wright's method of vaccine therapy, however, new interest was taken in the method by the believers in the germ theory of cancer. Jacobs and Geets claimed that the antitoxic serum of Doyen was useless and ought to be discarded as it possessed no bactericidal, bacteriolytic, agglutinating, or opsonic powers and also that the vaccine was dangerous, as it was unstandardized. They prepared their vaccine from cultures of the same age, sterilized at 60 deg. C., washed freely and standardized by the enumeration of the bacilli as advocated by Wright. They used the vaccine in 46 cases of carcinoma, with the following results: Cures maintained after several months, 7; lasting improvement, 12; transient result, 7; no result, 11; now under treatment, 9; total, 46. In every case examined by them the opsonic index to the *Micrococcus neoformans* was below normal. In all except the extreme cases where the resisting powers of the patient were beyond stimulation the opsonic index was considerably increased after the use of the vaccine. Jacobs and Geets after their experiments conclude that while it is not an absolute cure, in all cases treated there is real and definite improvement. Where the system is worn out by cancerous intoxication, improvement was only transient, but it has persisted for several months in the patients where treatment was continued. The question of success or failure seems to depend a good deal upon the reserve vital energy and capacity for reaction which each case possesses. They firmly believe that the *Micrococcus neoformans* is the specific cause of cancerous cachexia and that it is practicable to immunize the human organism by means of a series of inoculations of the *Micrococcus neoformans* vaccine when properly controlled by the opsonic index. Locally the results obtained by these two investigators are striking. The surrounding infiltration decreases, cancerous nodules are reduced to their actual size, the tumor shrinks and the skin loses its inflamed appearance. Abdominal tumors become movable and the mass can be measured. The general condition is also rapidly modified. The most striking fact observed at the beginning of the treatment is that the patient loses the cachexia, pain is diminished and the disease seems to be checked.

Sir Almroth E. Wright employed the vaccine in 5 cases. Two died, one remained stationary, and two were improved. One of the cases, an inoperable cancer of the fauces, the pharynx, the tongue and cervical glands, showed marked improvement after treatment for 10 weeks with the vaccine. Wright concludes that there can be no doubt that whatever opinions have been entertained about infection from this organism, it is a factor to be reckoned with in malignant disease. H. A. Duncan who used the vaccine with success in ten cases says that it it can be proved that the increased resistance following the use of the vaccines in cancer is specific and due to the neoformans vaccine alone, then the *Micrococcus neoformans* is a specific causative factor in malignancy. Numerous other observers have used the neoformans vaccine with successful results in the treatment of cancer.

My own observations are based on the use of the vaccines in the twelve following cases: Carcinoma of the jaw, 1; carcinoma of the esophagus, 1; carcinoma of the prostate, 1; carcinoma of the uterus, 2; carcinoma of the stomach, 1; carcinoma of the breast, 2; rodent ulcer, 3; sarcoma of the leg, 1; total, 12. All were inoperable cases and some of them in advanced stages of the disease. No opsonic index was taken on any of the cases. In three of the cases treated no appreciable effect was noticed either locally or in the relief of any of the symptoms and the patients grew steadily worse and finally died. These cases were the carcinoma of the jaw, carcinoma of the esophagus, and the sarcoma of the leg. All were advanced and hopeless cases. In the other nine cases some improvement was soon noticed, in several of the cases even after the first or second injection. The method of administration employed was to give one or two injections weekly or every three days, depending upon the length of time the positive phase lasted. The initial dose varied from 25 to 100 million microorganisms and was gradually increased to 200 million when necessary. No other therapeutic measures were used during the course of injections, and the narcotics which all the patients had been receiving in some form or other for some time prior to the injections were stopped abruptly. The most consistent effect of the treatment was the relief of pain. This effect was noticed in a greater or less degree in every case. In one case of cancer of the uterus, pain was relieved after one injection and did not return in spite of the fact that all morphine was discontinued. The general state of health in most of the patients was also much improved. They gained weight, lost their characteristic cachexia and regained their appetite and strength. When the vaccines were discontinued, patients became restless, pain returned or increased, they did not sleep and

lost their appetite and strength. If the intervals between the administration of the vaccines were prolonged, some of the patients claimed that they could feel the effect of the medicine wear off. In none of the cases of cancer of the internal organs could any diminution in size or change in the consistency of the cancer mass be noticed, but in the three cases of rodent ulcer the ulcerated area became clean, the tendency to bleeding became less, healthy granulations formed about the border of the wound and the disease seemed to be checked. In cancer of the uterus the decrease in the malodorous discharge and the bleeding was marked and lasting.

In the above series of cases treated by the neoformans vaccine, at least two of the most distressing symptoms of cancer were greatly relieved in the majority of cases, namely, pain and the cachexia. If such favorable results can be obtained in advanced and inoperable cases, it would be interesting to know what results could be obtained in early cases in conjunction with surgical procedure.

THE DROP METHOD OF ADMINISTERING ETHER.

By HAROLD A. LUCAS, M.D.,

ALBANY, N. Y.

INTERNE, ALBANY HOSPITAL.

There seems to be a question among practitioners who have frequent occasion to adminster ether as an anesthetic, not only as to the comparative merits of the open-drop and closed methods, but also as to which is the more convenient and best way of administering by the drop method. Is it better to use considerable time in preparing a gauze wick, and then still have uncertain regulation of the supply, or is it preferable to punch a hole in the top of the can with any instrument that happens to be handy, from a pin to an artery clamp, and call this the drop method? As a matter of fact the meaning of "drop method" is variously interpreted, especially by hospital internes who are frequently called upon to serve as anesthetists. For their benefit, in particular, I am offering the suggestion of a method which eliminates the objectionable features of the drop method now commonly employed, and which I believe to be new.

Cut out the top of the ether can. Fit over the rim an ordinary rubber nipple through the point of which a pin has been passed. Fix the nipple firmly in place by means of an elastic band snapped around its base. Then, by holding the can in a horizontal position, the slow issuance of drops, all of the same volume, is insured. There is no leakage, no waste, no chance of the dislodgement of a cork and a consequent deluge of ether upon the mask, or of other more or less annoying accidents which are of frequent occurrence when gauze wick and cork are used. If it becomes necessary to increase the flow of either a slight tipping of the can will produce a spray similar to that from an atomizer.

By this method patients have been kept adequately anesthetized during two hours or more, with the use of only one-half pound of ether, or even less. In cases of major operations upon babies the sight of the nipple seems to have a quieting effect, and anesthesia is produced without demonstration on the part of the subject.

I have found this method more satisfactory in results, neater, more economical, and more convenient than other methods commonly employed. Of course, the same nipple may be used repeatedly.

Treatment of Syringomyelia by X-Rays and Radium.—L. Duhain insists upon the excellent results that may be obtained in syringomyelia by means of the x-rays. The author has collected 65 cases treated by twelve or fifteen different physicians, all of whom claim good results. The hard tubes are to be used; the medulla is irradiated obliquely, the tube being placed aside from the median line, the rays traversing only the sides of the vertebral arches, and the application can be made alternately on the opposite sides of the column. The lesions are somewhat less extensive than the clinical manifestations would lead us to believe, and a wide application of the rays will prevent the extension of the process. There is a marked improvement of the motor symptoms, so that the patient is able to take up again an active life. The exaggerated reflexes diminish; there is a modification of the sensory symptoms to a less degree; anethesia improves first, then pain sense and thermic preception; the deep sensibility and the stereogenetic sense improve more slowly. Vasomotor and trophic sense also improve, the ulcerations heal, circulation is re-established and edema disappears.—*Annali di Electricità Medica e Terapia Fisica.*

Unexpected Dangers of Whooping-Cough.—Rousseau-Saint-Philippe calls the attention of parents and physicians to the abortive cases of whooping-cough which make of the little patients unwilling bearers of the disease. There are two common errors with reference to the disease; that it is a simple disease and that the diagnosis is to be made only by the whoop. There are many cases in which we get a paroxysmal, spasmodic cough without the typical whoop, and yet in which the microorganism discovered by Bordet and Gengou is to be found. As soon as the diagnosis is made isolation should be careful, both to prevent the spread of the disease and to prevent the little sufferer from acquiring further infections. It is a fact that a simultaneous epidemic of measles causes the mortality of whooping-cough to be greater. These children should be carefully excluded from school and from clinics for children. There should be a special clinic for them. The complications of this disease are many and serious; acute, and subacute bronchopneumonia, bronchitis, pulmonary congestion, bronchiectasis, emphysema, and enlarged bronchial glands. Tuberculosis may be the result of the cachectic state into which the child falls. Whooping-cough is really one of the most fatal of diseases among children.—*Journal de Médecine de Bordeaux.*

Exophthalmic Goiter in a Boy of Ten.—W. E. Wynter reports the case of a boy who exhibited undue prominence of the eyes at the age of 10, nearly a year ago. When admitted to the hospital there was obvious proptosis, with all the usual signs. The thyroid gland was enlarged, both isthmus and lobes; the fingers, when extended, exhibited fine tremor; the skin was moist and flushed, and about the hands and neck showed yellowish pigmentation. There had been no cramps, but the patient had faint attacks, flushes and occasionally showed temporary puffiness of the face. There was incontinence of urine, which contained a trace of albumin. The pulse ranged from 92 to 124. Thyroideetin was given in five-grain doses twice a day. On two occasions pituitrin was substituted, but the pulse rose to 110 and 124 under its influence, falling to 96 when it was discontinued. The case was a mild one, but exceptional on account of the sex and age of the patient.—*Proceedings of the Royal Society of Medicine.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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A NEW REACTION FOR SYPHILIS.

ALTHOUGH Schereschewsky about two years ago demonstrated the possibility of cultivating the *Treponema pallidum*, nevertheless the cultures that he obtained were contaminated with bacteria. It remained for H. Noguchi, who reported his results in the *Journal of Experimental Medicine*, August 1, 1911, to succeed in cultivating this microorganism in a pure state, and also to complete the chain of evidence that it is the pathogenic agent in syphilis. It was with difficulty that the *Treponema pallidum* could be subjected to cultivation, and, furthermore, this was possible only with certain strains of the parasite. With the use of a culture medium consisting of serum water containing a piece of sterile rabbit tissue and under strict anaerobic conditions, Noguchi obtained initial generations of the above strains, from one of which twenty-five generations of subcultures have been derived.

Important as was this triumph of patient investigation, it was but the prelude to a discovery that bids fair to mark another epoch in the history of syphilology. At a meeting of the Williamsburg Medical Society, held November 13, 1911, Noguchi announced that he had obtained a cutaneous reaction in the diagnosis of syphilis. This reaction, which may be compared to the von Pirquet test in the diagnosis of tuberculosis, is dependent upon the condition of allergy or of anaphylaxis resulting from infection with the microorganism of syphilis. The increased susceptibility of the skin to the syphilitic virus, although it had been demonstrated by others who resorted to cutaneous inoculations with syphilitic tissues, nevertheless was first established by Noguchi through the use of inoculations with material obtained from the isolated microorganisms. Sterile suspensions of these were prepared by Noguchi and designated "luetin." This was employed in two series of experiments: on syphilitic rabbits and on human beings. Of the latter about 400 were experimented upon, including, besides about 50 normal individuals, 100 who were suffering from various non-syphilitic diseases; the remainder were cases of syphilis in its various stages. The "luetin" was administered by means of cutaneous injections of 0.05 c.c. In the normal and non-syphilitic cases there was no reaction beyond that resulting from the traumatism of inoculation. In all of the tertiary cases of syphilis in which there were manifest lesions there was a positive reaction consisting of induration, erythema, and finally pustulation. Even tertiary cases, which had been treated regularly with mercury or with salvarsan and which presented no manifest lesions, in nearly all instances gave a markedly positive reaction, although the Wassermann reaction was either weak or negative. In cases of primary syphilis the reaction was almost invariably negative, which was explained by the fact that cutaneous anaphylaxis had not yet developed. In secondary syphilis the positive reaction was obtained in more than one-half of the cases that had been treated with mercury, and in more than two-thirds of the cases that had been treated with salvarsan. Some of the cases that gave a negative cutaneous reaction also gave a negative Wassermann test. Ninety per cent. of the cases of hereditary syphilis showed a markedly positive cutaneous reaction, which was also the case with instances of latent syphilis, in which neither symptoms nor a Wassermann reaction were present. Parasyphilitic affections gave much less constant results.

The results of the cutaneous inoculations in the human cases were closely paralleled by those obtained by similar inoculations in the rabbit. When recently infected with syphilis these animals did not respond by means of a positive reaction. It was only after the condition of cutaneous anaphylaxis had been developed as the result of successive inoculation over a period of five months with virulent syphilitic material that the rabbits gave a positive response to the cutaneous injection of "luetin."

Of great significance is the fact that the anaphylactic reaction may exist even though the Wassermann reaction may be negative. This imparts to the former a decided value, particularly in the diagnosis of tertiary cases, in which the symptoms may be obscure, and in latent and inherited syphilis. In primary syphilis the absence of the anaphylactic reaction and its variability in secondary cases restrict its utility to the cases of tertiary syphilis and those of the inherited disease. These are, however, particularly the cases in which a ready means of diagnosis is desirable. If further experience proves that the cutaneous reaction is a reliable one, it will place in the hands of the general practitioner a ready means of diagnosis, at any rate of tertiary and hereditary syphilis. In technique the simplicity of the cutaneous reaction forms a sharp contrast to the complexity of the Wassermann test. The latter will, nevertheless, still retain its prestige in the diagnosis of primary and secondary syphilis.

THE NEED OF EXERCISE BY SCHOOL GIRLS.

IT is a fact too obvious to need more than mention that many school children, like most college students, fail to get a sufficient quantity of regular physical exercise, with the result that present health and, to a greater extent, future prospects suffer. They live, to state it in physiological terms, on a lower plane of metabolic efficiency than is wise or even safe. This condition applies to boys much less than to girls, of course, but even they, as

every good city schoolmaster will complain, frequently desire exemption from the prescribed school athletics, in whatever form they may be arranged. It is, however, with the girls that we are chiefly concerned here, and especially with young adolescent girls of the grammar and high-school grades.

We may for our present purpose divide these girls (in years from nine, say, to fifteen or more) into three classes, each frequently visible in every school of any size: The unfit, the lazy, and the pseudo-unfit—unfit, that is, for the required exercise. With the really unfit we are not concerned here, and need pause at them only to suggest that it is a rare occurrence for a child to be really harmed by the carefully supervising instruction of the city schools of the present day, and surely a still rarer occurrence in the best private institutions. With the relatively uncommon instances in which true laziness is the cause of the desire to avoid athletics we are, on the other hand, concerned. These children usually need above all things else a habit of necessary exertion with their muscles, "the master tissues of the body," as Foster called them, the means of all accomplishments, one way or another, worthy of human effort. Some of these children actually have never experienced the substantial pleasures of physical exertion or the deep enjoyment of rest after it. And the automobiles and trolley cars are making the matter ever worse.

The third class of children who ask for exemption from required athletics is the most numerous class and the hardest to deal with—the "pseudo-unfit" we have called them, although the "neurotics" would be usually as appropriate a term. These girls, it is important to observe, are precisely the ones who need systematic physical training most, yet they are the children who most often cajole their mothers or other guardians into obtaining exemption for them. As every physician knows, overeating and undersleeping plus underexercise are the chief causal factors in this condition in rapidly growing children, but, as every physician ought to keep in mind also, if the girls get abundant exercise, the other two correct themselves. Some girls, many, in fact, come into the world with a neurological handicap, and these need, above all, whatever of correction systematic training, physical and moral, and well-devised and supervised athletics can give them—and often this is very much. Turn back to Charles Reade and Thackeray and Dickens and see in the girls of two generations since a notion of what our girls to-day might be without the renaissance of physical outdoor life! The days of "prunes, prisms, and persimmons" are, happily, mostly gone—they linger only in these neurotic girls about whom we speak.

Many physicians still are ignorant of the high plane of most of the work done to-day in the gymnasia, the playgrounds, and the athletic fields, and most of them, it is safe to say, utterly underestimate the basal anatomic and hygienic knowledge put in practice by the instructors in these places. The gymnastic and playground work in schools is of vast value as now systematized and directed, and, with the rise of sexual hygiene, is rapidly becoming still more useful and efficient in the very basis of happy womanly life. Instructors in athletics are nowadays, as a rule, competent to handle the children in their care, and are usually graduates of elaborate schools where physiology, hygiene, spinal conditions, psychology, etc., are scientifically and practically taught. The result is that very many of these instructors now know more about such conditions and are actually better judges of what is good or bad for a child than the average family physician.

As an illustration of actual conditions we may quote from a report by Miss McKinstry of experience in one of the Brookline, Mass., public schools. One year out of 216 students 45 presented certificates from physicians and were excused to the number of 11. Reform was declared in this respect, and the next year in a class of 301 none presented certificates and 12 were excused. Here is argument in two directions too obvious to need rehearsing. It certainly is to-day a professional duty owed by physicians to their own patients as well as to the general good to refuse to cater to the whims or misinformation of parents or guardians regarding the physical exercise of their children.

THE SALIENT EPIDEMIOLOGICAL FEATURES OF PELLAGRA.

The most significant feature of present-day research is the manner in which investigators are delving into the etiology of various diseases, perhaps mainly from the bacteriological standpoint. Long-held views with regard to the origin of many maladies have been subjected to revision. Pellagra is one of the diseases of which the causative agent is now being keenly looked into. The old theory that it is a disease of diet and that its manifestations are chiefly due to maize poisoning has been subjected to sharp criticism of late and it now appears probable that the time-honored views in this instance will have to undergo a considerable amount of revision.

In *Public Health Reports* of September 29, 1911, Passed Assistant Surgeon C. H. Lavinder, United States Public Health and Marine-Hospital Service, contributed a timely review of the situation as regards the epidemiology of pellagra. In the first place he points out the value to be attached to epidemiological studies as an aid in the elucidation of the etiology of disease and draws attention to the fact that such studies are lacking for pellagra. Indeed, the work of this kind is restricted to that of Sambon and Allesandrini. Although both of these authors have made important contributions to the subject, the value of these is largely discounted because each is striving to establish his own hypothesis of the etiology of the disease. Moreover, as Lavinder aptly shows, the studies of these two authors were made exclusively in Italy and practically all recorded epidemiological observations refer, if not to Italian pellagra, at least to the pellagra of southern Europe. Observations are lacking for many places where the disease is known to be endemic and there are none for the United States.

The need for widespread studies of this nature is obvious, and the object of Lavinder's paper is to remedy to some extent this lack.

At present the disease is probably most prevalent in Northern and Central Italy, Southern Roumania, the Austrian Tyrol, Southeast Hungary, and the Southeast United States. Perhaps Lower Egypt might be included. In a general way it may be said that pellagra is confined to tropical and subtropical regions. Its local geographical distribution presents very striking peculiarities. It appears to confine itself in Italy to particular regions, while neighboring places, without any definite apparent cause, are exempt. Such sharp limitations, however, are not constant. From Roumania it has apparently invaded neighboring parts of Russia and of Austro-Hungary. In the opinion of most observers the topographical distribution of the disease has furnished no facts of importance. But Sambon, in support of his simulium theory of the spread of pellagra, places great stress on topographical distribution. This forms an essential point in his hypothesis. His observations go to show that the disease is ilnked to the swiftly running streams in which the simulium breeds.

A very striking fact in connection with European pellagra is that it is essentially a rural disease. Men with most experience on this side, on the contrary, believe that the small mill towns and villages in the Southern United States suffer most from the disease. In Europe, too, where it has always been termed "the disease of misery," the great majority of those who suffer from it have a poor food supply. Again, in the United States, this does not seem to be a marked feature of the disease. Pellegra occurs at all ages, even the infant at the breast being included. With regard to sex incidence, in Europe women are somewhat more frequently affected than men, and in this country the preponderance of females is marked. Race or nationality is more or less a negligible quantity. As to occupation, in Europe the agricultural laborer is the chief sufferer, while here this is not the case. Heredity plays a part in that a predisposition to the disease may be inherited. It is the general belief that the disease is not communicable in any sense whatever. Yet several observers in the United States have raised again the question of contagion and affirmed a belief in its probability. Pellagra may be classed as endemic, at times epidemic, but never pandemic. The disease appears to present the characteristics of a "place infection" in the sense in which the expression has been used with regard to beriberi. The seasonal incidence of pellagra is one of its best known and most strongly marked characteristics.

So far as clinical characteristics are concerned pellagra is a general disease of marked chronicity with periodical exacerbations of a peculiar kind; also with the intervention at times of certain very striking attacks of a fulminating nature. With regard to its inception and evolution there is no agreement. But it may be said, from both clinical and pathological data, that the morbid process displays its most marked and most essential effects on the central nervous system. Further, pellagra is in a sense a secondary disease, a morbid process which so to speak engrafts itself upon some preceding morbid condition or depressed state. The disease displays more virulence by far in the United States than in Europe, a fact to be explained, perhaps, to some extent by the development of a partial immunity to pellagra in those countries in which it has been long prevalent. Lavinder shows that there are many well authenticated cases of undoubted pellagra which have had no connection with maize. Such cases are sporadic. The question has been also asked, is pellagra a morbid entity or may there be included under this term more than one morbid entity? Lavinder deems it a morbid entity.

The etiology of pellagra and that of beriberi appear to possess many points in common. It has virtually been proven that beriberi is due to an insufficiency of phosphorus content in the diet, caused by the consumption of polished rice. Simpson and Edie, writing in the *Annals of Tropical Medicine and Parasitology*, published by the School of Tropical Medicine of the University of Liverpool in August last, point out, as a result of their experiments of feeding pigeons with bread made from wheat from which the husk had been removed, that a whole cycle of diseases in all probability have a similar etiology to that of beriberi. Among these they include pellagra. Up to the present time, despite the many strong points brought forward by Sambon in support of his theory, the "zeists" still have many plausible arguments on their side.

Saving the Hundredth Man.

In an article with this title in *Surgery, Gynecology, and Obstetrics* for October W. P. Carr writes concerning the need for greater care in the details of surgical operations. It is pointed out that up to recent times sepsis easily led the list causes of death in operations, with hemorrhage and shock next in frequency. But as hemorrhage and sepsis were practically mastered, surgeons began to recognize more fully the dangers of anesthesia, of renal insufficiency, of gastric dilatation, of adynamic ileus, of myocarditis and atheroma, of complicating diseases in general, and of shock which is caused by complicating disease or intensified by it. Carr shows that the essential factor for securing good results is not to operate, except in cases in which prompt procedure is necessary to save life, until the patient has been brought into as ideal a condition as may be. He also lays stress on the importance of the patient being in a hopeful frame of mind prior to operation and argues that every step should be taken to avoid alarming him. For instance, to chat with a patient in a cheerful manner does much good, and he advises against following a common practice in some hospitals of carrying a patient upon a stretcher to the anesthetizing room and allowing him to remain there fifteen or twenty minutes or even longer, practically unnoticed, while waiting for some one to give ether, or for the operator to arrive. In order to save the hundredth man, Carr says, more attention must be paid to the following things: (1) A careful study of our patients and a careful endeavor to get them into as nearly an ideal condition as possible. (2) Avoidance of preoperative shock. (3) Diminishing operative shock by (*a*) skilful anesthesia, (*b*) shortening the

time of anesthesia and operation, (c) avoiding rough or prolonged handling of viscera and important nerves. (4) Rapid work will be greatly facilitated by knowing beforehand just what is to be done and doing it, not hurriedly, but without hitch or delay, sharp knives, scissors, and needles, and all necessary instruments being always ready. (5) Leaving wounds in ideal condition is of more importance than is generally believed. (6) Gloves should not be used in cases in which clean, rapid work is of paramount importance.

The Control of Rabies.

According to the bulletin of the Department of Health of the City of New York for September, 1911, reports from the Research Laboratory and from the Division of Contagious Diseases of the department indicate that rabies is gradually increasing in prevalence in the city. The bulletin points out the potent fact that from the broad standpoints of the health of the city and efficient public housekeeping, the existence of the disease is a growing municipal disgrace. In England rabies has been completely stamped out and prevented from reappearing by an effective system of detention and quarantine of all dogs brought into the country. The present control of the situation as regards the disease in this country, however, is inadequate. The bulletin sketches the essential features of municipal surveillance. Foremost of the measures calculated to abolish rabies is an ordinance requiring that dogs at large be permanently either muzzled or leashed. It was by such means that the disease was stamped out in England, Germany, and Denmark. An important factor also is education in regard to the care and observation of dogs by their owners. An adequate system of licensing by the municipal authorities may also have an important, although indirect, effect in the reduction of the number of stray dogs. The bulletin draws attention to the fact that among all the communities which have taken definite action in this respect, New York is the only city, of which the department has knowledge, in which the licensing of dogs is not a function of the municipal government. The statistics included in the bulletin may be commended as worthy of perusal by citizens of New York who are jealous of her good name in matters concerning the public health. In Greater New York in 1910 the number of dog bites reported and investigated by the Division of Contagious Diseases was 3,792, and during the first six months of this year 2,105. The Department of Health does all in its power to cope with the existing state of affairs, but laws are required whereby an adequate plan of control may be instituted by which the disease may be eradicated. This has been accomplished in other countries and can be accomplished here.

News of the Week.

New York's Death Rate.—Statistics from the Department of Health for the week ending November 18, 1911, show that the death rate was 13.44 per 1,000 population, as against 13.73 for the corresponding week of last year. Typhoid fever, pneumonia, intestinal diseases, and nephritis showed a falling off in mortality, while heart disease, consumption, and deaths from violence showed a gain. There was a slight increase in the number of deaths of children under five years of age.

Smallpox in Brooklyn.—Two cases of smallpox have been reported in Brooklyn; these are the first that have been brought to the attention of the health authorities in two years.

Smallpox in Pawtuxet Valley.—The State Board of Rhode Island scores the public school teachers of Pawtuxet Valley for permitting unvaccinated children to attend school and blames this laxity for the epidemic of smallpox in that vicinity. It is stated that of all those who have had smallpox not one had been vaccinated.

Plague in the Mediterranean.—A dispatch to *The Sun* states that the members of the Superior Council of Health of France have been hastily summoned to Toulon to investigate cases of bubonic plague. The Mediterranean fleet and the Colonial Office have been notified that there is bubonic plague at Philippeville, Algeria, where seven cases have proved fatal.

Glanders in Boston.—The persistent increase of glanders among the horses in and about Boston has been the occasion of considerable anxiety and the cooperation of the Board of Health has been asked in combating the disease. Dr. S. H. Durgin, President of the Board of Health, is advocating legislation to prevent horses afflicted with the disease from entering the State and for providing adequate compensation for the owners when it becomes necessary to kill animals on account of the disease.

A Conference on Pellagra.—Dr. J. A. Haynes, Health Officer of the State of South Carolina, called a conference of the health officers of the State on November 2 to which all physicians were invited to bring cases of pellagra. The public was invited to be present at both the scientific meeting and the clinic.

One Death a Day by Fire.—The City Committee of Safety, appointed to inquire into the conditions in loft and factory buildings, reports them as bad as before the Triangle waist factory fire last year. The report states that there is an average of one person a day burned to death in New York City.

Commercial Congress Discusses Public Health.—The Trans-Mississippi Commercial Congress which met in Kansas City on November 14 and which in other years has considered such problems as irrigation, waterways development, postal saving banks, etc., devoted its attention to questions bearing on the conservation of public health. It will make recommendations to Congress regarding plans for the proposed federal department of health.

Sanatorium for Locomotor Ataxia.—Through the generosity of a Chicago business man a sanatorium has been opened for the treatment of locomotor ataxia patients free of charge. Dr. Herman Silverman of Berlin will conduct the clinics.

National Educational Association Urges Health Work.—The Department of School Patrons of the National Educational Association has mailed letters and data to all parts of the country urging clubs to take up the work of improving health conditions in the schools. It has outlined methods of procedure as regards investigations and suggests subjects for discussion.

Missouri Preparing a New Hospital Bill.—Following the investigations of the hospitals of St. Louis by a Special Investigating Committee, a bill

is being prepared for presentation to the Legislature, the unusual feature of which is that it proposes three resident physicians for a hospital who shall be on duty in eight-hour shifts.

Lying-In Hospitals Closed.—The inspector for lying-in hospitals for the State of Colorado has closed six maternity homes in Denver, while only four lying-in institutions received his approval. It is said that those who have been refused a license are going into court to test the power of the State Board to take away their licenses.

The Webber Hospital at Biddeford, Me., which was erected at a cost of $100,000, was formally opened on November 8. It is built of brick and reinforced by concrete and there is practically no wood about the building.

Glass Eyes Captured.—Government agents recently seized 2,400 artificial eyes in Baltimore, alleged to be part of a lot of about 100,000 smuggled into the country by a man in Hoboken.

Honor Aged Physician.—The Whiteside County Medical Society held a special meeting on November 9 in honor of Dr. Charles A. Griswold, who is 86 years of age and the oldest physician in the county. Dr. Griswold was graduated from the College of Physicians and Surgeons of New York City in 1856 and has been practising in Fulton, Ill., for fifty-five years.

The Deaconess Hospital at Concord, N. H., was dedicated on November 12. The hospital is the gift of Charles Emerson, a cousin of Ralph Waldo Emerson.

Dr. Cleveland H. Shutt has been elected Hospital Commissioner of St. Louis.

Christian Scientists Barred from Canal Zone.—A few weeks ago President Taft gave an order requiring all persons except Government physicians who wish to practise medicine on the Isthmus to obtain a license from the Board of Health of the Canal Zone. Hitherto Christian Scientists have declined to apply to medical boards for licenses and unless they change their custom they may be liable to fine and imprisonment for violation of the executive order, unless this order is modified.

Plan to Enlarge Kingston Hospital.—The governors of this hospital have appointed a committee to secure funds and plans for enlarging this institution, which has just completed its most successful year and is greatly in need of larger facilities.

Attempt to End Fee-Splitting.—The Medical Society of Jackson County, Kansas, at its meeting on November 7, passed resolutions designed to put an end to fee-splitting; any member found guilty of the practice will be expelled.

Chicago Schools Teach Little Mothers.—Hereafter one room in each public school building in Chicago will be used for the instruction of girls in the care of babies. The Board of Health of the city supervises the work and furnishes the equipment.

Lepers in Philadelphia.—Two women who are suffering from leprosy have been discovered in Philadelphia; both have been removed to the isolation wards of the Philadelphia Hospital and their homes quarantined.

Tufts College Instructors Quit.—Following the resignation of Dr. David D. Scannell, assistant professor of surgery at Tufts Medical School, all of the instructors in surgery and also the assistant professors and instructors in the department of pediatrics have sent in their resignation. The difficulty which led to this step is said to have had its inception in certain appointments made when Tufts College secured control of the Grace Emergency Hospital.

Immunization Against Pneumonia.—It is stated in the *British Medical Journal* that Sir Almroth Wright has been commissioned by the mining groups of the Rand to investigate and report on the question of immunization against pneumonia, a disease which is said to be the cause of the largest mortality among the native laborers on the goldfields.

Cerebral Congestion at Cornell.—Complaint is made that there are too many, if not too much, brains at Cornell University. For many years Prof. Burt G. Wilder has received and examined brains of celebrated persons, and others sent to him. Since his retirement from active work, however, the brains have been received more rapidly than they could be examined, and the receptacles containing them are filling up the museum to the inconvenience of many students.

The Barnes Medical College in St. Louis has ceased to exist, having incorporated into the American Medical College, losing thereby its name and identity, although the new institution will occupy the buildings of the Barnes University.

The Central Illinois District Medical Society, which met in semi-annual session at Pana, on October 31, elected the following officers: *President*, Dr. M. P. Parrish, Decatur; *Vice-President*, Dr. Louis Miller, Pana; *Secretary*, Dr. J. N. Nelma, Taylorville; *Treasurer*, Dr. Walter Burgess, Pana.

A New Tri-State Medical Association Organized.—At a meeting of the Florida State Medical Association of colored physicians, dentists, and pharmacists it was decided to organize a Tri-State Medical Association formed of delegates from Georgia, Florida, and Alabama. The following officers were elected: *President*, Dr. J. Seth Hills, Jacksonville; *Secretary*, Dr. L. B. Palmer, Atlanta, Ga.; *Treasurer*, Dr. A. M. Broen, Birmingham, Ala. This organization will hold its first meeting in Jacksonville on February 1, 2, and 3, 1912.

The American Institute of Homeopathy has elected the following officers: *President*, Dr. T. H. Carmichael, Philadelphia; *Vice-Presidents*, Drs. W. H. Dieffenbach of New York and Clara Emerette Gary of Boston, Mass.; *Secretary*, Dr. J. Richey Horner of Cleveland; *Treasurer*, Dr. T. F. Smith of New York; *Honorary President*, Dr. G. B. Peck of Providence, R. I.

The Southern Illinois Medical Association, at its thirty-seventh annual session held in Mount Vernon on November 3 and 4, elected the following officers: *President*, Dr. Andy Hall of Mount Vernon; *Vice-Presidents*, Drs. H. E. Wilson of Centralia and W. E. Lingle of Cobden; *Secretary*, Dr. C. W. Lillie of East St. Louis; *Treasurer*, Dr. J. W. Armstrong of Centralia.

The Central Illinois Homeopathic Medical Association at its thirtieth annual meeting, held on October 26, elected the following officers: *President*, Dr. J. W. Calvert, Dwight; *Vice-President*, Dr. Calvin A. Frazee, Springfield; *Secretary-Treasurer*, Dr. Lewis T. Roades, Lincoln.

The New York and New England Association of Railway Surgeons, who held their twenty-first annual meeting at the Hotel Astor in New York City on November 16, elected the following officers, *President*, Dr. Walter Lathrop, Hazleton, Pa.;

Vice-Preisdents, Drs. J. W. Le Sen of Batavia, N. Y., and C. A. Pease of Burlington, Vt.; *Secretary,* Dr. George Chaffee of Brooklyn, N. Y.; *Recording Secretary,* Dr. J. H. Reid of Troy, N. Y.; *Treasurer,* Dr. J. K. Stockwell of Oswego, N. Y.

The Homeopathic Medical Society of Oregon at its annual convention in Portland on October 25 elected the following officers: *President,* Dr. John F. Beaumont, Portland; *Vice-Presidents,* Drs. J. S. Bishop of Forest Grove and A. J. Fawcett of Ashland; *Secretary,* Dr. J. F. Worcester; *Treasurer,* Dr. Charles Billington of Portland.

Kentucky State Medical Society.—At the fifty-sixth annual meeting of this society, held in Paducah on October 25 and 26 the following officers were elected: *President,* Dr. D. O. Hancock of Henderson; *Vice-Presidents,* Drs. Delia Caldwell of Paducah, W. L. Mosby of Bardwell, and J. R. Steele of Corbin; *Secretary,* Dr. A. T. McCormack of Bowling Green; *Treasurer,* Dr. W. B. McClure of Lexington.

The Medical Society of the County of New York will hold its 106th annual meeting on Monday evening, November 27, at which time officers will be elected for the ensuing year.

Obituary Notes.—Dr. Henry C. Dalton died at the Deaconess Hospital, St. Louis, Mo., on November 3, following an operation for appendicitis. Dr. Dalton was 65 years of age and was a graduate of the Missouri Medical College in 1870. He was professor of abdominal surgery and clinical surgery at Marion Sims College of Medicine, and more recently instructor of surgery in the St. Louis University.

Dr. John H. Hollister of Chicago, Ill., a graduate of Berkshire Medical College, Pittsfield, Mass., in 1847, died at Redlands, Cal., November 13, at the age of 89. For many years he was a prominent physician in Chicago and active in the work of the American Medical Association.

Dr. Andrew J. Mayfield of Campbell, Mo., died of apoplexy November 11 at the age of 66 years. He was a graduate of the College of Physicians and Surgeons, St. Louis, Mo., in 1885.

Dr. Wooten M. Wilkerson, a graduate of New York University Medical College in 1880, died in Montgomery, Ala., October 27, aged 53.

Dr. Alfred Cochran Lambdin, a graduate of the University of Pennsylvania, Department of Medicine, in 1866, died suddenly of heart disease at his home in Philadelphia, November 7, aged 65. He was editor-in-chief of the *Public Ledger* and noted as a music and dramatic critic and writer.

Dr. Charles W. M. Brown, a graduate of the Medical School of Harvard, Boston, in 1876, a member of the Medical Society of the State of New York, the American Medical Association, Academy of Medicine, consulting physician Arnot-Ogden Memorial Hospital, died at the Arnot-Ogden Memorial Hospital, October 29, aged 63.

Dr. Anthony F. Vadeboncœur, a graduate of Syracuse Medical College, New York, in 1877, a member of the Medical Society of the State of New York, died at his home in Syracuse, N. Y., November 9, aged 57.

Dr. Thomas H. McGann of Gloversville, N. Y., died November 8 of myocarditis. He was a graduate of Dartmouth Medical College in 1876. He was a member of the Medical Society of the State of New York and of the Johnstown and Gloversville Medical Associations.

Dr. Richard M. Wyckoff died at his home in Brooklyn, November 11, at the age of 73 years. He was a graduate of Bellevue Hospital Medical College in 1864.

Dr. William B. Martin of Sherrard, Ill., a graduate of Rush Medical College in 1888, died at his home on November 3, aged 51 years.

Dr. Frank W. Graham of Luddington, Mich., dropped dead on the street from heart disease on November 4. He was born in 1856 and was graduated from the St. Louis College of Physicians and Surgeons in 1883. Dr. Graham served as Mayor of Luddington for four consecutive terms and was City Health Officer for two years.

Dr. John A. Hillsman died at his home in Richmond, Va., on November 5, after a long illness. He was 78 years of age and was graduated from the University of Pennsylvania in 1859. He was born in Amelia County and moved to Richmond about twenty years ago. He was a Confederate Veteran, having been connected with the Forty-fourth Virginia regiment and having served as surgeon to Pickett's camp.

Dr. David C. Coleman died at the Beverly Hospital of general peritonitis, following an operation for appendicitis on November 5, at the age of 32. He was a graduate from the University of Georgetown in 1904 and had been city physician of Beverly, Mass., for five years.

Dr. John F. Bransford died at his home in Bon Air, Va., on November 5. He served in the Confederate Army and later became a surgeon in the United States Navy. He was retired after the Spanish-American War by special act of Congress with the thanks of Congress and a medal for bravery.

Passed Assistant Surgeon Ransom E. Rigg died on board the battleship *Ohio* November 17. He was born in Berkeley, S. C., 38 years ago.

Dr. Richard Morris Wyckoff of Brooklyn, N. Y., died of angina pectoris on November 11 at the age of 73 years. He was graduated from Amherst College in 1859 and from Bellevue Hospital Medical College in 1864. He was an assistant surgeon in the United States Navy during the last year of the Civil War, served in the Department of Health in the old city of Brooklyn under several administrations. In 1894 he became Sanitary Superintendent of Brooklyn and Deputy Health Commissioner. He was secretary of the Kings County Medical Society for many years, was one of the founders of the Medical Society of the State of New York and the New York Medico-Historic Society, and a contributor to many medical publications.

Dr. George W. Winterburn died at the New York Hospital November 18 at the age of 66. His death was attributed to apoplexy. He was a contributor to many medical magazines.

Dr. Albert A. Ames of Minneapolis, Minn., died suddenly on November 16 at the age of 69. For many years he was Mayor of Minneapolis and at one time a candidate for Governor of the State.

Dr. John J. McAvoy, a graduate of Bellevue Hospital Medical College in 1895, died at his home in Lawrence, Mass., on November 12.

Dr. G. A. Brug of Providence, R. I., a graduate of Bowdoin College in 1875, died at his summer home in Chilmark, Mass., on November 12 at the age of 58 years.

Dr. L. M. Bassett died at his home in Hearne, Tex., on November 8.

Obituary.

SURGEON-GENERAL WALTER WYMAN, M.D., LL.D.

U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Dr. Walter Wyman, for twenty years head of Marine-Hospital Service, died in the Providence Hospital, Washington, on November 21, from a carbuncle of the face for which he had been under treatment for several weeks. He was born in St. Louis August 17, 1848, was graduated in arts from Amherst College in 1870, and in medicine from the St. Louis Medical College in 1873. He entered the Marine-Hospital Service in 1876 and was appointed supervising surgeon-general in 1891. On July 1, 1902, when the service was enlarged and was called the Public Health and Marine-Hospital Service, he was continued at its head with the title of surgeon-general. During his long connection with the service, and especially after his elevation to the office of surgeon-general, Dr. Wyman was active in promoting reforms of far-reaching character. He was particularly interested in problems concerning the health of sailors in the merchant service, for the care of whom the Marine-Hospital Service was established. He made a special study of the physical conditions under which seamen are employed, and the result of his study is embodied in recommendations for legislation which Congress passed. He called special attention to the cruel treatment imposed upon deckhands on river steamboats in the West and investigated and exposed the barbarities inflicted on men employed in the Chesapeake Bay oyster fleets. In 1893 he succeeded in having a hospital for oystermen established in the Chesapeake Bay.

It was at the suggestion of Dr. Wyman that the first government sanatorium for the treatment of tuberculosis was established at Fort Stanton, N. M., and he was instrumental in securing the enactment of laws relating to quarantine, government regulation of the manufacture and sale of vaccine virus, antitoxin, and other therapeutic sera, and in the establishment of the hygienic laboratory in Washington.

Dr. Wyman was a member of the American Medical Association, of the American Public Health Association, and of many other medical societies. He was president of the American Public Health Association in 1902-3, of the Association of Military Surgeons in 1904-5, and of the American Medical Editors' Association at the time of his death, and had also held positions of honor and responsibility in many national and international gatherings.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent)

CASE OF PLAGUE IN EAST ANGLIA—SLIGHT STROKES—APPENDICITIS AND RHEUMATISM—EDUCATION MEDICAL OFFICERS' REPORT—INSURANCE BILL—MEDICAL DEPUTATIONS—OBITUARY.

London, November 3, 1911.

A case of plague has again occurred in Suffolk. The official announcement by the Local Government Board is sufficiently explicit as to this fact but reticent as to the source of infection. The case is that of a sailor admitted to the sick quarters of the naval barracks at Shotley (a few miles from Ipswich). This is where the first case in December, 1906, occurred and that, you may remember, was followed by several others during three or four weeks. In January, 1910, another outbreak occurred on the other side of the Orwell, just opposite Shotley. In September four cases, all fatal, occurred at Freston, about 6 miles from Shotley. Such is the so-called East Anglian epidemic, when, as reported to you at the time, rats, cats, and other furred animals, such as rabbits, hares, and ferrets, were found to be infected and a war of extirmination on them begun. The new case of a sailor was admitted on October 10 with symptoms of pneumonia. On examination plague bacilli were found and the patient was isolated, says the official statement "on the first discovery of suspicious symptoms," and, of course, all precautions taken to prevent the spread of the disease. The isolation has been strict since October 15, when the bacteriological diagnosis was complete. The attendants submitted to Haffkine's protective method. The period of incubation having passed without any contact being attacked we may consider the danger of further outbreak slight. The source of infection is uncertain, but it is stated in the locality that the sailor cut his finger when skinning a rabbit which was, perhaps, suffering from the disease. This may be so but cannot be proved for there is this serious hiatus in the evidence that there is no part of the rabbit preserved to submit to the bacteriologists. The M. O. H. for the district is satisfied that the County Council is acting with vigor and has been doing so ever since last year's cases. But the total extirmination of all vermin is hardly possible within a twelvemonth, but the campaign has been carried on continuously. In Ipswich 1,300 rats have been examined for the plague microorganism and in not one has it been found. It is intended to take still more strenuous measures to extirminate vermin in the small district invaded and to attempt to establish round it a rat-free cordon. All plans submitted to the council will be considered by the skilled staff.

"Slight strokes" were discussed in the Medical Section (R. S. M.) on October 24. Dr. Pruen introduced the subject in a paper in which he related a case of an old lady who was troubled with pins and needles in the right arm and leg, which came on suddenly and passed off in a few hours but not completely. A month later she had a stroke of the right leg. Within a year she had right hemiplegia, fatal in a few days. Dr. Pruen has since, by careful inquiries into the history of cases of obvious strokes, come to the conclusion that three-fourths of them have been preceded by symptoms like those in the case mentioned, or by giddiness, nausea, palpitation, faints, etc., either alone or combined, though mostly one symptom would predominate. These coming on suddenly in a patient over fifty, who had never had another attack, and disappearing gradually, he regarded as probably slight strokes, likely to be followed by one or two others and later by the well-known classical strokes. He looked to the vagus and sympathetic for explanation and considered degeneration of the vascular system with increase of tension as probable accompaniments. The changes in slight cases would naturally be slight and come on insidiously.

Dr. J. W. Carr regarded the paper as helpful in recognizing the danger that the symptoms might

indicate and the precautions as to future attacks. Dr. Parkes Weber thought the dulling of sensibility of the bladder seen in elderly persons was due to the muscular dullness rather than to the mucous membrane. Dr. Michael Foster mentioned cases of transient aphasia with partial paresis seen in pregnant women. Dr. Robert Hutchinson referred to transient hemiplegia sometimes seen in cases of migraine. He commended the paper as the experience of a general practitioner who had seen much of elderly patients.

Dr. Pruen in reply said he used the term slight strokes as a purely clinical one to cover various vascular conditions. He had considerable opportunities of watching old persons during life but was not permitted to make post-mortems. He therefore thought it well to make no attempt to deal with pathological conditions. He admitted having more than once made a mistaken diagnosis at first but he had always been able to correct the error as the case developed.

At the opening meeting of the Section of Pathology, on October 17, Drs. F. J. Poynton and Alexander Paine presented a further contribution to the study of rheumatism, being the experimental production of appendicitis by the intravenous inoculation of their *Diplococcus rheumaticas*. In their former researches these authors showed that their diplococcus, which they obtained from the effusion in joints in acute rheumatism, set up arthritis and cardiac disease if injected into rabbits. The infective agent in the new research was the diplococcus drawn from the fluid obtained by tapping the knee-joint of a boy of fourteen suffering from a first attack of rheumatic fever, brought to the hospital on the fifth day. They used for experiment in this series young rabbits six or seven weeks old and lay stress on this point. The first animal injected died from pericarditis. The second had a less dose. Multiple arthritis and mucous diarrhea followed and death after some days, from intussusception. A pure culture from this animal was used for the third—seven weeks old. Arthritis of the left knee developed with general illness, diarrhea, and death on third day. Post-mortem showed 1½ in. in middle of appendix acutely inflamed, early syovitis of knee, fatty areas of liver, excess of fluid in pericardium. The diplococcus was recovered in pure culture from the knee and the heart's blood. This rabbit was shown at the meeting with sections illustrating the inflamed mucous membrane of the appendix and the infective agent in the vessels of the mucosa and submucosa.

Other experiments confirming and extending the foregoing were detailed but results can only be stated in the space at my disposal. Appendicitis was found in early stage, later severe cases, ulceration, and further peritonitis from local deposits of the diplococcus injected into the veins. An interesting event was rapid destruction of the diplococci by the tissues which accounts for the difficulties of isolating the organism during life which have been reported. The mucous diarrhea seems a noteworthy symptom in connection with intussusception found in two cases. Concretions were not found. Indeed, the lesions began deep in the wall of the appendix. The middle part is the position in which stricture is often found in man and other results are evidently related to human appendicitis. In one case early peritonitis occurred with living diplococci in the effusion although there was no perforation. Altogether the results favor the common impression of some relationship between acute rheumatism and appendicitis. The authors do not claim priority over Adrian's results that in rabbits various micrococci produce appendicitis when injected into the veins and they give full credit to his masterly investigation which is quite in accord with their own. But he did not report ulcer formation, arthritis, or the state of the peritoneal fluid. He was occupied with the question whether appendicitis resulted from general blood infection or local injury.

The annual report of the medical officer of the Board of Education has been issued with the result of reviving interest in school hygiene and allied topics. General conclusions can hardly be drawn from the facts recorded in it, for to some extent it is a critical account of work in areas so various and in ways so different that comparisons are practically impossible. In a general way, however, it may be said that the findings of medical inspection in 1910 were similar to those of 1909. The report points out that the circumstances responsible for infantile mortality lead also to a high degree of sickness and disablement among children of school age and probably in a higher degree among adolescents and again among adults. Every step toward improving the health of children must, therefore, be a step toward diminishing disease and raising the standard of health of the general population. It is accordingly laid down that a State cannot effectually insure itself against disease unless it begins with its children, for many diseases and disabilities affecting adults spring directly out of those of earlier life. As examples the report says malnutrition, debility, dental caries, adenoids, and measles in childhood are the ancestry of tuberculosis in the adult—which may be taken as a type of preventable disease. The purpose of school baths (spray or douche) is not merely to cleanse dirty children but to train them in habits of cleanliness, so the board is ready to consider proposals from local authorities to install shower or any simple baths where there are difficulties for providing facilities for cleansing school children.

Yesterday Mr. Lloyd George received a deputation from the Irish Medical Association and the British Medical Association on points in his insurance bill, but the result is as uncertain as in former proceedings of this kind. The public are complaining that the Chancellor is superseding Parliament by his numerous conferences at the Treasury with the interested parties and comes down to the House to declare it is not necessary to debate this or that clause as he has amended it or settled it. If this is not accepted the guillotine soon falls. Among a number of new clauses he is bringing forward one establishes a "medical committee" to confer with the health committee. It can have no discussion in the House but, say many, it matters not, for he may alter it to-morrow. The British Medical Association does not admire the Chancellor's method but acting in the same way it cannot speak out. Just now it is also carrying on electioneering for the Medical Council in a manner more worthy of politicians than doctors.

Dr. Thomas H. S. Pullin, M. O. H. for Sidmouth and surgeon of the dispensary, has died at the age of eighty-seven. He was a Bart.'s man and took the double qualification in 1850; M.D., St. Andrew's, 1862, and the Fellowship of the Edinburgh College of Surgeons, 1882. He was through the cholera epidemic at Portsmouth in 1849 under a Board of Health and had filled many appointments.

I regret to report the death on November 1 of Dr. J. A. Coults, F. R. C. P., the very able physician of the East London Hospital for Children. He was a Cambridge graduate, had been Hunterian professor at the Royal College of Surgeons, wrote the articles on tuberculosis, infantile syphilis and rickets in *Allchin's Manual,* several others in the *Encyclopedia of Medicine,* the *Transactions of the International Medical Congress,* and was a liberal contributor to the societies and journals.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

TYPHOID FEVER IN TORONTO—SALE OF DISEASED MEAT—OPENING OF THE MEDICAL SCHOOLS OF CANADA—FIRST ANNUAL CONGRESS OF THE CANADIAN PUBLIC HEALTH ASSOCIATION IN MONTREAL—OPENING OF THE NEW HOME OF THE TORONTO ACADEMY OF MEDICINE—DR. RACHEL R. TODD APPOINTED AS MEDICAL SCHOOL INSPECTOR IN TORONTO—THE WATER FILTRATION WORKS OF TORONTO.

MONTREAL, November 1, 1911

TYPHOID fever has been somewhat prevalent in Toronto and in some of its outskirts. In Swansea, which is, by the way, under the control of the Ontario Provincial Board of Health, there have been a large number of cases. It is said that conditions there are unsatisfactory from a sanitary point of view.

Dr. Chas. Hastings, the Medical Officer of Health of Toronto, like Dr. Wiley, although of course on a very much restricted scale, seems determined to preach the gospel of pure food and to continue to preach the gospel until definite results shall ensue. Dr. Hastings stated recently that there are approximately 500 head of cattle killed each week in the twenty private abattoirs of Toronto. The three veterinarians attached to the Board of Health are only able to make 116 post-mortem examinations per week. Of these 116 carcases examined, 13, on the average, are found to be diseased and 15 carcases or portion of carcases are condemned weekly. Dr. Hastings estimates that of the 500 beasts killed weekly in the private slaughter houses of Toronto 55 are placed on the market without any inspection whatever. According to the Medical Officer of Health, if all the work of examining cattle were concentrated in one large abattoir worked under a co-operative system, an efficient inspection could be made of every animal killed and no diseased carcases would be sold of cattle killed within the city limits.

Canada has been making rapid material progress during the past few years. She is regarded as almost the land of promise. It is pleasing to notice that with material progress, in most parts of Canada, educational progress has gone hand in hand. This applies to medical education. The Carnegie report found that in a population of seven millions or so there were two medical schools of quite the first rank, some others were fairly well conducted, and only a few came in for sharp criticism. As the medical schools of Canada have just reopened, it will not be out of place to briefly consider the status and conditions prevailing in the chief of them. Perhaps, mainly owing to the strictures passed in the report of the Carnegie Commission on the Halifax College, the college has been reconstituted as the medical faculty of Dalhousie University, its old home. Dalhousie College was founded in 1818 by the Earl of Dalhousie, whose idea was to establish a college on similar lines to Edinburgh University. In 1841 university powers were conferred upon the college and in 1868 a faculty of medicine was organized. Financial reasons caused the medical college to become detached from the university. Now the university has acquired the property and equipment of the college and will carry on its work. The staff has been strengthened and it seems safe to predict an era of prosperity for the medical faculty of the Dalhousie University.

The medical faculty of Toronto University has made greater strides than that of any university in Canada, and probably greater than that of any university of the world. This remarkable advance is chiefly due to the enlightened policy of the Ontario Government under Sir James Whitney. The government has let the university have money without stint to forward the cause of higher education, and the result is now shown in some of the most splendid university buildings, with the most modern equipment to be found anywhere and a highly trained staff of professors and lecturers. Of course, the medical faculty has shared in this progress; in fact, the medical department of Toronto University is easily its most important department and bids fair to take rank with the celebrated medical schools of the world. The medical faculty of the University of Toronto has made for itself a high standard. It is impossible to obtain a degree in medicine until five years have been spent in medical study. Furthermore, a goodly proportion of the students of medicine take a preliminary course of scientific study. Twenty per cent. of the students voluntarily enter the arts' course in natural science, fulfilling the requirements of the natural science course, which entitles them to a degree of Bachelor of Arts, that is, after the necessary examinations have been passed.

There is every prospect for a prosperous session of the faculty of medicine of McGill University. Applications for admission have been exceptionally numerous. This is owing to some extent to the fact that the magnificent building of the medical faculty, principally given by Lord Strathcona, was opened a short time ago by the late Governor-General. The building is now complete, the west wing of which will give accommodation to the department of hygiene and pharmacology and will be ready for the teaching of students. The department of hygiene in every medical school in these days bulks very large. Most authorities are agreed that preventive medicine is the medicine of the future, and it therefore behooves students of medicine to pay particular attention to this branch of medical study. Both as regards housing, personnel, and equipment the McGill medical faculty, hygiene department, is highly favored. The faculty has undergone some changes. Professor Alcock of St. Mary's Hospital, London, takes the chair of physiology; Dr. Wilkins has resigned the chair of medical jurisprudence, and the position has been taken by his assistant, Dr. D. D. MacTaggart. Dr. Armstrong becomes the senior in the department of surgery, rendered vacant by the death of Dr. James Bell.

It is expected by the authorities at Manitoba Medical College, Winnipeg, that there will be this session a larger number of students than ever before. Manitoba Medical College occupies a unique position in the great Northwest. This part of the Dominion is advancing by leaps and bounds, and it is anticipated that the West may ere long equal the East in population and in commercial and educa-

tional importance. Outside of Winnipeg the western provinces of Canada have not reached that stage of development when they can establish medical departments in their recently organized universities. Therefore, for some time to come, it will be the duty of Manitoba Medical College to provide medical educational facilities for the western part of Canada. According to the Canadian Medical Association journal of October, 1911, when Abraham Flexner visited Manitoba Medical College in May, 1909, he made two suggestions: That a full-time professor in anatomy should be appointed, and that a course in practical pharmacology should be established. Since then these suggestions have been carried out. E. J. Evatt, M.D., M.S., (Dur.), has been appointed professor of anatomy, and a course in practical pharmacology has also been established. So far as facilities for clinical instruction are concerned, Manitoba Medical College is indeed fortunate. The home of the college is situated in close proximity to Winnipeg General Hospital, and the staff of the latter and the faculty of the former are practically the same.

The medical faculty of the University of Laval, at Montreal, will have about the same number of students as usual—200 or so. The medical curriculum is five years. The university building is small and cramped, but the medical students have the use of the laboratories of the Catholic Universities of Montreal; Hôtel Dieu, 250 beds; Notre Dame, 140 beds; St. Paul, 100 beds, and in addition the Maternity and the Asile St. Jean Dieu for the study of obstetrics and nervous diseases..

The Western University Medical Department, London, Ont., has raised its standard. The Ontario Government, too, has decided to equip and maintain the Institute of Public Health and Preventive Medicine recently erected in proximity to the Victoria Hospital. This institution will be open to students of the medical school.

The first annual congress of the Canadian Public Health Association is to be held in Montreal November 21 to 23, 1911.

The formal opening of the new premises of the Toronto Academy of Medicine, 13 Queen's Park, Toronto, took place on October 26. The academy was formed five years ago by the amalgamation of four useful but separate bodies, the Toronto Medical Society, the Clinical Society, the Pathological Society, and the Ontario Medical Library Association. Of the 600 medical men of Toronto, 300 are members of the academy, and there are 50 outside members. The present home of the academy is beautifully situated in Queen's Park in a larger and better equipped house than the one formerly occupied. Dr. Helen MacMurchy's place on the medical staff of the Toronto schools has been filled by the appointment of Dr. Rachel R. Todd, as inspector.

Dr. Nasmith of the Toronto Board of Health has criticised adversely recently the principle of slow sand filtration. Referring to the work now going on in connection with Toronto's water supply, he said: "While the city has been occupying two years in building a filtration plant, the advance of science has declared the plant an antiquated piece of machinery." Dr. Nasmith, among other things, recommended the chlorinating of sewage and sterilizing the filtered water. In Europe it would seem that slow sand filtration of water has a fairly good record. Enteric fever has been practically abolished from London by the employment mainly of the method, and if the polluted water of the Thames can be rendered potable and comparatively free from hurtful germs, principally by slow sand filtration, then it would seem that similar methods applied to the water supply of Toronto should have, at least, equally satisfactory results. The problem of eradicating enteric fever, to all intents and purposes, has been solved successfully in the civilized countries of Europe; why then should not similar methods be employed generally with equal success on this contitnent. The situation cannot be so very different.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

SOCIETY OF NATURALISTS AND PHYSICIANS—SALVARSAN—EHRLICH'S ADDRESS—BACTERIAL CONTAMINATION THE CAUSE OF MISHAPS—RECENT EXPERIENCES OF OTHERS—WASSERMANN REACTION AS AN INDEX OF CURE—MERCURY IN CONJUNCTION WITH SALVARSAN.

BERLIN, October 15, 1911.

THE center of interest at the recent meeting in Carlesruhe of the Society of Naturalists and Physicians was Ehrlich's address on the subject of salvarsan. The numerous mishaps that had occurred in the course of the administration of salvarsan, stated Ehrlich, had been attributed to this drug itself. The vesical disturbances that had been reported from Prague had been the result of the decomposition of salvarsan from prolonged exposure to the air. Indurations and thromboses in the veins were the result of excessive alkalinity of the solutions. Fever, diarrhea, headache, and vomiting were attributed by Wechselmann to the bacteria contained in the distilled water. Jakimoff had shown that bacteria increased the toxicity of salvarsan; he had found that the addition of the colon bacillus to salvarsan increased the toxicity of the latter in mice. Under the influence of bacteria the cells of the body anchored more firmly the salvarsan, and less of this was left free to act upon the parasites. Cases in which disturbances in the cranial nerves, particularly in the auditory nerve, had been observed, following the use of salvarsan, were really cases of previous disease in these nerves, which under the influence of salvarsan responded by means of a reactive swelling, and if these nerves lay in narrow, bony canals the nerves were subject to injury in consequence of this swelling. That salvarsan was not alone in regard to this sequence was determined by Benarios, who gathered from the literature that there were 149 cases of neurorelapses after salvarsan and 122 after mercury. The cases of fatality following the use of salvarsan showed at autopsy encephalitis hemorrhagica. Patients with disease of the nervous system should be treated only by means of small repeated doses, and absolute rest and the avoidance of excesses should be enjoined. In the face of the large number of successful cases the number of unsuccessful ones was insignificant. The fundamental proposition that one might with one dose of salvarsan effect a complete cure had not been realized in human pathology, with the exception of recurrent fever and frambesia. In cases of tertian malaria in which quinine had failed salvarsan had succeeded. Bilharziosis had also responded favorably to salvarsan.

In the discussion which followed dermatologists and clinicians reported their recent experiences. Wechselmann of Berlin reported his results in 8,000 injections. In no instance had he noticed any case

of poisoning, although in the cases of very anemic young girls he had given four injections of 0.5 gram each in the course of three days. The frequent adverse by-effects were to be avoided by the use of absolutely freshly distilled water. Seven preparations that had been used with a stormy outcome by other physicians had been employed by him without causing any unfavorable reaction. Heart disease and nervous affections were not absolute contraindications to the use of salvarsan. The hemorrhagic encephalitis was caused by bacterial toxins and not by salvarsan.

Gennerich of Kiel recommended the use of purest distilled water. The Wassermann reaction after the injections of salvarsan behaved in the following manner: Abortive cases with a negative Wassermann showed, following the injection, a period of positive reaction whose duration was directly proportional to the remoteness of the initial lesion. In tertiary syphilis the injection of salvarsan changed a negative reaction into a positive one. Since latent cases were made positive, one possessed in the Wassermann reaction a means of determining whether a definite cure had taken place, particularly if after a year's pause in the treatment the reaction was negative. In abortive cases the speaker gave four injections of salvarsan at intervals of four days for the first three injections, and for the fourth after an interval of ten days, and in addition eight injections of calomel. In all other cases he gave five or six calomel injections and in addition five doses of salvarsan. By means of this combination of calomel and salvarsan a negative reaction could be attained in all cases. Also Meirowsky of Cologne believed that by means of three intravenous injections of salvarsan and simultaneous calomel administration syphilis could be cured. Weintraub of Wiesbaden said that he had treated many cases of cardiac and vascular syphilis by means of cautious doses of salvarsan with permanent or transient improvement. Cases of angina pectoris were completely cured.

There followed a series of speakers who extolled the virtues of salvarsan as a means of aborting syphilis. Some of them beheld in this drug, in conjunction with mercury, an absolutely certain remedy. Kromeyer, Isaac, and Schindler of Berlin took the common stand that the intravenous method was not available for all cases. To avoid mishaps the doses should be small. Kromeyer gave three times a week 0.2 gram, until a total of 5 grams was administered. Isaac injected salvarsan suspended in lard, while Schindler used as a suspension his preparation known as "Joha."

Ehrlich in closing the discussion stated that the abortive treatment was to be thought of only by the use of salvarsan; that in the later cases the addition of mercury was necessary; that neurorelapses were controllable by means of an intensive treatment, and that fatalities were rare and were then only the result of a faulty technique.

Progress of Medical Science.

Boston Medical and Surgical Journal.

November 9, 1911.

The Biological Basis of Specific Therapy. S. Flexner.
The Association of Mental Symptoms with Contusions of the Eye. E. R. Williams.
Vincent's Angina. E. H. Place.
Epithelioma. A Record Showing Common Factor of Irritation as a Cause. J. A. Honeij.
Case of Primary Sarcoma of the Middle Ear and Mastoid, Operation, Recovery. G. L. Tobey, Jr.

Biological Basis of Specific Therapy.—S. Flexner states that the parasite in some instances tends to withdraw into situations to which the curative agents gain access imperfectly and with difficulty. The lymph provides the essential safeguard against infection. The parasites possess the power of developing an effective resistance, called "fastness," to injurious chemical agents. The new qualities are the result of mutations among the parasites, which mutations are transmitted to successive generations of parasites, and are responsible for troublesome relapses, as in malaria, sleeping sickness, and spirochetal infection. The chronic carrier is to be regarded as a victim of this form of mutation among the microorganisms. The two properties that determine the availability of drugs in combating infection are a low degree of toxicity for the organs of the host and an absence of the tendency to produce "fast" strains of the parasite. The infections of the meninges illustrate the increased defenses of a microorganism by confinement in one locality. The success attained in the serum treatment of epidemic meningitis has suggested the availability of this method in other forms of meningitis. Experimental influenzal meningitis has been controlled by the use of an immune serum injected intraspinally. By means of a suitable combination of sodium oleate and antipneumococcus serum, experimental pneumococcus infections of the meninges can be controlled and abolished. The soap increases the vulnerability of the pneumococcus, but it must be prevented from uniting with the protein of the antiserum, which can be done by the addition of a minute quantity of boric acid. The effort has been made with some degree of success to control experimentally produced tuberculous pleurisy and meningitis by means of repeated injections of living leucocytes. The possible control of poliomyelitis by means of drugs is indicated by the fact that urotropin does exert some action when administered by the mouth. In this instance it furnishes a unique example of a chemical body being excreted into the cerebrospinal fluid. A number of derivatives of urotropin have been prepared, which exceed the latter in activity and which have been applied with some degree of success in the treatment of experimental poliomyelitis.

Mental Symptoms and Contusions of the Eye.—E. R. Williams points out that apparently trivial eye injuries often cause quite serious mental complications, and reports a series of cases illustrating this fact. The arrangement of von Merz, who first called attention to psychic shock to the eyeball, is somewhat modified by the author in the following classification: (1) Psychic shock causing temporary reduced vision without permanent damage to the retina. (2) Surgical or psychic shock causing serious retinal lesions with permanent decrease of vision. Traumatic delirium. In eye injuries there are symptoms closely resembling cerebral concussion and also surgical and psychic shock. The effect of air concussion in producing blindness was studied by von Merz during the Russo-Japanese War.

Vincent's Angina.—E. H. Place states that there can be no question that this disease is often confused with diphtheria, syphilis, stomatitis, and tonsillitis. From diphtheria it differs in being always an ulceromembranous process, which diphtheria is never primarily. Edema and marked and diffused redness may be absent in both, but their presence is entirely against uncomplicated Vincent's angina. In diphtheria it is uncommon to find a smear having the appearance of Vincent's angina. From primary syphilis the absence of infiltration and of any marked adenopathy and of other signs, and its rapid clearing with local treatment serve to differentiate Vincent's angina. From mucous patches, its more evident ulceration, its distribution, the absence of other signs, the smear, the absent Wassermann's reaction, are usually sufficient. From the other ulcerations of the mouth and throat Vincent's angina may be diagnosed by the smear and culture and the course and history. Ulceration very closely simulating Vincent's angina may be seen after the severer forms of

diphtheria and after serious streptococcus infections. The postoperative ulcerations of tonsillectomy, etc., may simulate the disease. The most satisfactory local treatment in the hands of the author has been the swabbing of the ulcer with hydrogen peroxide full strength or diluted one-half and then painting it with a 2 per cent. solution of chromic acid once daily.

Irritation as a Cause of Epithelioma.—J. A. Honeij notes that out of a group of 150 patients suffering from epithelioma 32 per cent. gave a positive history of irritation of some benign growth or injury to the normal epithelial surface.

Primary Sarcoma of the Middle Ear and Mastoid.—G. L. Tobey reports a case of this condition in a boy aged eleven years. Recovery followed operation and the use of Coley's serum.

New York Medical Journal.

November 11, 1911.

The Thyroparathyroid Secretion as Wright's Opsonin. C. D. De M. Sajous.
The Fatalities of Delay in the Diagnosis and Treatment of Rectal Diseases. J. P. Tuttle.
Sera and Vaccines; Prophylactic and Curative. J. H. Egbert and O. O'Neill.
Observations on the Use of Tuberculinum Purum in Pulmonary Tuberculosis. C. Rayevsky.
Combined Vaccine Therapy in Pulmonary Tuberculosis. G. Sanders.
Monthly Mortality in the Registration Area. H. A. Brown.
Furunculosis as a Cause of Death. L. I. Harris.
Symptomatic Parotiditis. P. W. T. Moxom.

Thyroparathyroid Secretion as Opsonin.—C. E. de M. Sajous believes that it is as an opsonin that the thyroparathyroid secretion produces its main effects, and recommends that thyroparathyroid preparations be used in various acute and chronic infections to enhance the opsonic power of the blood.

Fatalities of Delay in Rectal Diseases.—By J. P. Tuttle. (See MEDICAL RECORD, July 22, 1911, page 203.)

Sera and Vaccines.—J. H. Egbert and O. O'Neill review the mode of action and the indications for the use of the various sera and vaccines, and report cases illustrating the value of antistreptococcic serum, gonococcic vaccine, Coley's fluid, and pneumococcic vaccine.

Tuberculin.—C. Rayevsky believes that the true specific for tuberculosis is probably hidden in the tuberculins, and that of these tuberculinum purum is the one that comes nearest to the desired goal. Six cases are reported in which the use of this remedy produced good results.

Combined Vaccine Therapy in Pulmonary Tuberculosis.—G. Sanders states that the prostration, night-sweats, fever, and debilitating condition of a patient having pulmonary tuberculosis are considered to be due to a secondary infection, and by mitigating or removing the secondary infection, thereby increasing the vitality of the patient and also his resisting powers, one may accomplish a rapid cure of the tuberculosis. For this purpose the combined vaccines are injected. These consist of the following: streptococcus, multivalent, 50,000,000; staphylococcus, multivalent, 500,000,000; and colon bacillus, multivalent, 200,000,000 to each cubic centimeter vial. One half of this quantity is injected hypodermically. Used every other day, from four to ten injections seem to bring definite results.

Monthly Mortality.—H. A. Brown states that in 1909 a larger proportion of deaths occurred during the month of March than in any other month during that year, the percentages of total deaths for the year ranging from 9.56 in March to a low point of 7.41 in June.

Furunculosis as a Cause of Death.—L. I. Harris reports the case of a man aged twenty-two years, who succumbed to pyemia with sinus thrombosis and metastatic abscesses four days after coming under treatment for a furuncle on the back of the neck.

Symptomatic Parotiditis.—P. W. T. Moxom presents the history of a case of double parotiditis in a lady aged seventy years, occurring after an attack of appendicitis. The inflammatory process in one of the glands went on to suppuration. The other salivary glands were swollen but without pain or tenderness. After the evacuation of pus from the suppurating gland the patient made a complete recovery.

Journal of the American Medical Association.

November 11, 1911.

Variations in the Phagocytic and Other Powers of the Leucocytes. L. Hektoen.
Adiposity of the Mammary Glands. J. R. Guthrie and H. Albert.
The Treatment of Certain Obstructive Bends of the Intestines Due to Abnormal Mesenteric Attachments and Inadequate Parietal Support. F. H. Martin.
Finger Phenomenon. A New Diagnostic Sign of Organic Hemiplegia. Preliminary Report. A. Gordon.
A Case of Sporadic Elephantiasis. G. J. Winthrop.
The Use of Rebreathing in the Administration of Anesthetics. W. D. Gatch.
Anesthesia, with Special Reference to Nitrous Oxide and Its Sequences. W. H. Allen.
Surgical Pathology of the Prostate. Review of 468 Cases. L. Blanchard Wilson and B. F. McGrath.
A Case of Hyperidrosis Universalis with Continuous Fever. H. Herbert.
How Our Therapeutics Can Be Improved. B. Reed.
Carcinoma of the Clitoris. C. D. Lockwood.
Isolation of *Bacillus typhosus* from a Well. D. W. Lewis.
Rejuveration of Cultures of Tissues. A. Carrel.
The Infectivity of the Secretions and the Desquamating Scales of Measles. J. F. Anderson and J. Goldberger.
Phenol Gangrene. E. J. Brown.
Sodium Perborate as a Dressing in the Treatment of Diabetic Gangrene. A. Herzfeld.
Ureteral Catheter Coupler. B. Harris.

Phagocytic Power of Leucocytes.—L. Hektoen notes that the phagocytic power of the leucocytes may vary somewhat even in persons in health. At birth it is less than in the adult and decreases during the first months of life, the adult standard for streptococci, pneumococci, and staphylococci being reached about the third year of life. There is no conclusive evidence that the different kinds of neutrophiles differ in phagocytic activity. There are indications that their phagocytic power is below normal in myelogenous leucemia. The phagocytic power has been found above normal as regards pneumococci, streptococci, and staphylococci in pneumonia, scarlet fever, and other conditions where there are acute leucocytosis and a good prognosis. In pneumonia the leucocytes may be more resistant to heat than normal leucocytes; they may have greater attraction for pneumococci and take up more virulent germs than normal leucocytes. The destructive power of leucocytes in pneumonia and scarlatina for pneumococci and streptococci runs parallel with the phagocytic power. In severe cases of these diseases the phagocytic and destructive powers will be lower than normal. In recent exudates the leucocytes are more active as phagocytes for streptococci, pneumococci, and tubercle bacilli than the leucocytes of the corresponding blood. The exact causes of the increase in activity are not known, but it has been suggested that it is due to the predominance of young leucocytes. In certain chronic infections, notably pneumococcus endocarditis and chronic erysipelas, the phagocytic power of the leukocytes may be either above or below normal, and at times there may occur a distinct fall, which may be specifically limited to the infecting microorganism or observable only in the native serum, or both.

Mammary Adiposity.—By J. R. Guthrie and H. Albert. (See MEDICAL RECORD, July 1, 1911, page 50.)

Pathological Kinks of the Intestine.—By F. H. Martin. (See MEDICAL RECORD, July 8, 1911, page 103.)

Finger Phenomenon.—A. Gordon describes the following new diagnostic sign of organic hemiplegia: The forearm of the patient's affected limb is elevated and the elbow is placed on a table. The patient's wrist is then lightly embraced by the examiner's hand, with the thumb against the pisiform bone and the other fingers on the dorsal surface of the wrist. Pressure is then produced with the thumb against the pisiform body, and especially on its radial side. Care must be taken not to produce

pressure on the dorsal surface of the wrist where the extensor muscles are located. The fingers are then seen to extend and sometimes also to spread in a fan-like form. In some cases the extension is observed only in the last two fingers; in others all five fingers extend, and in still others the thumb and the next two fingers.

Sporadic Elephantiasis.—G. J. Winthrop reports a case of connective tissue hypertrophy with enlargement and induration of one leg, recurring in a woman aged 48 years. It would seem that the thrombophlebitis following labor produced chronic edema of the leg or by its extension caused an obliterative inflammation of the lymph-channels about the vein, with resulting lymph stasis.

Rebreathing in Anesthesia.—W. D. Gatch states that rebreathing, when properly regulated and when the oxygen supply is ample, is harmless and can be put to a valuable use. If one can prevent anoxemia, overconcentration of vapor, and too great a depth of anesthesia, one can obviate most of the serious objections to the closed method of giving ether. The process of rebreathing prevents the elimination of ether and chloroform by way of the lungs, and overventilation of the lungs hastens the elimination. It is suggested that after any administration of ether or chloroform overventilation of the lungs be brought about by the use of mixtures of oxygen and carbon dioxide. Morphine, or any other drug which depresses the respiration, retards the elimination of ether or chloroform.

Nitrous Oxide and Its Sequences.—W. H. Allen notes that nitrous oxide is the safest general anesthetic known. There is no direct effect on the heart and vasomotor systems, and the rise of arterial pressure is due to the light intercurrent asphyxia. There is no bad effect on the blood and the slight cyanosis due to the asphyxia can be disregarded. No changes in any of the body structures have been demonstrated. Nitrous oxide should be used in all cases in which chloroform and ether are contraindicated. Its own contraindications are those attending the asphyxia produced and in cases with narrowed or obstructed air passages, serious cardiac disease, extreme youth, and advanced arteriosclerosis. Its advantages are its safety and rapidity, and the comfort of the patient. The disadvantages are the narrow zone of application with consequent uncertainty of muscular relaxation, the need of skill in administration, and the expense. Special apparatus is required. For routine use the author employs the nitrous oxide and oxygen-ether sequence.

Diseases of the Prostate.—L. B. Wilson and B. F. McGrath present the results of a study of 468 cases of which seven were tuberculous. The ordinary picture of acute prostatitis in the text-books is misleading, as it gives the symptoms of the severe parenchymatous form, whereas both the lighter forms, the catarrhal and the follicular, are much more frequent. Gonorrhea is the most common cause of all the forms. The greater part of the bladder troubles of old people are due more to exacerbations of chronic prostatitis than to hypertrophy. Atrophy of the organ has multiple and quite different causes. It is doubtful whether true atrophy ever results after castration in existing hypertrophy, though it can occur after operations. Associated with exhausting diseases it is found in connection with atrophy of all the body structures. Stricture is a common cause of mechanical atrophy of the organ, caused by the pressure of the stagnating urine. Senile atrophy is to be considered as prostatic atrophy in the narrower sense, since it can occur in advanced age without any cause as yet determined. The prostate may become apparently completely destroyed in suppurative conditions from gonorrhea, tuberculosis, etc. Concretions may set up no symptoms or may cause chronic inflammation and suppuration.

Hyperidrosis Universalis.—H. Herbert reports a case of this condition associated with continuous fever in a man aged twenty-two years.

Improvement in Therapeutics.—B. Reed states that this can be obtained only by raising the standard of the doctorate to a higher plane. Improvement calls for more thorough study of functions in both health and disease and a still more intimate acquaintance with the more reliable remedies.

Carcinoma of Clitoris.—By C. D. Lockwood. See MEDICAL RECORD, July 1, 1911, page 50.)

Isolation of Typhoid Bacillus.—D. M. Lewis reports a case of typhoid fever traced to drinking from a well that had been contaminated by laborers.

Rejuvenation of Cultures of Tissues.—A. Carrel states that the rejuvenation consists in removing from the culture substances that inhibit growth and in giving to the tissue a new medium of development. It is accomplished by extirpating with a cataract knife the fragment of coagulated plasma containing the original piece of tissue and the surrounding new cells, which are washed for several minutes in normal or slightly hypotonic Ringer's solution. This rejuvenation shows that, under the conditions and within the limits of the experiments, senility and death are not a necessary, but merely a contingent, phenomenon.

Infectivity of Secretions and Scales of Measles.—J. F. Anderson and J. Goldberger find that the nasal and buccal secretions of uncomplicated cases of measles may be at times but are not always infective for the monkey. It is highly probable that the desquamating epithelium of measles in itself does not carry the virus of the disease.

Phenol Gangrene.—E. J. Brown reports a case of this condition in a boy aged five years, caused by the application of a phenol ointment of unknown strength to a bruised finger end.

Sodium Perborate as a Surgical Dressing.—A. Herzfeld states that he has used sodium perborate successfully, not only in epistaxis, but also in secondary hemorrhage after adenoid operations and tonsillotomies. He has also used it frequently in infected wounds, in acute and chronic ulcers, and in three cases of diabetic gangrene, in which the results were marked.

Ureteral Catheter Coupler.—B. Harris has devised a conical needle by means of which a syringe may be attached to a ureteral catheter.

The Lancet.

November 4, 1911.

Acute Iritis. N. B. Harman.
Treatment of Diabetes Mellitus. E. I. Spriggs.
Two Cases of Sarcoma of the Thymus. W. Sheen, C. A. Griffith, and H. A. Schölberg.
The Operative Treatment of Badly United Fractures. W. A. Lane.
Cases Illustrating the Use of Venesection. R. F. Fox.
The Prevention of Anthrax Infection Due to Imported Hides and Skins. (The Seymour-Jones Formic-Mercury Process.) C. W. Ponder.
The Treatment of Bubonic Plague by the Immediate Incision of the Glands. V. B. Nesfield.
Acetonuria in Childhood: A Study of Its Prevalence in the Medical Wards of a Children's Hospital; with an Inquiry Into Its Cause. R. S. Frew.
Experiments on the Causation of Beriberi. (Preliminary Communication.) E. A. Cooper and C. Funk.
A Note on the Carbolic Acid Coefficient of Disinfectants. F. T. Marchant.
Note on Leishmania and Mosquitos: The *Leishmania-donovani* Can Live and Develop in the Intestinal Tract of the Anopheles. G. Franchini.
Drill and Development: A Plea for Universal Military Training. L. B. Cane.

Acute Iritis.—N. Bishop Harman, in discussing this subject, contrasts the signs of iritis, glaucoma, and conjunctivitis. The most important of these is the character of the pupil. It is normal in acute conjunctivitis, small and sluggish in acute iritis, wide and paralytic in acute glaucoma. In iritis the altered color of the iris is striking. Discharge is characteristic of conjunctivitis; it is absent in iritis and glaucoma.

Treatment of Diabetes Mellitus.—E. I. Spriggs, in continuing his article on this subject, devotes attention to the treatment of cases with diaceturia.

Sarcoma of the Thymus.—W. Sheen, C. A. Griffiths, and H. A. Schölberg report two cases of this rare con-

dition. In the first case the bilobate character of the growth as revealed at operation, coupled with microscopic examination of some of the pieces of growth then removed, allowed a probable diagnosis of sarcoma of the thymus to be made during life. Both cases were in young males and showed an acute onset; dyspnea, at first in attacks, dilated veins of the neck and thorax, swelling of the lower part of the neck, and dulness over the manubrium. Direct laryngoscopic examination was of value in determining the site of the obstruction. Division of the manubrium sterni and the removal of portions of the growth pressing on the trachea permanently relieved dyspnea. The clinical conditions unfortunately seem to show that there is little hope of ever getting a case so early that the growth can be entirely removed.

Operative Treatment of Badly United Fractures.—W. Arburthnot Lane believes that no operation in surgery may make a greater demand on the skill, resources, and ingenuity of the surgeon than that requisite to restore a badly united, useless bone to its normal form and functions. The chief obstacle in many cases is the difficulty in approximating the edges of the skin incision and in retaining them in accurate apposition. Surgeons are learning by painful experience that they cannot fix fragments in fractures by foreign bodies with the asepsis attained in abdominal and other operations.

Venesection.—R. Fortescue Fox states that this ancient method of treatment, which so suddenly disappeared from medical practice, has been again employed in a guarded manner and with good results in a variety of cases. The chief indication for venesection is cyanosis with distention of the right heart. To this is attributed its beneficial action in mitral disease and in some cases of bronchitis and pneumonia. No mere mechanical relief to the heart can, however, explain the observed effects. Venesection in some cases appears to influence in a favorable manner the progress of specific disease, both acute and chronic, probably by heightening the natural resistance of the tissues; it helps to restore the balance of the circulation and the normal distribution of the blood by a dilator effect on the arterial system; a small venesection may have a powerful and apparently disproportionate influence, not only in quieting the circulation, but the nerve centers also. This is witnessed in uremic coma or convulsions and in the crises of pain and dyspnea in aneurysm. Excessive blood pressures have been more or less permanently reduced by venesections far too small to produce such effects in a direct manner. Such facts as these suggest that the respiratory and vasomotor centers are concerned in these actions: and that there are, in truth, morbid states of the circulation and the nervous system, both acute and chronic, which are in some unknown manner peculiarly sensitive to a slight reduction in the amount of the circulating blood.

Prevention of Anthrax Infection.—C. W. Ponder states that civilized governments should forbid the importation of hides or skins unless either these have been submitted to the ordinary "wet-salting" process immediately after flaying; or if cured by drying they have been converted back to the "wet-salted" state by the "formic-mercury" process before leaving the country of export. If such regulations were adhered to one would hear no more of anthrax among the dock laborers and warehousemen, nor of those sporadic cases which are continually cropping up in the tanneries in different parts of the country.

Treatment of Plague.—V. B. Nesfield notes that early incision into a plague gland produces an immediate improvement in the patient's condition. The temperature is lowered and the severe headache alleviated, and if the patient is seen during the first 24 hours the probability of his recovery is very great.

Acetonuria in Childhood.—R. S. Frew concludes that acetonuria occurs in childhood with great frequency. In the large majority of cases the carbohydrate starvation necessary for its production is caused by a temporary failure of digestion. This loss of digestive power can be brought about by mere change of diet. It is more easily set up the younger the child, and the digestive instability becomes less marked as age advances. About three days are required before the digestive processes can accommodate themselves to a change of diet. Disease, with few exceptions, has no influence on the production of acetonuria in childhood.

Causation of Beriberi.—E. A. Cooper and C. Funk find that the polyneuritis induced in birds by a diet of decorticated and polished rice is not due to the deficiency of phosphorus compounds, but to the absence of some substance not of protein nature, devoid of phosphorus, soluble in water and acidulated alcohol, dialysable, and precipitated by phosphotungstic acid. The precise nature of this substance is being investigated.

Carbolic Acid Coefficient of Disinfectants.—F. T. Marchant states that the Rideal-Walker method of determining the carbolic acid coefficient of a disinfectant often furnishes results which are discrepant—a subculture tube often shows a growth when another tube, containing the same culture exposed to the same dilution of a disinfectant and for a shorter period of time, fails to do so.

Leishmania and Mosquitos.—G. Franchini believes that the *Leishmania donovani* can live and develop in the digestive tube of the anopheles.

Drill and Development.—L. B. Cane believes that even a few months' military training is responsible for definite and well-marked progress in physical development. Not only this, but the enforced discipline and regular habits cannot fail to be of benefit and to prove of distinct value in after life.

British Medical Journal.

November 4, 1911.

The Surgical Requirements of Narcosis and the Available Methods. D. W. Buxton.
Preliminary Note on Experimental Investigations on the Pituitary Body. Dr. Handelsmann and Sir Victor Horsley.
Acute Poliomyelitis; With Special Reference to the Outbreak in Plymouth, Stonehouse, and Devonport. A. B. Soltau.
Clinical Observations on an Epidemic of Acute Poliomyelitis in Cornwall. A. Gregor and L. B. Hopper.
Epidemic Anterior Poliomyelitis in Huntingdonshire. C. B. Moss-Blundell.

Methods of Anesthesia.—D. W. Buxton states that the safest method of employing ether is to inject 1/100 gr. atropine, or this together with morphine and scopolamine, half an hour before giving ether by the open method.

Pituitary Body.—Dr. Handelsmann and Sir Victor Horsley state that their experiments do not confirm the conclusion reached by Cushing and others that the anterior lobe is the essential element of the gland.

Poliomyelitis.—A. B. Soltau reports an epidemic of this disease which has occurred this year in the towns of Plymouth, Stonehouse, and Devonport. The author has been able to collect 73 cases. In discussing the mode of transmission, he believes that air or dust conveyance is the most probable one. It seems that the heat and dust of 1911 have been factors in maintaining the virus at a high rate of potency and in favoring its dissemination.

Poliomyelitis.—A. Gregor and L. B. Hopper describe the disease as it presented itself during a recent epidemic in Cornwall. One of the interesting points noted was that during this epidemic there were also a great many cases of herpes zoster. The possibility is suggested that there may be at work the same organism in both diseases.

Poliomyelitis.—C. B. Moss-Blundell reports a series of 15 cases of this disease which recently prevailed in Huntingdonshire. Three of the cases occurred in one family. The author notes that there did not seem to be any association between the sanitary condition of the houses and the disease. The weather at the commencement of the outbreak was very hot.

Insurance Medicine.

Some Suggestions Regarding the Means of Detecting Adverse Selection.—By Arthur B. Wood. (See page 1063.)

Prognosis in Examinations for Insurance.—Th. Eschenburg, in communicating his experiences as a medical director, says that he has often been surprised at the lack of agreement between the anamnestic and physical findings of the medical examiners and the prognosis expressed by them in cases of applicants for insurance. It seems that the practice of medicine gives better training in diagnosis and treatment of disease than in making conclusions as to the future health of the patient and the duration of life he may expect. As a rule, the prognosis of the medical examiner is too optimistic. Thus one examiner recommends the acceptance of an applicant whose father died of tuberculosis and who himself has suffered from tuberculous inflammation of the lungs, in the course of which tubercle bacilli were found in the sputum. His sole ground for the good prognosis was the belief that the tuberculous focus has become "encapsulated." Another sees nothing objectionable in a patient whose family history suggested tuberculosis and who himself has suffered from repeated attacks of pleurisy, involving the diaphragmatic pleura especially. Still another gives a reassuring prognosis for an applicant, because of his muscular development and abundant subcutaneous layer of fat, though very suspicious apical signs are present and the history of a stay in a sanatorium for pulmonary diseases is mentioned. Another class of cases concerns applicants with disease of the heart valves. While compensated valve lesions are *per se* not necessarily indications for declining an applicant for insurance, yet many an applicant suffering from a valvular lesion has been recommended in spite of a history of repeated rheumatic attacks.

Occasionally the examiner's prognosis is too pessimistic. Thus, a youthful applicant is not recommended for insurance because of an irregular heart action, although no other pathological findings are present.

Frequently, too optimistic prognoses are given in cases of luetics, where the possibility of the development of parasyphiltic nervous lesions should certainly enjoin caution. Too often symptoms of beginning tabes or paresis are explained by the word "neurasthenia"! The rôle of alcohol is also frequently underestimated, many applicants being recommended for insurance though strong probability of confirmed alcoholism is suggested by the history and physical findings. Another pathological condition that is underestimated is otitis media; in one such case an applicant was recommended for life insurance, although two years' treatment of the existing inflammation of the ear failed to cure the affection.—*Blätter für Vertrauensärzte der Lebensversicherung,* January and February, 1911.

Insurance During Pregnancy.—Tissier thinks that insurance of a pregnant woman should be postponed until the termination of pregnancy. There can be no reason for haste in the matter on the part of the insurance company, for an insurance policy is a contract made for a long term of years, while a few months decide the course of pregnancy. Of course, pregnancy introduces certain well-marked difficulties in prognosis. Moreover, the physical examination of a pregnant woman is never very satisfactory, as many temporary changes take place in the organs. The applicant, too, is better served, if termination of pregnancy is awaited, because many functional disorders occurring at that period imitate acute organic or chronic functional disease. In case all these objections do not outweigh some other reasons for insuring a given pregnant woman, in case of primiparæ, at least, such reasons should not be allowed to outweigh the risks taken. In the case of multiparæ, a careful history of preceding pregnancies should be obtained. Any cause for which one may hesitate to recommend a nonpregnant woman for insurance should in case of pregnancy be looked upon as a reason for nonadmission for insurance.—*Proceedings of the Third International Congress of Insurance Physicians.*

The Alcohol Problem in Medical Examinations.—T. D. Crothers says that all life insurance companies are becoming painfully conscious of the influence of alcohol in the risks that they constantly assume. There is great confusion in their theory and practice, some taking a very decided stand against insuring alcoholics of any type, others insuring "moderate" drinkers, still others laying stress upon the kind of alcoholic beverage the applicant habitually uses. Frequently, the policy of the company depends upon the existence of moderate drinkers among its officers and medical examiners. Crothers cites an illustrative case of an applicant who was reinsured for a large sum, though Crothers advised against it because of the admitted "moderate drinking" of the applicant. The latter died one year later of pneumonia. Pneumonia seems to be a special disease following the use of spirits. Cerebral hemorrhage, palsies, and arterial hypertension are other conditions favored by the use of alcohol. Many applicants deny the use of alcohol yet show unmistakable signs of alcoholism. It must be remembered, too, that constant "moderate" drinking is more dangerous for the health than occasional excesses. Alcohol increases susceptibility to disease and mortality among diseased persons. Frequently a psychological and physiological study of the applicant, of his habits, surroundings, etc., gives more clues to the effects of alcohol upon him than any discoverable lesion of the heart or kidneys. Mental conditions produced by alcohol, vasomotor instability marked by flushes, venous congestion, etc., are valuable indicators of the injury done, and are more significant than albumin in the urine or a high pulse beat. The man whose highest pleasure in life is gratification of his bodily wants, passions, and impulses, is also inviting early death and disease. Alcohol is his frequent aid.

The examiner should also be on the lookout for persons who are reckless of their health, abuse it in every way, and expect nature to repair it. Even if such men pass the usual physical standards of insurance companies, they are very bad risks because of their life habits. The medical examiner must also determine whether the use of alcohol may not be symptomatic of other abnormal conditions, for instance, drug-taking, etc. The examination blanks provided by insurance companies are very minute, yet frequently quite inadequate for "sizing up" an applicant. Many applicants should be studied continuously for a long period and medical examiners should be paid expert fees for such work. Insurance companies should employ expert physicians for this work, just as railroads employ experts for the study and prevention of accidents. There is something farcical in expecting the medical examiner to give a clear account of a man, insuring for a large sum, for a five- or a ten-dollar fee, while the agent gets several hundred dollars. The five-dollar fee cannot pay for the time that ought to be spent in studying an applicant for a large policy, and the insurance company gets what it pays for, indeed, but not what is important in sizing up the risk.—*Lancet-Clinic,* November 4, 1911.

Blood Pressure in Insurance.—J. S. Lankford says that in order that blood-pressure results may prove useful uniform standards of measuring should be adopted. The sleeve or cuff should be at least 5½ inches wide; the test should be made in a recumbent position on the level of the heart; the left arm just above the elbow should be used. The limits of normal variation in blood pressure are pretty wide, but the following figures may be used as standards: young children, 85 to 100; older children, 100 to 110; young

adult females, 110 to 120; young adult males, 115 to 125; older ages, up to 145 or 160. From the insurance standpoint, the low pressure in tuberculosis is a most important fact; in many cases it is an early diagnostic symptom of the disease. In all diseases leading toward great exhaustion the pressure is lowered, unless there is a toxemia of some kind or some organic disease of the heart or kidneys.

The all-important thing about pressure readings in insurance is that the sphygmomanometer reveals the earliest indication of heart and kidney lesions, even before a murmur can be heard or a trace of albumin found. In fact, it will show toxic blood conditions that lead on to heart and kidney diseases long before any other evidence of abnormality can be discovered. In sixty-four tests in various heart lesions, Lankford found the pressure above normal in all but five, and these were in the terminal stage where dilatation and exhaustion caused low pressure. Of thirty-seven cases of acute and chronic nephritis all showed high pressure, varying from 165 to 250. A very important stage of high pressure precedes the development of manifest heart or kidney diseases, and may be caused by the present-day nerve strain, impairing digestion and leading to the formation of various toxins and to autointoxication. Lankford predicts that testing blood pressure will become a universal requirement within certain limitations in life-insurance work. He is certain that no progressive physician can afford to be without a sphygmomanometer in the diagnosis and treatment of disease.—*Texas State Journal of Medicine*, November, 1911.

Chronic Affections of the Veins.—Moritz says that behavior of the venous system gives many important indications in insurance examinations. General venous engorgement may be due to chronic bronchitis with emphysema, to valvular disease of the heart, or to insufficiency of the myocardium. Frequently persons suffering from venous congestion impress the layman as healthy and "full-blooded." Local venous engorgement is usually due to mechanical causes. A most important instance of this is found in hemorrhoids, and from the insurance standpoint may be essential and independent, or symptomatic of abdominal conditions. The former accompany constipation and are frequently seen in persons of sedentary habits; the latter are most important evidence of organic disease, and sufferers from them must be looked upon as hazardous or substandard risks. Essential hemorrhoids must be judged in each individual case, and such complications as hemorrhage, spasm of the sphincters, periproctitis, fistulæ, fissures, ulcerations, etc., carefully looked for. In general essential hemorrhoids should not bar admission to insurance, but such admission may be delayed until complications have been cured or operative removal of the hemorrhoids themselves effected.

The next important type of venous engorgement is found in varices of the legs, with the accompanying chronic skin affections and ulceration. Here, too, the division into essential and symptomatic varices is very useful. The latter must be judged by the nature of the causative illness, which will determine the prognosis and the advisability of recommending an applicant for insurance. The former must be judged with reference to the age of the patient, the severity of complications, the probability of cure, etc. The last type of venous engorgement is exemplified in varicocele, and the gravity of this affection has been greatly exaggerated. It is more important as a frequent indication of abnormal sexual life than as an independent lesion, for symptoms referred to it are more probably caused by some sexual anomalies.—*Proceedings of the Third International Congress of Insurance Physicians.*

Asthma and Insurance.—Mahillon of Brussels, Belgium, holds the following views in regard to the admission of asthmatics for insurance: Young subjects, that is, persons below 35-40 years, whose antecedents are free from tuberculosis, who are not specially exposed to tuberculous infection, in whom asthmatic attacks occur at long intervals only and do not last more than 24 to 48 hours, who do not cough, do not raise sputum, suffer from no dyspnea, and whose hearts are not hypertrophied or dilated, should be recommended for life insurance at the ordinary premium but for a limited number of years. Asthmatics over 45 years of age, especially stout subjects, in whom deposition of fat about the heart may be suspected, and who are gouty, arteriosclerotic, or emphysematous, are not admissible. They belong to the class of people whose life is in no immediate danger, who may even attain advanced age, but in whom no prognostic estimate of any value can be made. Of course, such persons are not to be excluded from insurance at a more or less advanced premium, and under various other conditions protecting insurance companies.—*Proceedings of the Third International Congress of Insurance Physicians.*

Miner's Nystagmus.—Hessberg details the case of a man who developed marked nystagmus during his occupation as miner and put in a claim for indemnity. The legal aspect of the matter, as presented by Hessberg, is applicable only in Germany, but the medical interest of the case is a wider one. It appears that nystagmus is a frequent occupation disease among German miners, developing among such as are compelled to work in a half-erect position with eyes directed upward to the "ceiling" of the mine, upon which they are working. A contributory cause is found in the poor illumination of mines. The real cause, however, is not yet quite clear, for nystagmus develops only in a small number of workers. According to the most accepted opinion, this nystagmus is a neuropathic affection, only secondarily affecting the eye muscles by lowering their normal tone. Miners having weak eyes are more susceptible, especially as compensating eyeglasses cannot be very well worn during mining work. In addition any illness or habit, such as alcoholism, producing a weakened state of the body, seems to predispose to this affection. Frequently this type of nystagmus appears to be inconstant, being evident only when the miner is at work in the mine.—*Zeitschrift für Versicherungsmedizin*, October, 1911.

Increased Duration of Life in France.—Lannelongue points out the fact that the average length of human life in France has increased by 20 per cent. in the last 25 years. At the beginning of the last century the average duration barely exceeded the age of 30, in 1880 it was up to 40, and now it varies between 47 and 48. The progress of science, which has lowered the rate of mortality from epidemics and contagious diseases, and the development of hygienic principles among all closses of society have helped to delay the inevitable hour. But there is unfortunately another reason which is not so satisfactory. It is the steady diminution of the birth rate. Up to the age of 2 years infant mortality is very high. But of 1,000 infants from 200 to 300 die in the first years of childhood, and this mortality naturally has the result of considerably diminishing the average rate of life. Now as the birth rate has been decreasing for some time, fewer infants die, and the average rate of human longevity will further increase in proportion to the further decline of the birth rate.

Workmen's Compensation.—A brief has been prepared for presentation by the National Civic Federation to Congress in support of the Federation's Workmen's Compensation bill. The brief gives a rough classification of the different forms of compensation law. The arbitrary form gives the injured workman a right to compensation in every case and to the exclusion of all other remedies. This is the common form of "compulsory insurance." The simple form, compulsory compensation, gives the injured workman the right to compensation in every case except when the injury is caused by his own serious misconduct. The supplemental form adds to the liabilities of employers, and the elective form permits masters and servants to contract with each other in case of injury.

Book Reviews.

Criminal Psychology. A Manual for Judges, Practitioners, and Students. By Hans Gross, J.U.D., Professor of Criminal Law at the University of Graz, Austria; formerly Magistrate of the Criminal Court at Czernovitz, Austria. Translated from the Fourth German Edition by Horace M. Kallen, Ph.D., Assistant and Lecturer in Philosophy in Harvard University. With an Introduction by Joseph Jastrow, Ph.D., Professor of Psychology in the University of Wisconsin. Boston: Little, Brown & Co., 1911.

Rarely is a book written as this has been, by one who is able to combine the erudition of the scholar with the practical wisdom of the man of affairs. The presiding magistrate and the professor of criminal law are both represented in the author of this book, which has already achieved the distinction of a classic. Criminal psychology is not what this title would at first indicate, namely, the psychology of the criminal, but is of broader scope; it takes up the psychology of everything pertaining to the administration of justice. The psychology of the judge, the psychology of the witness, the psychology of the prisoner are all included. The book is divided into two parts. The first deals with the subjective conditions of evidence, or the mental activities of the judge. The second part deals with the objective conditions of criminal investigation or the mental activity of the examinee. In the first part are included the following topics: method; psychological lessons, such as integrity of witnesses, correctness of testimony, egoism, secrets, etc.; phenomenology or the outward expression of mental states, including the various signs of character, reflex movements, dress, physiognomy, and the hand; and the making of inferences, including a discussion of proof, causation, analogy, probability, chance, inference and judgment, mistaken inferences, etc. The second part of the work takes up in detail the subjects of sense perception, perception, imagination, intellectual processes, the association of ideas, memory, the will, emotion, etc. It also discusses the conditions of giving testimony; the differences inherent in women, in children, and senility; and the influences of habit, heredity, superstition, etc. The important topic of mistakes is considered from the viewpoint of illusions, hallucinations, and the actual lie. This is a mere and incomplete skeleton outline of the plan of the book. Every one of its 500 pages is replete with interest not only to the general reader and to the lawyer but also to the physician, whose knowledge of the human organism enables him to penetrate deeper than others into the innermost sources of human action. The style of the author scintillates with wit, and in its wealth of allusions indicates the breadth of his culture. The translator has succeeded in presenting the meaning of the writer in idiomatic and elegant English.

Zabludowski's Technik der Massage. Dritte, veränderte, und vermehrte Auflage bearbeitet von Dr. J. Eiger, Leitender Arzt des Berliner Ambulatorium für Massage. Mit 80 Abbildungen. Leipzig: Verlag von Georg Thieme, 1911.

Zabludowski spent twenty years of his his life in Berlin, occupied in teaching and practising medical massage, and his book on the subject has attained a well deserved popularity in Germany. The present third edition contains exact descriptions of the various procedures employed in massage, names the indications for them, and gives numerous therapeutic hints regarding the preparation of the room and the patient for massage, the frequency for treatments, the employment of mechanical devices, etc., etc. The theory of massage is touched upon only as far as it throws light upon the art of the procedures. The volume is a valuable text-book on the subject it considers. Illustrations are frequent and make many directions very objective and easily understood by the reader.

Practical Pathology. A Manual of Autopsy and Laboratory Technique for Students and Physicians. By Aldred Scott Warthin, Ph.D., M.D., Professor of Pathology and Director of the Pathological Laboratories in the University of Michigan, Ann Arbor. Second Edition, Rewritten and Enlarged. Ann Arbor: George Wahr, Publisher, 1911.

The second edition of this useful book appears practically as a new work, for it has been largely rewritten and more than doubled in size. As is customary, the text is divided into two parts, of which the first is concerned with the methods of performing post-mortem examinations and with the study of the gross material, while the second is devoted to the technique of the preservation of tissues and the procedures necessary for their microscopic examination. The book is characterized throughout by a strongly individual note which adds greatly to its interest and value, for it incorporates the results of the author's very extensive experience as a practical pathologist and as a teacher, and consequently abounds in original suggestions and methods. Like most workers in this field the author is abandoning celloidin imbedding more and more in favor of the paraffin method, which has now been improved to such an extent that it almost equals the other in simplicity and expedition, while it is its superior in nearly all other respects. A wise discrimination has been shown in the chapters on preservation, staining, etc., which include a sufficient variety of formulæ for all practical purposes and adequate discussions of their respective advantages, while all useless lumber has been omitted. The work may be commended as a thoroughly modern and satisfactory guide for the autopsy room and laboratory.

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord. A Concise Introduction to the Principles of Clinical Localization in Diseases and Injuries of the Central Nervous System. By Robert Bing, Privat-Docent for Neurology in the University of Basle. Translated by F. S. Arnold, B.A., M.B., B.Ch. (Oxon.). Revised by David I. Wolfstein. With 70 Illustrations. Price, $2.50. New York: Rebman Company, 1911.

This little book purports to be an easily and quickly consulted work of reference, accurate and comprehensive, and yet clear and simple—a practical vade-mecum of a didactic character. The author states that only such material has been put forward, in the main, as seems firmly established, and the discussion of theories and controverted points is avoided. Regional diagnosis of brain and cord affections implies, of course, a knowledge of the anatomy and physiology of the nervous system. It is based on symptoms and signs arising from injury or destruction or impairment of function of separate structures of the nerve centers. These structures, broadly speaking, comprise only nuclei and tracts which have definite locations and definite functions. These locations and functions are now pretty well known and understood, and regional diagnosis has, therefore, assumed of late years a very practical importance for surgical as well as medical purposes. In the plan of the book, transverse or systemic diagnosis of lesions of the spinal cord is first taken up; the tracts, cell groupings, and mechanisms are described, and the localizing value of motor and sensory disturbances considered. This is followed by a consideration of the longitudinal or segmental diagnosis of cord lesions. The second division of the work is devoted to the regional diagnosis of brain lesions. A knowledge of the morphology of the brain-stem is assumed. The topographical anatomy is, however, described. General rules for localization are laid down. Special reference is made to the differential diagnosis of central and peripheral affections in the semeiology of the nerves of the brain-stem. Lesions of the cerebellum are covered in only fourteen pages. In the section on lesions of the cerebrum, the basal ganglia, and the hypophysis there is an anatomicophysiological introductry chapter, followed by chapters on the localizing value of motor and sensory disturbances of cerebral origin, on visual and on speech disturbances, and on certain rarer cerebral symptoms. The special chapter on the localizing value of disorders of speech is rather short, comprising but three pages. The illustrations in the book are mainly diagrams employed by the writer in lectures. The book will scarcely take the place of a text-book, but will be helpful for ready reference, especially for those who have considerable knowledge of the subject.

A Manual of the Practice of Medicine. Prepared especially for Students. By A. A. Stevens, A.M., M.D. Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania; Lecturer on Medicine in the University of Pennsylvania; Physician to the Episcopal Hospital and to St. Agnes Hospital; Assistant Physician to the Philadelphia Hospital; Fellow of the College of Physicians of Philadelphia, etc. Ninth Edition, Revised. Illustrated. Price, $2.50. Philadelphia and London: W. B. Saunders Company, 1911.

In addition to being revised, this new edition contains articles on acute dilatation of the stomach, mucous colitis, sprue, suppurative cholangitis, beriberi, Malta fever, sleeping sickness, plague, and pellagra. The book still retains its elementary character, and is of the same size as before.

Society Reports.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-Seventh Annual Meeting, Held at Nashville, Tenn., October 17, 18, and 19, 1911.

(*Continued from page 1049.*)

THE PRESIDENT, DR. ROBERT H. BABCOCK, CHICAGO, IN THE CHAIR.

Frequency and Etiology of Cholecystitis.—Dr. CHARLES N. SMITH of Toledo, Ohio, drew the following conclusions: 1. That in the case of cholecystitis two conditions existing simultaneously were necessary, namely, first, obstruction of the biliary current, and, second, bacterial invasion. 2. The mechanical irritation and the trauma produced by gallstones were a predisposing factor in cholecystitis, second only in importance to obstruction of the biliary flow. 3. The pathway of infection commonly was through the portal vein, occasionally through the doudenum and common ducts, rarely through the hepatic duct artery, and then, owing to the bacteriemia attending a general infectious process, and most frequently indeed through the lymphatic circulation.

Symptomatology and Diagnosis of Cholecystitis.—Dr. BAYARD HOLMES of Chicago confined his remarks to the symptoms of toxic, noninfectious cholecystitis, and said that the study of the symptoms of the toxic, noninfectious cholecystitis was based upon a meager material of forty-six cases, of which thirty-two were operated on by himself for drainage o fthe gall-bladder. Seven of these forty-six cases were operated upon after a diagnosis was made by other surgeons. He spoke of the objective symptoms and findings. In every one of the thirty-two cases operated on Riedel's lobe had been distinctly palpated and diagnosed by auscultatory percussion and the diagnosis confirmed at the operation. In nearly every case the gall-bladder was found sufficiently large to be palpated beyond Riedel's lobe, and on the surface of the abdomen during the diagnostic examination; but in quite a number of cases the enlargement was fleeting, appearing one day and disappearing for days or weeks, and then showing up again in the same manner. In two notable cases the position of the gall-bladder was quite abnormal, extending to the middle line and almost to the umbilicus. In six of the thirty-two cases the liver was markedly enlarged, especially the left lobe, and in one other case where this enlargement was present there was a cyst of the omentum in close proximity to the gall-bladder and left lobe of the liver which obscured the diagnosis. In one case, where the liver was considerably enlarged and had been pronounced cirrhotic, there was considerable ascites. Several other patients had hypostatic congestion at the base of the right lung. Not one of his patients had any discoloration about the navel often observed in calculous cholecystitis, necrosis of the gall-bladder, and rupture of the cystic duct. Most of his patients were in the fifth and sixth decades of life, but one was 72 years old, and one was 20. Two other patients were in the thirties. The most characteristic, although not absolutely uniform, symptom had been the cardiac disturbance. In the thirty-two cases which furnished most of the material every gall-bladder was found at the operation to be thick, white, and filled with tarry or porridge-like material which, by the most careful bacteriological examination in the clinical laboratory, proved sterile. Six of the gall-bladders had some adhesions, usually lace-like, but in two instances firm and strong, connecting the gall-bladder with the surrounding viscera. The operation was a simple cholecystostomy varied from the custom by the removal of a small bit of the fundus for microscopical examination. Only one of these thirty-two gall-bladders had to be extirpated on account of permanent obliteration of the cystic duct.

Medical Treatment of Cholecystitis.—Dr. WILLIAM ENGELBACH of St. Louis, in a paper on this subject, drew the following conclusions: 1. Medical treatment of cholecystitis should be directed mostly toward prevention of this disease, particularly in those affections of the gall-bladder complicating known diseases, such as typhoid. 2. Medical treatment was indicated and should be carried out with the purpose of curing the incipient mucous membrane infections of the gallbladder before these became extensive enough to produce obstruction of the cystic duct and calculi, or involved tissue beyond this membrane. 3. Gall-bladder antiseptics, such as menthol, combined with vaccine, preferably specific vaccine, probably offered the most promise for further observations upon the prophylactic and active treatment of acute cholecystitis. 4. Chronic cholecystitis was not amenable to medical treatment on account of the extensive pathological changes in the contents and tissues of the gall-bladder and the contiguous organs.

Surgical Treatment of Cholecystitis.—Dr. LOUIS FRANK of Louisville said that the prime factor in gall-bladder disease was infection, and in the treatment of gall-bladder inflammation the sequence of this infection must be remembered. The relationship between infection and calculi was a definite and a constant one. The stones themselves bore merely a causal relation to the infection, although when once stones were present they acted as a constant irritant and maintained an inflammatory condition of the gall-bladder. Furthermore, by their irritation they invited cancer. Surgical drainage was the one method of relief. In all infectious processes the necessity for drainage was recognized. The general profession needed education along the lines of early diagnosis of gall-bladder disease. The surgical indications were fully recognized by all unprejudiced and thinking men. The profession had overlooked the early symptoms of gall-bladder infection, but had sought for those symptoms indicating a more advanced pathology. Stones were only one factor in infection, and were not even a secondary sequence of infection. Too much stress was laid upon stones in the diagnosis. Drainage was the *sine qua non* of treatment. Without subsequent drainage, even though stones be removed, though adhesions be broken up, and the structures entirely liberated, a complete and perfect recovery would not take place. To effect a cure, drainage of the gall-bladder must be prolonged. It should be continued until the discharge of bile was free from bacteria. His observation had been that drainage was not carried out a sufficiently long time by many surgeons. In his own cases he maintained drainage for from two to six weeks, and even longer. As a routine he examined the bile immediately after the operation by culture and microscope. Early drainage, or drainage during the time calculi were resident in the gall-bladder, was one of the easiest, one of the simplest, and one of the most satisfactory operations, with a mortality so low as to make it urgently advised and readily accepted by the patient. Cholecystectomy was very rarely indicated in a large class of cases in which he formerly did not hesitate to remove the gallbladder. Since resorting to prolonged drainage he had been perfectly satisfied with the results obtained. He questioned the advisability of indiscriminate cholecystectomy. That it was an operation of value no surgeon would deny, but that it should be done in every case of cystic duct obstruction and in every case of empyema of the gall-bladder he was convinced was not the best surgery.

Dr. WILLIAM D. HAGGARD of Nashville thought the keynote of treatment was struck, first, in prevention in a medical way, and, second, drainage in a surgical way. Drainage in many instances should be more prolonged than was the usual custom. There were cases that had this sequence: after the drainage tube had been removed and the fistula had closed, the patient would have the same attacks of colic he had before. As a proof of the fact that early closure of the gall-bladder and interference with drainage would pro-

duce mischief, he said if one would reopen the sinus the patient would at once get relief. He had had colic occur a third time in some of his cases, and a little delay in removing the drainage tube under these circumstances would perhaps avoid the necessity of a second opening of the gall-bladder, because it was due in his judgment to the fact that the gall-bladder, after having been emptied for a number of days and suddenly called upon to retain its fluid again, naturally rebelled, and that this was an explanation of the colics. The diagnosis of chronic cholecystitis was made upon the symptomatology, or the old-fashioned stomach trouble.

Dr. Thomas Hunt Stucky of Louisville said the general practitioner could accomplish drainage in these cases in a manner that was not only beneficial to the patient, but which would be helpful to the surgeon in putting the patient in a better condition to be operated upon later. As to the use of cholagogues, if there was any irritation in the gall-bladder *per se*, if it contained any inspissated mucus, if there were retained concretions of any description or character, a cholagogue was contraindicated. He believed we could accomplish better results by giving something that was going to keep the large bowel empty, that was going to keep up a drain and by contiguity and indirect peristaltic influence produce a flow of bile. Any agent that would produce elimination from the intestinal canal would produce a flow of bile unless there was mechanical obstruction.

Dr. Fenton B. Turck of Chicago stated that experiments showed that the colon bacillus in cholecystitis became more virulent. A new accession of conditions caused an increased virulency in the microorganisms; there was a lowered resistance to the microorganisms, a loss of antibodies in the blood, and consequently increased virulence of the intestinal flora. These conditions made it possible for autolysis to take place and small ulcers were formed in the gall-bladder, the stomach, and duodenum. Many of them would heal, while others would not. Around the erosions the exfoliations formed a nidus for gallstone formation, and there took place a reaction of the mucosa, which was the inflammatory process that went on.

Dr. Robert H. Babcock of Chicago said it was up to the general practitioner to recognize the existence of chronic infection of the gall-bladder before the typical symptoms of gallstone colic, in order that the gall-bladder might be opened and drained before calculi formed and before the dangers ensued which resulted from the formation of calculi. Gallstone pain was frequently like an attack of acute indigestion, and many a case of so-called gastralgia, gastritis, or acute indigestion meant disease of the gall-bladder and the presence of stone or stones.

Dr. Daniel N. Eisendrath of Chicago said it was necessary to have a clear conception of the pathology of cholecystitis. Where the gall-bladder had become converted into a mass of cicatricial tissue incapable of contraction and incapable of doing anything else in the way of neutralizing the toxins or bacteria accompanying them, it was taken out, but this was about the only type of gall-bladder in which such an operation was done. Surgeons should not remove every gall-bladder. There were two classes of gall-bladder cases—those in which there was cholecystitis without the formation of stones, and cholecystitis with stones. Where a diagnosis was made before operation of gallstones and absolutely no stones were found at the operation except a thickened gall-bladder, with adhesions, that condition of the gall-bladder would cause just as many symptoms as the gall-bladder in which stones began to wander down the cystic duct or caused a great deal of colic or inflammation of the gall-bladder.

Dr. Albert E. Sterne of Indianapolis said it was surprising how many of these cases of infection of the gall-bladder and the viscera below the stomach came to the neurologist under the caption of neurasthenia or nervous prostration. Whenever a so-called neurasthenic patient complained of stomach symptoms persistently, a careful examination might disclose the existence of an infected gall-bladder with possible gallstones present, although the existence of stones was not always to be determined either by the *x*-ray or any other means of examination, but could be detected only at the time of the operation. It had been his experience time and again that patients had come under his care who had been treated for a considerable time systematically, but who had only recovered after surgery upon the gall-bladder had been undertaken.

The President's Address: Medical Tendencies.—Dr. Robert H. Babcock of Chicago said that so indispensable had laboratory methods become to-day that one wondered how clinicians of fifty years ago ever succeeded as well as they did in the diagnosis of any but the commonest affections. In his experience as a consultant he had become deeply impressed with the general reliance on laboratory methods shown by practitioners recently out of college, and at the same time with their ability to observe accurately symptoms or to appreciate their real significance and value as compared with the findings of the microscope or test tube. Was there not a tendency along with devotion to laboratory research and animal experimentation to make the study of pathology outweigh too greatly the application of remedies to the alleviation of disease? In how many schools of to-day did the students receive the instruction in materia medica and therapeutics they did thirty years ago? There was reason for this therapeutic scepticism, but it was a tendency which should not be permitted to grow too rank lest the art of healing be lost in the science of investigation of disease processes. Medical colleges must enlarge their clinical facilities or it might be well to return to the good old custom of each student having a practical training with an experienced preceptor. Then added to enlarged and improved facilities for laboratory and clinical instruction was a higher standard of preliminary education. In some medical colleges a degree of B.A. or B.S. was required, which requirement naturally tended to lessen the number of matriculants. Hence the effect of all this was to improve the quality, while at the same time reducing the number of medical practitioners. Nothing could be more valuable in the way of preparation for the successful practice of medicine than service in a large hospital as a so-called interne or health officer. No one could contemplate present therapeutic methods and contrast them with those of three or four decades ago without recognizing that a momentous evolution was at work. Surgery might be said to have undergone its evolution with the adoption of aseptic methods, but medicine had a far more difficult task to perform; hence its accomplishments were neither so striking nor indeed so apparent. Yet who could say that the discovery of the diphtheria antitoxin or of Flexner's antimeningitic serum and the use of autogenous or multivalent vaccines did not compare favorably in the saving of human life with any of the dazzling performances of surgery. As to a national department of public health, in all probability such a bureau or department was only a question of time. It certainly was in accord with popular education on matters of health and hygiene and sprang from the humanitarian desire for the physical betterment of the masses. Its advocates believed that a national control of health boards and public sanitation in general would be more effective than independent action along this line by state and municipalities.

Address in Medicine: Doctors and the People.—Dr. J. C. Wilson of Philadelphia said that the three professions called learned—divinity, the law, and medicine—had in modern times been curiously separated from the people at large. Even the individual members of these professional bodies, while appearing to be in many respects

very close to their fellow members of society, showed upon critical study a certain curious aloofness which became very conspicuous in the aggregate. Manifest to some extent in superficial and external things, this difference between professional and nonprofessional members of a community became impressive and significant when we investigated its actual causes. Not only were the professions separated from others, but they also differed among themselves and especially in their relation to nonprofessional persons. With medicine, however, the conditions were wholly different. The organization of the medical profession but lightly touched the people and the discipline reached them not at all. They only most remotely comprehended its aims and were incapable of a dispassionate consideration of the means by which it was striving to realize them. They were in no sense bound to it and so long as they were in good health regarded themselves as altogether above and independent of it. So far were they from being influenced by its powers to restore health to the individual and avert pestilence from the community, which must appear in every sense mysterious to them, that they formed organizations to undermine the results of scientific investigations concerning the causation and course of diseases and to prevent such investigations. Hence antivaccination societies and antivivisection societies. It was thus seen that there were many people who were wholly indifferent to the medical profession; some that were actively hostile to it. Those who were indifferent so long as they were well and who at once demanded the services of the most experienced and skillful physicians when they were injured or ill afforded material for an unpleasant psychological study. The history of medicine would be but a series of disconnected episodes were it not that it taught us that here as in other fields of human endeavor knowledge ripened slowly and that failures were the stepping stones to success. It taught us another lesson well worth the knowing, and that was that knowledge advanced by indirection. There was no reason for medicine except to prevent and cure disease, yet most of the actual workers who made this history in its earlier period appeared to have been more concerned with other matters. Medicine had thus become not only curative but also protective. No possible knowledge of effects could have given us preventive medicine. We owed this to the study of causes, and the means by which they had been and were being studied were bacteriology and animal experimentation. By the scientific and humane methods of laboratory research the nature of infection and immunity had been clearly established, the methods by which particular diseases were transmitted had been revealed, the part played by various insects as direct carriers and intermediate hosts of disease-producing microorganisms had become known, and the natural defenses of the body against infection investigated. This knowledge had been used in the cure and prevention of the infections with remarkable results in preventing suffering and saving life. Modern medicine was preventive medicine. To attain its objects, which were the protection of health and life, no effort was too arduous, no problem too difficult. Wherever disease prevailed, wherever the death rate was high, it wanted to know the cause in order that the remedy might be applied. It busied itself with water, milk, foods of every kind, and even the air we breathed. It went to the school, the mine, the factory, the shop, even to the very homes of the people to correct the faults that menaced health and life through ignorance and neglect. It invoked the law that people might be protected from themselves and from each other. It was in the highest sense educational. It invited reasonable criticism of its methods and results. It should have the interested cooperation of those who reaped the benefit of its work. There was and always would be much for it to do, always perhaps until that millennium to which the ardent disciples of Metchnikoff looked forward when, infection being ended and the forces which made for senility minimized, there would be no sickness, old age would be enjoyable, and death nothing more than a gentle turning over for a longer sleep.

Address in Surgery: The Indebtedness of Posterity to the Pioneer Surgeons of the Mississippi Valley.—Dr. Joseph D. Bryant of New York delivered the address in surgery. Among other things he said that those pioneer heroes of the Mississippi Valley who engaged in the advancement of civilization, and those devoted to the creation of novel means of medical and surgical relief, were closely akin in importance to those whom poetry and sculpture had glorified for centuries. The magnitude of the contributions of Boone and Lincoln to personal welfare, civilized comfort, and happiness in our country were well measured by similar blessings bestowed on the civilized world by Ephraim McDowell of the Mississippi Valley. In a small town in December, 1809—more than a century ago—McDowell performed the first ovariotomy recorded in the annals of our profession. The operation was successful in the full meaning of the term. The patient recovered promptly and completely, and lived thereafter in comfort and usefulness for thirty-two years. McDowell's first ovariotomy was not published until eight years after its achievement. Dr. Bryant then referred to the early work of J. Marion Sims, a most distinguished son of Alabama, and of the professional world; to Dr. T. Gaillard Thomas, from South Carolina, most eminent in his profession, and also a successful ovariotomist, and to Thomas Addis Emmett, a famous son of Virginia, and closed his address by saying that in his judgment Ephraim McDowell's contribution to the comfort and the security of the most sacred and enduring part of the family circle was of priceless value in the broadest sense.

General and Dietetic Treatment of Typhoid Fever.—Dr. George Dock of St. Louis spoke of the importance of the continued discussion of typhoid fever on account of its wide extent and continued prevalence. He directed attention to the efficient preventive treatment now available and urged that it be used in camps and in institutions or wherever bodies of people were gathered together under conditions that might make typhoid infection possible. He touched on a number of details in the general treatment, and especially on the preliminary use of calomel, showing that that could be carried out without danger of setting up dangerous diarrhea. He devoted himself especially to the question of diet. He pointed out the difficulty of drawing conclusions from small statistics, even from those running up into many hundred cases. He called attention to the anatomical processes, the importance of keeping up the patient's nutrition to the highest possible point in order to favor recovery of the anatomical lesions, and the fact that fuller diet recommended by many recent authorities did not involve any greater danger to the intestinal wall than the administration of milk. He emphasized the fact that a comparatively varied diet could be given without exciting the patient in any way, and that the morale of the patient was nearly always distinctly improved by realizing that he was not on the painfully limited diet traditionally given to seriously sick people. Various modifications of diet were described and their advantages pointed out.

Dr. Charles L. Minor of Asheville dwelt upon the question of water. He thought we ought to use all the various means of giving water to patients, of pushing water on them, having the nurses insist that they get so much water at a time and as regularly as medicine. He had for the last two years in a number of severe cases infused his patients and he had been surprised to see the wonderful effects of a bi-daily saline infusion. He could only testify as to its effect on elimination rather than the blood-pressure.

Dr. Fenton B. Turck of Chicago said it was a mistake to inject a large quantity of water into the bowel of a typhoid patient, for the reason that it overstretched he colon and increased the cramps and did not produce a true peristalsis.

Dr. John A. Witherspoon of Nashville said that in his typhoid experience sweet milk, if given at any stage of fever, and especially after the beginning of the second week, would invariably increase fermentation to the extent that one would have a great deal more gas in the abdomen and a great deal more of flatulency. Then in the stools there would be found large masses of curded milk passing through. Any diet that increased flatulency and fermentation, and that was capable of passing through the intestinal tract in a coagulated form, was not the best diet. He believed in nutrition, but sweet milk in his judgment, backed by many years of study, had no place in the treatment and dietetics of typhoid fever. If the physician would give these patients buttermilk or ordinary broths, or meat juices or extracts, he would get very much better results, and maintain the vitality of the patient better.

Dr. L. H. Montgomery of Chicago advocated soups and beef extracts, properly prepared, but he used milk as well, and buttermilk. He gave custards and poached eggs, recommended sunshine and plenty of clean sheets and bedding, and gentral hygienic rules.

Dr. Robert B. Preble of Chicago said the keynote of the discussion was individualization; that there were patients who could be fed successfully upon sweet milk without disturbance; that some could be fed nothing but water and not feel any disturbance, while there were others to whom the physician might give a liquid diet. But each patient must be handled as an individual, and any man who attempted to treat a case with a fixed diet that applied to all patients would have a lot of trouble.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Sixty-first Annual Meeting, Held at Harrisburg, September 25, 26, 27, and 28, 1911.

SECTION ON SURGERY.

(*Concluded from page 999.*)

What Can Be Done to Preserve the Strength of Patient During Stay in Bed?—Dr. John M. Baldy of Philadelphia said that surgical patients, as a rule, were not sick in the sense, for instance, of a typhoid fever patient. Therefore, there was little call for efforts for sustaining strength after operation. The effort to force the appetite by drugs only prolonged the loss for an indefinite period. The excretory organs should be got to working actively by means of purgatives and diuretics. With a few exceptions the diet should not be limited except as to quantity. A patient kept in bed for two to four weeks on three full meals a day inevitably suffered from one or two attacks of indigestion. If the surgeon would use good judgment in deciding that an operation was desirable, would prepare his patient well, do his operation properly, and pick his nurse carefully he needed not bother much about the after-treatment.

Transfusion.—Drs. George M. Dorrance and Nathaniel Ginsburg of Philadelphia presented this paper. They said that in concealed bleeding within the abdomen or pelvis we frequently waited for the resultant syncope to arrest the bleeding. This too often resulted in loss of life. Instead of waiting and trusting to uncertainty they advised and practised transfusion. In that way it was possible to render cases apparently inoperable on account of shock suitable for operation. Instances of this were met with in gastric or duodenal hemorrhage, in hemorrhage following operation or typhoid fever or extrauterine pregnancy.

The Treatment of Tumors of the Urinary Bladder by High Frequency Desiccation.—Dr. B. A. Thomas of Philadelphia said he was strongly of the conviction that in high frequency dessication, erroneously styled fulguration, the surgeon had at his command a new measure that would challenge, rival, and surpass in effectiveness the long established methods of treatment for vesical neoplasm. It was a serious question in the mind of the writer whether or not a patient with a bladder papilloma should ever in the future be subjected to radical operation when treatment by this method was available. Two of the three cases which Dr. Thomas reported as treated by this method were entirely cured, one presenting the largest papilloma he had ever seen. The third case was at present under treatment.

Thursday, September 28—Third Day

Commission on Prevention of Venereal Diseases.—Dr. Edward Martin of Philadelphia, chairman of this commission, offered on behalf of the commission recommendations that a medical certificate of freedom from venereal or other contagious diseases should be required from the man who contemplated marriage, that one who conveyed venereal disease should be punished by a jail sentence, and that provision should be made for foci of infection so that the public might be protected. The recommendations were adopted by the society and the commission continued another year with the same personnel.

Commission on Fractures of the Femur.—Dr. William L. Estes of South Bethlehem, chairman of this commission, offered on behalf of the commission recommendations that teachers of surgery should give far more attention to the investigation of fractures and to the teaching of this important branch to their students; that, while recognizing the fact that x-ray photographs might be most misleading, they would, when properly made, furnish an indication for the proper reduction and preservation of apposition of the parts and serve as a graphic record of the fracture itself; that while treatment by means of traction enabled the patient in most cases to resume his occupation without serious detriment, yet x-ray pictures showed that absolute apposition and restoration of the proper axis of the bone were seldom accomplished; that the open method of treatment introduced such a very marked element of danger that the commission could not recommend it for general use or recognize it as a routine practice, but that in selected cases it might be employed by an experienced surgeon; that some form of traction, such as Buck's extension, seemed to be the preferable method of treatment, though Bardenheuer's transverse traction and Hamilton's apposition splints would serve a useful purpose in the majority of cases; that good functional results were obtained when the shortening was not over an inch, providing there was no inversion or eversion of the foot; that the usual methods of measurement were very inaccurate, and that the usual method of measuring should be checked by measuring from the tip of the ensiform cartilage to the internal malleolus or the patella or from the middle of the umbilicus to the internal malleolus and that in making measurements the pelvis should not be tilted and that the anterior spines should be in the same horizontal plane. The commission was continued for another year with the same personnel.

The Commission on Cancer.—Dr. J. M. Wainwright of Scranton, chairman of this commission, reported that County Societies had been urged to devote meetings to the study of cancer and that a number had done so; that six short articles adapted to lay readers had been prepared and that these would be sent to all the leading news-

papers in the State for publication; that from a report of 382 cases of cancer it was shown that only 68 per cent. of superficial cancers and 48 per cent. of deep-seated cancers were operable when they came to the surgeon; that in 39 per cent. of the superficial and 46 per cent. of the deep-seated cancers there had been a precancerous condition of a chronic irritation; that both the patient and physician were to blame for the delay in treating cancer, but that it would seem that the medical profession should be the first to show improvement in this respect.

Officers.—The election of officers resulted in the choice of the following: *Chairman,* Dr. Otto C. Gaub, Pittsburgh; *Secretary,* Dr. J. Torrence Pugh, Philadelphia.

SECTION ON EYE, EAR, NOSE, AND THROAT DISEASES.

Tuesday, September 26—First Day.

DR. WILLIAM F. ROBESON OF PITTSBURGH IN THE CHAIR.

Opening Address of the Chairman.—Dr. WILLIAM F. ROBESON of Pittsburgh said that all, no doubt, felt the practising of a specialty to be likely to make one narrow, but that he could conceive of no better way to make one broaden out than to attend such a medical gathering. By reason of the numerous special medical societies and the various State societies, the profession itself had not only improved greatly within his own brief career, but it had also broadened very much, particularly in its ethics.

Aids to Diagnosis in Otology and Their Clinical Significance.—Dr. JAMES P. MCKERNON of New York City, by invitation, presented this paper, and took up the leucocytes and the differential blood-count, blood-cultures, cerebrospinal findings, and radiology. He said that some of these diagnostic aids were merely confirmatory of the clinical evidences, while some were of the utmost value from the standpoint of a positive diagnosis.

Dr. S. MACCUEN SMITH of Philadelphia stated that it had been his custom to have an *x*-ray taken in virtually every case on which he wished to operate, especially in chronic mastoiditis.

Dr. EWING W. DAY of Pittsburgh insisted that when one had a plain case of sinus thrombosis with distinct clinical symptoms one should not let timidity keep one from operating until the diagnosis was confirmed by blood-cultures.

Dr. MCKERNON said that he had distinctly stated in his paper that the blood-cultures were merely confirmatory of the clinical evidence, and that their chief value was in cases in which there was not enough clinical evidence to enable one to operate.

Symposium on Suppurative Diseases of the Labyrinth.

Indications for Operation.—Dr. S. MACCUEN SMITH of Philadelphia said that only clinical experience and personal intuition could govern one's operative procedure in each individual case. Given a case of chronic suppurative otitis media presenting the characteristics of a latent labyrinthitis, in which there were an absence of hearing and no response to the caloric test, the indications were that the labyrinth was destroyed. Some cases of this type would recover spontaneously, but they required close watching in order to prevent further intracranial complications. This was especially true if the radical mastoid operation was undertaken. One should, therefore, endeavor to determine the exact status of the labyrinth before advising a patient to submit to such an operation. Nevertheless, on account of the lack of definite indications for operative intervention, it would seem that patients could be best served by the use of palliative methods of treatment, until definite indications for more radical procedures should become manifest. Dr. Smith was convinced that a large proportion of the fatal cases had been caused by meddlesome surgery. He thought that one was justified in operating only after one had considered the clinical evidence in each individual case.

Technique and Results of Operation on the Labyrinth.—Dr. EWING W. DAY of Pittsburgh said the indications for treatment in diffused labyrinthitis to be the relief of the violent symptoms, the avoidance of a resulting residual chronic infection, and the cutting short of the great danger of meningitis and cerebellar abscess. In considering the question of operation, the function of the ear could not be taken into account, he said. The treatment of chronic diffused labyrinthitis offered much better surgical possibilities than did that of the acute form.

Some Remarks on the Ocular Symptoms in Pituitary-Body Diseases and Results of Treatment.—Dr. GEORGE E. DE SCHWEINITZ of Philadelphia, while fully recognizing that nonacromegalic cases of pituitary body disease should present no difficulties in detection, believed that bitemporal hemianopsia and *x*-ray findings constituted the most potent features in the diagnosis. He considered the following as suggestive symptoms: unexplained amblyopia, or blurred vision, sometimes of long duration, and often at first of one eye only; a central scotoma, especially if of hemianoptic type, again often in one visual field; temporal hemianopsia preceding loss of the form sense of the affected visual field area; extraocular muscle palsy, usually third-nerve palsy, with or without exophthalmos of one or the other eye; atrophy of the nerve-head without indication of antecedent neuritis or choking of the disk; nausea and headache, the latter often violent, especially before the active degradation of direct vision and the development of visual-field defects; disturbances of the sense of smell, exaggerated tendon reflexes and (in women) amenorrhea or early cessation of menstruation. While bitemporal hemianopsia was the common visual-field defect, homonymous hemianopsia was not excluded, and might occur from backward extension of the growth with involvement of one optic tract.

Tonsillectomy: Why, When, and How.—Dr. J. LESLIE DAVIS of Philadelphia preferred tonsillectomy to any less complete operation for the following reasons: The function of the tonsil was either suspended or destroyed when the tonsil was involved in any pathological process for which even the partial removal of the gland had been recommended. To excise the free portion did not remove the cause; and in the residue of the tonsil thus amputated there still existed an inflammatory process that would result in a fibrous infiltration or be followed by a more extended necrotic invasion of the tissues surrounding the exposed place. Since the physiological function of the tonsil was compensated for after enucleation, the preservation of any part for functional effect was not necessary. When the principal indication for operation was a peritonsillar abscess, enucleation was the only operation that would insure nonrecurrence. Toxic absorption from necrosis in a remnant of tonsil tissue and the concomitant putrefaction of retained coagulated secretion and débris was almost as marked as when the whole tonsil was retained. The danger of hemorrhage and of injury to the surrounding structures was lessened when enucleation was performed. Tonsillectomy left the most perfect relation of structures bounding the tonsillar recess, and the most symmetrical readjustment of the faucial pillars. Regarding the time of operation Dr. Davis said that every tonsil sufficiently diseased, whether by virtue of its size or through absorption of its septic products, to interfere with any other normal function, either local or systemic, should be enucleated, unless the abnormality were due to an acute process that would naturally subside in due time, or offered under treatment reasonable encouragement for eventual restoration to a non-offending state. Concerning the last division of his subject, he said that the method employed by him was the simplest, since but six instruments were needed; the safest, because it produced the least possible hemorrhage; and the most satisfactory in

point of enucleating the entire tonsil without injury to the surrounding structures, leaving a normal throat so far as any perceptible function was concerned.

Dr. Eugene L. Vansant of Philadelphia remarked that the operation as now performed was much more severe than it used to be. The anesthesia was now much deeper, the loss of blood greater, and the shock to the patient worse than under tonsillotomies. Tonsillectomy should not be undertaken too quickly, because it was necessary for many of these patients to have a preliminary treatment to build them up. The surgical procedure itself should be performed rapidly; and the patient should afterward have rest in bed with a subsequent tonic treatment. Dr. Vansant thought that in some cases the tonsils were in such a healthy state that it was advisable to leave a small amount of tonsillar tissue behind. He considered anyone that performed a tonsillectomy, and left adenoid tissue in the vault, to be doing bad surgery; and anyone that removed both these, and failed to remove a nasal obstruction, to be doing very bad surgery, the fundamental object being to restore nasal respiration.

Dr. G. Arthur Dillinger of Pittsburgh said that for the last fifteen years he had been using the tonsillotome entirely, and doing a partial resection under chloroform anesthesia. This operation could be done in a shorter time, with less shock to the patient, and with no severe hemorrhage. If the pillars of the fauces were dissected away carefully, he thought that there would be few cases of small submerged tonsils in which the capsule could not be removed clean-cut. He had never been called upon to operate on the same child twice. In the last three years he had known of five deaths from hemorrhage in cases in which the complete dissection had been done and the snare had been used.

Dr. G. R. S. Corson of Pottsville agreed with Dr. Davis in his use of a small number of instruments, but said that he himself would cut out one or two of the instruments used by Dr. Davis; for instance, he saw no longer any use for the snare. He had not used it for a couple of years, and had had no serious secondary hemorrhage.

Dr. Davis stated that in most cases dangerous hemorrhage had occurred after the use of sharp knives to free the pillars, these instruments having penetrated the muscular tissue and cut blood-vessels outside of the tonsil.

The Influence of the Eustachian Tube in Purulent Otology.—Dr. M. Delmar Ritchie of Pittsburgh said that the fact that the Eustachian tube was the channel for most primary and secondary infections of the middle-ear was an accepted one in otology. Serious middle-ear infections had been brought about by pathological conditions of the mucous membrane of the tube itself. Treatment of the tubal membrane, in chosen cases, he considered an abortive measure in acute middle-ear inflammation. Curettage of the Eustachian isthmus, producing permanent closure, he believed to be a justifiable procedure in selected cases of purulent otitis media, and an imperative measure as a final step in the technique of a radical mastoid operation.

Dr. G. Arthur Dillinger of Pittsburgh remarked that the majority of otologists would spend two or three months on a new case of otitis media in trying to cure the discharge by local remedies, etc., before advising a radical operation. Curettage of the Eustachian tube, he thought, would probably be used conjointly with these measures by most men during this period of waiting. He could not see that this procedure was more dangerous than a radical operation. In entering the mastoid one was in one of the most serious localities to be found in the anatomy, and anyone doing operations on the Eustachian tube should, of course, use great caution.

Adenoids: Their Effect Upon the General System.—Dr. James J. King of Feeland said that adenoids produced deformation of the face and the palate arches. If the condition was not corrected early in life it was most difficult or impossible to correct afterward. Adenoids also had serious effects upon the general development of the child, producing well-defined changes in the blood and the general nutrition. They were undoubtedly the cause of much deafness and other serious auditory troubles, and this fact alone should be sufficient to warrant their receiving the proper early treatment.

Wednesday, September 27—Second Day.

Symposium on Tuberculosis of the Throat.

Treatment of Tuberculosis of the Larynx.—Dr. Christopher C. Sandels of Pittsburgh stated that this condition was usually secondary to pulmonary tuberculosis and required the same constitutional consideration. The proper hygienic surroundings, diet, climate, and rest, were all-important. Measures should be adopted for the control of pain and cough. Much could be done for the benefit and comfort of the patient by proper systematic local treatment.

Dr. George B. Wood of Philadelphia was sorry that Dr. Sandels had not mentioned the use of the local cautery, and said that if the lesion were not great it could be healed by the use of the galvanocautery.

The Relation of the Tonsils to Tuberculosis.—Dr. George B. Wood of Philadelphia said that about 5 per cent. of all tonsils removed showed some tuberculous lesion. Practically all patients with tuberculosis in the advanced stage had their tonsils inoculated secondarily from the sputum. Tuberculous disease of the tonsil, however, gave rise to pulmonary disease only in exceptional cases by way of the lymph channels, though such infection was possible when certain anatomical peculiarities existed.

The Anomalies of Refraction and Their Relation to Abnormalities of Ocular Balance.—Dr. Samuel D. Risley of Philadelphia remarked that it was not unreasonable to expect that, during development in an anomalously shaped orbit, not only would a great variety of modifications occur in the form of the eyeballs, which would determine their diameters, and consequently alter the radii of the curvature of the cornea, but that they would, as an anatomical necessity, also lead to changes in the length and line of direction of the optic nerves and modify the origin and attachment, the length, and the line of direction of the extraocular muscles. Great assistance in the discovery and treatment of these abnormalities, he said, was afforded by a definitely recognized standard for normal binocular vision. Having determined accurately the fault, one would often be able to correct the error in balance, and so secure comfort by restoring a normal acuity of vision for each eye and a proper binocular balance. The ideal relation would be found in two emmetropic eyes with a normal acuity of vision and a physiological range and region of accommodation and convergence.

Refraction and the Use of Cycloplegics, with Special Mention of Hyoscine.—Dr. Clarence M. Harris of Johnstown considered refraction the most important department of ophthalmology, as it affected the comfort and capability of so large a proportion of the population, and said that as a prophylactic agent it could not be overestimated. It should be adapted to the needs of the individual. Hence, a careful history taking, exhaustive methods of testing, the use of the ophthalmoscope in every case, and a close estimate of the patient's general condition were necessary. The proper use of cycloplegics he thought very important. He had come to depend upon hyoscine and homatropine. Properly used, hyoscine was equal to atropine, and in many instances superior to homatropine. It could be safely employed three or four times daily by the patient at home. Most of the cycloplegia would have disappeared in forty-eight hours. He had never had toxic

effects follow his office instillations. Distressing symptoms were frequently due to impurities in these preparations. One should first, by elaborate investigation, determine just what should be considered standard in regard to strength and purity in these drugs, and then insist on the druggist's adhering to this standard.

Dr. Wendell Reber of Philadelphia considered nothing more valuable than the repeated tests, as it took at least one test for the patient to be educated for his part in the drama. He had practically abandoned the use of homatropine. As for atropine, its use took more time than people were usually willing to give. Hyoscine had been his reliance for six or seven years. Its use allowed of more elasticity in the manipulation of the patients in the office than would that of homatropine.

Dr. Samuel D. Risley of Philadelphia stated that, while rapid cycloplegics were useful in healthy eyes, there was a very large group of eyes in which their use was not prudent or useful. Many asthenopic patients had congested, fluffy eyegrounds, and had suffered for a long time with periodical or constant headaches. Their eyes were sick, and one could not expect in a few hours to get rid of an infiltrated retina and choroid and a fluffy eyeground by any method. No patient would ever select his proper mathematically correcting glass until his sick eye was better. If one kept on using homatropine often and long enough the eye would quiet down and one could refract it correctly.

The Blackboard Evil and the Remedy—The Copybook Evil and the Remedy.—Dr. John Neely Rhoads of Philadelphia said that children and everyone else should learn to avoid glare, no matter what its source. In order to prevent the glare that came from the reflection of light from the blackboard into the eyes of the children the base of the board should be pulled away from the wall, so as to deflect the light upward. Children should never be required to copy script from the blackboard, because, in order for a child forty feet away to see them, the letters would have to have lines a quarter of an inch thick. To be in proportion the letters would then have to be five or six inches high. Besides, such copying made a constant strain upon the accommodation. The copybook evil he considered just a trifle less serious than the blackboard evil. There was a glare from the white page, and the writing of the child became less and less good as he wrote farther and farther away from the copy. The copies should be inserted in a carrier on a ruler that could be moved down the page in such a manner as to cover the last line of writing. Every child should also be taught to write and cipher without the use of his eyes. This would enable him to do a good part of his work without looking at it, and thus avoid a considerable part of the strain upon his sight.

Dr. Fremont W. Frankhauser of Reading stated that in that city the glare from the blackboard was obviated by having a light green screen dropped over the board when not in use. The glare from the copybooks, he said, might be averted by not having them made of glazed paper. A great deal of the glare in cities and towns came from the bright light striking the white concrete pavements. Lampblack should be added to the concrete in order to make a slate-colored pavement that would give no sharp reflection to any kind of light.

Recurrent Third-Nerve Paralysis, with Report of a Case.—Dr. J. Ferdinand Klinedinst of York said that his patient was a female aged fifteen years who had had since childhood annual attacks of paralysis of the right third nerve, always occurring in the early spring. The attacks always began with severe pain extending from the back to the mastoid region, over the temporal region, and to the right eye. The paralysis lasted from ten days to two weeks. No other member of the family had had similar paralysis. There was, however, a family history of migraine, and he considered it probably a case of migraine ophthalmoplegia.

Thursday, September 28—Third Day.

Orbital Diseases Secondary to Sinusitis.—Dr. Wendell Reber of Philadelphia said that all manner of extraocular and intraocular diseases were traceable to suppurative and non-suppurative diseases of the accessory sinuses, and that it would often require the most prolonged study on the part of the rhinologist to establish finally the relation. Even in the presence of seemingly negative findings intranasal treatment that would deplete the mucous membrane to the fullest extent should be instituted. In ocular conditions of apparently obscure origin he thought that no case could be said to have been properly studied until the accessory sinuses had been shown to be plainly non-causative.

The Relation of Ethmoid Disease to Orbital Conditions.—Dr. Ross Hall Skillern of Philadelphia stated that the circulatory and nervous anatomy were such as to permit of the passage of infection from the mucosa of the ethmoid cells to the orbit. He named the following as some of the pathological conditions that affected the ethmoid cells: Polypoid hypertrophies and polyps, frank or closed empyema, polypoid growth with suppuration, mucocele, and malignant growths. He stated that the infection extended by mechanical pressure, by continuity, by contiguity, and through the blood-lymph channels (toxemia). When the infection reached the periosteum of the orbital side one of two things occurred: (1) If the infecting process was not exceptionally virulent, the periosteum acted as a barrier and prevented perforation, guiding the purulent secretion anteriorly along the bone until it finally pointed externally through the upper eyelid; (2) when the infection proved too severe for the periosteum to halt it in its progress, the orbital contents quickly became involved, with the appearance of an orbital phlegmon, all of the orbital tissues being involved in one great purulent mass. If this condition was allowed to form, total loss of the eye would invariably follow. When extension through the blood and lymph-channels occurred alone, two foci of inflammation without any apparent connection were present: one, at the original seat in the ethmoid; and the other, the secondary, in some portion of the orbit. He considered it questionable whether infection from a focus of pus in the ethmoid capsule ever caused ophthalmic complications solely through the medium of the lymph—or blood-vessels; as usually the other modes of infection were at least coincident. Even in malignant disease extension through the circulation was not preeminently marked, owing to the extreme thinness of the separating partition.

Preventable Blindness.—Dr. William W. Blair of Pittsburgh remarked that the medical profession was laboring most successfully in the prevention of diseases, thus destroying the necessity for its own existence. Ophthalmology was not lagging in the rear, as witnessed by organized efforts for study and prevention. The lines of activity along which it was possible to accomplish prevention that were open to thoughtful men, he said, included hygiene and care of the eyes, ophthalmia neonatorum, trachoma, Fourth of July accidents, and industrial blindness. He thought that it would be well if the State Society should make an organized effort toward the prevention of blindness through a subdivision of the work.

Dr. Edward F. Pyfer of Norristown had been surprised at the opposition to the use of nitrate of silver existing among medical men doing midwifery and obstetrical work. At a meeting of the Montgomery County Medical Society he had tried in vain to impress upon the members the fact that a few drops of a 2 per cent. solution could do no harm. He stated that in Indiana legislation had been

adopted making the use of the Credé method almost compulsory. He suggested having two grains of nitrate of silver put in a small vial and having the obstetrician add the water at the time of using. He protested against the use of argyrol or protargol in place of nitrate of silver to combat the infection. In regard to trachoma, he said that if a small bottle of a 15 per cent. solution of acetate of copper in glycerin were give the patients, with directions to use it for an indefinite time, it would do more good than one or two applications made at the office.

Dr. Edward B. Heckel of Pittsburgh remarked that everyone doing eye work knew that blindness resulting from ophthalmia neonatorum came in many cases through the neglect of the general practitioner, and stated that the Pittsburgh Health Department made free distribution of nitrate of silver to anyone asking for it. It was put up in hermetically sealed plain glass tubes, and not colored glass; for, contrary to a prevalent opinion, it had been found that the nitrate of silver would not turn black when exposed to the light, so long as no organic substance, such as a cork, was allowed to come into contact with it. He thought that the number of cases of trachoma in this country had greatly diminished, because the government was preventing the entrance of foreigners afflicted with this disease, which had also been made a reportable one. Regarding industrial injuries, he said that many of these were due to the careless use of dynamite, and stated that while persons handling this explosive were at first careful, they later became so careless that they would even take a wagon-load of it over a stony road.

Dr. John B. Corser of Scranton said that in his section of the State more eyes were lost from the pieces of copper thrown from copper capped dynamite cartridges than in any other use of dynamite. Children would find these where they had been carelessly left by the workmen, and explode them innocently. The pieces could not be removed unless they could be seen and taken out by means of the forceps. He thought it would be well for some of the members to interview the makers of these cartridges and see whether they could not make them of steel or iron.

Dr. Clarence M. Harris of Johnstown thought that trachoma was on the increase in his locality, where the people lived crowded together, the beds never being long enough unoccupied to become cold. One case of the disease might infect a whole house. The municipal authorities, he said, should compel these people to live right. Very few of these cases were reported. Indeed, the health officers did not know what a physician was talking about when he reported a case of trachoma.

Dr. Wendell Reber of Philadelphia then offered the following resolution, which was adopted:

Whereas, it has been increasingly shown that much of the blindness incident to injury and disease is largely preventable; and, *whereas*, the intelligent resort to ordinary, every-day means and methods in the manufacturing establishments of the State of Pennsylvania would greatly reduce the number of partially and wholly blind persons, thus relieving the State of a grievous burden: Be it, therefore,

Resolved, That the Section on Eye, Ear, Nose, and Throat Diseases of the Medical Society of the State of Pennsylvania recommends to the general body of the society that a permanent committee be formed, to be known as the Committee on Prevention of Blindness and Conservation of Vision, to act in conjunction with the Pennsylvania Association for the Conservation of Vision and the other societies working in the same direction.

Dr. Reber was appointed a committee of one to present this resolution to the general body.

Officers.—The following officers were elected for the ensuing year: *Chairman*, Dr. Wendell Reber, of Philadelphia; *Secretary*, Dr. Clarence M. Harris of Johnstown

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting, Held November 2, 1911.

The President, Dr. William M. Polk, in the Chair.

The scientific business was held under the auspices of the Section on Surgery.

Report of the Committee on Hospital and Municipal Budget.—The Committee of the New York Academy of Medicine on Hospitals and the Municipal Budget (*President*, Dr. Charles L. Dana; *Secretary*, Dr. James Alexander Miller) was formed by the consolidation of two committees created by act of the Council and appointment by the President. The work of this reorganized committee had been the investigation in this city of hospital conditions. It was to keep the profession informed in regard to hospital needs, organization and progress and to cooperate with the library in securing hospital literature; it was also to investigate the conditions and needs of those departments of the city which controlled the public hospitals, viz., the Health Department, the Charities Department, and the Bellevue and Allied Hospitals, so that the committee could with proper data appear before the city authorities and help in securing needed or in opposing unwise appropriations, so as to increase the efficacy of our city's hospitals. All this was to be done on condition that such investigation and help were desired. The work of this committee should not be done without the aid of paid and efficient labor and through the generosity of a friend such help was obtained and work was begun in May, 1911, and had gone on steadily ever since. After a conference with the President of the Borough of Manhattan and with the Board of Estimate and Apportionment, the Committee was organized as follows: 1. Subcommittee on the Department of Public Health with Dr. Huddleston as Chairman. 2. Subcommittee on Bellevue and Allied Hospitals with Dr. Thompson as Chairman. 3. Subcommittee on the Department of Charities with Dr. L. Williams as Chairman. A permanent Executive Committee was appointed to take charge of and superintend the active work. This committee consisted of the President and Secretary of the General Committee and the Chairmen of the three special committees. The Subcommittee on the Charter was continued. With this organization much useful work had been done during the past six months. With the cooperation of the Health Department a study of its hospitals was made, the results of which were embodied in a report with recommendations and suggestions which had been submitted to the Council. The recommendations and advice of this Committee were asked and given to the city authorities and were effective in securing for the Health Department means for enlarging its work, for establishing new hospitals, and for adding to its facilities for tuberculosis patients. Similar investigations were made of the hospitals and of the Charities Department and a report was submitted to the Council. The Subcommittee on the City Charter drew up arguments against the hospital organization scheme of the proposed new City Charter, and they were presented to the Assistant Corporation Council and brought to the attention of other city officials interested in the revision of the Charter. The arguments and the position of the Committee were formally approved by the Board of Governors of Bellevue and the Allied Hospitals. Through the activities of the subcommittees a great deal of valuable statistical matter had been gathered and put at the disposal of the Committee and the Academy of Medicine. They felt that the work was appreciated and its position as an important organ of opinion acknowledged by the officers of the City Departments. Financial officials of the city and others in authority had expressed the opinion that they needed and desired the views and advice of medical men on questions of hospital and public health

policy. It was proper that such a body as the New York Academy of Medicine should have a special body to whom the city could apply. They owed this as a public body to the public good. The committee also felt that if its paid executive committee were continued it could and ought to assume the work of a Council on Hygiene, or a Committee on Public Health, since the Section on Public Health had been discontinued. It therefore asked for this enlargement of its activities.

The Council approved of the Report of the Committee and voted to grant to it the enlarged powers which it asked and also voted that the report be read before the Academy and published in the journals.

Proposed Program of the Committee of the Academy of Medicine on Public Health, Hospitals, and Budget.—1. **Public Health.**—It was proposed that the object of this branch of the work be as follows: *a.* To maintain a bureau for the collection of facts in regard to public health, sanitation, and hygiene. *b.* To endeavor to establish an active cooperation with all public health activities in the city. *c.* To keep the medical profession advised of public health conditions. *d.* To render to the public authorities and to the community at large an authoritative medical opinion on public health matters. This was to include frequent conferences with officials of various city departments, the holding of public meetings, the giving of lectures, the distribution of literature, and other methods of publicity. *e.* To undertake and suggest special researches looking to the solution of vital public health problems, such as the investigation of industrial diseases, etc. *f.* To make a comparative study of methods and results of public health activities in other cities, both in this country and abroad. *g.* To cooperate with the Library Committee in maintaining the literature in the Academy Library upon the subjects of public health, sanitation, and hygiene in a high degree of efficiency.

2. **Municipal Budget.**—The object of the work in this direction was as follows: *a.* To utilize facts obtained by the study of public health and hospital conditions for practical application in the preparation of the annual municipal budget. *b.* To assist actively the various departments of the city government which related to public health and hospitals in the preparation of their tentative budgets. *c.* To take an active part in the budget hearings before the Board of Estimate and Apportionment.

3. **Hospitals.**—The work in respect to the hospitals would be as follows: *a.* A study of hospital and dispensary conditions in New York City, including public and private institutions in all the boroughs. This study to be made from the standpoint of construction, equipment, administration and medical efficiency. *b.* To plan for the future development of hospitals and dispensaries according to the distribution of population and to further the efforts already being made to raise the standards of dispensary work. *c.* To undertake the comparative study of hospitals and dispensaries in other cities, both in this country and abroad. *d.* To cooperate with the Library Committee in establishing and maintaining a section in the Library of the Academy for the collection of all forms of literature relating to hospitals and dispensaries

The Academy voted to adopt this proposed plan of work.

Certain Phases of the Surgery of the Spinal Cord and Spinal Paths.—Dr. Charles H. Frazier of Philadelphia presented this paper. He first considered the treatment of spasmodic torticollis and occipital neuralgia. One of the characteristic features of the first three cervical nerves was the free anastomosis not only between each of the posterior divisions one with another but between the anterior and posterior divisions as well. Recurrence of pain or motion was inevitable unless all three divisions of the first, second, and third were resected. Because the muscles at the nape of the neck concerned in drawing the head backward and rotating it, with the exception of the trapezius, were supplied by the posterior division of the cervical plexus, resection of these nerves was suggested as a means of relieving, if not curing, spasmodic torticollis. The violent contractions of this distressing condition were favorably influenced by a peripheral operation. Dr. Frazier had had experience with six cases, two of which were reported as cured, while in the remaining four the improvement had been so decided that the operation was more than justified. He, therefore, recommended this operation with perfect propriety. Before undertaking the operation the surgeon should be perfectly familiar with the anatomical relations because the field of operation was one seldom approached and the isolation and identification of the nerves in question was not free from difficulties. The technique which he recommended was different from that of Keen. The anatomical guide to the first three cervical nerves was the obliquus inferior muscle which formed the base of the suboccipital triangle, which might be identified by its points of attachment and insertion in the transverse portion of the atlas and spine of the axis. The first and second nerves emerged just above, the third just below this muscle. To reach this, the deepest of five layers of muscles, a curved cutaneous incision was made transversely from the mastoid process to the median line, and one inch below this incision the intervening muscles were divided down to those of the suboccipital triangle where the cervical nerves might be found, and were resected from their point of exit from the spinal foramina as far as they could be traced, usually for 6 or 8 cm. In closing the wound no attempt should be made to suture the divided muscles, but only the aponeurosis and skin. The extraction of the nerves by the Thiersch method was a dangerous procedure, as the cord might be damaged or injury to the origin of the phrenic nerve might result in respiratory failure. Dr. Frazier had removed the ganglion of the posterior division of the occipitalis major in three instances for the relief of occipital neuralgia and this was as absolute a safeguard against its recurrence as the removal of the ganglion of Gasser for neuralgia of trigeminal origin. Dr. Frazier cited a case of brachial palsy resulting from an injury in which he felt that operation on the plexus itself offered little hope of relief and he therefore did a laminectomy, and upon opening the dural sac the fifth, sixth, and seventh cervical roots, both anterior and posterior, were found wanting and two defects each the size of a dime were seen in the lateral aspect of the dura. In operating he resected the eighth cervical and first thoracic. The pain was alleviated to a marked degree. This case was cited because it had a distinct bearing on the effects of root resection. With respect to the results of root resection it was quite evident that the severance of every connection between the upper extremity and spinal cord, except through the intercostohumeral, representing the second thoracic root, did not render the patient as free from pain as one would have expected. In this case of brachial plexus palsy the gross lesion within the spinal canal led him to suspect that in the avulsion of the root they had a satisfactory explanation for the pitiful end results with or without operation in the majority of brachial plexus injuries. Where an attempt was made to restore function by nerve suture or anastomosis the results were either negative or but feebly effective. In most instances the operation had revealed a definite lesion of the plexus and it seemed possible that motor or sensory, one or more, had been avulsed. He submitted this as a contribution to the pathology of brachial plexus palsy for their consideration and discussion. The routine procedures were anything but satisfactory. Before any material advance could be made in

this field they must investigate the topographical structures of the individual nerve trunks as a means of intelligently selecting and planning anastomosis and must resort to more ingenious methods than were now in vogue. In regard to fractures and fracture dislocations of the spinal cord Dr. Frazier said that personally he favored early operation. The preliminary report of Dr. Allen seemed to indicate that only by early operation could they hope to save the cord from the effects of the traumatic effusion which formed so rapidly and proved so disastrous. Circumscribed serous meningitis responded to surgical therapy, and the sooner the operation the better would be the results. Numerous instances could be cited that would emphasize the fact that the end results of root resection were very variable. In some there might be a partial, in some complete anesthesia, transitory or permanent; in some hyperesthesia, in some no disturbance of sensation at all. These widely varying phenomena would seem to throw some doubt upon the present conception of the pathways of all afferent sensations and should open up a field for investigation. A communication from Kidd in the *British Medical Journal*, August, 1911, in which he reviewed a large amount of evidence which he had collected concluded that afferent fibers, in some cases algetic, in others reflex, existed in the spinal ventral roots of man and many other vertebrates. He went so far as to advocate the division of the ventral as well as the dorsal roots except in the case of the third and fourth cervical roots. The matter of posterior root resection for spasticity or athetosis was a vexing question. He had operated upon six cases of various ages with various lesions. While the number of operations was not large the series was thoroughly representative in every way, including ages from five to forty-three, lesions of from one to ten years' duration, of both spinal and cerebral origin, some with and some without athetosis, a moderate spasticity and one of very high degree. From a survey of this material it might be said that in certain cases and under certain circumstances resection of the sensory roots of the spinal cord relieved spasticity, that this relief, so far as they could judge, was not transitory, that the treatment was more efficacious for the lower than for the upper extremities, that the restoration of function would be accomplished in an inverse ratio to the amount of muscular weakness, and that the degree of muscular weakness could not be estimated before operation. In this series the spasticity was relieved in three of the four paraplegic cases; the fourth, a case of cerebrospinal, was only partially relieved. The two cases involving the upper extremities were disappointing, and this brought up the question as to the number of roots to be cut. The section of a given number of roots was not followed by uniform results. In selecting the roots to be cut two of every three roots supplying a given group should be chosen, and the roots selected would depend upon which groups were most affected. Ordinarily for the upper extremity in severe cases of spasticity the fourth to the eighth cervical and the first dorsal should be selected; of these the sixth was the most essential. In milder cases the fifth, sixth, and eighth cervical and the first dorsal would suffice. For the lower extremity, in mild cases, the third and fifth lumbar and first and second sacral. In more severe cases the second and fourth lumbar and first and second sacral. Van Gehucten had suggested that the resection be restricted to a limited number of radicular filaments of only three roots. This might be applied with advantage to spasticity, but it was doubtful if it could be applied with advantage to operations designed to relieve pain. A point to be emphasized was the importance and necessity of a course of after-treatment. Secondary anastomoses, gradual extension of contracted limbs, reduction in locomotion, and passive movements must be included in the program. Although time would not suffice for an extended discussion of end results, it might be said that the effect of the operation was more gratifying the further down the cord they went. When the roots of the lumbar plexus were involved the effect was comparatively uniform and usually permanent. After root resection temporary paralysis of the lower extremities and bladder had been observed; this was probably due to trauma to the cord. In his own case where this had occurred the cord had been gently retracted in order to bring the roots of the opposite side into view; this was an error in technique. In regard to laminectomy there seemed to be an over-apprehension regarding the opening of the spinal canal and the difficulties and dangers seemed to have been exaggerated. As a routine procedure it was both wiser and safer to complete the operation at one sitting. The danger of infection was less by one half, and one anesthetization was certainly preferable to two. Another bugbear in the minds of many operators was the escape of cerebrospinal fluid and the accompanying danger of infection. Accurate closure of the dural incision with a No. .00 continuous catgut suture mounted on a fine needle should be a sufficient safeguard against leakage. As an additional safeguard the line of incision in the skin should not correspond to that of the fascia and muscles. For this reason he preferred a semilunar incision in the skin, and after reflecting the flap a longitudinal one in the aponeurosis and muscles. The aponeurosis was closed also with continuous catgut with double strand No. 1, and drainage was also inserted down to the dural sac and brought to the surface through a stab wound, never through the line of cutaneous incision. Should the flow of cerebrospinal fluid be established, the foot of the bed should be elevated well above the head to counteract the effect of gravity. The active bleeding that sometimes followed the separation of the muscles from the spinous processes was effectively controlled by tampons of gauze wrung out of saline solution almost boiling. Hemorrhage from the exposed surfaces of the cut laminæ was readily stopped with Horsley's wax. To prevent the escape of the cerebrospinal fluid during operation the pelvis should be elevated. In discussing the advantages of unilateral and bilateral methods Dr. Frazier said he had found that the removal of two alternate spinous processes, with their corresponding arches, leaving the others intact, was a very satisfactory compromise between the unilateral and bilateral methods. In the identification of the roots he had been guided entirely by the point at which they left the dural sac with relation to the spinous processes.

Results of Post-Mortem Examinations in Cases of Cranial Injuries and Simulating Conditions.—Dr. Otto H. Schultze said he wished to offer some results of his work which he thought might be of use to the operating surgeon. It was very important to distinguish between a fracture of the vault and a fracture of the base of the skull; also between a direct or an indirect fracture. The skull might be looked upon as a bone contained in a firm capsule and one, therefore, that would be fractured in a definite direction. The line of fracture depended in large part upon the pole struck. There was what he called the "bursting fracture." The one point of importance regarding this fracture was that it occurred along the line of the greater curvature occupying a segment of the larger sphere; this was where the bursting was liable to occur, since this was the weak point. So far as the bursting fracture itself was concerned, its only actual value for the surgeon was the question, did the line of fracture pass across the larger branches of the meningeal artery? The most important thing which concerned the operating surgeon was, did the line of fracture cross the branches of the middle meningeal artery, an area that was most vulnerable. So far as the location of the epidural clot was concerned, it occurred posterior to the branches of the middle meningeal artery; the most common cases

occurred low down in the middle fossa. The posterior branches of the middle meningeal artery, however, were not so vulnerable. With regard to an epidural clot it was very important to know the general form of the skull, to locate the particular portion of the skull that was struck, and to follow out the most probable line of bursting fracture. Clinically too much attention was placed on the hemiplegia. The hemorrhage, as a rule, was a gradual one. If a patient fell upon the back of his skull the bursting fracture would be on the same side as the injury. A bursting fracture preferred to take the curve of a greater sphere rather than that of a smaller one. As to laceration of the brain as a result of contrecoup, the result of a blow received on the side opposite, in not a single instance was this directly opposite; they now had to abandon the old explanation regarding force by contrecoup, or the actual wave of the force across the skull. Many cases of laceration, however, could be predicated directly if one knew the part of the skull struck. The part of the skull that was struck was compressed; the equator was enlarged at right angles to the axis of compression, and the laceration occurred at that point. Opposite the pole struck the brain was called upon suddenly to occupy an area that formed a larger sphere, and the area of laceration could be mapped out. With regard to pachymeningitis hemorrhagica interna, a point of practical importance was the mistaken impression that there was an occurrence of bloody cerebrospinal fluid. The presence of blood in the cerebrospinal fluid did not mean fracture of the skull primarily; it meant a laceration of the cerebral cortex. In epidural hemorrhages no blood appeared in the cerebrospinal fluid. In central hemorrhages the patients were practically dead before the blood got to the cerebrospinal fluid.

Dr. M. Allen Starr said they were all indebted to Dr. Frazier for his summary of work done in the various departments of spinal surgery; it was just as important that they should hear of results that were negative as it was that they should hear of results that were favorable. It seemed to him that as an outcome of that portion of the paper which interested him greatly, the portion in regard to the section of the spinal nerve roots, the conclusion to be drawn was that very little could actually be promised in an individual patient in the relief of pain. While, in persons suffering excruciating agony, they were inclined to operate, it was well to realize that they could not promise definitely any great result from the operation. While they might feel justified in dividing the posterior nerve roots in cases of pain, and particularly in cases of gastric crisis in tabes, the results would be problematical. This was the position he said he must take after his experience in a few cases operated upon by Dr. Hartley. He regretted to say that in three cases, of which he had personal knowledge, no relief attended the operation. He had been exceedingly disappointed in the results of section of the posterior nerve roots in the spinal canal for the relief of intractable neuralgia of the trunk in one case he remembered. He had had no personal experience in regard to this operation for the relief of gastric crisis in tabes, but it came to his knowledge while abroad that in three cases (two in London and one in Edinburgh) the results of this operation had been negative. In the two London cases four consecutive dorsal nerve roots had been cut for the relief of gastric crisis, and nothing had been accomplished in either case. Nothing was accomplished in the Edinburgh case either. Therefore, it seemed to him that the operation for the relief of pain by intradural section of the nerve roots was one which perhaps in the future might yield favorable results, but at the present time they could not recommend it to their patients. Dr. Starr said that his experience regarding operations for the relief of torticollis was not favorable: he had seen a number of operations done, division not only of the spinal accessory nerve, but also of the posterior nerve roots, and he had failed to see any favorable results follow. Several years ago he was particularly interested in this subject; at that time he was President of the American Neurological Association, and this subject was up for discussion at one of their annual meetings. The consensus of opinion of a number of surgeons from all over the country, men like Maurice Richardson of Boston, Charles McBurney of New York, William S. Halsted of Baltimore, was that this operation for torticollis was almost always a failure.

Dr. Charles A. Elsberg said that he was much interested in Dr. Frazier's paper, especially because it seemed to him that in the study of diseases of the brain and of intracranial surgery the spinal cord and its diseases had been somewhat neglected. More attention should be paid to diseases of the spinal cord and their surgical treatment. During the past few years the interest in spinal surgery had been somewhat stimulated by the publications of Foerster, of Breslau, and his suggestion to cut the posterior nerve roots for spasticities. This idea had, however, already occurred to a number of American neurologists. There were a number of affections of the spinal cord which could be relieved and cured by operative treatment. With regard to meningitis serosa, he recalled one case in which such a diagnosis had been made by him from the operative findings, but he was still in doubt whether the diagnosis was correct, although the patient was entirely relieved by the operation. Perhaps there were a number of instances in which the pia arachnoid was not opened at first and in which the cerebrospinal fluid was seen to flow up and down with each respiratory movement which might be looked at as cases of localized serous meningitis. The opening of the pia allowing of the escape of fluid from beneath it might even be followed by great improvement, but that would not be a proof that a localized collection of fluid had existed in the case. After the bilateral removal of the laminæ with the spinous processes great improvement might follow the operation itself. In a number of cases in which he had found nothing to explain the symptoms of spinal tumor that had been present, he had removed five or six laminæ, and the patients had improved in a most astounding manner, several being entirely cured. He recalled several instances of sclerosis in which a laminectomy had been followed by a remarkable improvement in motor and sensory symptoms for a time. He was not prepared to say whether this improvement was the result of circulatory changes or of the decompression. He agreed with Dr. Frazier that in most instances a bilateral laminectomy was preferable to a hemilaminectomy. Dr. Elsberg said that he was much interested in what Dr. Frazier had said about paralytic ileus after laminectomy. He had had several patients who suffered from marked abdomenal distention for several days after a laminectomy in the upper dorsal region which gave the patients much discomfort and which was difficult to relieve. He never looked upon the condition as one of paralytic ileus because the patients never vomited, they only had a marked intestinal distention. He agreed with what the other speakers had said in regard to the ineffectiveness of posterior root section in many cases of intractable pain, although some of the patients were entirely relieved by the operation. Up to the present time there was no way to distinguish between the favorable and the unfavorable cases for the operation.

Dr. Pearce Bailey said that one of the most important points regarding this operation was the question of the relief of pain and, if he remembered correctly, when Dr. Dana first proposed the operation and Dr. Abbe performed it, it was for peripherally situated lesions; section of the posterior nerve roots served to relieve the pain. He remembered one case that Dr. Abbe operated on by making a

section of the posterior nerve roots for pain that was intractable, being the result of a sarcoma of the brachial plexus. The pain had existed a few months only; after the section the pain stopped immediately and did not return during the life of the patient. It seemed to Dr. Bailey that the question of whether the pain was peripheral or central in origin was important. If the pain was peripheral, after a certain length of time it seemed to become cortical, and then any section of the posterior nerve roots was useless. He recalled a case he saw one year ago, a patient on whom Dr. Taylor operated; there was a rupture of the brachial plexus and injury to the cervical nerve roots, and as the arm had been amputated at the shoulder the case appeared eminently fit for posterior nerve root section. The operation was delayed six months after the injury; the section of the posterior nerve roots which supplied the painful areas gave negative results as far as the relief of pain was concerned. Dr. Bailey agreed with Dr. Elsberg in regard to meningitis serosa; there was no pathological basis for the existence of a circumscribed serous meningitis. The recoveries or improvement of the symptoms following laminectomies were often remarkable. In one case he remembered, a man presented himself with symptoms of a spinal cord tumor which had existed for three years; he had the knee jerks, terrible pains in the legs, and some anesthesia. A double laminectomy with decompression was done, and there followed an immediate relief of the symptoms, and this relief had been permanent now over one year. There were a number of patients at the Neurological Institute with distinct focal symptoms of spinal cord lesions in whom at operation no tumor was found, but in whom immediate relief of symptoms followed. They had come to the conclusion that oftentimes as much relief followed the opening of the spinal canal as in opening the abdomen in cases of tuberculous peritonitis. Many cases of relief in serous meningitis might be explained on that basis. Sir Victor Horsley's report of relief following operations for syphilitic lesions was possibly due to the same cause. In regard to the operation for the relief of spasticity by section of the posterior nerve roots, he had tried this in one or two cases where the spasticity was due to multiple sclerosis. The results were unfortunate, and they never again proposed to recommend this operation in this disease; the relief of the spasticity might be for a few weeks, but after that in both of the cases the disease progressed, and at the end of three months the patients were in a more serious condition than before the operation. With regard to Dr. Schultz's paper, he asked if he would tell them something about the condition, which puzzled clinicians very much; in any local collection of fluid following an injury was there any benefit to be derived by operation or lumbar puncture?

Dr. Alfred S. Taylor said there were a number of things in the paper that particularly interested him. He had had only one case of torticollis, and he had attempted to apply posterior nerve root section for its relief; in that case the posterior nerve roots of the upper three cervical nerves were divided at the first operation, and the spinal accessory was divided peripherally at the second operation. There was marked relief, but not a complete cure of the condition. He did not know whether the relief was from the posterior nerve root section or whether there was a psychical influence; it might be both. With regard to section of the posterior nerve roots for the relief of pain, there were a certain number of cases that could be relieved, and he reported one case that was particularly interesting. This was a man who had his left arm and shoulder almost knocked off, with, of course, complete rupture of the brachial plexus. The arm was amputated at the shoulder by the doctor whom he then consulted. The terrible pain he experienced immediately after the accident never left him, and the pain was referred to the missing arm. He came to New York and was operated on for the relief of this pain. The posterior nerve roots of the lower four cervical and first dorsal nerves were divided completely and this was followed by absolutely no relief from his pain. Recently there was reported an observation just referred to by Dr. Frazier that sometimes sensory fibers ran to the cord through the anterior nerve roots. This patient submitted to operation again two days ago; two days after operation, *i.e.* to-day, he told him that he experienced less pain than he had for many months; whether this relief would be permanent or not he could not tell. The first day after operation the pain was as bad as ever. The interesting thing was that two days after the operation the pain was less than it had been for several months. There appeared the question of the psychic influence, but the improvement on the second day after operation seemed to Dr. Taylor to do away with the probability of the pain being psychic. It had been Dr. Taylor's fortune to operate upon thirty cases of brachial birth palsies in which there were many lesions external to the spinal canal. After nerve repair there was such a distinct improvement in the great majority of cases that one must consider that there was present no spinal lesion. In two or three cases where there had been found comparatively slight lesions in the brachial cords, but where there was an extensive paralysis, little or no improvement followed the operation. In these cases there was also an extremely marked atrophy, an atrophy more extensive than the distribution of the paralysis in the extremity. It seemed to him that by observing the relations between the atrophy and paralysis present in the arm one might be able to distinguish between those cases where roots have been divulsed from the cord and those where the injury was entirely in the external brachial plexus. He had had two cases of gastric crisis; in one patient the condition had been present more than one year. The seventh to the tenth dorsal posterior nerve roots were divided on both sides. There was complete relief. Later he developed crises in his bladdr; those lasted but a short time and gradually disappeared. The second case was a confirmed morphine taker; two to four days after the operation there seemed to be considerable relief of the gastric crisis and the morning vomiting; then the pain and vomiting returned. This case was considered to be a flat failure. From his personal experience he could say that in 50 per cent. there was no return of the gastric crisis after operation. He noticed that some German authorities gave from 80 to 90 per cent. of cures, which was much higher than the returns in this country. It was very important in these cases, if anything was to be done by operation, to do the operation before they became morphine eaters. Very often it was difficult to identify the exact nerve roots chosen for section, and he had adopted *x*-ray pictures with metal markers as most reliable. His experience with spasticity embraced fifteen cases. The work in the upper extremity was not nearly as satisfactory as the work in the lower extremity. In one arm case there was a considerable amount of pain in the contracted muscles; the pain was relieved by operation, but the spasticity was only slightly relieved. In work in the lower extremity there usually followed relief of both the pain and the spasticity. A very important thing in these cases was the after-treatment. It was as necessary to educate these patients in the use of the muscles as it was to teach children to walk. It was only by careful and systematic training over a long period of time that one could hope to get the best results after operation by root section. With regard to the number of roots to be divided Dr. Taylor said he preferred to divide portions of all the roots in their order of origin rather than to divide two whole ones and then to skip one. The results were equally good and the technique was simpler, particularly in the lumbar region. With regard to the technique he

said that his interest was largely in the unilateral laminectomy. He had operated upon thirty cases. Four or five cases had been operated on, exploring for suspected tumor; one revealed a tumor which was later removed by Dr. Elsberg during his absence from the city. He thought that the secret of laminectomy for cutting the nerve roots on both sides without traumatism to the cord was in bevelling the bases of the spinous processes. They had tried to minimize the amount of blood left inside the dura at the end of the operation. A point in the technique was this: since the roots contained small vessels which bled on cutting and blurred the remaining field, he took a clamp, crushed the root, and then divided it through the crushed area. The presence of blood would not interfere then with the cutting of the remaining nerve roots.

Dr. James Ramsay Hunt said that in the operation for section of the posterior nerve roots it had been suggested that only a partial section be made; it seemed to him that this would be an error, as there would result a false neuroma which would cause a focus of irritation. As the object of the operation was to do away with afferent impulses through these roots, it seemed to him that a complete section only of the root would accomplish this end. He was in accord with Dr. Starr's statement regarding the inadvisability of operation for spasmodic tic. He had had two cases in which section of the posterior branches of the second, third, and fourth cervical nerves was done, and with only a temporary improvement. The operation was so severe and the result so poor that the patients became discouraged and were unwilling to continue further treatment directed toward the correction of the underlying mental state, which, after all, was the essential motive of operation. He had seen cases of meningitis serosa; at operation no tumor was found, although the symptoms were indicative of tumor. Such accumulations of cerebrospinal fluid were usually found in organic diseases of the spinal cord: in central growths of system disease, and this might explain some of the cases

Dr. Frazier said that he was glad that Dr. Starr approved reporting the unsatisfactory results which followed the cutting of the posterior nerve roots for the relief of pain; he was in accord with his views. He thought that it was the duty of every surgeon to publish records of his failures, especially in the cases of the newer procedures. Sometimes a successful case was reported and many operations would follow by men who had no experience whatever in that particular class of cases. He thought that it was incumbent upon one to report failures as well as successes. Dr. Frazier said that he did not feel that he was at all justified in taking back what he had said regarding the treatment of torticollis, for his results had been very good. The operation was not an easy one and, in his opinion, was more difficult than operations upon the Gasserian ganglion. Unless the operation was done thoroughly, the best results would not be secured. He sympathized with what had been said regarding the pathology of meningitis serosa, the pathological findings at the time of operation. He regretted not having had a larger experience in this condition, and what he had said regarding it was influenced by the experience of Dr Horsley, for whose work all had the greatest admiration and in whose opinion they all placed much confidence. With regard to the relief following section of the posterior nerve roots for crisis, he believed that they should take a more conservative view. He felt, however, that in certain cases the results justified the operation It was interesting to know, however, that recurrences did take place after the operation, but it was not, strictly speaking, a recurrence, for this reason: whereas the pain was due to the gastric crisis of tabes before the operation, after it returned oftentimes in other parts, such as the bladder or the intestine. The intestinal or the bladder crisis came on some time after the operation for the gastric crisis. He thought that if they could get these cases early enough, before they had acquired the morphine habit, they were justified in the more desperate cases in doing a section of the posterior nerve roots. He agreed with what was said in regard to doing a partial section of a large number of nerve roots rather than a section of a limited number of roots. With regard to what Dr. Schultz had said, his observations were immensely interesting to him because so little opportunity had been afforded him to see such a considerable amount of material. It was interesting to hear how he was enabled to localize the clot, to determine on which side of the brain was the epidural clot, and also to hear what he said in regard to operations for the relief of cerebral compression and the saving of lives in cases of cerebral contusions. In the consideration of these pathological conditions they should bear in mind the rapidly forming cerebral edema. One could not stop or stem this pathological process. For this reason he believed that operations for cerebral decompression should not be recommended as a routine procedure in this class of cases.

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Conduct and Its Disorders. By Charles Arthur Mercier, M.D., F.R.C.P., F.R.C.S. 277 pages; cloth; price $3.25 net. The Macmillan Company, Ltd., London, Publishers

Diseases of the Ear. By William Milligan, M.D., and Wyatt Wingrave, M.D. 596 pages with 293 illustrations and 6 colored plates; cloth; price $5.00 net. Macmillan & Co., Ltd., London, Publishers.

The Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P. Ninth Edition. 1121 pages; illustrated; cloth; price $6.00 net. The Macmillan Company, New York, Publishers.

Die Erkennung der psychopathischen Konstitutionen und die öffentliche Fürsorge für psychopathisch veranlagte Kinder. By Prof. Dr. Th. Ziehen. 34 pages; paper; price .80 M. S. Karger, Berlin, Publisher.

Anormale Kinder. By Dr. L. Scholz. 442 pages; paper; price 10 M. S. Karger, Berlin, Publisher.

Periodizität und periodische Geistesstörungen. By Dr. Franz Mugdan. 18 pages; paper; price .75 M. Carl Marhold, publisher.

Diseases of the Ear, Nose, and Throat. By Wendell C. Phillips, M.D. 847 pages; illustrated with 545 halftone and text engravings, many of them original, including 31 full-page plates, some in colors; cloth; price $6.00. F. A. Davis Company, Publishers, Philadelphia.

Taschenbuch der Therapie. By Dr. Schnirer. 465 pages; cloth; price 2 M. Curt Kabitzsch, Publisher, Würzburg.

Microbiology. By Charles E. Marshall. 724 pages, with 128 illustrations; cloth; price $2.50 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

Reproduction in the Human Female. By James Young, M.D., F.R.C.S.; 222 pages; illustrated; cloth; price $2.50 net. William Green & Sons, Publishers, Edinburgh and London.

The Way with the Nerves. By Joseph Collins, M.D. 313 pages; cloth. G. P. Putnam's Sons, Publishers, New York and London.

Salben und Pasten mit besonderer Berücksichtigung des Mitin. By Dr. Jessner. 30 pages; paper; price 1 M. Curt Kabitzsch, Publisher, Würzburg.

Juckende Hautleiden. By Dr. S. Jessner. 120 pages; paper; price 2 M. Curt Kabitzsch, Publisher, Würzburg.

The Concise Oxford Dictionary of Current English. By H. W. Fowler and F. G. Fowler. 1041 pages; price $1.00 net; cloth. Henry Frowde, M.A., Publisher.

The Origin of Life. By H. Charlton Bastian, M.D., F.R.S. 119 pages, with ten plates, containing numerous illustrations from photomicrographs; cloth; price $1.50. G. P. Putnam's Sons, Publishers, New York and London.

A Manual of Pathology. Second Revised Edition. By Guthrie McConnell, M.D.; 531 pages; illustrated; flexible leather; price $2.50 net. W. B. Saunders Company, Philadelphia, Publishers.

Applied Anatomy and Oral Surgery. By Robert H. Ivy, M.D., D.D.S. 280 pages; illustrated; cloth; price $1.50 net. W. B. Saunders Company, Philadelphia, Publishers.

Die Divertikel und Dilatationen der Speiserohre. By Dr. Hugo Starck. 84 pages; illustrated; paper; price 2.40 M. Carl Marhold, Halle, a. S., Publisher.

Handbuch der allgemeinen und speziellen Arzneiverordnungslehre. By Dr. C. A. Ewald and Dr. A. Heffter. 851 pages: cloth; price 18 M. August Hirschwald, Berlin, Publisher.

A Text-Book of Physiological Chemistry. By Prof. Olof Hammarsten and Prof. John A. Mandel, Sc.D. 6th American Edition. 694 pages; cloth; price $4.00 net. John Wiley & Sons, New York, Publishers.

Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege. Br. Dr. L. Katz, Dr. H. Preysing, and Dr. F. Blumenfeld. 304 pages; illustrated; paper; price 9 M., Curt Kabitzsch, Publisher, Würzburg.

Dental Disease in Its Relation to General Medicine. By J. F. Colyer, L.R.C.P., M.R.C.S., L.D.S., and Stanley Colyer, M.D., M.R.C.P., D.P.H. 189 pages; illustrated; cloth. Longmans, Green & Co., New York, Publishers.

Lippincott's New Medical Dictionary. By Henry W. Cattell, A.M., M.D. Second Edition. 1108 pages; illustrated; flexible leather; price $5.00. J. B. Lippincott Company, Philadelphia and London, Publishers.

The Diseases of Infancy and Childhood. By L. Emmett Holt, M.D., Sc.D., LL.D., and John Howland, A.B., M.D. Sixth Edition, Fully Revised. 1112 pages: with 240 illustrations, including 8 colored plates; cloth. D. Appleton & Co., New York and London, Publishers.

Chemical and Microscopical Diagnosis. By Francis Carter Wood, M.D. Third Edition. 791 pages; with 194 illustrations and 9 colored plates; cloth. D. Appleton & Co., New York and London, Publishers.

Food Values. By Edwin A. Locke, A.M., M.D. 110 pages; cloth. D. Appleton & Co., New York and London, Publishers.

The Parasitic Amœbæ of Man. By Charles F. Craig, M.D. 253 pages; illustrated; cloth; price $2.50. J. B. Lippincott Company, Philadelphia and London, Publishers.

Report of the Veterinary Director-General and Live Stock Commissioner. J. G. Rutherford. For the Year ending March 31, 1909. 212 pages; illustrated. Department of Agriculture, Canada, Publishers.

Den Wassermann'she Reaktion og Dens Klinske Betydning. By Rudolf Krefting. 152 pages; paper. Trykt I Steen'ske Bogtrykkeri, Publishers, Kristiania.

Manual of Pathology. By W. M. Late Coplin, M.D. Fifth Edition, Rewritten and Enlarged. 1139 pages; with 612 illustrations and 12 plates; price $4.50 net. P. Blakiston's Son & Co., Philadelphia, Publishers.

The Practical Medicine Series. Vol. VII. Pediatrics. By Isaac A. Abt, M.D., and May Michael, M.D. Orthopedic Surgery. By John Ridlon, A.M., M.D., and Charles A. Parker, M.D. 237 pages; illustrated; cloth; price $1.25. The Year Book Publishers, Chicago, Publishers.

Twelfth Annual Report of the State Board of Insanity of the Commonwealth of Massachusetts. For the Year ending November 30, 1910. 319 pages; cloth. The State Board of Insanity, Publishers.

Moto-Sensory Development. By George V. N. Dearborn. 215 pages; cloth; price $1.50. Warwick & York, Inc., Publishers, Baltimore.

Aphorismen für die Hals-, Nasen-, und Ohren-ärztliche Praxis. By Dr. Franz Bruck. 39 pages; paper; price 1 M. August Hirschwald, Publisher, Berlin.

Das Erkenntnisproblem und seine kritische Lösung. By Berthold Kern. 227 pages; paper; price 5 M. August Hirschwald, Publisher, Berlin.

Surgical Applied Anatomy. By Sir Frederick Treves, Bart. 676 pages; illustrated with 137 figures, including 58 in color; cloth; price $2.50 net. Lea & Febiger, Publishers, Philadelphia and New York.

International Clinics. Vol. III. Twenty-first Series. By Henry W. Cattell, A.M., M.D. 304 pages; illustrated; price $2.00; cloth. J. B. Lippincott Company, Publishers, Philadelphia and London.

Health for Young and Old. By A. T. Schofield, M.D. 300 pages; cloth; price $1.50 net. G. P. Putnam's Sons, New York, Publishers.

Verhandlungen des Vereins deutscher Laryngologen 1911. By Dr. Richard Hoffman. 223 pages; paper; price 7 M. Curt Kabitzsch, Würzburg, Publisher.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended November 18, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	538	160
Diphtheria	254	28
Measles	167	5
Scarlet Fever	96	2
Smallpox	2	—
Varicella	133	—
Typhoid Fever	125	13
Whooping Cough	23	2
Cerebrospinal Meningitis	4	6
Malarial Fever	—	—
Totals	1342	216

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended November 17, 1911:

CHOLERA.

Places	Date	Cases	Deaths
Austria-Hungary: Torokbecse	Oct. 1–7	27	15
Sept. 27, present.			
Ceylon: Colombo	Sept. 24–30	1	1
France: Marseille	Sept. 1–30	..	117
India: Calcutta	Sept. 10–23	..	23
Madras	Oct. 1–14	20	15
Madras presidency, Aug. 1–31: Cases, 8,630; deaths, 6,478. Sept. 1–30: Cases, 3,328; deaths, 1,891.			
Java: Batavia	Sept. 24–30	16	7
Philippine Islands: Provinces—Union	Sept. 17–30	4	3
Servia: Belgrade	Oct. 15–21	2	..
Novo Selo	Oct. 15–18	9	2
Suvo Selo	Oct. 16	1	1
Smederevo	Oct. 20	1	3
Urovtzi	Oct. 15–20	8	4
Straits Settlements: Singapore	Sept. 17–30	18	23
Turkey in Asia: Adana	Nov. 15	..	Present
Bagdad, vilayet	Sept. 10–Oct. 14	185	122
Basra	Sept. 24–Oct. 20	70	53
Damascus	Oct. 14–20	7	6
Haifa	Oct. 3–22	41	31
Kharput	Sept. 17–Oct. 7	55	45
Medina	Sept. 22–Oct. 16	39	34
Mekka	Sept. 25–Oct. 1	14	15
Trebizond	Oct. 16	1	..
Tripoli	Sept. 26–Oct. 18	45	33
Zongouldak	Sept. 25–Oct. 15	13	15
Turkey in Europe: Constantinople	Sept. 17–Oct. 23	427	270
Saloniki	Sept. 25–Oct. 18	385	224

YELLOW FEVER.

Ecuador: Bucay	Oct. 1–15	1	1
Chobo	Oct. 1–15	1	..
Guayaquil	Oct. 1–15	5	3
Mexico: Merida	Oct. 29–Nov. 4	2	4

PLAGUE.

Algeria: Philippeville	Nov. 1	5	..
Brazil: Rio de Janeiro	Sept. 24–Oct. 7	3	2
Chile: Iquique	Sept. 24–Oct. 7	4	2
Ecuador: Guayaquil	Oct. 1–15	41	13
Egypt: Alexandria	Sept. 12–23	3	2
Ismailia	Oct. 12	1	..
India: Bombay	Oct. 1–7	13	10
Calcutta	Sept. 10–23	..	10
Rangoon	Aug. 1–31	139	125
Java: Pasoeroean Residency	Sept. 24–30	22	8
Morocco: Doukala, district		..	..
Present to Oct. 17.			
Cherouba	Sept. 29	..	Present
Mauritius	Aug. 24–31	1	1
Peru: Trujillo	Oct. 23	..	..
3 cases in the lazaretto, and present in vicinity.			
Straits Settlements: Singapore	Sept. 24–30	1	..

SMALLPOX.

Arabia: Aden	Sept. 6–11	1	1
Brazil: Rio de Janeiro	Oct. 1–7	2	..
Canada: Ottawa	Oct. 29–Nov. 4	6	..
Quebec	Oct. 29–Nov. 4	13	1
Ceylon: Colombo	Sept. 24–30	..	1
Chile: Talcahuano	Oct. 8–14	5	1
China: Hongkong	Sept. 24–30	1	1
Egypt: Cairo	Sept. 24–30		1
France: Paris	Oct. 15–21	2	..
Germany			..
Total, Oct. 8–28, cases, 5.			
India: Bombay	Oct. 1–7	5	3
Madras	Oct. 1–14	4	3
Rangoon	Aug. 1–31	4	4
Italy: Palermo	Oct. 8–14	273	74
Java: Batavia	Sept. 24–30	3	..
Mexico: Aguarsalientes	Oct. 9–15		2
Cananea	Oct. 28	45	Present
Juarez	Oct. 27–Nov. 4	2	..
Magdalena	Oct. 23		Present
Mazatlan	Oct. 1–31		1
San Luis Potosi	Oct. 1–7	2	2
Peru: Trujillo	Oct. 23		..
Present in vicinity.			
Russia: Libau	Oct. 15–22	1	..
Moscow	Sept. 24–Oct. 14	6	1
St. Petersburg	Oct. 1–14	3	2

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Original Articles.

THE TREATMENT OF TUBERCULOSIS AND OTHER DISEASES OF VEGETABLE PARASITIC ORIGIN BY DEEP MUSCULAR INJECTIONS OF MERCURIC SUCCINIMIDE.

A THEORY AND THE RESULTS OF ITS APPLICATION IN TWENTY-SIX CASES.

BY BARTON LISLE WRIGHT, M.D.,
SURGEON, UNITED STATES NAVY.

SINCE reporting my case of acute miliary tuberculosis of pulmonary type, treated as indicated above, in the *New York Medical Journal*, March 18, 1911, I have improved the method so that I now believe more constant results can be obtained in the treatment of all cases of tuberculous infection. For a long time I have also believed that any of the group of diseases classed as infectious granulomata could be successfully treated in this way, and more recently I have entertained this belief in relation to all other diseases of vegetable parasitic origin. In order to make myself clearly understood it will be necessary to cite the now well known work of Ehrlich, as follows:

Ehrlich's Theorem.—Every specific microorganism has a specific chemical affinity, which when found and injected (intramuscularly or intravenously) into the infected host will cure the specific disease. This may be expressed by a chemical formula as follows: (Specific antigen + specific chemical affinity) + antibody + complement = complement fixation (cure). As I understand it Ehrlich's first proof was obtained by the treatment of mice infected with trypanosomes, in which, after a time, he was able to cure the disease by one injection of trypan red, the curative action of which may be shown by the following chemical formula: (Trypanosoma + trypan red) + antibody + complement = complement fixation (cure); and proven by the following geometrical formula: *X* cases of trypanosomiasis + trypan red = *X* cases of trypanosomiasis cured.

During his experimental work he discovered that, while a single large dose would absolutely destroy these organisms in the infected host, smaller doses frequently repeated not only would not destroy them, but in time rendered them immune to the action of the curative agent (chemical affinity), and that this immunity was conferred upon their offshoots. The importance of this discovery is only second to the brilliant conception of his theory, for upon it depends success or failure in the treatment of disease along these lines.

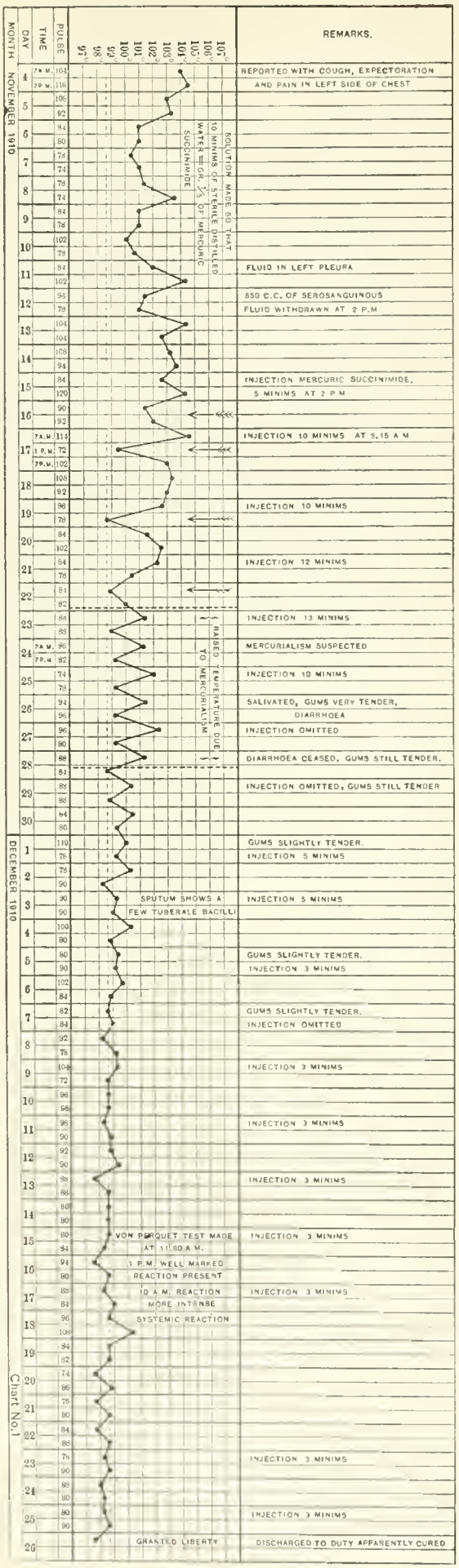
As I said in my first paper on this subject, in 1908, the value of mercury in the treatment of tuberculosis came to me by accident; had I been familiar with Ehrlich's theory and work at that time I am convinced that many of my own failures and those of others would probably have been cures. Until the present I never used initial doses larger than 0.013 gram (1/5 grain), yet even with this small dose I accidentally secured the complete or nearly complete parasitotropic action of the chemical upon tubercle bacilli in a number of cases, resulting in the excellent and at times brilliant results reported by me during the past three years. Fully realizing the destructive action of mercury upon tubercle bacilli, but groping in the darkness of empiricism, I discarded for a time my first dosage, and commenced giving small and very slowly increasing doses, thereby, as I see now, only to produce in these patients a strain of parasites immune to the parasitotropic action of the drug. Then I went back to large initial doses, but not sufficiently large to produce the parasitotropic action of the drug with any degree of certainty or regularity.

The most efficient initial dose will be that which will just fall short of producing mercurialism, after which, depending to a great extent, I believe, upon whether the disease is a chronic or an acute infection, a few succeeding doses may or may not be required to complete the cure. Several months ago I carefully increased the initial dose of mercuric succinimide, and found that 0.091 gram (1 2/5 grains) is the most satisfactory dose for the average adult male patient; it is probable that this dose will at times produce mercurialism, but it can be used with perfect safety, and in all probability will reduce the number of, if not the necessity for, succeeding injections in most, if not all, diseases where it is indicated.

If mercury is the chemical affinity for one vegetable organism it seems logical that the same chemical reaction will take place when one of these organisms is substituted for another, they all having about the same chemical composition; I have therefore developed the following theory:

For Every Vegetable Organism Mercury Is the Chemical Affinity.—This may be expressed by chemical formula as follows: (Vegetable antigen + Hg) + antibody + complement = complement fixation (cure).

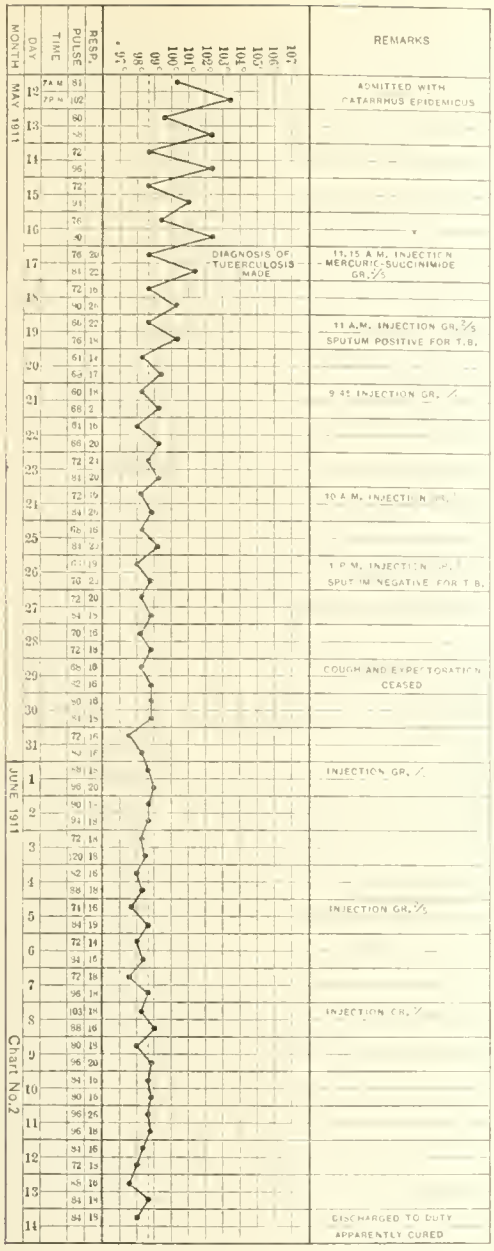
With the above in view, on May 16, 1911, when my colleague, Passed Assistant Surgeon W. G. Farwell, U. S. Navy, reported that a case of bronchopneumonia then under treatment was worse, I made known my theory, and with his support gave the patient an injection of 0.019 gram (3/10 grain) at 3:20 P.M. with the most brilliant results. With this encouragement we have since treated twenty-four additional cases, embracing nine distinct diseases of vegetable parasitic origin, and one in which the organism is unknown, with the results noted below. As the case of acute miliary tuberculosis referred to in the opening of this paper was the first case of any disease in which I have injected


MONTH
DAY
TIME
PULSE
REMARKS.
NOVEMBER 1910
DECEMBER 1910
REPORTED WITH COUGH, EXPECTORATION AND PAIN IN LEFT SIDE OF CHEST
FLUID IN LEFT PLEURA
850 C.C. OF SEROSANGUINOUS FLUID WITHDRAWN AT 2 P.M.
INJECTION MERCURIC SUCCINIMIDE, 5 MINIMS AT 2 P.M.
INJECTION 10 MINIMS AT 9.15 A.M.
INJECTION 10 MINIMS
INJECTION 12 MINIMS
INJECTION 13 MINIMS
MERCURIALISM SUSPECTED
INJECTION 10 MINIMS
SALIVATED, GUMS VERY TENDER, DIARRHOEA
INJECTION OMITTED
DIARRHOEA CEASED, GUMS STILL TENDER.
INJECTION OMITTED, GUMS STILL TENDER
GUMS SLIGHTLY TENDER.
INJECTION 5 MINIMS
SPUTUM SHOWS A FEW TUBERALE BACILLI
INJECTION 5 MINIMS
GUMS SLIGHTLY TENDER.
INJECTION 3 MINIMS
GUMS SLIGHTLY TENDER.
INJECTION OMITTED
INJECTION 3 MINIMS
INJECTION 3 MINIMS
INJECTION 3 MINIMS
VON PIRQUET TEST MADE AT 11.30 A.M.
1 P.M. WELL MARKED REACTION PRESENT
10 A.M. REACTION MORE INTENSE
SYSTEMIC REACTION
INJECTION 3 MINIMS
INJECTION 3 MINIMS
INJECTION 3 MINIMS
GRANTED LIBERTY
DISCHARGED TO DUTY APPARENTLY CURED
SOLUTION MADE SO THAT 10 MINIMS OF STERILE DISTILLED WATER = GR. 1/75 OF MERCURIC SUCCINIMIDE
RAISED TEMPERATURE DUE TO MERCURIALISM
Chart No. 1

the succinimide of mercury with the definite idea that it was the chemical affinity of the causative organism, and as the subsequent history of the case is of peculiar interest, I include it in this series, briefly reviewing the case as reported, and following up the case after his discharge to duty apparently cured.

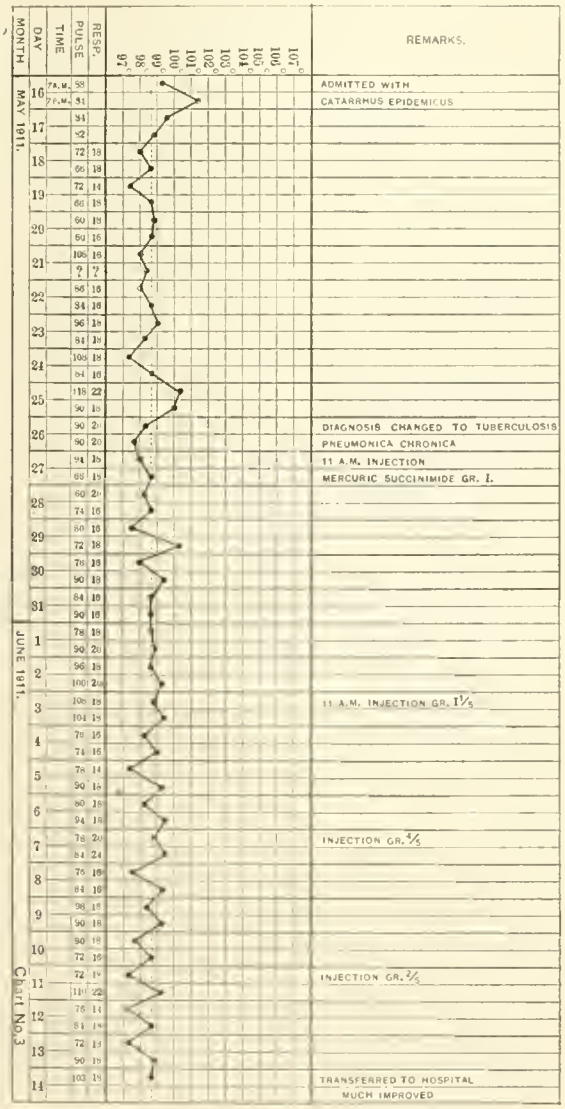
Tuberculosis, Three Cases.

Case I.—Acute miliary tuberculosis of pulmonary type. Patient 25 years old, always in good health previously. Athlete of exceptional strength and ability. Admitted to sick list November 4, 1910, with acute severe illness of sudden onset, both lungs involved, quickly extending through entire area; left pleura developed fluid exudate November 11; on the 12th, 850 cc. serosanguinous exudate was removed by aspiration. Profuse night sweats. November 23, tubercles on left choroid. December 3, sputum positive for tubercle bacilli. December 16, von Pirquet test positive. Chart No. 1 shows the acuteness and severity of the infection, the dose and time of each injection, and the marked parasitotropic and curative action of the succinimide of mercury (chemical affinity) in this case. The day prior to his admission this patient weighed 165 pounds stripped; on November 14, or the tenth day of his illness, about 130 pounds; when discharged to duty, December 26, 148 pounds; on January 12, 1911, the date of my paper, he weighed 163 pounds stripped. His history subsequent to his discharge to duty is of peculiar interest. From January 12, 1911, until May 22, 1911, I saw the man almost daily. During this time his pulse ranged from 72 to 76, and temperature from 98° to 98.6°. He presented no objective or subjective symptoms of disease, performed his duty perfectly, practised with the baseball team, went in swimming, and exercised freely and at will; repeated examinations of the lungs were negative. On May 21, 1911, at 9:30 A.M., he was apparently in excellent health; pulse was 72, respirations 18, and temperature 98.2°. He was weighed and tipped the scales at 172 pounds stripped, or four pounds more than he had ever weighed before. At 7:30 P.M. of that date he reported at sick call, saying he felt tired; his temperature was 100°. He was placed in bed, given magnesium sulphate, 30 grams, and quinine and phenacetin, 0.324 gram. The following morning he complained of severe pain and tenderness over the appendix; the right rectus muscle was extremely rigid, and a diagnosis of appendicitis was made, the lungs were examined and found to be negative. He was transferred to the U. S. Naval Hospital, Chelsea, Mass., where the diagnosis was confirmed and an operation was performed. On opening the peritoneum a serous exudate escaped; tubercles were discovered on the peritoneum, including that of the appendix; the omentum was thickened. The appendix was removed and the wound closed, and the diagnosis changed to acute miliary tuberculosis. The patient died some six days following the operation, and I am indebted to Surgeon F. M. Furlong, U. S. Navy, for the report of the autopsy as follows: Both lungs showed healed tubercles, indicating the active lesion I reported him as having during his first attack; in the left pleura were healed lesions such as I described in the previous paper; in addition, the right pleura presented old adhesions representing an involvement which escaped me during the primary attack; in addition to these healed lesions a new



tuberculous consolidation, with a cavity about the size of a chestnut was found in the immediate apex of the right lung anteriorly. Below the diaphragm all the abdominal organs and tissues were involved, new miliary tubercles being found in the liver, spleen, both kidneys, and the peritoneum, and a few tuberculous ulcers in the mucosa of the intestines. No old lesions were found below the diaphragm. Thus the picture is presented in this one patient of a primary attack of acute miliary tuberculosis of pulmonary type ending in recovery with apparent cure, this apparent cure lasting five months, at the end of which time the man weighed four pounds more than at any previous time of his life, when he was suddenly seized with what proved to be a miliary tuberculosis of abdominal type from which he died. I have heard that many of the profession regarded this case as described by me in the primary attack as one of bronchopneumonia. The subsequent history and postmortem findings confirm beyond question the correctness of my diagnosis, and that he made such a brilliant recovery and apparent cure firmly established the value of mercury in the treatment of tuberculosis. Had I continued the administration of mercury in interrupted courses, giving four or five large injections, at varying intervals of from four to eight weeks I think it probable that the second attack would not have occurred. If the primary attack in this patient was a bronchopneumonia then the curative action of mercury in these cases must be considered.

Case II.—A man, 33 years old, was admitted May 12, 1911, with the diagnosis of catarrhus epidemicus. He was given the usual treatment for this type of infection until May 17, when the diagnosis was changed to tuberculosis. The local lesion was an infiltration of the right upper lobe. The sputum was positive for tubercle bacilli on May 19. The first injection of mercuric succinimide, 0.025 gram (2/5 grain) was followed by immediate improvement. Following the fifth injection the temperature, pulse, and respiration became practically normal and the sputum negative for tubercle bacilli. (See Chart No. 2.) The cough and expectoration entirely ceased on May 29. Three additional injections were given, and the man was restored to duty on June 14, apparently cured, since which time he has had no objective or subjective symptoms of disease and has performed his full duties on this ship without effort. Examination this date (October 11, 1911), four months after discharge to duty, during which time he has not received treatment, shows no objective or subjective symptoms of disease.



Pulse, 74; respiration, 18; temperature, 98.4°; weight, 155 pounds, or 7 pounds heavier than his highest previous weight. I will resume injections in this case at once, commencing with 0.091 gram (1 2/5 grains); on the fourth day following, 0.052 gram (4/5 grain); four days later, 0.026 gram (2/5 grain), etc., until five injections in decreasing doses have been given, when in order not to render the possible remaining latent organisms immune to the chemical affinity they will be discontinued for the time being, at least. Chart No. 2 presents the course of disease, together with treatment; the temperature and pulse curves show the marked immediate curative (parasitotropic) action of mercuric succinimide (chemical affinity) in these cases.

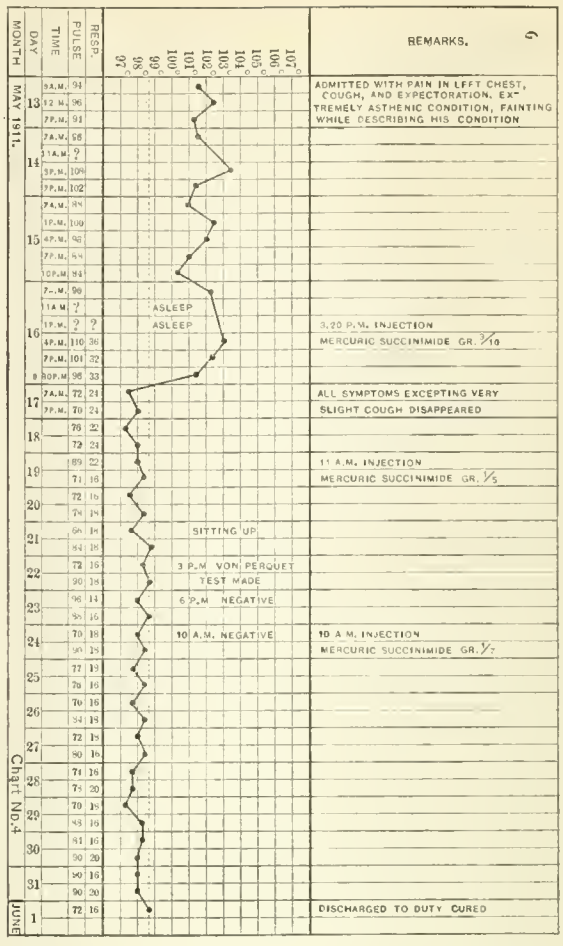
Case III.—A man, aged 21 years, with a particularly bad family history, was admitted May 16, 1911, as with a diagnosis of epidemic catarrh, which diagnosis was changed to tuberculosis May 26, when there were physical signs of infiltration in the upper halves of both lungs. There were severe cough, profuse sanguinopurulent expectoration, negative for tubercle bacilli, and the patient was extremely weak. There was pain following first injection, on May 27, of 0.065 gram (1 grain). This made him refuse further injections until June 3, when 0.078 gram (1 1/5 grains) was given, with slight improvement after the first injection, becoming marked after the second injection, with diminution in cough and expectoration, and marked increase in the appetite and strength. Following the fourth injection his symptoms were still better, but the ship arriving at Boston he was transferred to the Naval Hospital at that place, since which time I have not been informed as to his condition. Chart No. 3 shows the course of the disease, the treatment, etc., while on this ship.

Bronchopneumonia, One Case.

Case IV.—Boilermaker, 39 years old. Diagnosis; Bronchopneumonia. Reported at sick call May 13, 1911, at 8:15 A.M. Complaint: Extreme weakness, pain in left chest, cough, and expectoration. Physical examination showed scattered areas of consolidation in the left upper lobe. By the 16th this condition had spread throughout the entire area of both lungs, with profuse and intermittently rusty sputum containing pneumococci and staphylococci, the former being very numerous. Von Pirquet test was negative. Sputum negative for tubercle bacilli. At 3 P.M., May 16, he was reported by Dr. Farwell as being much worse, and his transfer to the hospital was suggested and considered. At this time I presented my theory, and with Dr. Farwell's support, at 3:20 P. M., I injected 0.019 gram (3/10 grain) of mercuric succinimide; at 4:30 P.M., crisis; 4 A.M., May 17 (12 hours after injection), temperature was 97.4°; pulse, 70; respirations, 24. Convalescence was established, and all the symptoms disappeared. Discharged to duty June 1, 1911. Absolute cure followed the first injection. Chart No. 4 shows course of disease and treatment. Attention is invited to the fact that in this case temperature fell by crisis, while in the case of acute miliary tuberculosis the temperature fell by lysis.

Typhoid Fever, Three Cases.

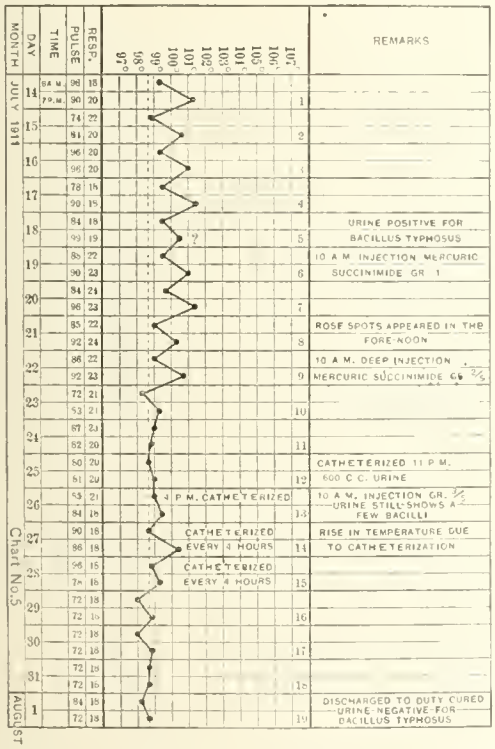
Case V.—Patient 23 years old. Admitted July 14, 1911, with tentative diagnosis of malaria. Blood negative for malarial parasites and on the



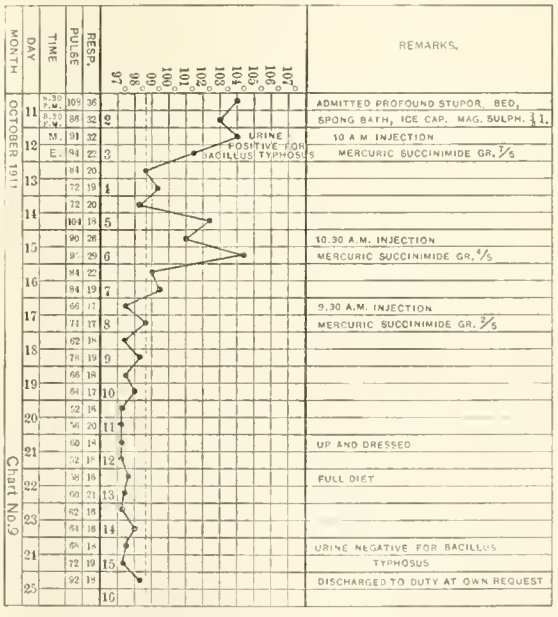
morning of the 18th, Assistant Surgeon Turner of the Maine Naval Militia, then on board; Passed Assistant Surgeon W. G. Farwell, U. S. Navy, and myself in consultation unanimously agreed upon a diagnosis of typhoid fever based on the clinical symptoms, which, with the exception of the rash, which had not yet appeared, were typical of a mild case. I suggested to Dr. Farwell that he examine tht urine for *Bacillus typhosus*. At 2 P.M. he reported these organisms in large numbers. They were seen and recognized as such by Dr. Turner and myself. By this time the patient had lost considerable weight. At 10 A.M., July 19, 0.065 gram (1 grain) of mercuric succinimide was injected. The following morning the patient felt better; by the next morning he was markedly improved; diarrhea had ceased, headache had disappeared, and the tongue was cleaner. On this day (July 21) rose spots appeared upon the abdomen. On July 22, 0.026 gram (2/5 grain) of mercuric succinimide was injected; on the 23d, four days after the first injection, and the day following the second, it being the tenth day of the disease, the temperature and pulse fell to normal, convalescence was established, and with the exception of the retention of urine which occurred on July 25 this was uneventful, resulting in complete recovery on August 1, patient having been sick just nineteen days. Chart No. 5 shows the course of the disease, the number of injections, and dosage given. It is to be noted that on July 26 the number of *Bacillus typhosi* in the urine were markedly decreased, and that on August 1 they had disappeared.

Case VI.—Patient 17 years of age. Enlisted May 16, 1911, and was sent to the U. S. Naval

Training Station, Newport, R. I.; was transferred to this ship, reporting aboard on October 5, 1911, at which time I made a physical examination and found him to be in good health. His health record shows that he had chicken pox and diphtheria before enlistment; no illness since enlistment until present attack. On October 10 he was taken sick but did not report for treatment; at 6:15 P. M., October 11, a chief petty officer brought him to the sick bay; his temperature was 104°, pulse 108, and respirations 36, and he was in a profound stupor; after considerable effort he was aroused sufficiently to say that his "head hurt." Examination of the chest gave the physical signs of a slight bronchitis, the heart and abdomen were apparently normal. He was placed in bed, and given a sponge bath, and ice cap. Thirty grams (1 ounce) magnesium sulphate were administered. The following morning there was but little change, the spleen was slightly enlarged, and the tongue coated; stools pea-soup in character, with scant high-colored urine. Blood was negative for malarial parasites, and the white count 15,000. A tentative diagnosis of typhoid fever was made, and at 10:00 A. M. a deep muscular injection of 0.091 gram (1 2/5 grains) of mercuric succinimide was given. The urine was centrifuged for twenty minutes, and a hanging drop from the



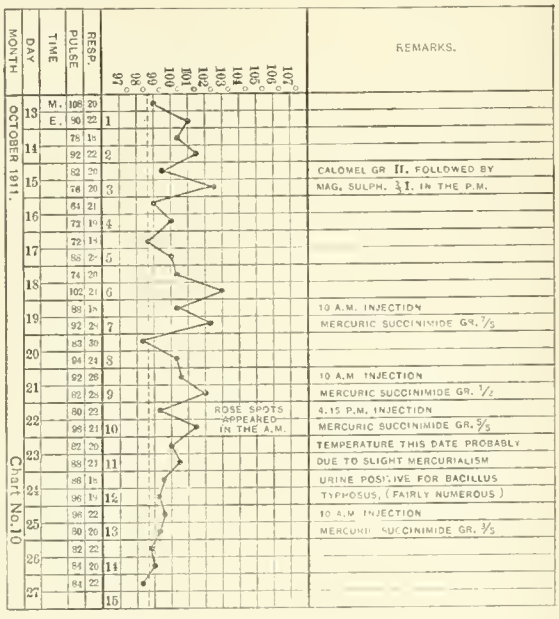
lower portion examined and found positive for *Bacillus typhosus*. By 5:00 P. M. the temperature had fallen to 101° and the stupor was clearing up. At 8:00 A. M., October 13, the temperature was normal. Pulse was 84 and respiration 20; the patient stated that he felt perfectly well; at 11:00 P. M. the temperature was 98°, pulse 72, and respiration 18; I thought that the parasitotropic action of the mercuric succinimide (chemical affinity) had been complete. At 8:00 A. M., October 14, this belief was strengthened by the facts that the temperature was 98.2°, pulse 72, and respiration 20, and that the urine was negative for *Bacillus typhosus*. The temperature slowly rose during the day (see chart) but, firm in the belief that all the organisms were destroyed, I permitted myself to think that the rise in temperature was due to an endotoxemia, and therefore did not give a second injection at this time. However on October 15, the 8:00 A. M. temperature being 101°, pulse 90, and respiration 26, it was evident that some of the infecting organisms had escaped death, had multiplied, and had relighted the pathological condition with resultant toxemia; at 10:30 A. M. I injected 0.52 gram (4/5 grain) of mercuric succinimide, and by the following morning, October 16, the temperature had fallen to 99°, and at 10:00 P. M. the temperature was 98.4°, pulse 70, and respiration 20. The urine this day showed a few actively motile bacilli. Convalescence was established at this point, the 7th day of the disease, and the 5th day after the first injection. From the history of the case and the temperature curve it is evident that this result could have been accomplished in two days' less time had I given the second injection on October 14, when the temperature began to rise, instead of waiting until the 15th. To be on the safe side I gave a third injection on October 17 of 0.026 gram (2/5 grain). On the 18th the white count was 6,300 and in the urine a few sluggish bacilli having a tendency to clump were found. On the 20th the urine contained a very few bacilli which were almost totally lacking in motility. On the 21st the patient was up, dressed, and about the ship, and on the 22nd he resumed full diet. October 24 he was practically ready for duty, the urine was negative for *Bacillus typhosus*, but he will be retained on the sick list a few days longer. Chart No. 9 shows the course of the disease, and



the temperature curve well demonstrates the marked parasitotropic action of mercuric succinimide by the critical falls in temperature following each of the injections on October 12 and 15 respectively.

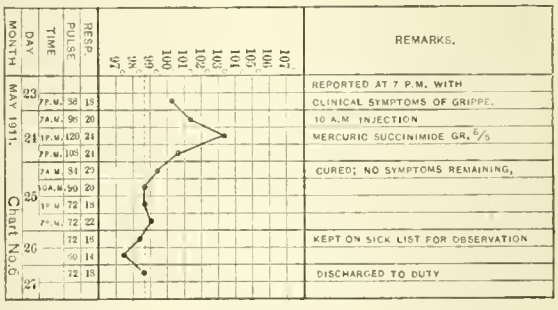
CASE VII.—Patient 20 years of age, admitted to the sick list October 13, 1911, at 8:15 A. M. Complaint, pain in the small of the back, temperature 99°, condition thought to be myalgia of lumbar muscles, salol prescribed; later in the day felt worse and was put in bed; the evening temperature was 101.2°, and pulse 80. The following morning, patient being constipated, he was given magnesium sulphate, 30 grams (1 ounce), without result; the dose was repeated that evening with no results. On the morning of the 15th he complained of severe

pain in the pit of the stomach; abdomen was carefully examined; it was flaccid and no mass could be detected. Calomel, 0.130 gram (2 grains), was given in broken doses followed by magnesium sulphate. This was followed by a free movement of the



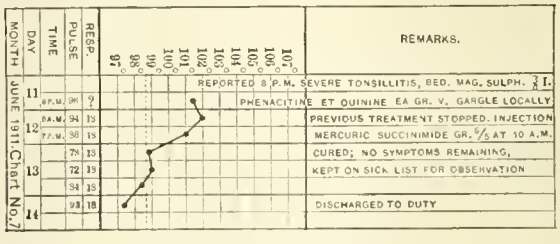
bowels with instant relief. During the 16th the bowels did not move, and the case was considered to be one of obstinate constipation. Two compound cathartic pills were given at 8:00 P. M. On the 17th constipation continued, and the patient again had severe pain in the abdomen, which was examined with negative results. A saturated solution of magnesium sulphate 4 c.c. (1 dram) every half hour; there was a small movement of bowels; at 7:30 P. M. 2 compound cathartic pills were given with relief. October 18 the evening temperature rose to 103°, pulse 102, respiration 21. Syphilis being excluded, it was thought an infection of vegetable parasitic origin confronted us, and the following morning, October 19, an injection of mercuric succinide 0.091 gram (1 2/5 grains) was given, followed by improvement; on the 21st 0.032 gram (½ grain) was injected; on the 22nd rose spots appeared on the abdomen and a positive diagnosis of typhoid fever was made; in the afternoon of that date the temperature showed an inclination to shoot upward, the patient became slightly hysterical, carphologia and subsultus tendinum developed, and at 4:15 P. M. mercuric succinimide, 0.065 gram (1 grain), was injected; between 9 A.M. and 4 P.M. of the 23d the patient had ten copious watery stools, but no abdominal pain. This injection was followed by immediate improvement, all nervous symptoms disappeared, the patient sleeping naturally and soundly from 8:00 A. M. to 1:00 P. M. The raised morning temperature on this date is attributed to the slight mercurialism. The ship being under way at sea prevented examination of the urine for *Bacillus typhosus*. On the 24th urine was positive for *Bacillus typhosus*; the patient's improvement continued. On October 26 the temperature fell to normal and convalescence was established—this being the 14th day of the disease, and the 8th day following the first injection. Chart No. 10 shows the course of disease, treatment, etc.

Comparing these last two cases it will be seen that the earlier in the disease the injection is given the better and more prompt the results. By looking at the temperature curve of the last case it will be noticed that 0.130 gram (2 grains) of calomel, prescribed by Dr. Farwell on October 15 in broken doses, 0.016 gram (¼ grain) every hour, for the purpose of moving the bowels, very nearly aborted the disease on the 16th, emphasizing the advantages of beginning treatment at the earliest possible moment. It seems probable that in diseases in which the causative organism is a rapidly growing one a shorter interval between injections will produce better and more rapid results than the interval mentioned previously in this paper, and in the future in these cases I will give the second injection (4/5 to 1 grain) twenty-four hours after the first; this procedure may also produce better results when treating diseases caused by the more slowly growing organisms such as tubercle bacilli. When treating typhoid fever and the initial injection is not given until the latter part of the second week or later, 0.091 (1 2/5 grains) sometimes produces mercurialism (with violent peristalsis. The initial injection should not be more than 0.065 gram (5/5 grain) to safeguard the patient against perforation. Sometimes the only symptom of mercurialism is a rise of temperature. This is easily mistaken for a symptom of toxemia, due to the activity of the specific organism, and should this mistake be made and an injection be given, it should only serve to further mislead the physician, unless the more classical symptoms of mercurialism presented themselves.



Catarrhus Epidemicus, Five Cases.

Cases VIII-XVII.—These were all cases typical of an infection of this nature, which need not be described. The preponderating organism in the sputum of all these cases was the staphylococcus: four cases were cured by one injection in twenty-four hours, the fifth required two injections. Chart No. 6 well represents these cases.



Tonsillitis, Acute Follicular, Ten Cases.

Cases XVIII-XXVI.—Nine cases were cured in from twenty-four to thirty hours with one injection. One case was cured in 48 hours with one injection, no local or other systemic treatment being given any of the patients. Chart No. 7 is typical of these cases.

Cystitis, One Case.

Case XXVII.—This was of staphylococcic origin, in which the urine was flooded with pus for four

days, during which time the patient was given urotropin, 0.648 gram (10 grains), every three hours, with increasing symptoms. On the fifth day 0.065 gram (1 grain) of mercuric succinimide was injected; in twenty-four hours pus had disappeared from the urine, the infecting organisms were markedly reduced in numbers, and all other symptoms had cleared up. In forty-eight hours the urine was negative for staphylococci.

Otitis Mediachronic, One Case.

Case XXVIII.—This patient had suffered off and on for several years with a more or less severe inflammation of the middle ears. It had been quiescent for about six months, when the condition suddenly relighted, giving rise to the typical symptoms of such an inflammatory process. He received local treatment for a month, at the end of which time he was worse. On September 5, 1911, 0.078 gram (1/5 grain) of mercuric succinimide was injected, with some improvement; on the 10th, 0.052 gram (4/5 grain) was injected, followed by marked improvement; pain almost entirely ceased, as well as did the purulent discharge; the patient was given a third injection and transferred to the hospital for further treatment, much improved. (See Chart No. 8.)

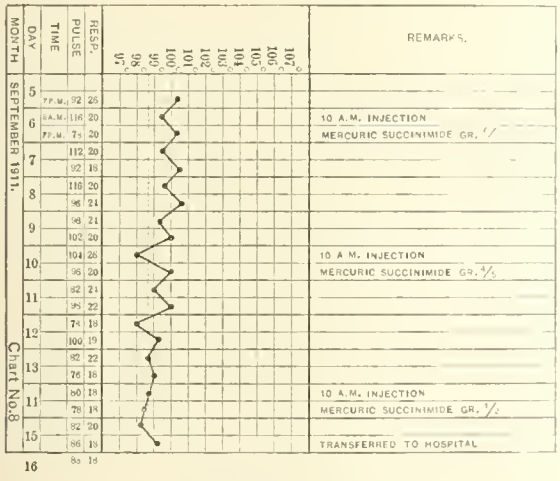


Chart No. 8

Cellulitis, One Case.

Case XXIX.—The patient was admitted October 10, 1911; the middle, ring, and little fingers and the dorsum of the outer side of the left hand were swollen, boggy, painful, tender, red, and hot; diagnosis, cellulitis. Patient's hand placed in a protective dressing and worn in a sling. Injection 0.078 gram (1 1/5 grains) at 10:00 A. M.; October 11, 1911, 8:30 A. M., all symptoms disappeared; discharged to duty.

Furunculosis, Four Cases.

Cases XXX-XXXIII.—Three cases, one injection each of 0.091 gram (1 2/5 grains), followed by rapid disappearance of boils, without new outcroppings. One case, one injection 0.091 gram (2 2/5 grains), disappearance of original crop less rapid, and the appearance of two new boils.

Chancroid, One Case.

Case XXXIV.—Serpiginous chancroidal ulceration at base of penis, treated by usual methods for ten days, growing worse; injection 0.091 gram (1 2/5 grains), no improvement, following three additional injections no improvement.

Conclusions.—The three cases of tuberculosis herein reported strengthen my confidence in the supreme value of mercury in the treatment of this disease, and I believe it to be the chemical affinity of the tubercle bacillus. Whether or not it is also the chemical affinity of all the vegetable parasites remains to be proved or disproved, and I hope that others will use the suggestions contained in this paper to that end. It seems highly improbable that during the short period of nine months of professional work on this ship that I should have an abortive case of miliary tuberculosis (none reported), of chronic pulmonary tuberculosis (none reported), of bronchopneumonia (rare), of typhoid fever, not to mention the remaining diseases reported above, and it would indeed be a marvelous coincidence, even more improbable, that each of these abortions should take place immediately following the administration of a chemical given with the definite idea of curing each of these diseases, unless that chemical possessed the curative properties my theory suggests.

Mercury administered in the large initial doses as I am now using it, continued every fourth day in decreasing doses, is less liable to produce mercurialism than when the initial dose is small and slowly increased during succeeding doses. I have given over 30,000 deep muscular injections of mercury without abscess formation or necrosis, which at any rate should not occur. The only contraindications to this treatment that I know of are organic lesions of the kidneys of non-bacterial origin and asthma. The solution of mercuric succinimide should be made so that 0.260 c.c. (4 minims) of sterile distilled water equals 0.013 gram (1/5 grain) of mercuric succinimide.

U. S. S. Nebraska.

JOHN BROWN, M.D., AND THE BRUNONIAN SYSTEM OF MEDICINE.*

By RICHARD COLE NEWTON, M.D.,

Montclair, N. J.

The subject of this sketch was born in 1735 or 1736, in the village of Lintlaws, or Preston, in the Parish of Buncle, in the County of Berwick, in Scotland. His parents were poor people, but his father appreciated the value of an education sufficiently to send his son to school. The school which young Brown attended was in the village of Dunse, the place where the celebrated Duns Scotus once flourished, a fact of which Brown was apt to speak with pride, calling attention to the circumstance that two such celebrities as himself and the learned philosopher had attended the same school. Brown rose to the highest rank in the school, but, his father having died, he was obliged to relinquish his plan of going to the university and was apprenticed to a weaver. This occupation proving distasteful, he gave it up and went back to the school. He is said to have hired out as a reaper of corn in order to obtain the means for releasing himself from the weaver's occupation and putting himself back in school.

He was a robust young man, and at the age of fifteen walked in one day from Berwick-on-Tweed to Morpeth, a distance of fifty miles, and later on in his career he walked from 4 A. M. one day until 2 A. M. the following day, with only one hour's intermission for dinner.

At school he was regarded as a prodigy. His application was so intense that he was seldom seen

*Read before the Orange Mountain Medical Society, May, 1911.

without a book in his hand. He was at this time of sober habits and exceedingly religious. He was attached to the sect of seceders from the Established Church of Scotland, who were known as Whigs, and so intense was the feeling which these sectarians entertained against the established kirk that young Brown would have considered his salvation in danger if he had read or listened to the "profane discourses of the regular establishment." "He aspired to be a minister of a purer church, of which it was expected that he would be a chosen vessel."

He remained at Dunse at school until he was nearly twenty years of age, working very hard at the humanities, and becoming exceedingly proficient in Latin. About this time out of curiosity he attended a meeting of the synod of the Scotch Established Church which happened to be held near Dunse, and not having been quite so shocked as he ought to have been at the proceedings he stayed and listened to the sermon. This extraordinary performance having been made known to his colleagues of the Scotch Whigs, they were horrified, and called him up in session, where he was rebuked and threatened with extremities unless he recanted and made all due and humble apologies and promises for the future. Brown was obstinate, declined to apologize, and to forestall excommunication withdrew from this communion and joined the Establishment, and, with his usual headlong enthusiasm, became deeply interested in it, attacking vehemently David Hume, whose writings were just then setting all churchmen aghast, and the world at large by the ears.

He now left the grammar school at Dunse and became a private tutor in the family of a neighboring laird, where his superior learning and positive manner led the family to form the habit of referring various disputed points to him for adjudication. On one occasion the laird, having invited some of the nobility and gentry of the surrounding country to dinner, the tutor, as was the custom in that house, repaired to his own apartment after the dessert, leaving the guests to their wine.

Like good Scotchmen of a century ago, when somewhat deeply in their cups, the company engaged in a theological discussion, choosing the comprehensive subject, "The Decrees of Providence." As they did not seem to be making satisfactory headway in their arguments, the host sent a message to the family tutor requesting an expression of his views on the subject. The messenger returned with the surprising information that Mr. Brown considered "The Decrees of Providence very absurd that make so many blockheads lairds."

This incident led to Brown's dismissal from the post of tutor in the family of this particular laird. It shows, moreover, a certain pride of opinion and boldness in expressing his convictions on Brown's part, the certain hallmarks of a born reformer. He then became a student of divinity at the University of Edinburgh, where in the course of time he preached his ordination sermon, which was his first and last sermon, since he failed of ordination for some reason, and giving up the study of theology he returned to the school at Dunse as an usher. In 1759 he competed unsuccessfully for the position of teacher in the High School at Edinburgh. He was then twenty-three or twenty-four years old, and so far had not been especially successful in carrying out his projects to establish himself in life.

Now, however, he turned his thoughts to medicine. It does not appear that he was the seventh son of a seventh son, nor that he had received an "especial" call to practise medicine nor to discover and promulgate a theory. It is more probable that, like the average Chinese physician, he took to medicine because he had failed in his efforts to become a "literate." He repaired again to the University of Edinburgh and became a "grinder." By this suggestive title is meant a person who "grinds out" the young aspirants for the degree of doctor of medicine. Not only did he translate their graduation theses into good Latin, but he tutored them in the same language until they were able to sustain their examinations in this ancient tongue. Not only this, but he would no doubt write the whole or a part of the graduation thesis upon occasion and would help the backward student in other ways to fulfill the requirements of the university.

No doubt some of you who were students in the College of Physicians and Surgeons some years ago will remember the amiable custom, more or less prevalent there, by which for a consideration the aspirant for the doctor's degree could have his graduation thesis written for him by an obliging colleague, and pass it off as his own. In our time, however, the young gentlemen who helped their colleagues to thwart the design of the examiners to exact a well-written thesis from each applicant for a degree kept very quiet about it, and if the professors knew of these performances they said nothing about them, at least so far as I have ever heard. But at the University of Edinburgh the "grinder" was a recognized institution, and while his remuneration seems to have been far less than private quiz masters and thesis writers get in this country, yet his position as a valuable adjunct to the teaching force was recognized. Had we been obliged to hand in graduation theses, written in good, classical Latin, and to sustain our examinations in the same tongue, there would have been abundant use for "grinders" in the old Twenty-third Street Medical School a generation ago, if not since.

Brown now began to study medicine in earnest, but his progress was impeded by the amount of time which he was obliged to give to his tutoring. He, however, soon became proficient as a "grinder." He had now "discovered his strength, and was ambitious of riding in his own carriage as a physician."

He married in 1765, and to help support his family he opened a students' boarding house, which was at first quite successful. But its master was improvident and free handed, and the students soon began not only to live with him but on him. He had become popular among them and was known as a scholar and, unfortunately for his success, also as a jolly good fellow. The intense and emotional piety of his earlier years and his interest in theological questions seem to have subsided, and his attention was largely directed toward having a good time. He paid court at the shrine of Bacchus, surrounding himself with bodies of students and sharing in their revels as well as their serious studies. Finally to make his hold upon them more secure he founded in 1784 a sort of free masons' lodge, which he called the Lodge of the Roman Eagle. He turned the ritual into Latin, which language by this time he spoke as fluently as he did English.

His teaching from the lecturer's chair was, to say the least of it, eccentric. Sometimes he compared his discoveries with those of Newton, to his

own advantage. At other times he grew weary, and the enthusiasm of his young audiences waned with his own. Under such circumstances, in accordance with his doctrine that his natural excitability required to be roused by different stimuli, he would place on one side of the lecture table a bottle of whisky and a phial of laudanum on the other. He would mix forty or fifty drops of laudanum in a glass of whisky, take the draught off at the opening of the lecture, and repeat the dose four or five times during the discourse, working himself up to a frenzy by the time of the peroration.

However, I am anticipating. His proficiency as a scholar had attracted Cullen's attention. Cullen was then at the height of his fame, and was perhaps the leading clinician in the world. He befriended Brown and finally adopted him as his Latin secretary and tutor to his children. About 1765 Brown applied for the position of professor of the theory of medicine, then vacant in the University of Edinburgh, and relied upon Cullen to obtain the post for him. He was unsuccessful in his ambition, and blamed Cullen for his failure. The enmity between them thus started gradually increased, and Brown never forgave his former friend and benefactor for his alleged treachery.

This animosity toward Cullen had much to do with the elaboration of Brown's theory of practice which was largely aimed at the all-prevalent practice of phlebotomy, which Cullen also employed assiduously. With the fate that attends reformers generally Brown finally made himself so unpopular with the professors at the Edinburgh University that, as he alleged, he was obliged to go to St. Andrews' University for his degree as doctor of medicine.

At the risk of making my paper too long I am constrained to quote the following extract from the minutes of the Senatus Academicus of the University of St. Andrews' of date September 21, 1779: "The professor of medicine represented to the meeting of the university that one John Broun was in town, desiring the degree of Doctor of Medicine. That Dr. Flint had examined him in the presence of Mr. Cook, and presented to him the usual trials to be delivered before this meeting, which trials having been revised and approven of by the examinators, Mr. Broun was called in and delivered the said trials to the satisfaction of the university. They accordingly unanimously agreed to confer the Degree of Medicine on him, and ordered his diploma accordingly."

He was unquestionably a learned man, and many have maintained that he was truly a man of genius, although he seems to us in this practical age more like a hard-drinking pedagogue than a master of the healing art, or a scientific physician.

Once when he was afflicted with gout "he partook freely of alcohol before dinner and then called six of his pupils to join him at dinner in order to demonstrate that whereas before he had entered into any degree of intoxication he could not put his inflamed foot to the ground, and could only walk on his sound limb, assisted by a crutch, he could after some intoxication use his affected leg in the most perfect manner. Greatly troubled with gout, he tried in the year 1775 to cure himself by abstinence, and for a time he succeeded. But as the gout returned, and as the practice (of abstinence) did not fit in with his system, he went back to the bottle and stuck to it to the end."

Two instances are related which throw a strong side light on Brown and his peculiar mental make-up. They occurred as follows: A medical student was sick of a fever and under the care of an eminent practitioner in Edinburgh who was treating the case in the usual antiphlogistic manner. This treatment was severe, and the patient was not improving, when another student, who was an ardent Brunonian, tampered with the nurse and induced her to administer strong stimulants. The effect was so favorable that Dr. Duncan, who had charge of the case, thought that his patient had recovered. The patient, however, relapsed, and the great Brown was again consulted clandestinely, and more stimulants were surreptitiously administered. The patient finally got well. This was hailed by the Brunonians as a great triumph. But it nearly led to the prosecution and punishment of their leader, whose duplicity served to deepen the dislike and distrust with which his contemporaries regarded him.

Another case of fever about this time having been submitted to the Brunonian treatment, openly and fully, turned out badly, and the patient died. An autopsy was held at which Brown was present. It appeared that the body had undergone no putrefactive changes, a fact upon which the leader of the Brunonians dwelt in triumph, saying, "Gentlemen, I appeal to you if we may not consider this as a clear proof of the propriety of our practice."

This incident is of especial interest as showing the foggy methods of reasoning and the want of a sense of humor which have ever distinguished the system makers in medicine. It shows, also, how this class of theorizers loved then as now to make the worse appear the better reason.

Quoting Richardson again, I will give an epitome of the so-called Brunonian theory.

(A) In all states of life men and other animals differ from themselves in their dead state, or from any other inanimate matter in this property alone; they may be affected by external agents, as well as by internal, or functions peculiar to themselves, in such a manner that the phenomena peculiar to the living state can be produced. This proposition extends to everything that is vital in nature, and therefore applies to vegetables.

(B) The external agents are reducible to heat, diet, and other substances taken into the stomach, the blood, the fluids secreted from the blood, and the air.

(C) The internal agents, or functions of the body itself, namely muscular contraction, sense or perception, energy of the brain in thinking and in exciting emotion or passion produce the same effects.

(D) If the property which distinguishes living from dead matter or the operation of either of the two sets of powers be withdrawn, life ceases. Nothing else than the presence of these is necessary to life.

(E) The property on which both these sets of powers act may be termed "excitability" and the powers themselves "exciting powers."

(F) The effects common to all the exciting powers are sense, motion, mental exertion, and passion.

(G) The effect of the exciting powers acting upon the excitability may be denominated "excitement."

(H) Some of the exciting powers act by impulse. They may be denominated "stimulants" or "stimuli," which may be universal or local.

(I) What excitability is, or in what manner it is affected by the exciting powers, we do not know.

But whatever it may be, whether a quality or a substance, a *certain portion is assigned to every being upon the commencement of its living state.* (Italics mine.) The quantity of energy is different in different animals, and in the same animals at different times.

(J) The general powers produce all the phenomena of life, and the only operation by which they do so is stimulant. It follows, therefore, that the whole phenomena of life, every state and degree of health and disease, are also owing to stimulus and no other cause.

(K) Excitement, the effect of the exciting powers, the true cause of life, is within certain boundaries proportional to the degree of stimulus. The degree of stimulus, when moderate, produces health; in a higher degree it gives occasion to diseases of excessive stimulus. In a lower degree or excessively weak, it induces those diseases which depend upon a deficiency of stimulus.

(L) Every age and every constitution, if the excitement be properly directed, has its appropriate degree of vigor.

(M) Life must be considered as a *forced state.* The body lives as long as the exciting powers act upon it through its excitability. If the exciting powers are removed from it death is as certain as it would be if the excitability itself were withdrawn.

(N) The seat of excitability in the living body is the nervous matter and muscular solids to which the appellation of nervous system may be given. In this the excitability is *inherent,* but is not different in different parts of its seat.

(O) Everyone of the exciting powers always affects some one part more than any other, and different powers affect different parts in this unequal manner. The affected part is generally that to which the power is directly applied.

The above is said by Richardson to be the epitome of the tenets of his doctrine, made by Brown himself. They were officially promulgated by Brown in the "Elementæ Medicinæ," published in 1780. In that year Brown was elected for the second time President of the Royal Medical Society of Edinburgh, and this period may be called the zenith of his career.

In commenting on the above extract of the Brunonian Theory Richardson says: "In this purely mechanical day, when nothing is allowed that is not experimentally illustrated, the hypothesis of Brown may seem, and I doubt not does seem, a mere fancy. Yet when it is candidly considered it is very much more. As an abstract reading of vital phenomena, it is indeed a most ingenious exposition and shows that its author was a man gifted with curious insight, a man of genius of a very high order. To this day we have not come much nearer to the true solution of the great question of life than the hypothetical solution which he advanced.

"Had Brown been content to put forth the hypothesis which bears his name, he would have had no serious quarrel or opposition. But to make a long story short, he must turn his alleged great discovery to a practical account. He must deduce from it a system of practice, from which he could obtain wealth and worldly honor." Richardson adds sententiously: "How many men of genius in medicine have split upon this deceitful rock! Those only can tell best who have read the history of medicine with most care, and they know that there is not one instance on record of a physician of great original genius ever having been a physician esteemed great as a healer (in his lifetime) by the world at large." "With a certain kind of enthusiasm, which his words and arguments sometimes show to be inconclusive even to himself, Brown tried to adapt his hypothesis to practice. He argued that as in some persons there is implanted a certain measure of excitability, which is dead unless it be called into excitement, or life, by an exciting power or stimulant, so the changes or phenomena which we see in disease are due entirely to errors of function existing between the excitability and the exciting powers. If the exciting powers do not call the excitability into action, there is set up a want of excitement or deficient life, a direct debility. If, on the other hand, the exciting powers are brought excessively into action, there is an exhaustion of the stock of excitability and indirect debility follows. In the end, in cases where life is most prolonged, the excitability is at last exhausted and then, as the exciting powers have nothing left to act upon, there is final death. But during life, when in its prime, a large primitive stock of excitability may be knocked out of the body by an exciting power or stimulus, instantly, as by a blow, more slowly but still rapidly, as by the too frequently repeated stimulus of wine.

"On these principles he divided diseases into two great classes, the sthenic and asthenic. Disease marked by over-excitement and induced by action of the exciting powers he called sthenic. Disease marked by feeble excitement, whether induced by deficient excitability, or by feebleness of the exciting powers, he called asthenic. These two terms which he invented for his system still remain in common acceptation.

"Taking death then as the type of the final disease, Brown insisted that every disease is an approach to death, a result either of exhausted excitability or of deficient stimulus, in either case a result of debility. To make this hypothesis bear more fully on practice he went a degree further. He taught that where the excitability is wasted by any one stimulus there is still a reserve of it capable of being acted on by another stimulus, and to show the applicability of this view he cited the case of a gentleman who, under intense literary labor, supported himself for forty hours with alacrity by frequently changing his stimulus. The first stimulus was a good dinner; then work with a glass of wine every hour for ten hours, then food, nourishing, but sparing in quantity, then work again, with punch, not too strong. But sleep coming on under the pressure he changed his stimulus. The punch was replaced by opium, more excitability was thus called out. In forty hours the work was completed and, by continuation for five hours longer, the proofs were read and corrected. The succession of stimuli in this case was first food, next the stimulus of the intellectual faculties, then wine, then the food varied, then punch, then opium, then punch and conversation.

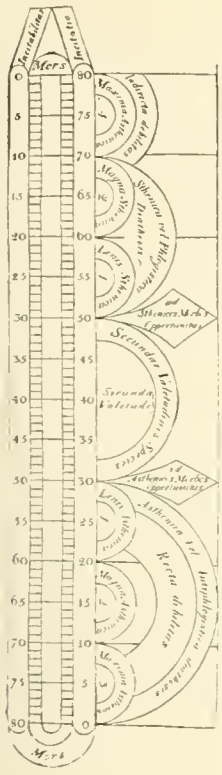
With this extensive range of action by the employment of varied stimuli, Brown was able very easily to construct a speculative system of therapeutics and régime, which necessarily had its fascinations.

I quote a prescription of Brown's for a hypochondriac: "For breakfast toast and rich soup made on a slow fire. A walk before breakfast and a good deal after it; a glass of wine in the forenoon, *from time to time;* good broth or soup to dinner, with meat of any kind he likes, but always the

most nourishing; several glasses of port or punch to be taken after dinner, till some enlivening effect is perceived from them, and a dram (of whiskey?) after everything heavy. One hour and a half after dinner, another walk; between tea and supper a game with cheerful company at cards or any other play, never too prolonged, a little light reading, jocose, humorous company, avoiding that of popular Presbyterian ministers and their admirers and all hypocrites and thieves of every description. Lastly, the company of amiable, handsome, and delightful young women, and an enlivening glass."

been written by one Robert Jones, M.D., a pupil of his. He also wrote and published anonymously in 1787 a book "On the Principles of the Old System of Physic. By a Gentleman Conversant on the Subject." This was a covert and ungentlemanly attack on the views of Cullen, his quondam, friend and benefactor, whom to the last he never forgave. He left a large family, two sons (Baas says four sons) and four daughters. Contributions for their support poured in from foreign countries, and the students in Scotland and Padua went into mourning for him. He was much more famous dead

INCITABILITATIS ET INCITATIONIS SERIES.



ADVERSA VALETUDO VEL MORBI		CAUSÆ. NOXÆ	CAUSÆ. JUSTA	MORBORUM CURATIO.
Apoplexia. Paralysis. Pestis. Febris Maligna. Cynanche Typhoides	Variola confluens Hydrothorax Phthisis. Dysenteria contagiosa, &c	Nimia magnorum stimulorum vis, ut calor, exercitatio, victus, sanguinis abundantia, gravis animi adfectus, contagio, et similia.	Indirecta debilitas.	Medendi consilium est incitationem sustentare. Remedia sunt vehementes stimuli, ut electricitas, opium, æther, spiritus Gallicus, vinum, moschus, cortex peruvianus, serpentaria, camphora, jusculum lautum, et similia
Synocha. Phrenitis. Cynanche inflammat Variola.	Rubeola Peripneumonia Dysenteria Mania, &c	Eædem, ac supra dictæ, sed non ea vi incumbentes, qua indirectam debilitatem creent, sed majore quam infra	Aucta vel magna incitatio.	Medendi consilium incitationem imminuere, quod fit, magnos stimulos subducendo, exiguis vel deficientibus utendo, scilicet, frigido cubiculo, animo tranquillitate, sanguinis missione, alvi purgatione, parco victu, et similibus.
Synochus. Rheumatismus. Catarrhus. Scarlatina.	Miliaria Varicella Ophthalmia, &c	Eædem, ac supra dictæ, sed non ea vi incumbentes qua magnam sthenicam creent, sed majore quam in fecunda valetudine.	Aucta minus incitatio.	Hic consilium incitationem, ita ut supra, sed modice magis, minuere.

A 30° ad 50° in serie fecundæ valetudinis species jure notatur, quia, nisi in 40°, absoluta valetudo non contingit: In magna enim stimulorum, quotidie incumbentium, varietate; cujusmodi cibus et potio et adfectuum animi vis, paulò gravius agentia sunt, raro medium punctum attingitur, plerumque intra 30 et 50° variat incitatio.

Febres intermittentes. Colica simplex. Dyspepsia. Hypocondriasis.	Hysteria. Epistaxis. Menorrhœa. Amenorrhœa, &c	Hæ noxæ sunt stimulorum, secundæ valetudini necessariorum, subductio, et potestatum, quæ, licet stimulent, non satis id faciunt, abutus.	Imminuta incitatio vel recta debilitas.	Medendi consilium est incitationem augere; remedia vehementes stimuli, quales ad indirectam debilitatem medendam adhibentur, hoc tantum differentes, quod a parva eorum hic vi incipiendum, et paulatim ad majorum adscendendum
Rheumatalgia. Cholera. Epilepsia. Chorea	Rachitis. Hæmoptysis. Scrophula, &c	Sunt stimuli deficientes fortis, ut frigus, parcus cibus, nec ex bona materia, metus, et similia.	Imminuta incitatio vel recta debilitas.	Consilium his idem, ac modo dictum, sed cum cautiore stimulorum usu
Typhus. Colica Pictonum Podagra. Tetanus	Scorbutus Diabetes Hydrops Ictterus, &c	Sunt stimuli deficientes fortis	Imminuta incitatio vel recta debilitas.	Idem etiam consilium, scilicet augere incitationem, et isdem quoque stimulis, sed etiam cautius administrandis

JOANNI BRUNONI, M D.

HANC TABULAM, UT SUÆ IN PRÆCEPTOREM REVERENTIÆ MONUMENTUM DICAT ILLIUS AMICUS ET DISCIPULUS,

SAMUEL LYNCH.

An enthusiastic pupil of his, named Samuel Lynch, constructed a sort of barometer of disease, of which I have been able to procure a copy, which I will explain and then pass around.

About 1780 Brown was imprisoned for debt, and delivered lectures during his incarceration, until relieved by a present of one hundred pounds from an unknown friend. Not being able to make things go, financially speaking, in Edinburgh, he finally gave it up and went to London in 1786, where he was again imprisoned for debt. However, he was bailed out by friends and had started to make a living, when, in October, 1788, after taking, as was his custom, a large dose of laudanum, on going to bed he was seized with apoplexy from which he died. Just before his unfortunate end he had narrowly missed a call to Berlin and another to Padua as a teacher, the scale having been turned against him by his dissipated habits.

The best thing that we know about this peculiar man was that he once refused a large sum of money to allow a speculator to bring out an "exciting pill" bearing his name, and that, too, when he was oppressed by debt, and in the midst of dire financial distress. He was vain to weakness. He, himself, wrote and published in 1781 a book supporting the Brunonian system, alleged to have

than alive. He has been called the Paracelsus of Scotland. The comparison is by no means entirely inept. Both showed remarkable courage and good fighting qualities in attacking the moss-covered errors of their day; both made their mark which will never be entirely effaced from medical history; both blazed the way for the advance of scientific truth; both builded better than they knew, and both finally died in poverty and neglect from the abuse of alcohol.

That a rational man should not only have attempted to build up, but actually did build up a theory of the etiology of all human diseases and their treatment upon such facts, which no one disputes, as that alcohol and opium, if taken in sufficient quantities, will allay pain and stimulate the imagination, would be quite incredible did not every student of the history of medicine know that the various systems and sects in the practice of medicine have been built up and defended on even more ephemeral grounds than these.

That these sects and systems of medicine founded on assumption should lead to bitter feuds among their adherents and opponents was only to be expected, as most men will fight to the death for their opinions and let the facts take care of themselves. So the Brunonians and the Cullenites

fought violently with tongues, fists, and cudgels, and challenged each other to duels. The dueling seems to have been stopped only when the Royal Medical Society of Edinburgh voted to dismiss any member who engaged in a duel. Probably in resentment for some strictures upon their belief or practice 400 students of the University of Göttenberg, ardent Brunonians, led by an enthusiastic young professor, armed themselves with cudgels and after indulging in breaking windows and other riotous demonstrations overcame the police and seized the town house. It took some days to restore order in the university.

Twenty years in the university working as a "grinder" was passed before Brown got his degree in medicine. It scarcely seems wonderful that he was a theorizer and a pedant rather than a physician, for he never seems to have enjoyed much private practice.

In the light of the history of medical systems and theories we may say that the fact that the new system did not immediately "take" with the laity seems perhaps rather strange. But we must remember that it takes time for the introduction of any new system in medicine. Probably if Brown had not been so dissipated in habits and pugnacious in disposition, and had not drunk himself to death at 52, he would have lived to see his hopes of wealth and worldly position realized in spite of his follies, his inordinate vanity, and the weakness of his character. One principal reason for the comparatively short duration of the Brunonian system was evidently its simplicity. All diagnosis, all pathology, and practically all infections were disregarded by it. A patient either felt well and seemed up to the standard (30° to 50° in the scale) or he did not. In the first alternative he was to receive stimulation to preserve his excitation in equilibrium, and in the second alternative he was to be stimulated to restore the equilibrium of his excitation. The vulgar mind does not approve of any system of medicine that it can understand. As Mark Twain said, his auditors always believed him implicitly, except when he told them the truth. So, in medicine, simple and easily understood doctrines do not "take" well for any considerable time whether they be true or not.

Gross says that the Brunonian system had extensive sway for only twenty-five years (mostly after its author's death). Yet after all is said and done, it is only ideas that are immortal, and it seems to me quite safe to assert that some of Brown's ideas are still exceedingly potent in the minds not alone of the laity, but of the profession. To be sure the consumption of alcoholic beverages, the sheet-anchor of his system, has been steadily decreasing since Brown's day, and this decrease has been notable during the past few years, largely because the white light of science has been turned upon the study of the effect of alcohol upon the human body, with the result that the enormous harm which this drug has entailed upon mankind can no longer be doubted by any fair-minded person. So long, however, as authoritative or fiat medicine held sway, the scientific investigation of the fundamental questions of human alimentation was never properly undertaken. A total abstainer a generation or two ago, wishing to effect an insurance upon his life was charged an extra premium, because the life insurance doctors esteemed a man who did not sustain his vital powers by alcoholic stimulation a risk inferior to the average. This feeling was quite probably due to Brown's teaching. In our day those who have most thoroughly investigated the question of diet believe that a preponderance of all human ailments is due to overeating and improper eating. Overfeeding the sick as well as the healthy in order to keep their "strength up" is another fruit of the Brunonian theory. Mankind is practically the only animal that eats when he is sick, and he would not as a general thing eat during illness were it not that he feels (his doctor and his nurse and his family urging him on), that he must eat to keep his "strength up" if he wants to throw off his disease. Every one assumes apparently that if some food gives strength more food will give greater strength. Many a patient is fed to death with the doctor's concurrence and consent. And yet we do not study diet, but spend our energies in trying to learn how to cure the evil effects of an improper diet. In this respect we still have the cart before the horse.

Another of the errors promulgated by Brown and many others and still firmly believed by many of the profession and the laity is that "a certain portion of excitability (*i.e.* vital principle, vital energy, or strength) is assigned to every being upon the commencement of its living state." In other words so much energy is given to each human being or animal at birth. This cannot be augmented, it may be husbanded, but cannot be increased. This is a fundamental and foolish error which is one of the main props of fiat medicine.

All the sects in medicine assume also that the physician, not nature, cures the disease. This second fundamental error is another main prop of fiat medicine. In regard to this popular fallacy, sedulously cultivated, of course, by the system makers, Voltaire, I believe it was, said that "the physician amuses the patient, while nature cures the disease." The third leg of the tripod of fallacy upon which all these superstructures of authoritative medicine are built up is that there is a remedy for every disease if we are only astute enough to find it.

If one admits the truth of these three postulates, what is more natural than that an ambitious theorizer should expect to achieve immortality by evolving a system of medicine that will work? Unfortunately our profession has not yet overcome its tendency to worship theories and systems, to "make tithes of mint and anise and cummin and to neglect the weightier matters of the law." Gross says, "As fast as one delusion enslaving the professional mind disappears another springs up to take its place, and thus it will probably ever be." This was written forty years ago.

Whereas, Benjamin Ward Richardson, himself a potent theorizer, writing twenty-four years ago, seems to complain that in this "purely mechanical day, nothing is allowed that is not experimentally illustrated." For my part, I say, thank God for the change, if it has really come! It sometimes seems as though the day of theories and systems in medicine were drawing to its close, and that the dawn of scientific medicine were even now breaking. However, no teaching of the healing art can ever be called truly scientific that is not founded on the study of preventive medicine. The cure of disease is important, its prevention inconceiveably more so. We still have the cart before the horse, because we are still expending at least nineteen-twentieths of our energy and our resources in in studying curative medicine, and less than

one-twentieth in studying preventive medicine.

Brown's teachings were said to have led to the death of more human beings than all the wars of Napoleon and the French Revolution. We should not, however, blame any one man for the fashions in medicine; they are like the waves of the sea sweeping up and receding, often without specially obvious causes. Minute analysis of any particular theory yields the conviction that novelty has been perhaps more than any other attribute a determining factor in its popularity, and frequently the final adoption of the new theory has been in direct proportion to the vigor of the opposition with which its introduction has been assailed.

It is also to be observed that when in the history of medicine some particular therapeutic measure has been largely overdone the common sense of the plain people has finally overthrown it. In Brown's time the practices of bleeding and polypharmacy had been pushed to a shameful extent. Louis the XIV of France was bled 47 times in one year and took 215 different medicines and 212 enemata.

Dr. Quine informs us that in the latter part of the eighteenth century doctors were fined and imprisoned for having allowed any patient to die without having bled him. Boussat was banished from Paris, not because he failed to bleed a patient, nor because he had ever questioned the universal applicability of the lancet, but because he had the audacity to propose a new method of bleeding. Is it any wonder that public opinion at last revolted against the universality of this treatment and that physicians were forced to largely discontinue and finally abandon the practice of phlebotomy?

Radical changes in medical theory and practice, as said above, come in waves, and when once started sweep everything before them. The doctrines of Hahnemann, which were promulgated about the same time as Brown's, also, as you know, were strongly opposed to bloodletting. The time was ripe for this reform, and the leaders in it were really expressing public opinion, quite as much as forming new medical doctrines. Futhermore, Brown and Hahnemann lived in the age of new doctrines in medicine. The medical world had finally shaken itself free from the teachings of Galen, which had held undisputed sway for 1,500 years, and, since there was at that time no scientific basis for medical practice, systems must be invented to guide the floundering medical intellect into some sort of a harbor and pile up precedent and precept to prevent complete anarchy and disorder in the ranks of the physicians, as well as to guide the public into the belief that doctors had a solid reason for their beliefs and their practice.

Theories and systems afford a refuge for the unlearned and narrow medical mind. When it has mastered certain glittering generalities, which are true at least in so far that few can successfully dispute their truth, a feeling of satisfaction is engendered, because the rudiments of medical practice are thought to be secure. We have frequently seen as much anger and perturbation caused by any question of the absolute truth of an accepted doctrine in medicine as was caused among the ecclesiastical authorities by the teachings of Galileo.

We still have doctrines and systems and hypothetical explanations of natural phenomena, but the white light of science has grown too strong for us. The medicine of the future will, we believe, not be, like that of the past, largely controlled by dogma, superstition, and tradition. It will be scientific medicine and the true physician of the future will not be ashamed to say that he does not know a thing that science has not yet made clear to him, and will not condemn an innovation simply because it does not conform to his theories, and because he cannot measure it with his yardstick.

Fiat medicine like fiat money can make a great show. It can fool the laity and even arouse the wild enthusiasm of the prejudiced and unthinking practitioner. But it is not real medicine. There is no royal road to complete knowledge of our art or to the acquisition of skill in its practice. Only the student, the thinker, the man who is honest with himself, an unprejudiced observer, a merciless sceptic of pretense and assumption, and one who is capable of a lifetime of hard work can expect to be a real master of medicine.

THE USE OF ALCOHOL AND THE LIFE INSURANCE RISK.

By T. F. McMAHON, M.D.,

TORONTO, ONT.

ASSISTANT MEDICAL REFEREE THE MANUFACTURERS' LIFE ASSURANCE COMPANY.

THERE is no subject with which the medical referee has to deal that involves so much trouble and uncertainty as that connected with the drinking habits of the applicant. For many reasons it is impossible to get the truth even from applicants whose statements can be received with confidence in all other respects.

It is not my purpose to contend that the strictly moderate user of alcoholic beverages is to any appreciable extent a less desirable risk than a total abstainer. A man may drink a glass or two of wine or beer a day without rendering him a less desirable risk than a total abstainer. But we cannot deny that an abstainer is less likely to become later an immoderate user than one who habitually uses alcoholic drinks in moderation. He is less exposed to the temptations of the club, the barroom, and the sideboard, and there is less danger of him contracting vicious habits. We know how difficult it is to draw the line between moderation and excess. We are all familiar with the man who prides himself on his moderation, and would be much hurt at the suggestion that his daily consumption exceeds the limits of safety, and yet is in the habit of taking half a dozen or more drinks a day. He does not like to be questioned as to the exact number of drinks he takes, and if the examiner is conscientious and tries to get accurate information it is resented, and the applicant is apt to carry the business to another company. Bitter complaints follow from the agent and the examiner is likely to be supplanted by some one less likely to give offense. The applicant is usually unknown to the examiner, and even the ablest examiner cannot always distinguish moderate from immoderate drinkers. Thus it comes about that every company carries risks in large numbers on men who habitually or occasionally drink to excess.

We mentally classify risks according to drinking habits something after this scheme: (*a*) Total abstainers. (*b*) Strictly moderate drinkers. (*c*) Those claiming or believing themselves to be moderate drinkers, who, nevertheless, use alcohol in such amounts as to render themselves less desirable as risks than classes (*a*) and (*b*). (*d*) Immoderate drinkers.

In my opinion the only safe way to deal with immoderate drinkers is to reject them. If we attempt

to meet the danger by giving short term endowments and imposing liens, our experience will not be satisfactory for the reason that as a rule only the bad ones will accept such policies while the less undesirable will refuse to accept them. No matter what care we take, a large number who properly are graded in class (*c*) will get on our books. We can hope to keep down the number only by maintaining a high standard in our agents and medical examiners and by securing reports on habits from reliable and disinterested sources. But if there is to be any classification of the assured along this line, the only practicable one is into abstainers and non-abstainers. If the life expectancy of the average abstainer is higher than that of the average drinker who does not drink in such amounts as to make him uninsurable, it is surely only just that abstainers should be separately classified so that they may enjoy a lower rate on non-participating policies and share in the greater profits accruing upon the lives of the abstainers in the participating class.

THE USE OF ALCOHOL AND THE LIFE INSURANCE RISK.

In the year 1840 a certain Robert Warner—a members of the Society of Friends and a total abstainer—applied for a policy on his life. The directors of the company to which he applied would grant him a policy only on the condition that he paid 10 per cent. more than the ordinary premium, because they looked upon him "as thin and watery and as mentally cranked in that he repudiated the good creatures of God as found in alcoholic drinks." He refused to accept the policy thus loaded, and he and his friends banded themselves together and founded what is now known as the United Kingdom Temperance and General Provident Institution. Warner took the first policy and died at the ripe age of eighty-two years. This was the first company formed to insure the lives of total abstainers. The business at first restricted to abstainers was in 1848 extended to non-abstainers in a separate section. The above table shows their mortality experience under ordinary whole life policies for the forty-five years, 1866 to 1910, in 5-year periods.

The following are the percentages of actual to expected losses both as to number and amount:

Years.	Section and Percentage of Number		Section and Percentage of Amount	
	Temperance.	General.	Temperance.	General.
1866–70	74.86	93.65	72.35	117.28
1871–75	70.68	102.60	69.9	99.07
1876–80	69.77	99.73	65.10	103.63
1881–85	70.82	91.61	62.62	89.07
1886–90	68.95	94.79	72.08	90.64
1891–95	71.35	99.74	64.81	96.98
1896–00	73.79	90.52	73.29	89.07
1901–05	72.04	88.29	65.92	85.26
1906–10	65.21	83.26	59.75	79.91
Average	70.47	93.14	66.25	91.27

It will thus be seen that during the forty-five years from 1866 to 1910, inclusive, the number of expected claims from deaths was 12,754 in the temperance section and 15,794 in the general section, while the actual number of deaths was 8,988 in the temperance section and 14,711 in the general section. In other words, the percentage of actual to expected deaths in the temperance section was 70.47, while in the general section it was 93.14. The ratio of actual to expected losses as to amount was 66.25 per cent. in the temperance section and 91.27 per cent. in the general section. The mortality saving in the temperance section was therefore 3,766 lives during the forty years. In the general section with larger business it was only 1,083 lives. If the loss ratio had been as high in the temperance section as it was in the general section the mortality saving would have been only 875 lives instead of 3,766 lives. If the loss ratio in the general section had been as low as in the temperance section the mortality saving would have been 4,664 lives instead of only 1,083 lives.

The total saving from death losses being lower than the mortality tables called for was 4,849 lives in the two sections. With the same loss rate in both sections that was experienced in the general section, the mortality saving would have been only 1,958 lives. On the other hand it would have been 8,615 lives if the loss rate had been the same in both sections that it was in the temperance section. The ratio of mortality saving was on the average of 4.3 times as great in the temperance section as in the general section. In the forty-five years with a mortality in the whole business such as was experienced in the general section the total savings would have been only $3,045,495, but with a mortality in the whole business such as was experienced in the temperance section the savings would have been $11,775,465. The total actual mortality saving in the whole business was $7,070,658. The shortage in the general section on account of its less favorable mortality was $11,775,465 — $7,070,658 = $4,704,807.

MORTALITY EXPERIENCE UNDER ORDINARY WHOLE LIFE POLICIES, 1866–1910, 45 YEARS IN 5-YEAR PERIODS.

Years.	TEMPERANCE SECTION.				GENERAL SECTION.			
	Expected Claims.		Actual Claims.		Expected Claims.		Actual Claims.	
	Number	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
1866–70	549	£100,446	411	£ 72,676	1,008	£196,352	944	£230,297
1871–75	723	139,819	511	97,773	1,266	257,450	1,330	255,062
1876–80	933	193,748	651	126,142	1,485	311,326	1,480	322,644
1881–85	1,179	268,272	835	168,003	1,670	367,214	1,530	327,100
1886–90	1,472	359,061	1,015	259,114	1,846	249,046	1,750	388,913
1891–95	1,686	430,211	1,203	278,815	1,958	476,558	1,953	462,201
1896–00	1,900	505,332	1,402	370,374	2,058	535,686	1,863	477,145
1901–05	2,021	574,144	1,456	378,487	2,221	613,207	1,961	522,820
1906–10	2,291	739,414	1,504	441,838	2,282	681,932	1,900	544,946
Total, 45 years	12,754	£3,310,447	8,988	£2,193,222	15,794	£93,868,771	14,711	£3,531,128
£1 equals $4.86		$16,088,772		$10,659,059		$18,802,227		$17,161,282

The Abstainers & General Insurance Company, of

Age.	Years of Life Under Observation.	Deaths "Expected" Under the Table of the Institute of Actuaries.	Actual Deaths.	Ratio of Actual to "Expected" Deaths.
10 to 24	14,116	87.7	34	38.8
25 to 34	46,500	352.3	131	37.2
35 to 44	39,645	398.2	134	33.7
45 to 54	20,561	311.0	142	45.7
55 to 64	6,966	189.9	106	55.8
65 to 87	1,752	112.8	82	72.7
Total	129,540	1,451.9	629	43.3

Birmingham, Eng., published the preceding table compiled by its actuary with its annual report for 1910. It covers the period of twenty-seven years (1884-1910).

The Sceptre Life Association published the following table with its latest annual report:

Period.	GENERAL SECTION.			ABSTAINERS' SECTION		
	Expected Deaths	Actual Deaths	Per Cent.	Expected Deaths	Actual Deaths	Per Cent.
5 yrs., 1884-1888..	466	368	79.00	195	110	56.41
5 yrs., 1889-1893..	564	466	82.62	312	184	58.97
5 yrs., 1894-1898..	628	498	79.30	419	228	54.42
5 yrs., 1899-1903..	712	548	76.97	514	270	52.53
5 yrs., 1904-1908..	709	573	80.82	607	294	48.43
2 yrs., 1909-1910..	273	221	80.95	264	128	48.48
Total, 27 yrs...	3,352	2,674	79.77	2,311	1,214	52.53

The latest published experience of the Scottish Temperance Life, covering the period of twenty-five years (1883-1907), is as follows:

Period.	ABSTAINERS' SECTION			GENERAL SECTION.		
	Expected Claims	Actual Claims	Ratio, Per Cent.	Expected Claims	Actual Claims	Ratio, Per Cent.
1883 to 1887.....	43	15	35	11	7	62
1888 to 1892.....	159	79	50	49	33	68
1893 to 1897.....	290	138	48	95	67	70
1898 to 1902.....	444	188	42	164	118	72
1903 to 1907.....	609	298	49	223	123	55
	1,545	718	46	542	348	64

An interesting result is obtained by combining the figures of the Sceptre Life and the Scottish Temperance for a twenty-five-year period. It shows that during that period the two companies had a loss expectation of 3,621 lives in their general section and 3,592 in their abstainers' section, with actual losses of 2,801 in their general sections and 1,804 in their abstainers' sections. That is, they expected 29 more losses in their general sections than in their abstainers', and had actually 997 more losses.

In the ten-year period, from September 30, 1900, to September 30, 1910, the mortality experience of the Australasian Temperance & General Life Insurance Society was as follows:

	Expected Claims.	Actual Claims.	Percentage of Actual to Expected.	General Percentage of Abstainers.
Temperance section.....	$591,569	$278,497	47.1	.....
General section.....	303,322	229,572	75.7	160.7

In the first five years of the ten-year period under consideration the percentages of actual to expected losses were 50.1 in the abstainers' section, and 81.4 in the general section, while in the last five years the percentages were 44.8 and 70.8 respectively.

The Manufacturers Life, with which I am connected officially, has shown a remarkably low death rate among total abstainers. The experience of the Manufacturers Life in its Canadian business for the last nine years, 1902 to 1910 inclusive, is shown in the following table.

This experience is that of the last nine of the first twenty-five years of the company's business. It was even more favorable to total abstainers in the earlier years.

What is more significant than anything else is

Year.	PERCENTAGE OF EXPECTED MORTALITY.		
	Abstainers' Section.	General Section.	General Section Percentage of Abstainers' Section.
1902.....	36.9	67.5	184.4
1903.....	37.4	71.1	190.2
1904.....	42.5	61.9	145.7
1905.....	37.3	78.1	200.8
1906.....	35.9	56.6	160.0
1907.....	39.0	72.7	186.4
1908.....	38.2	82.1	214.9
1909.....	34.6	51.1	147.5
1910.....	30.3	50.7	167.4

Abstainers' average..... 36.90 per cent.
General average..... 65.75 per cent.
General percentage of abstainers..... 178.89 per cent.

the fact that a critical examination of the experience of every company separately classifying its risks reveals the fact that in every year and at all ages, wherever a considerable number of lives are under observation, mortality is much lower among abstainers than it is among non-abstainers. This is being recognized more and more by the British companies, several of which, while they do not maintain abstainers' sections, guarantee a permanently lower rate of premium.

116 St. George Street.

THE TREATMENT OF DIARRHEAS IN BOTTLE-FED INFANTS.*

By ROGER H. DENNETT, M.D.,

NEW YORK.

ASSISTANT ATTENDING PHYSICIAN, BABIES' WARDS, NEW YORK POST-GRADUATE HOSPITAL; INSTRUCTOR IN PEDIATRICS IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

The purpose of this paper is to discuss the results of my summer's work in diarrheas in bottle-fed infants. I have long been dissatisfied with the routine treatment of giving to every baby with a diarrhea a cathartic followed by a longer or shorter period of starvation. This work was based upon the single contention of Finklestein that sugar is the chief cause of diarrheas in artificially-fed infants. In this country we have looked upon the vast majority of these diarrheas as a bacterial invasion of the intestinal tract, so that the theory that sugars are the cause of even a part of such disturbances deserves investigation. Until the last year or so we have not thought much about the sugar in artificial feeding. It has been the custom in diarrheas, after a routine cathartic and period of starvation, to habitually start feeding various dilutions of top-milk, wheys, and cream mixtures, or what not, but quite universally 6 to 7 per cent. of sugar was given in the food at once. In order to come to some conclusion on the subject I adopted the routine method of cutting out all sugar in every case of diarrhea in my patients in private practice, and in the dispensary, and in the babies' wards. I had been feeding as a routine simply milk, water, and sugar mixtures. In these cases at the onset of a diarrhea I stopped the sugar, without changing the food in any other way except to boil the milk. The babies who had a diarrhea when they came to me, and who had been fed upon top-milk, or cream and whey mixtures and gruels or other foods, I put upon the routine mixture of one-third whole milk, and two-thirds water, without sugar. In the vast majority of cases this treatment was successful in controlling the diarrhea.

*Read before the Medical Association of the Greater City of New York October 16, 1911.

Many of these diarrheas occurred in the worst types of babies, those with extreme malnutrition and atrophy, or those that had had a diarrhea lasting weeks or even months, and those that had been upon a starvation diet for a prolonged period, with no improvement. These are three of the most resistant classes of cases, except, perhaps, those that are overwhelmed with an infection. The fact that some these diarrheas were not improved by this treatment impressed me more forcibly than ever with the lack of any satisfactory classification of diarrheas in infancy. For the want of a better method, and since this plan lent itself more easily to treatment, I have therefore classified them as follows: 1. Faulty feeding (indigestible mixtures); (2) insufficient feeding; (3) overfeeding; (4) infectious diarrhea.

Faulty Feeding: After being a top-milk and percentage feeding enthusiast for ten years I have finally come to the conclusion that babies with a weak digestion thrive far better on simple milk, water, and sugar mixtures and babies with a good digestion do just as well on these mixtures. I believe that top-milk mixtures especially in the hands of anyone but a skillful infant feeder are a very frequent source of diarrheas in the bottle fed. Gruels in very young infants are another cause. Young infants may stand a weak barley gruel, but often it is the cause of both gastric and intestinal indigestion. I have seen such babies stop vomiting and get normal stools by simply substituting water for the gruel without changing the food in any other way. I believe sugars are a still more important cause of diarrhea for the following reasons: (1) In the great majority of all my cases in hospital and private practice I have stopped diarrhea by omitting the sugar. (2) In other cases I have caused a diarrhea by giving too much sugar. (3) Constipation in bottle-fed babies can almost invariably be remedied by increasing the sugar when the child is fed on simple milk mixtures. (4) We also occasionally see intense intoxication by continuing sugar in sufficient quantity in a baby who already has a diarrhea from too much sugar. I believe milk sugar to be the least digestible. Cane sugar is usually well borne. Malt sugar (maltose and dextrine) is the best sugar of all, especially where there is a tendency toward diarrhea. The only preparation of malt sugar that I know of that is made in this country, is Dextri-Maltose. The leading German pediatricians have used this sugar for a long while, but the German preparation is very expensive when imported into this country. Other causes of diarrhea from incorrect feeding are irrational foods of any sort, such as condensed milk and some proprietary foods.

Babies who have a diarrhea from faulty feeding usually do not have any fever. The stools are numerous and may be watery or contain curds and mucus. There may or may not be vomiting. My last summer's experience has proven to me that such babies do not need a cathartic nor do they need starvation. With no preliminary treatment whatever they should at once be fed with whole milk and water boiled, with no artificial sugar added to the food. One-third milk and two-thirds water is a good routine mixture whatever the age, but with the older babies, half and half is well borne. This is given freely every two hours in the quantity which the well child of that age and weight should have. Vomiting is the only indication for reducing the quantity. In the vast majority of my cases the stools became more solid within one or two days. There was less mucus and there appeared in the stools light yellow masses which on cursory examination look like curds. They are, however, soft and homogeneous, and in my opinion are fecal masses showing the beginning of normal intestinal digestion. The next day these masses became larger and more numerous, making up the bulk of the stool, but might still be surrounded with some mucus. After the third or fourth day of a boiled milk and water diet the stools were usually pale yellow in color, sometimes pale green, and consisted of one large soft homogeneous mass with no mucus, which is a normal stool. They may be one, two or three in number. The number is not important. It is safer then to continue for a day or two more on this food, to which no sugar has been added, but the strength of the milk may be increased. When the sugar is added we should begin with small quantities. Say one-half ounce of sugar to the twenty-four hour amount of food, and gradually increase it up to one or one and one-half ounces. Rarely does the baby who has had a diarrhea stand more than that amount of sugar. If one and one-half ounces of sugar are given the first day it may bring about a return of the diarrhea. I have seen this done repeatedly. As in the following cases:

Case I.—I. T., 3 months of age. Weight 9 pounds, 12 ounces. Breast fed for a few days only; since then has been on top-milk mixtures. For the last month has had cream, top 5 ounces, water 14 ounces, sugar of milk 1 ounce, lime water 1 ounce. Vomits occasionally. Bowels loose, 6 or 7 stools a day, green watery with curds and much mucus. Seen August 4, and put upon milk 10 ounces, water 20 ounces, boiled, no sugar; 3 ounces every 2 hours and 10 feedings in twenty-four hours. August 8, four days later, the stools had become normal and the food was increased to 15 ounces milk and 20 ounces water (boiled) and 10 feedings of 3½ ounces each. Three days later, August 11, ½ ounce of maltose was added to this mixture with no return of the diarrhea. August 15, the food was increased to 18 ounces milk and 18 ounces water, and 1 ounce of maltose. On August 18, 1½ ounces of maltose were added to the mixture and since this gave him 122 calories per kilogram of body weight, he was getting sufficient food to make good gains thereafter.

Case II.—This is illustration of diarrhea caused by too much sugar. A. V., 4 months of age. Weight 11 pounds, 15 ounces. She had previously made continuous gains in weight on simple milk and water mixtures, to which 2 ounces of maltose had been added in each twenty-four hour feeding. On June 29, the food being 24 ounces milk and 16 ounces water, I added 2½ ounces of maltose to the twenty-four hour feeding, and two or three days later, diarrhea began with 5 or 6 loose, green, mucus stools a day. On July 6, without changing the food in any other way, I omitted the sugar, and on July 13, the stools were again normal. I then began with one ounce of maltose, and she did not have any further bowel disturbances throughout the summer.

The vast majority of cases went on to recovery with this method of feeding, but occasionally there were babies that did not do so. Such cases still continued to have a great deal of mucus in the stools, the mucus often being thoroughly mixed and intermingled with the rest of the stool without

any normal fecal masses appearing. After two or three days of such stools we know that our boiled milk and water treatment will not be successful. It is then necessary to start the *Eiweiss Milch* (casein milk) of Finkelstein. This is made in the following manner: One quart of milk is heated to 100 F. and two teaspoonfuls of rennet or essence of pepsin added. This is allowed to stand 15 to 20 minutes until jellied, then heated to 150 F., constantly stirring. The whey is then drained off through a wire colander and thrown away. Enough cold water is added to the curds to make a pint in all. The curds and water are then pressed through the wire sieve or colander with a wooden spoon two or three times until the curds become soft and fine. To this pint of curds and water one pint of real buttermilk (from the churn) is added. It should be used in the same amounts and at the same intervals as the boiled milk for a period of three to seven days, or until the stools are hard and dry. Then the boiled milk and water are substituted for it and the sugar is gradually added to the food as above described. This feeding will rarely fail us in stopping the most resistant diarrhea. Finkelstein's theory of its action is that the milk sugar being soluble in the whey which is discarded, the food is almost sugar-free. It would seem that there are other elements which must enter into reasons for its beneficial effect such as its coagulability in the gastrointestinal tract and the mechanical action of the casein or curds.

There was one particular class of babies that did much better on the *Eiweiss Milch* than they did on the boiled milk and water. These were the babies, who, during the summer had had many recurring attacks of diarrhea.

Insufficient Feeding: The best results that I got during the summer were in the underfed infants, so that this treatment seemed particularly applicable to this class of babies. Babies who have been wrongly fed are frequently put upon weaker and weaker foods until they are getting so little nourishment in the course of twenty-four hours, so few calories, that they not only cannot maintain their weight but they sometimes lose in weight and strength continuously. At the same time the stools do not improve, in fact they often go from bad to worse. In this same class of cases are the babies who have been given a barley gruel, weak condensed milk or some other starvation treatment, and kept upon it indefinitely. A cathartic only makes the bowel more irritable and aggravates the diarrhea. The boiled milk and water feeding as above described should at once be started. To those who have not used this method of feeding it appears wonderful to see the rapidity with which the stools become normal in this particular class of babies. I often see such babies who have had the diarrhea aggravated by the cathartic and their one chance of recovery lost by the inanition of lowered vitality which is directly caused by this period of starvation. How many cases do we see which go on from bad to worse and finally die under the old plan of treatment.

Case III.—J. W., 6 weeks of age. Weight at birth 7½ pounds. Present weight 6 pounds. 12 ounces. Never breast fed. Various foods until two weeks ago, when diarrhea began and has been fed barley gruel only since then, the diarrhea being unimproved. When seen on June 24, there were seven or eight stools a day, watery and brown in color, chiefly composed of thin mucus. The baby was restless and cried most of the time night and day. I prescribed a food composed of 8 ounces milk and 16 ounces water (boiled), feeding 2½ ounces of this mixture every two hours. Two days later, June 26, the stools were less numerous, three to four daily, containing a good deal of mucus with some normal fecal masses. June 28, the stools were three in number, still more solid and contained very little mucus. June 30, there were only two stools which were almost normal and the food was increased to 12 ounces of milk and 18 ounces of water (boiled), 3 ounces being given every two hours. After this the stools remained normal. On July 5, one-half ounce of sugar was added to this mixture and four days later the baby had gained 6 ounces in weight from water retention caused by adding the sugar. On July 9, 1 ounce of sugar was put into the twenty-four hour quantity of food, and a week later, on July 16, the sugar was increased to 1½ ounces. This gave the baby 127 calories of food per kilogram of weight and enabled him to make steady gains thereafter.

Occasionally these starvation cases go on to complete prostration. They have lost so much fluid from the body that they will die if they do not retain some water in the tissues. The eyes are sunken, the extremities are cold, the temperature subnormal and the bowels are loose. If such a baby has been fed on a sugar free diet he must at once have sugar added to the boiled milk and water, in order to save him. One and one-half ounces of maltose and dextrine are temporarily added to the food which will cause water retention through osmosis and the baby is tided over a critical period. I have seen infants gain nearly a pound in weight in twenty-four hours from water retention.

Overfeeding: In my early work upon caloric feeding I have occasionally kept on increasing the strength of the food with increased gains in weight until I fed a given baby so much food in twenty-four hours, so many calories, that he finally got a diarrhea. This was repeated so many times with so many different babies that I am thoroughly convinced that overfeeding, too many actual calories, is a frequent cause of diarrhea. This diarrhea I often stopped in my own cases by simply omitting the sugar without changing the food in any other way. In fact, the mothers of some of my feeding cases, observing the success of this plan of treatment, adopted it of their own accord. It was a fairly common occurrence to have a mother tell me that the baby had had a diarrhea the week before but that she had stopped the sugar for a day or two until the bowels became normal again. Cutting out the sugar of course, reduces the food value (the number of calories) a great deal as one ounce of sugar is equivalent to six ounces of milk. I believe that without keeping track of the number of calories per kilo or pound we are feeding a baby, we are in constant danger of overfeeding him and causing a diarrhea. It is such a simple matter to reckon calories when we know that every ounce of whole milk given in twenty-four hours equals twenty calories and every ounce of sugar equals one hundred and twenty calories. The average baby will do well on 120 calories per kilo. Atrophic, emaciated babies need as high as one hundred and fifty to one hundred and sixty calories per kilo. In these diarrheas from overfeeding the starvation does not do as much harm. In fact, I am not sure but that it is the best treatment in the older well-nourished babies. The gastrointestinal

tract needs a rest and the child can afford to lose weight for a few days. At the same time, I found that the boiled milk and water was not successful in as large a percentage of the older well-nourished babies. In some of my older babies, I persisted in this milk and water treatment for ten days to two weeks without getting good stools, only to find that twenty-four to forty-eight hours of a barley gruel diet, with no cathartic preceding it, brought about normal stools with ease. This may have been due to changing the intestinal flora according to the theory recently advanced. At any rate, I concluded that as a routine the barley gruel diet was more serviceable than the boiled milk and water in older babies who were well nourished or overfed. In the particularly resistant cases changing back and forth from one diet to the other every two or three days gave very good results.

Infectious Diarrhea: The signs of this condition are sudden onset of the diarrhea with fever usually accompanied by vomiting often with blood and mucus in the stools. Personally I saw through the summer comparatively few of these milk poisoning cases among a large number of the other varieties, and I believe that is due to the good milk supply in New York City. The treatment of these cases consists of the administration of a cathartic, if the case be seen early, and starvation for twenty-four to forty-eight hours. A weak barley gruel or boiled water may be used during this period. At the end of forty-eight hours at the most, whether the stools are better or not, I give boiled milk and water mixtures, or the *Eiweiss Milch*.

I have said nothing about drugs for the reason that I do not often use them. However, strychnine in doses of gr. 1/300 to 1/200 of a grain is very useful for the baby whose strength and resistance is poor or whose appetite is not good. Paregoric is occasionally useful in stopping vomiting which has become chronic.

I have not referred to those diarrheas caused by eating indigestible solid foods, because it is perfectly obvious that a cathartic is indicated, in cases in which such undigested substances remain within the intestinal tract. Nor do I include in this paper diarrheas in babies over a year of age which undoubtedly do best on a strictly carbohydrate diet.

In conclusion I will state that from a theoretical standpoint I do not feel sure that the mere absence of artificial sugar in the food is the cause of the beneficial effect upon the diarrhea. Boiling the milk changes it in many ways but I believe it makes the food more digestible. During the summer I did not see a single hard curd in any of the stools of my babies who were on boiled milk. At first I boiled my milk because Finkelstein and other German pediatrists do so as a routine and because it seemed desirable to follow them entirely. I continued to boil it in my diarrhea cases throughout the summer because I got such good results. I found, however, that boiling the milk has little or no effect upon the diarrhea when artificial sugar is added to the food.

From a practical standpoint, I came to the following conclusions: (1) Underfed, poorly nourished babies with diarrhea, do best on the milk and water mixture, boiled, without sugar. (2) Bad diarrheas, or those that do not improve upon these mixtures are benefited by *Eiweiss Milch*. (3) Babies that have had repeated or prolonged attacks of diarrheas do best upon *Eiweiss Milch*. (4) Older, well nourished babies with a diarrhea do best upon a barley gruel diet for a few days. (5) Infectious diarrheas, if seen early, should have a cathartic and starvation for forty-eight hours and no longer. The milk and water mixtures, boiled, or *Eiweiss Milch* should then be given. (6) Cathartics should be given to babies with diarrhea, with great discretion.

121 East Thirty-Eighth Street.

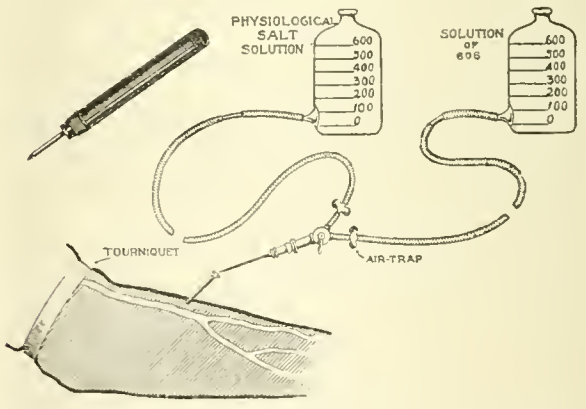
A BRIEF REPORT ON 414 INJECTIONS OF SALVARSAN.*

By EDGAR G. BALLENGER, M.D.,
AND
OMAR F. ELDER, M.D.,
ATLANTA, GA.

Since the first of January of this year we have administered 606 to nearly all of our syphilitic patients, and although the time is still too short to draw conclusions as to the absolute permanency of the cure, it seems quite certain that in 606 we have the best treatment for this disease. Never before have we had such a healthy, well nourished group of syphilitics, free from visible evidences of the disease, and with a feeling of well being rarely observed in those patients who have received the mercurial treatment.

The brevity of the paper will not permit a discussion of the details of this subject. Two things, however, seem to me to be of great importance: (1) The repetition of the treatment; (2) the method of administering the remedy.

The knowledge of the minute pathology of syphilitic lesions is of great importance in enabling



us to effect a permanent cure, as we may then understand the complicated conditions possible and see the necessity of subsequent injections regardless of the clinical cure or a negative Wassermann reaction. Competent observers believe that syphilis is not a blood disease in the sense that sleeping sickness is with the organisms living in the blood in infinite numbers. The treponema pallidum is thought to pass through the blood in large numbers only once (Wechselmann, Loewenthal, and Cannon) as search for them in the blood has furnished almost uniformly negative results. After having traversed the blood stream the spirochetes settle in the tissues in scattered foci. At these points lesions or recurrences develop. Ehrmann has clearly shown by injection preparations that spirochetes may become incapsulated in small blood vessels or lymph vessels, or connective tissue spaces by the cell growth thrown out by nature in her efforts to limit the spirochetal invasion. It

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is to destroy the organisms thus protected that two or more injections seem necessary and, at times, previous or subsequent mercurial treatment. Since salvarsan is admitted to be much more destructive to the spirochetes than is mercury fewer foci of infection will probably remain after a series of treatments with 606. From the published reports and from our personal experience it seems that perhaps a good number of the patients who have received two injections of 606 are permanently well. This, however, we cannot know yet, nor until the time test has proved it, but as a course of mercury and iodide of potassium is not without deleterious influence upon the gastrointestinal tract and the patient's general health, it should not be recommended except where it seems clearly necessary to render permanent the good produced by 606. It does not seem expedient that we should subject all patients to mercurial treatment who have received several injections of 606, and are free from visible and subjective evidences of the disease, but rather those who remain uncured, who have recurrences, or who retain a positive Wassermann reaction. Several years of observation should be required before declaring that the disease is cured. The Wassermann reaction should not be relied upon implicitly when negative, but should be considered always in connection with the symptoms and clinical history, and disregarded when not in accord with them. When mercury is indicated it seems that the salicylate, in 10 per cent. suspension in liquid albolene, given intramuscularly in ¾ to 1 grain doses once weekly, is the most effective and satisfactory method of administering it.

Ten per cent. each of camphor and creosote previously mixed and added to the liquid albolene suspension lessens the pain which follows the injection and renders the preparation aseptic. A needle one inch long and about 18 or 20 gauge is used. Ten minimims of the suspension are drawn into the syringe, the needle is quickly inserted into the gluteal muscles and the pistons withdrawn so as to determine if a blood-vessel has been entered; if no blood appears in the barrel of the syringe the remedy is injected. The site is massaged for a moment and the puncture is then sealed with collodion.

Technique of Intravenous Injections.—The majority of investigators now believe that the best method of administering salvarsan is by the intravenous method; that this view is correct we are confident and have discontinued all other methods of giving it. Those who have administered many intravenous injections have at times experienced difficulty in inserting the needle directly into the vein, without a previous incision. As many patients were complaining of the telltale scars that remained, we endeavored to devise a method whereby all patients might receive the intravenous injection without the incision and herewith submit a simple plan which, in our hands, has greatly facilitated the insertion of the needle. A tourniquet is adjusted around the arm so as to make the veins stand out prominently. The largest one near the elbow is selected and a few drops of cocaine are injected into the skin over the vein and into the subcutaneous tissue around it. A point just over the vein is noted and, while the skin is pulled aside so as not to puncture the vein, a small trocar is inserted through the skin so that the distal end of the cannula lies just between the skin and the vein. With the cannula now held over the vein and at an angle of 30 degrees to it, the needle may be easily inserted into the vein. If further efforts are necessary in passing the needle very little inconvenience is experienced by the patient. The pressure required to carry the needle through the skin without the cannula in place tends to press the vein to one side or to flatten it out so that the needle passes through both walls of the vein. The cannula enables one to gauge more accurately the insertion of the needle. The escape of the blood from the punctures of the vein, which is likely to cause a confusing hematoma, may be lessened by using a needle with a sharp round point instead of one with cutting edges. No effort should be made to test the inward flow until a free stream of blood passes out into the tube when the physiological salt solution is lowered (see cut). The tourniquet is now loosened, the solution is raised about three feet above the patient's arm, and if it flows freely into the vein without a subcutaneous swelling the cock may be so adjusted as to allow the flow of the 606 solution, which with the same elevation flows into the vein slowly by gravity. The only dressing necessary after such a treatment is a small bit of collodion over the punctured wound. Occasionally the individual may be so fat that a suitable vein cannot be found or the veins may be so small that an incision from the first seems necessary. It is advisable not to prolong unduly the trials by the puncture method until experience has been acquired, but to make a small incision rather than to annoy the patient by tedious, unsuccessful attempts. The method just described undoubtedly facilitates the insertion of the needle and will lessen the number of cases in which an incision is required to secure a proper flow. In fact, we have not found it necessary to make incision in more than one per cent. of our last 200 administrations. The site of the injection should be watched for swelling, as a subcutaneous leak may occur toward the end of the injection even when it starts perfectly. A burning pain is also felt by the patient if there is a leak. If any untoward symptoms should develop during an injection the treatment should be discontinued. So far in our experience no symptoms have occurred that prevented the patients taking the full amount of 606 indicated, nor have the after-effects of the treatment seemed serious. An effort has been made always to regulate the dose to suit the physical condition and weight of the patient.

By-Effects and Recurrences.—We have so far administered 414 injections of 606 to 240 patients with practically no untoward by-effects, except in one patient who became unconscious on the 5th day after an intravenous injection of .5 gram. This coma-like condition lasted for about 20 hours and then the patient gradually became normal. Just what the cause of this condition was we are unable to say, but coming on so early after an injection we feel convinced it was in some way produced by the 606. This freedom from trouble so far experienced was probably due to very careful physical examinations of all patients and a regulation of the dose to suit the condition and weight of each individual. We have also insisted that all patients drink freely of plain water and lithia water the day of the treatment and for two weeks afterwards in order to dilute well the salvarsan as it is eliminated and thus prevent irritation of the kidneys. Nausea, vomiting, chills and fever of a few degrees were present to some extent in many patients during the first 24 hours after the treatment, but did not assume a

serious nature nor were the patients annoyed very much by these temporary disturbances. Many times there was no effect at all. The patients have nearly all willingly returned for subsequent treatment and expressed a preference for 606 to mercury when the latter had been previously taken. The use of the intravenous injection followed by another in a month, then subsequent injections of the salicylate of mercury when occasionally required, and if necessary even other injections of 606 have probably prevented the nervous recurrences that have been observed by other writers, as we have seen none. Two patients gave well marked signs of a recurrence of the disease, but were promptly cured of the visible evidences by another injection. Two patients were not completely cured by two intravenous doses of 606 and required a few weeks of mercury to complete the work. One patient with very large flat papular syphilide was not cured after four intravenous injections of 606 nor was there much improvement obtained by previous and subsequent applications of mercury. We believe that by persisting with mercury, potassium iodide tonics, and 606 we shall ultimately effect a cure in spite of the stubborn character of the disease in this patient.

MENTAL STRESS A POSSIBLE ETIOLOGICAL FACTOR IN CERTAIN CASES OF PELLAGRA.

By JOHN W. PRESTON, M.D.,

ROANOKE, VA.

The onset, course, termination, and mortality of pellagra furnish a striking parallel to tuberculosis, and in relation to the exact causative agent we stand at this time on precisely the same ground in the former as in the latter previous to Koch's discovery of the now well-known acid-fast bacillus. That pellagra has suddenly become widespread and has a selective capacity for certain individuals, some of whom readily succumb while others make a winning fight, is a matter of greatest interest and importance.

Barring here the discussion of the unknown organism or poison, which must be the proximal cause, the above mentioned selective action of the disease for certain individuals living under exact conditions with others of the same family and community who do not develop it can only be explained by the lowered resistance or lack of immunity on the part of those affected. That this lack of resistance has to do with the nervous system mainly would seem to be indicated by the following facts: The insane are especially predisposed; in a certain proportion of cases there is a nervous heredity; alcoholics are frequently attacked and usually quickly succumb; there is a period of vague and varying nervous symptoms of uncertain duration preceding the digestive and cutaneous lesions, which latter indeed may never develop, as has been emphasized by Harris.* The salivation, vomiting, and diarrhea in the beginning are unmistakably of a nervous character, and the skin manifestations have much in common with those due to the disturbance of its nutrition through the nervous system, notably surgical injuries and herpes zoster; and finally the pathological findings are chiefly in the nervous system.

That the poverty-stricken whose supply of carbohydrates is drawn largely from the poorer grades of corn products rather than from the higher-priced cereals, and the vicissitudes of whose lives render them more vulnerable to almost all diseases, are more susceptible is not questioned. It is to the well-fed, of good habits, who consume little or no corn, and who to appearances would seem to offer good resisting power that attention is here directed; with especial reference to the possible effect of mental stress, or trauma, if one may so express it, producing in the nervous system a fertile soil suitable to the development of the disease. The following cases may serve to illustrate the point:

Case I.—Mrs. H., white, American, aged 49 years. Father a suicide by hanging; mother and one brother died from tuberculosis; a sister is still living suffering from this disease; one brother was killed while intoxicated, and another is a paranoiac; two brothers are living and well. She had for some years undergone severe domestic worries, finally separating from her husband. In April, 1910, she suffered from an attack simulating a mild influenza, soon after which an additional misfortune befell her which worried her greatly. When seen August 10 she showed the typical nervous digestive and cutaneous manifestations of pellagra, which ran the usual course of fluctuating symptoms, with steady sapping of her vitality resulting in her death from exhaustion in October. Her habits had always been good.

Case II.—Mrs. W., aged 30, in good financial circumstances, food abundant and only of the best; never ate corn bread; was a splendid physical specimen. Heredity good, except that her mother recently suffered from "nervous prostration"; health was always good until the early spring months of this year, when, following closely upon a severe domestic disappointment and suspense, which continued on into the summer, she grew nervous and depressed, suffered from peculiar and varying nervous sensations about the limbs, "just like one getting out of a hot bath"; "gets angry at the least little thing." Digestion is easily upset and she gets loose movements of the bowels if excited. She had lost considerable weight. In June the characteristic skin lesions made their appearance, beginning on the back of the hands and forearms and progressing symmetrically on both arms to near the insertion of the deltoid. Her forehead and chin assumed a dark, leathery appearance. As cool weather now approaches the latter symptoms are clearing up, but nervous symptoms persist.

Case III.—Mrs. C., white, aged 47 years, was seen in consultation with Dr. Watson. She had always lived well and eaten a good variety of food. Previous to the present trouble she was well and robust. In February of this year she was greatly distressed by the death of her son's wife and a subsequent sharp contention over the guardianship of a child, following which she grew nervous and developed, as she expressed it, "crazy, curious spells," of vertigo, etc. In June she showed the typical cutaneous manifestations of pellagra, beginning, as she thought, as a sunburn and spreading symmetrically to the elbows. The forehead and chin likewise showed a well-marked bronzing. Under tonics, rest, and a liberal diet the symptoms are at this time subsiding, except the burning, tingling, etc., of the extremities.

While one recognizes that from the nature of this disease its victims fret and worry unduly over trifles, still when it follows closely upon misfor-

*Harris: *American Journal of the Medical Sciences*, 1911, xcii, 715.

tunes of sufficient magnitude to in a measure upset the nervous system of any normal individual as in the above cases, it would seem to make this phase of the question well worthy of consideration and further observation. Every one who has had to do with tuberculosis knows the futility of treatment so long as a patient is suffering greatly from anxiety, grief, or even homesickness, and how well one is often rewarded in the beginning of a case by efforts to ameliorate these and similar conditions. Since the two diseases have so much in common it may be that the lessons learned in the one may with advantage be utilized in the other.

309 South Jefferson Street.

HAMMOCK APPENDIX.*

By W. R. McKINLEY, M.D.,

COLUMBUS, MISS.

In using the title hammock appendix I do not mean to convey the idea that I have something new to report in appendix troubles. It is simply one of the many atypical conditions of appendix troubles I have encountered, usually in the chronic recurrent form in which this pathological condition occurs. In addition to the pathological condition with which we are all familiar, it obtains its significance or importance from its unusual situation, or, better expressed, predicament. Every surgeon will, of course, immediately conclude that my subject after all deals directly with abdominal adhesions. But while it is true that I am dealing with adhesions, it is the peculiar situation, attitude, or predicament in which the organ was found that suggested the appropriateness of the title. Every surgeon doing much abdominal work meets with appendix adhesions in great frequency. In fact they are to be looked for and expected in all pelvic inflammatory conditions.

The presence of adhesions and their resulting complications is a very great determining factor to operators in selecting their point of attack in abdominal and pelvic surgery. For instance it is the frequent occurrence of adhesions and their numerous complications that leads so many operators to select the abdominal instead of the vaginal route in many pelvic operations. In support of this we find that operations are frequently begun from below, but on account of complications encountered the route is abandoned and the operations finished from above.

Nearly all surgeons doing appendix work and who report their cases tell us how frequently they find the organ where they did not expect it to be before opening the abdomen, and it is these abnormally located appendices we find so difficult to resect.

A very frequent location in which we find the organ is on the posterior surface of the cecum, densely bound by adhesions, and, needless to say, the operation is extremely difficult in these cases. We sometimes find the appendix attached to the border of the spleen by bands of adhesions; we sometimes find it attached to the uterus, to the tubes, to the ovaries, or to the bladder, to the sigmoid flexure, or to the rectum; we sometimes find it attached to the intestines, to the anterior abdominal wall, and, as I have frequently seen, to the gall-bladder. Not only do we find the appendix at times bound by adhesions to all these organs, but sometimes it is a very difficult matter to find it at all; then again we find both the appendix and cecum bound down by an enormous mass of exudations and adhesions and covered by a sheet of newly formed connective tissue much like the peritoneum in appearance, thereby making its removal a very tedious undertaking. We find that our greatest aid is in careful inspection and in following the longitudinal bands marked on the anterior surface of the cecum.

Since we find the diseased organ in so many situations or positions we must expect to find a different array of symptoms from those found in a typical attack of appendicitis, since such organs as the gall-bladder, uterus, tubes, and ovaries add some of their symptoms to those of the primary disease. I have recently seen a case which an eminent internist referred to a surgeon with the diagnosis of distended gall-bladder, but the operation revealed one of those cases in which the diseased appendix was attached to the gall-bladder by adhesions.

In seven atypical cases under my observation the appendix was attached by adhesions to the right ovary, hanging, as it were, between the cecum and the ovary like an ordinary hammock, swinging like a swing between these two points. In these cases the appendix symptoms predominated, yet some of them were manifestly referable to the ovaries themselves.

In cases of this kind patients are necessarily subjected to many dangers, such as having loops of intestines wind round this hammock-like appendix, thereby causing obstruction, and are also liable to the danger of sudden perforation, the appendix being forced loose either from the ovary or the cecum—the point of disease, of course, being the point of least resistance. In one of my seven cases perforation had occurred before the belly was opened, and in two others perforations were noted in the distal end of the appendix when it was detached from the ovary.

McKinley Sanatorium.

*Read before the Southern Medical Association.

Treatment of Papilloma of the Larynx in the Young Child.—A. Broca and Ed. Rolando give us the results of their study of papillomata of the larynx in young children. This is a most intractable disease, since the growths rapidly occur after removal, and cause severe dyspnea and suffocation. Left alone this disease inevitably goes on to asphyxia due to obstruction of the larynx, since there is no tendency to spontaneous retrogression of the growth. Tracheotomy and intubation are but temporary palliative measures and only put off the time of fatal suffocation, since the child cannot go on indefinitely wearing a tube in his throat. Death may happen by reflex inhibition of the respiration. The voice becomes permanently rough or lost. The author concludes that there is no treatment that can be recommended as certain to preserve the voice, and to give probability of non-recurrence of the disease. Whenever there is alarming dyspnea the proper treatment is tracheotomy, hoping to produce enough atrophy of the growth to allow of operation by the natural passages. The procedure of choice is extraction in this manner under control of the head mirror, and this can be done after four years of age. It requires many sittings and recurrences are probable. When extraction by the natural passages is impossible on account of the extreme youth of the patient thyrotomy must be done. Definite success by this method is very rare. After these operations stenosis may make the removal of the tube impossible.—*Revue de Chirurgie.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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ANNUAL REPORT OF THE SURGEON-GENERAL OF THE UNITED STATES ARMY.

THE annual report of the Surgeon-General of the United States Army has recently been issued, and as usual contains a great deal of information of medical and public interest. The mean enlisted strength of the army, white and colored, for the year 1910, as reported on the monthly sick reports of the medical department was 71,534. This shows a considerable decrease in strength below that of 1909, for which the medical returns showed 74,319. During 1910 American troops were stationed in the United States, the Philippine Islands, Alaska, and Hawaii. The constantly non-effective rate which is the true measure of the loss in efficiency from sickness and injury was 35.98 per 1,000, as compared with 41.48 for 1909. The total admissions to sick report were 67,940, equal to an admission rate of 949.76, as compared with 1,062.99 for the previous year. The deaths from all causes numbered 320, of which 175 were from disease. The death rate from all causes was 4.46, and from disease it was 2.44, as compared with 4.91 and 3.02, respectively, for the preceding year. The death rate from disease is the lowest on record. The discharges for disability numbered 1,007, the rate being 14.02 as compared with 16.84 for 1909. The ratio of admission rates for disease for 1909 was 766.06 of mean strength; for the previous year it was 865.92. The mean strength of officers was 4,216 as obtained from the reports of the sick and wounded of the medical department. There were 2,515 admissions, 15 deaths, and 119.54 constantly non-effective from all causes, equal to ratios of 596.54, 3.40, and 28.35, as compared with the ratios of 628.90, 4.20, and 30.27 per 1,000 for 1909. The admission, constantly non-effective, and death rates were all lower than in 1909. The death rate from typhoid fever was less than in 1909, in fact, the lowest recorded in the service.

Perhaps the most instructive part of the entire report is that which refers to the success of anti-typhoid vaccination. During 1910, 16,093 persons were protected against typhoid fever by means of prophylactic vaccination. In only one case was the reaction deserving of special mention. A few cases of typhoid fever occurred among immunized men, but these cases were mild and all ended in recovery. It is worthy of note that compulsory vaccination against typhoid fever had never been attempted in any military service until used in our army in Texas and along the Mexican border in the spring of 1911.

The propaganda for the prevention of venereal diseases initiated by the army medical department in 1909 has begun to show good results. The admission rate for malaria for the army in the United States was the lowest on record. The admission and death rates for tuberculosis for the home army were less than for the two preceding years. The admission rate for alcoholism for the home army also showed a gratifying decrease. In this connection the Surgeon-General takes the opportunity to deplore the abolition of the canteen which, in his opinion, or rather as statistics seem to show has been, on the whole, coincident with the lamentable increase of alcoholism in the army.

With regard to sanitary matters some interesting information is given. It is stated that the Army Water Supply and Sewage Disposal Board, having made a study of ozone purification of water, recommended on February 11, 1911, the installation of an electric ozone plant at Fort Niagara. The hypochlorite method was not favorably considered at this post because it had failed to give satisfaction, chiefly because the water of the Niagara River is so heavily polluted. Moreover, it is announced that the board was also directed to consider a method of sterilization of water by the use of pure chlorine gas, which method had been devised and brought to the attention of the War Department by Major Carl R. Darnal of the medical corps. The board reported that the chlorine method is as efficient as purification by ozone or by hypochlorite, and is more reliable in operation. As to the health of the American troops in the Philippines, this continues to improve year by year. The admission rate was slightly higher than that of the army as a whole. In the Philippines venereal diseases still hold the first place, constituting more than one-fifth of the total number of admissions for disease. For alcoholism the admission rate was somewhat higher than in 1909. The total admission rate for all diseases among the white troops in the Philippines was lower than that for 1909. The most conspicuous feature of the nosological history of the Philippine scouts for the year 1910 is the eradication of beriberi, a disease which in the preceding year caused 41 per cent. of the total loss. The admissions and constantly non-effective rates were much lower for the Filipino than for American troops serving in the Philippines. Among Filipino troops venereal diseases constitute the second cause of admission, this good showing being entirely due to the fact that the majority of the native troops are married.

In the light of recent researches as to the cause of beriberi and the conclusions drawn therefrom the findings of the Tropical Board of the army in the Philippines should be of value. The board concluded that the important beriberi-preventing factor in the new Filipino ration, prescribed by

General Order No. 24, was neither mongo, nor camote, nor ginger root, nor undermilled rice *per se*, but was the substitution of part of the rice by mongo, but which might equally well have been another legume, such as beans, as recommended by the board on September 20, 1910. The question of beriberi and of some other diseases met with in the tropics is fully dealt with by the board. The report is satisfactory and speaks well for the ability and energy of the medical department of the United States Army.

ACTION OF THE TROPICAL SUN.

THERE are many who hold that white men succumb more or less quickly to the climate of the tropics, or if they do not die they deteriorate physically and mentally and that in short the inhabitant of the temperate zone is not physically adapted for a tropical life. These views would seem to have been borne out by experience, and yet there are some who contend that if the white man will only live with an eye open to the dangers of his surroundings and a care to shun them he may live in the tropics in fair health for the greater part of his life. In the *Philippine Journal of Science* appeared recently a paper by Hans Aron setting forth a series of experiments undertaken in the Physiological Laboratory of the College of Medicine and Surgery at Manila for the purpose of investigating the action of the tropical sun on men and animals.

The conclusions reached as a result of these investigations were interesting and valuable. These were as follows: (1) Under climatic conditions, even during the cooler seasons of the year in Manila, animals, such as rabbits and monkeys, which by nature have only a limited power of physical heat regulation, or animals the physical heat regulation of which is artificially inhibited, die if exposed to the sun, the body temperature rising to febrile heights. If the same animals are protected from the rays of the sun, or if the increase of heat due to radiation from the sun is compensated by an increased loss, such as would be brought by a strong wind, then the animals suffer no discomfort. Insolation of the skull alone is without effect if the body temperature is kept within normal limits. (2) The post-mortem examination of animals dying as a result of insolation shows decided hemorrhagic lesions of the brain and in monkeys of the heart. (3) In animals without sweat glands the subcutaneous tissues are heated by the radiated heat from the sun to temperatures above those compatible with life. (4) The human skin, if exposed to the sun, is warmed to about 3° or 4° above the normal skin temperature. An increase even to the normal body temperature is prevented by evaporation of sweat. The cooling effect of the sweat secretion causes a fall of the skin temperature even if insolation is continued during longer periods. (5) The brown skin of the Malays, while theoretically absorbing more heat in the sun, shows a smaller rise of temperature in the tropical sun than the skin of white men under similar conditions. As an explanation, it is believed that an earlier and greater evaporation by sweat secretion takes place. (6) The air in the human hair, especially in black hair, under the influence of the tropical sun, acquires a high temperature. (7) It is demonstrated that in the tropical sun a man with a colored skin is in a better position as regards heat regulation than is a man with a white skin.

It is pointed out that the monkey is a denizen of the woods and instinctively avoids the sun. The same is true of the native of the tropics, if he is left to his own customs. Consequently the argument is somewhat thus: A white man is not so well fitted by nature for tropical life as his colored brother. Outside the tropical diseases, for the most part carried by insects and avoidable by taking due precautions, the chief menace to the white man of a tropical climate is the sun. Therefore, in order to live in health in the tropics a white man should avoid exposure to the sun, especially in the interior, where the mitigating effects of the normal sea breeze are not experienced.

OCCUPATION HAZARDS.

THE New York State Factory Investigating Committee, created by the Legislature after the shirtwaist factory fire in Washington place, which cost 145 lives, has begun its deliberations; it expects by February next to make its report at Albany, and to prepare a bill for the remedy of existing defects and life-perils in factories. This committee will consider, of course, hazard to life because of fire, and such will perhaps be its main function; but it will inquire also into the following matters: accident prevention, the guarding of machinery, the proper and adequate inspection of factories and manufacturing establishments, the danger to life and health by reason of unsanitary conditions, ventilation, lighting, seating arrangement, hours of labor, and the like; such occupational diseases as "industrial consumption," lead poisoning, phosphorus necrosis, and so forth. It is with certain of these latter phases of industrial hazard that we are here concerned.

It is with gratifying emphasis that the counsel of this committee, Mr. A. I. Elkus, declares: "Occupational diseases, poisoning and industrial consumption, have practically been permitted to go on unchecked. Men are permitted to handle arsenic without gloves, to breath ammonia and turpentine fumes without protection, to fill their lungs all day long with dust and other harmful substances. Charity ineffectively palliates what wise and just special legislation might effectively prevent."

But are such things really permitted to go on unchecked to-day? Yes, they are. For example, a harmless process of manufacturing matches has been discovered, and the match company which owned this discovery generously divulged it to its competitors, nor would it protect itself by securing a patent in the premises. But since this discovery increases the manufacturing cost of matches by about 5 per cent., the new method has failed of general adoption. So the wasting of one match in twenty necessitates the continuance of "phossy jaw." Something of a remedy for this evil has been sought in the attempt to get a tax imposed on white phosphorus so high that its use in match making would be unprofitable, but the measure has thus

far failed of passage in Congress. Again, of two factories engaged in the production of white lead in one of the central States, one in which no effort was made to safeguard life, although employing only eighty hands, was compelled to renew virtually its entire working staff every ten weeks; the other establishment, conducted on principles more consistent with humanity and civilization, and employing twice as many hands, took on less than a hundred new workmen during the year.

The etiological relation between dusty trades and pulmonary disease has long been recognized. This relation is emphasized in a recent report issued by the Bureau of Labor at Washington, as follows:

CASES PER 100 WORKERS.

Class of Employment.	Tuberculosis.	Pneumonia
Workers in metallic dust.....	28	17.4
" " mineral dust.....	25.2	5.9
" " mixed dust.....	22.6	6
" " animal dust.....	20.8	7.7
" " vegetable dust.....	13.3	9.4
" " non-dusty trades.....	11.1	4.6

Still more strikingly is the tuberculosis mortality in the "dusty trades" shown by Mr. F. L. Hoffman.[1] We find that between the fifteenth and the sixty-fifth years the consumption deaths as against deaths from all causes in some of these trades are in the following percentages: Grinders, 49.2; plasterers, 38.7; brass workers, 38.9; instrument makers, engravers, 34.9; printers, 38.6; compositors, 35.1; stone-workers, 35.2; marble cutters, 28; glass cutters, 34.5; furriers and taxidermists, 32.4; silk mill workers, 35.9; bakers, 20.4; button makers, 37.8; leather workers, 32.0. But when we consider the life period between the twenty-fifth and the thirty-fourth years, we find the tuberculosis death rate truly appalling; as, among grinders, 70 per cent.; among engravers, 61 per cent.; compositors, 66 per cent.; stone-workers, 52 per cent.; millers, 87 per cent.; bakers, 42 per cent. And Mr. Hoffman observes that the contrast in the proportionate consumption mortality in indoor and outdoor occupations is truly startling.

To remove entirely occupation hazards is, of course, impossible; yet the dangers can be very greatly mitigated. And to this end it is proposed[2] that commissions be appointed by Congress to investigate these industrial evils; that medical clinics devoted exclusively to occupation diseases be established; that State governments employ medical inspectors of factories; that compulsory examinations of workingmen be made at definitely arranged periods; and that "employees' liability and compensation acts" be passed by legislatures.

[1] Tuberculosis as an Industrial Disease. Sixth International Congress on Tuberculosis, Vol. III, Section V, p. 141.

[2] Paul M. Peirce, Industrials Diseases, *North American Review*, October, 1911.

A PREMONITORY SIGN OF ACUTE INFECTIOUS DISEASES.

ANY addition to the diagnostic resources of the clinic is to be welcomed, particularly in the case of the acute infectious diseases of childhood, in which an early diagnosis is a prerequisite to efficient isolation and prophylaxis. As yet there has been no means of recognizing these individually or even as a group during the period of incubation. Giovanni da Gaetani Giunta, in the *Archiv für Kinderheilkunde*, Vol. 56, Nos. 4 to 6, reports that he has observed a symptom in some of the above diseases, even in earliest childhood, and at a period in the disease when there is no functional disturbance and before there are any demonstrable lesions. This premonitory sign consists in a swelling of the lymphatic glands of the axilla, neck, and groin, which is present during the incubation period of measles, scarlet fever, chicken-pox, mumps, diphtheria, and whooping-cough. The study of a large number of cases showed that in earliest childhood the lymphatic glands in the above-mentioned regions are ordinarily not palpable, but under the influence of various morbific agents they undergo the following changes: they are absolutely insensitive, both on spontaneous or passive movement; they present a variety of forms, in the majority of cases attaining the size of a lentil; they are most palpable and movable in the inguinal region. There is no marked correspondence between the axillary, cervical, and inguinal glands. The presence of this form of glandular enlargement may, according to the author, be regarded as a certain premonitory sign of an acute infectious disease. Neither age nor sex has any bearing on the occurrence of this symptom, nor does this vary with the variety of disease present. The presence of this sign depends upon neither inherited nor acquired predisposition. The sign does not indicate the severity of the infection or the degree of resistance in the patient.

The period of incubation of the infectious diseases has been termed by Royer the "silent period"; but, according to Giunta, this stage of the evolution of these diseases is one of marked activity, involving important functional and physical changes in the lymphatic glands. These act as a barrier to the invading microorganisms and their toxins. Not only do they serve as organs of inhibition and filtration, but they also elaborate the leucocytes and therefore play an important rôle in the fight of the entire body against the most diverse infections.

This function is a complicated one, is always being exercised, but with each new infection is aroused to increased activity. Moreover, the toxic substances produced in the various parenchymatous organs during the initial activity of the infecting agents cannot fail to affect the lymphatic apparatus. The latter is therefore the seat of numerous and profound changes in its inner workings, which as yet have escaped the searching eyes of science. The enlargement that accompanies these changes during the period of incubation of an infectious disease is not, however, a constant phenomenon. When present it may be the result of a lymphatic hyperfunction caused by functional changes in innervation; or of a more greatly developed reactive power of the glands with respect to toxic influences. There is a third possibility, namely, the glands may be the seat of a permanent latent microbic infection which predisposes them to added infection and hence to enlargement. This latter possibility, however, is not regarded by the author as of any moment in the production of his premonitory symptom of infectious disease.

THE HORSE AND THE AUTOMOBILE.

Dr. Walter Lindley of Los Angeles and twenty-four Californian physicians discuss in the *Southern California Practitioner* of October, 1911, the inferiority of the horse to the automobile from the hygienic point of view. At the recent California State Board examination Dr. Lindley asked, as one of the questions in hygiene: What are the hygienic advantages of the automobile over the horse at home and in the street? Naturally, from twenty-four medical men a large number of points of superiority of the automobile over the horse were given. Within the limits of an editorial article there is no space to note more than the general trend of these answers. Of course, the menace of horse manure was the feature chiefly dwelt on, and this menace, mainly in connection with manure as a breeding place for flies. Pollution of wells from stables was mentioned. The horse as the disseminator of the tetanus bacillus was referred to, also the danger of horses communicating glanders, the possibility of actinomycosis being communicated by the horse, etc. Several answers laid stress upon the fact that additional air and sunshine were enjoyed by those who had automobiles.

It would be interesting to learn from a company of medical men in what respects they might consider the horse superior to the automobile from the hygienic standpoint. No doubt the horse is a menace to health to a certain extent in a city, chiefly by reason of his stable affording a breeding place for flies. On the other hand, the automobile in a city has to answer for the promotion of more noise than was the case before its advent. This, too, affects the general population, perhaps, more than the motorist himself. Whether the automobile has increased nervous complaints to an appreciable degree is a moot point. There is, also, the question of dust dissemination to be considered when discussing the automobile. From the esthetic point of view there is room for comparison, but even from the hygienic standpoint solely the lover of the horse and the votary of the motor car would, doubtless, argue stoutly with regard to the relative merits of the animal and of the machine and each would give cogent reasons for his attitude. Apart from the question of hygiene, however, the superiority of the machine over the horse, so far as the physician is concerned, is so marked and so proved by experience that it is probable no consideration will ever bring back the animal to the service of medicine except as a provider of antitoxins.

News of the Week.

A Misstatement.—In the *New York Times* of Sunday last there was printed an article on the treatment of arteriosclerosis which purported to have been read by Dr. Bruno Fellner, Jr., of Franzenbad, at a meeting of the Medical Association of the Greater City of New York on November 20. The remedy for arteriosclerosis proposed by Dr. Fellner was a drug which once enjoyed a reputation as an aphrodisiac. The chief point of interest in the paper, however, was that it was not read before the Medical Association of the Greater City of New York, and as is stated in a resolution of the Council of the Society passed on Tuesday of this week the character of the paper was such that the Society would not have permitted it to be presented to its members.

Smallpox in Vermont.—Several hundred cases of smallpox are reported to have occurred in northern Vermont in the vicinity of St. Johnsbury and of Greensboro. Whether the cases are really of smallpox seems uncertain as it is stated that among the large number of persons attacked there have been no deaths.

Work of Pennsylvania's Health Department.—The Legislature of Pennsylvania last year appropriated $3,000,000 for its public health, $2,000,000 of which was to be expended in the fight against tuberculosis, and $1,000,000 to combat other diseases. During the past four years the number of deaths per annum has been decreased 14,000. It is estimated that about 2,500 deaths from typhoid fever and 7,000 from diphtheria were prevented last year by the activities of the State Health Department. The State maintains three sanatoria and 115 dispensaries for the treatment of tuberculosis and during the past year treated 40,000 cases of that disease. Taking the lowest estimated value of a human life, $1,700, it is calculated that the economic saving to the State through this reduction of the death rate amounts to $24,000,000 for the year. Preliminary arrangements have been made for the medical inspection of girls and boys in the third and fourth class school districts throughout the State. Five hundred physicians will be appointed to the task which embraces the examination of children in 321 boroughs and 460 townships.

The Board of Health on Watch for Infantile Paralysis.—The New York Department of Health has assigned inspectors to all orthopedic hospitals and dispensaries to insure the complete report of all cases of infantile paralysis. Circulars will be issued by the Board of Health and distributed to every family in which the disease occurs giving information regarding the disease and its treatment. The minimum quarantine will be six weeks, after which disinfection or house renovation will be made obligatory. Circulars calling attention to these requirements will be sent to all physicians and they will henceforth be required to report promptly to the Board of Health all cases which they are called on to treat.

Railroad Hospital to Be Opened.—The Western Pacific Railroad Hospital, located at Portola, is about ready for occupancy. It is the only hospital on the Western Pacific between Salt Lake City and Sacramento.

Gifts to Hospitals.—The will of John M. Lohse leaves $10,000 to the Presbyterian Hospital of New York City and $15,000 to the German Hospital. The latter institution has also received $10,000 under the will of Mrs. Elise Timme. The Dickinson Hospital at Holyoke, Mass., has received a bequest of $2,000. Before the Alaska-Yukon-Pacific Exposition the Anti-Tuberculosis League of Seattle received a donation of a large amount of the stock of this exposition, which upon a distribution of dividend recently has yielded the League $14.122. By the will of Mr. Frank Haseltine of Philadelphia, who died in 1910, the sum of $29,650 is bequeathed to the University, Jefferson, and Pennsylvania Hospitals. Under the terms of the will of Mrs. Sarah V. Feddyplace the hospital of Salem, Mass., received $2,000. The hospital at Brockton,

Mass., has received a gift of $500. A charity ball has just netted $2,500 for St. Mark's Hospital of Salt Lake City.

The Hospital Saturday and Sunday Association of New York City in its annual report recently made public states that the amount contributed to the association during the year was $116,000, or an increase of about 28 per cent. over 1910. The report says that $200,000 is badly needed to care for the dependent sick in the city. During the past year some 1,235,524 days of free hospital treatment were given by the 45 hospitals belonging to the Hospital Saturday and Sunday Association. The last Saturday and Sunday in the year are the days set apart by the churches for this collection.

The National Association for the Study and Prevention of Tuberculosis has received a donation of $50,000 worth of vacuum cleaners from a firm in New York City to be given as prizes for those who sell the most Red Cross Christmas seals. A stationary vacuum cleaning system will be given to the school in each of the thirteen Congressional districts which sells the most stamps. The State Charities Aid Association announces tweny-one different contests, one State contest for cities of 5,000 or over, and a contest for each of the Congressional districts in its territory. Through a special donation the association will give to schools as the prize for each district a full equipment of "The Control of Body and Mind" by Dr. Luther Halsey Gulick.

Minneapolis Opens a New Hospital.—The new Hopewell Hospital, a model institution for tuberculous patients, erected at a cost of $80,000, will be ready to receive patients on December 1.

Nursing-Bottle Fatalities.—According to the records of the State Board of Health of California the percentage of deaths in that State of infants under five months of age is 49. Most of these deaths were due to intestinal diseases for which the Board of Health holds the nursing-bottle responsible.

Physicians Regulate Fees.—The physicians of Norwalk, Ohio, have agreed to raise their charges to $1 as the minimum office fee and $2 for house calls between the hours of 9 A. M. and 6 P. M.

Standardization of Germicides.—The State Board of Health of Kansas has determined the standard for germicides and disinfectants in the State of Kansas. The ruling says "An article or substance which is designated as 'germicide' or 'disinfectant' will be held to be of such character when it will actually kill any nonspore-bearing bacterium within six hours under the conditions prescribed for its use."

Must Report Tuberculosis in England.—Under an order issued by the Local Government Board every practitioner in England must report cases of pulmonary tuberculosis after January 1. In a circular accompanying the order it was pointed out that the death rate from pulmonary tuberculosis was 18.25 per 10,000 of population in 1881, while it was 10.30 per 10,000 in 1900; this period coincided with the marked increase in the activities of the local authorities. It is urged that all publicity is to be avoided and that the reports are to be regarded as strictly confidential documents.

To Rent Medical and Surgical Appliances.—A large medical supply company is about to open a place in Chicago where all kinds of appliances which may be needed in surgery or in the sick room may be rented by those unable to buy them. For emergency cases attendants, nurses, ambulances, and chests will be kept in readiness at any hour of the day or night. A special food department, modeled after an establishment of the kind in New York, will also be maintained.

Many Adulterations of Food and Drugs.—During the past fiscal year the Bureau of Chemistry of the Department of Agriculture, Washington, D. C., collected 9,500 official samples of foods and drugs, of which 3,280 interstate samples were found to be legal, and 3,113 misbranded or adulterated; 503 check analyses were made to insure that correct results were obtained before recommending action on the samples. There were 96,129 floor inspections made of imported products, of which over one-half were made in New York. A total of 9,698 imported foods and drugs were analyzed, of which number 3,085 were adjudged adulterated or misbranded.

Suicides in American Cities.—According to the *Spectator* the combined suicide rate of 100 American cities, which was 21.8 per 100,000 population in 1908 and 21 in 1909, fell to -9.7 in 1910. The rate for the city of New York was 18.9. San Francisco has the highest suicide rate, the yearly average being 52 to 100,000 inhabitants for the period of 1900 to 1909, although in 1909 the rate fell to 42. Suicide has been most frequent during the last 10 years in five California cities and in Hoboken, N. J., which has a rate of 35 per 100,000 inhabitants, which is the third highest in the list of 100 cities.

The Campaign for the Prevention of Insanity.—The Committee on Mental Hygiene of the State Charities Aid Association has just reported on its first year's campaign of education on the prevention of insanity. During this year 360,000 persons have received a pamphlet entitled "Why should anyone go insane?" This gives some of the facts as to the extent, causes, and prevention of insanity, and is issued for lay circualtion. Another feature of the campaign has been the sending out of 24,845 circular letters to physicians, clergymen, teachers, social workers, and heads of various organizations asking their cooperation. It is estimated that by the various methods employed more than 500,000 persons have been reached by this new campaign. Among the new agencies for the treatment of incipient insanity inaugurated this year are the outpatient department of the Long Island State Hospital, Brooklyn, the new Psychopathic Hospital, Syracuse, and plans for two clinics for mental diseases, one of which is to be established at Kings County Hospital and the other at the new Gouverneur Dispensary, New York City.

Passed Assistant Surgeon George W. McCoy of the U. S. Public Health and Marine-Hospital Service has been relieved as Director of the Federal Plague Laboratory at San Francisco, Cal., and detailed Director of the U. S. Leprosy Investigation Station, Honolulu, Hawaii.

Dr. C. J. Wallace of Duluth has been appointed surgeon for the new steel plant built by the Minnesota Steel Company. The company is to build a large hospital in connection with the steel plant.

Dr. Hiram J. Smith of the Elgin State Hospital of Indiana has been appointed assistant superintendent of the Watertown State Hospital.

Dr. M. Karpas of the Manhattan State Hospital has been appointed first assistant in the psychopathic ward at Bellevue Hospital.

Dr. T. J. Vosburgh has been appointed first

assistant in the alcoholic ward at Bellevue Hospital.

Dr. Albert E. Ferris of New York City has resigned as president of the State Commission in Lunacy. He was appointed in 1907 by Governor Hughes. Dr. Max Schlapp of this city, it is reported, will be appointed to succeed Dr. Ferris.

Dr. J. M. T. Finney of Johns Hopkins University, Baltimore, has declined to allow his name to come before the trustees for nomination to the presidency of Princeton University.

Portrait of Dr. Wyeth.—It is proposed to purchase a portrait of Dr. John A. Wyeth for presentation to the Gallery of Presidents of the New York Academy of Medicine, by subscription of members.

Jewish Hospital Reports.—The annual report of this hospital shows that 4,124 persons have been treated during the year ended October 31, an increase of 15.5 per cent. over the previous year. In addition to the $1,000 which he gives annually to the hospital, Jacob Schiff has offered to give $500 for every $10,000 the hospital authorities might collect. An announcement was made of a donation of $2,500 to be devoted to the maintenance of an .r-ray room. The gifts for the year amounted to $7,466.

Jewish Consumptives' Hospital.—The annual meeting of the trustees of the National Jewish Hospital of Consumptives, which is located at Denver, was held at the Hotel Astor on November 19. It was announced that the $70,000 lost by defalcation by the secretary, who died in August, had been more than made up. The hospital now has accommodations for 150 patients. During the year a trade school has been donated in memory of Joseph E. Schoenberg, a former trustee, in which convalescents will be trained in labors suitable to their constitution so that they may have a healthful means of gaining a livelihood. A farm of 700 acres has also been given by Louis Schoenberg. It is said that 65 per cent. of the patients are Russians and about 40 per cent. of those admitted are from the congested districts of New York City.

French Birth Rate Declines.—The official statistics for the first six months of 1911 show that the excess of deaths over births is 18,279. During the same period of 1910 the births exceeded the deaths by 21,189.

Aid Association of the Philadelphia County Medical Society.—At the annual meeting held November 14 the following officers were elected for the ensuing year: *President*, Dr. Roland G. Curtin; *Vice-President*, Dr. Jacob R. Shellenberger; *Treasurer*, Dr. Lewis H. Adler, Jr. An appropriation of $200 was made for the physicians who were sufferers as a result of the flood at Austin, Pa.

The American Association for the Conservation of Vision is inaugurating a widespread campaign of public education to call the attention of people to the care and preservation of their eyesight. The association has recently moved to new offices at 105 East Twenty-second street, New York City. A recent election of officers leaves the personnel as follows: *President*, Dr. F. Park Lewis; *Vice-President*, E. L. Elliott; *Acting Secretary*, Douglas C. McMurtrie; *Acting Treasurer*, T. Commerford Martin. Dr. Hiram Woods of Baltimore is on the board of managers and Dr. G. E. de Schweinitz of Philadelphia is director of the Department of Diseases and Defects of the Eye. Among the publications of the association are its *Bulletin* and *Monograph Series*, the first of a popular and the latter of a technical nature. The first issue of the *Bulletin* is entitled "Conserving Vision," compiled by Douglas C. McMurtrie and edited by G. E. de Schweinitz, M.D., F. Park Lewis, M.D., Louis Bell, Ph.D., and E. Leavenworth Elliott. The first issue of the *Monograph Series*, edited by Douglas C. McMurtrie, is entitled "Ophthalmia Neonatorum in Ten Massachusetts Cities" by Henry Copley Greene. The association has now in press additional instructive booklets of a popular nature.

The American Guild of St. Luke.—The next meeting of this Society will be held on December 8, 1911, at 8.30 P. M., at the Catholic Club, 120 West Fifty-ninth street, New York City. Dr. James J. Walsh will read a memoir of the late Prof. Thomas Dwight, the Harvard anatomist, and a general discussion will be held on the subject: "When Is the Induction of Premature Labor Justifiable?" Non-members desiring to attend should communicate with the president of the society, Dr. Charles E. Nammack, 42 East Twenty-ninth street.

The American Public Health Association will hold its thirty-ninth annual meeting in Havana, Cuba, from December 5 to 9. The headquarters of the association will be at the Hotel Sevilla. Dr. William C. Woodward is the secretary.

The Pan-American Sanitary Conference held its fifth annual meeting at Santiago, Chile, on November 6, 7, and 8.

The Canadian Public Health Association will open its first annual meeting at McGill University, Montreal, on the evening of December 13, on which occasion His Royal Highness, the Duke of Connaught, will deliver the opening address.

The Homeopathic Medical Society of Delaware State and Peninsula, recently in session in Wilmington, elected the following officers: *President*, Dr. W. F. Hoey, Frederica; *Vice-President*, Dr. E. Q. Bullock, Wilmington; *Secretary*, Dr. Victor D. Washburn, Wilmington; *Treasurer*, Dr. H. W. Howell, Wilmington.

The Sixth International Congress of Obstetrics and Gynecology will be held in Berlin September 10, 11, and 12, 1912. The German Gynecological Society and that of Berlin will join with the Organization Committee in the reception of the International Congress in Berlin. The subject for discussion proposed is: "The Treatment of Peritoneal Wounds in Relation to Obstetrics and Gynecology." Some large national associations have already appointed their referee. During the session of the Congress an exhibition of obstetrical and gynecological specimens, objects for demonstration, instruments, and apparatus will take place.

The Southern Medical Association, which held its fifth annual session at Hattiesburg, Miss., on November 14, 15, and 16, elected the following officers: *President*, Dr. J. M. Jackson of Miami, Fla.; *Vice-Presidents*, Dr. Frank A. Jones of Memphis, Tenn., and Dr. D. J. Williams of Ellisville, Miss.; *Secretary-Treasurer*, Dr. Seale Harris of Mobile, Ala. Changes in the constitution and by-laws of the association were made whereby Texas, Arkansas, Kentucky, West Virginia, Maryland, North Carolina, South Carolina, and the District of Columbia were taken into the association.

The Tri-State Medical Society, Arkansas, Texas, and Louisiana, which convened in Little Rock, Ark., on November 14, elected the following officers: *President*, Dr. E. H. Martin of Hot Springs; *Vice-Presidents*, Drs. T. F. Kittrell of

Texarkana, J. F. Rosborough of Marshall, Texas, and Knighton of Shreveport, La.

The East Texas Medical Society, which met in Little Rock in joint session with the Tri-State Medical Society, elected the following officers: *President,* Dr. Samuel Ball of New Boston; *Vice-President,* Dr. E. Y. Anthony of Omaha; *Secretary,* Dr. H. T. Mann of Texarkana; *Treasurer,* Dr. C. A. Smith of Texarkana.

Obituary Notes.—Dr. Elmer Fletcher of Eugene, Ore., died suddenly November 10. He was 49 years old.

Dr. Joseph Waldauer of Vicksburg, Miss., a graduate of the Louisville Medical College in 1894, died at his home November 10.

Dr. James S. Daniel, a graduate of Chattanooga Medical College in 1893, died at his home in Danielsville, Ga., November 12, aged 42.

Dr. David R. Wallace of Waco, Texas., died at his home November 21 at the age of 87. He was a graduate of the Bellevue Hospital Medical College in 1854.

Dr. William D. Barclay, a graduate of the Hospital College of Medicine, Louisville, Ky., died at his home in Odessa, Mo., aged 42.

Dr. William J. H. Ballamy, a graduate of New York University Medical College in 1868, died at his home in Wilmington, N. C., November 18, aged 67.

Dr. James Frederick William Ross of Toronto died on November 17 at Richmond Hill, Ont., from injuries received in an automobile accident. He was born in 1857 and graduated from Trinity Medical College in 1870. He was professor of gynecology at the Toronto University.

Dr. H. C. Barkhausen died at his home in Unity, Ill., on November 8 at the age of 95 years.

Dr. B. Brindley Eads, surgeon at the Cook County Hospital and Dean of the Illinois Medical College, died at his home in Chicago, Ill., on November 10. He was born in Paris, Ky., January 23, 1870, was graduated from Jefferson Medical College, Philadelphia, in 1891, and began the practice of medicine in Chicago in 1892. He was at one time professor of physiology and anatomy in Rush Medical College.

Rear-Admiral John Yeatman Taylor, formerly a Medical Director of the United States Navy, took his own life because of ill health on November 16 at his home in Washington, D. C. He was born in East Nottingham, Pa., and was graduated from Jefferson Medical College in 1852. He was with Farragut on the *Oneida* in the battle of Mobile Bay, where re won distinction, in recognition of which he was advanced to the rank of Rear-Admiral in 1906. He was 82 years of age.

Dr. Eugene Wasdin, Surgeon U. S. Public Health and Marine-Hospital Service, died on November 17 at Gladwyn, Pa. He was born in 1869 and was graduated from the Medical College of the State of South Carolina in 1882. He entered the Marine-Hospital Service in 1883 and was commissioned surgeon in 1898. Dr. Wardin was in Buffalo at the time of the assassination of President McKinley, and was one of the surgeons in attendance upon him. He was at one time a member of the yellow fever commission of the Marine-Hospital Service, and wrote much upon the subject.

Dr. James B. Jones, retired, for sixteen years president of William Wood College at Fulton, Mo., died at Winston-Salem, N. C., on November 8, at the age of 65 years.

Correspondence.

IPECAC IN DYSENTERY AND TYPHOID FEVER.

To the Editor of the Medical Record:

Sir:—The Medical Record has recently published two articles which bring up old memories of my service in the "New York Hospital" (1867 and 1868) and suggest a question which I have never heard discussed, viz., How does ipecac effect the remarkable cures of dysentery which are vouched for by so many trustworthy authorities?

In 1867 the New York Hospital was, if I remember rightly, under contract to care for, in its wards, a fixed number of the employees of the Panama Railroad (or Steamship Company?), and so it came about that during that summer, for weeks at a time, the beds of one of the medical wards were occupied by patients affected with dysentery or with "Panama fever," a most virulent type of malarial infection, that resulted, in not a few instances, in death. When the first batch of dysentery patients were brought into the hospital the physician who was then in attendance (Dr. Charles E. Hackley, since deceased) instructed the house staff at first to use opium and vegetable astringents freely; but when it became evident, as it soon did, that this plan of treatment was not likely to cure the disease, he ordered the adoption of what was then known as the East Indian method of treating dysentery. As it was then—and doubtless still is—the practice for the house staff to keep a careful record of every case treated in the hospital, I have no doubt that anybody who is interested in the subject will find, in the volume of case records for 1867 (or 1868), a detailed account of the hospital's experience with the East Indian ipecac treatment of tropical dysentery.* There remain in my memory simply a few facts relating to the cases in which this mode of treatment was employed. The doses of powdered ipecac administered were relatively large—15 or 20 grains; they were given only once a day and were invariably preceded by the application of a strong mustard plaster over the region of the stomach; as the character of the stools improved, which they very soon did in nearly every instance, the dose was gradually diminished; and, finally, in the course of from four to six weeks, nearly every one of these patients was "discharged cured." These facts, if I have remembered them correctly, are in full harmony with those observed by medical practitioners in the Philippine Islands, as stated by Dr. Andresen of Brooklyn, and also with the latter's personal experience.

The marvelous action of this drug, ipecac, upon the intestinal parasites which are now known to be the causative factors of tropical dysentery suggests at once the question, What is the *modus operandi* of the remedy? Does it mingle with the contents of the intestinal canal and in this manner eventually reach and destroy the harmful parasites, or is it gradually absorbed by the gastrointestinal blood-vessels and thus, in all probability, more rapidly conveyed to every part of the body, the secreting structures of the intestinal mucous membrane included? The great efficiency of ipecac in

*The volumes referred to are probably still in the possession of the New York Hospital, in West Sixteenth Street, or possibly they may be in the custody of the Academy of Medicine, in West Forty-third Street.

alleviating bronchial inflammatory disorders in which bacterial organisms play an important part suggests the likelihood that the drug, or at least a large part of the dose administered, reaches the affected intestinal area in precisely the same manner as it does the inflamed bronchi, that is, by way of the circulating blood. And if it be true that, as here assumed, one of the chief effects of ipecac is to destroy certain bacteria which find their way into the human body, why is it not reasonable to believe, as Dr. Frazier of Mountain Home, Idaho, maintains, that the drug may be administered to advantage in typhoid fever?

ALBERT H. BUCK, M.D.

HEWLETT, LONG ISLAND, N. Y.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE INSURANCE BILL—ROYAL COLLEGE OF SURGEONS PRESIDENCY—GENERAL PARALYSIS OF THE INSANE—DR. COUTTS—OBITUARY—SIR S. WILKS AND MAJ.-GEN. MEADOWS.

LONDON, November 10, 1911.

THE insurance bill is being pushed through with a determination which some condemn as unscrupulous and others say is sheer obstinacy. Yesterday nine clauses were passed under the guillotine. There was, of course, a mere pretence of discussion, and that only on the proposal to empower approved societies and health committees to recover from defaulting local authorities or employers the cost of expenditure on excessive sickness. The chancellor held that it was desirable to make neglect unremunerative, and made statements which were regaded as unfair attacks on existing sanitary authorities. The title health committees being objected to, he half promised to substitute insurance committees. Whatever they may be called, it was urged they should be under existing health authorities. It was further held there is no need of them, and parliament ought not to multiply machinery which might overlap or interfere with that which is working well.

The most important question for the profession remains: Should we accept the contract system of practice or insist on payment for work done? Mr. Lloyd George, though he has altered his bill so often that it is very difficult to understand its present provisions (which may be reversed tomorrow), seems firmly determined to carry it through and sacrifice the doctors to the societies.

The British Medical Association is giving way on tactical grounds, and has admitted that nearly half the profession would be content with contract practice. This was at once denied, and a poll taken by the Reform Union, the result being, it is said, 95 per cent. in favor of payment for work done. In reply to the objection that this plan is difficult, if not impracticable, there is a society—the National Deposit Friendly—which works on that system, and satisfactorily to all concerned.

The voting papers for the General Medical Council have to be returned next week. In this contest the British Medical Association is pursuing its old game of using every electioneering trick to monopolize the representation by three members of its own officials. One of the branches has repudiated the assertion that it supported one of these candidates, but the repudiation was refused insertion in the journal as unfair to the "association's first attempt to run candidates"! And every one knows they have been running them from the very foundation of the council!

Yesterday at a special meeting of the council of the Royal College of Surgeons the announcement was made that Sir H. T. Butlin resigned the presidency of the college on account of ill health. In accepting the resignation the council expressed their deep sympathy with him in having to curtail the period of his presidency, and their admiration of the ability, dignity, and courtesy with which he had represented the college. The council then proceeded to fill the vacancy caused by Sir Henry's resignation. They chose Mr. Rickman J. Godlee, who is surgeon in ordinary to the king, a member of the senate of the University of London, and surgeon and professor of clinical surgery at University College Hospital, etc. The sincere wishes of the profession go to Sir H. T. Butlin for his recovery to health and strength.

General paralysis of the insane is a phrase which has been made to cover such a variety of symptoms and such complex conditions that to many who do not often see cases it seems rather a group of different diseases greatly in need of differentiation. At one time microbes and their toxins were held responsible as primary causes. Later they were held to be rather effects coming in at the period when the tissues had been so weakened as to be incapable of resisting invasion. Dr. Goodhall, at the British Medical Association this year, declared there was no reason to regard the organisms which had been detected in the tissues in any case of insanity as causes of the disease. His personal experience on the matter gave negative results. Dr. T. B. Hyslop gave an interesting lecture on the subject last month at the London Polyclinic. He has long taught that general paralysis of the insane is really made up of a group of affections similar in type, but differing in their etiology and course. Some of the types he has described at the Medical Society of London and elsewhere under the term pseudogeneral paralysis. To those engaged in asylum practice these distinctions are interesting, and have importance in relation to pathological conditions as well as to clinical appearances. But to those outside institutional work diagnosis and prognosis are, I think, more likely to absorb attention. If the general opinion now held, and which Dr. Hyslop does not question, that general paralysis of the insane is in the great majority of cases a sequel of syphilis in some form, the extreme variation it presents is what might be anticipated. The importance of detecting the coming danger at its earliest threatening can hardly be exaggerated, either from the patients' or the doctor's point of view. It is true that other causes must not be overlooked—traumatism, nervous exhaustion, or strain, and, above all, alcoholism. Where this last is known to be possible the difficulty of diagnosis is much increased. So much is this the case that Dr. Hyslop remarked that few asylum physicians could say they had never either over- or underestimated its effect. Another very difficult problem is to distinguish between general paralysis of the insane and intracranial syphilis. Yet how important the question is to the patient, and even to the practitioner! It may even occur in hereditary cases.

The last named point was aptly illustrated at the Royal Society of Medicine on the 27th of October, when Dr. P. Parkinson showed in the children's section a girl of six with symptoms that resembled

both general paralysis of the insane and diffuse cerebral syphilis so closely that the members were not inclined to give a definite diagnosis. There was a history of infection in the mother, and the child had had iritis three months before the meeting.

The medical superintendent of an infectious diseases hospital was lately subjected to the annoyance of an action for damages for alleged negligence in discharging a boy who had had scarlet fever in an infectious state. It was admitted that desquamation was not complete, but argued that in the opinion of experienced physicians less importance is attached to this than formerly. "Allbutt's system" was cited in support of this statement, and experts gave evidence to this effect and said it is now the practice to discharge such patients earlier than formerly. The patient was given printed instructions as to the danger of discharges from the nose or ears, but seems to have caught cold a day or two after going home and another member of the family became ill. The defense was successful, but the case shows the risks to which medical men are exposed.

The late Dr. J. A. Coutts, whose death was mentioned in my last week's letter as having occurred on November 1, after a short illness, was one of the foremost pediatrists in London, and second to none in diagnostic acumen. His Hunterian lectures on "Some Aspects of Infantile Syphilis," and his addresses at the Belfast and London meetings of the British Medical Association on "Functional Neuroses in Children and Non-Tuberculous Joint Disease in Children," and his work on rheumatic nodules, were all very valuable. Personally he was one of the most retiring but lovable of men, and his loss is deeply and widely felt.

Sir Samuel Wilks, Bart., M.D., F.R.S., LL.D., died on Wednesday in his eighty-eighth year, closing a long and distinguished career as a leading consultant and teacher whose work will be familiar on your side the Atlantic as well as here. He was a student of Guy's Hospital, to which he became, ultimately, consulting physician. He took M.R.C.S. in 1847 and M.D., London, three years later. He served as demonstrator and lecturer on morbid anatomy, curator of the museum, passed on to the staff as assistant and then full physician. In 1885 he resigned and was made consulting physician. In 1897 he was created baronet. In 1900, while he was president of the College of Physicians, he gave up other offices and retired from practice. His election to the Royal Society took place in 1870. He was appointed physician to the Duke of Connaught in 1877, and in 1878 to Queen Victoria. At the College of Physicians he was Harveian orator in 1879, vice-president, 1894; president, 1897 to 1900, being elected three years in succession. He represented the London University in the General Medical Council for about ten years. He had presided over the Pathological Society and that section of the International Medical Congress, and was one of the royal commissioners on contagious diseases. His valuable contributions to pathology and clinical medicine must be as well known to you as to us.

Surgeon-Major-General Robert W. Meadows, A.M.S., died yesterday in his seventy-eighth year. He qualified M.R.C.S. and entered the army in 1854, retiring in 1892. He served in the Crimea and was awarded the medal and clasp, as well as the Turkish medal. He was also in the Afghan War, 1879-80, and was present at Ahmed Khel and Urzoo, receiving the medal with clasp and being mentioned in despatches.

Dr. William Millington died on the 5th inst. at Wolverhampton, in his ninety-first year. He took M.D., Edin., with the gold medal, in 1851: M.R.C.P., Lond., 1859. He served as physician and consulting physician to the Wolverhampton General Hospital, and to the Orphan Asylum. He was also at one time connected with the Ventnor Consumption Hospital.

Progress of Medical Science.

Boston Medical and Surgical Journal.

November 16, 1911.

The Use of Whole Milk and Fat Diminished Milk in Infant Feeding. E. A. Darling.
Some Personal Observations of Southern California as a Winter Resort. G. G. Sears.
Bone Plates and Clamps in Excisions of the Knee-Joint. L. A. O. Goddu.
Sciatica: Etiology and Treatment. M. H. Rogers.

Whole Milk and Fat Diminished Milk in Infant Feeding.—E. A. Darling concludes (1) that cow's milk unmodified or modified simply by dilution or by removal of part of its fat content is a suitable food for infants; (2) that digestive disturbances in babies fed on cow's milk are usually due to an excess of fat; and (3) that the caloric requirement according to the age and weight of the infant is the best guide in calculating the amount of food to be given.

Southern California as a Winter Resort.—G. G. Sears notes that a feature of the climate of Southern California is its high humidity. The rapid and regular variations in the humidity must be considered in estimating the effect of the Southern Californian climate upon the invalid who is less able to adjust himself to the conditions than the healthy individual, while it also shortens that portion of the day which many invalids can spend out of doors. The climatic drawbacks are of slight importance to those who propose to spend a winter vacation there, provided they have resources within themselves to draw on during the occasional periods of prolonged rain, but these drawbacks must be carefully considered from the standpoint of the invalid. The climate is well suited to those suffering from arteriosclerosis, cardiorenal, or other circulatory diseases. A better climate can be found for most cases of pulmonary tuberculosis. Rheumatic affections as a class do badly.

Excisions of the Knee Joint.—L. A. O. Goddu concludes from his experience as follows: (1) the use of metal fixation methods in excisions of the knee gives the patients far less pain than without their use: (2) the holding of the cut surfaces immobile and in constant apposition is necessarily conducive to a more probable ankylosis; (3) the diseased tissue is evidently more tolerant of the presence of metals than is generally supposed.

Sciatica: Etiology and Treatment.—M. H. Rogers states that a careful examination of any case of sciatica will show that there is some trouble at or near the sacro-iliac joint, and in most cases one is dealing with a definite joint lesion. It is easily understood how the sciatic nerve may be involved if it is remembered that the sacral plexus passes directly over this joint so that any disturbance may affect the nerve. During the latter part of pregnancy, and especially after a hard confinement, sciatica of a troublesome nature is quite frequent. What happens is that under such conditions the ligaments holding the pelvis are necessarily stretched and therefore the ligaments of the sacro-iliac joints are relaxed and there is a very good chance for this joint to be relaxed. The same condition is seen also in physically underdeveloped growing girls and in women with poor musculature. The more severe cases of sciatica generally represent more definite injury to the joint. In these cases the body is listed to one side. If one is dealing with

a very acute sciatica of sudden onset, it means either an acute strain with some slight rupture of the ligaments or a displacement of the joint. If there is a strain, then the treatment would consist of fixation, as in any strained joint, which is done either with adhesive strapping or, in more severe cases, a plaster jacket. Of course rest is essential. But occasionally one meets cases in which rest and fixation will not relieve the symptoms, and it is in such cases that an immediate manipulation to reduce the dislocation often shows striking results.

New York Medical Journal.

November 18, 1911.

The Relation of the Pharmacopœia to the Practice of Medicine. S. Solis-Cohen.
Inspection. M. I. Knapp.
The Value of Patients' Histories. B. Robinson.
Sigmoidoscopy. A. Bassler.
The Relation of Natural Antisheep Amboceptor to the Wassermann Reaction. H. LeB. Peters.
Exophthalmos in Nephritis, with a Consideration of Its Etiology. A. Levison.
Obscure Symptomatology with Tumors of the Fourth Ventricle. G. R. Lafora.
Purpura. D. Elliott and H. S. Martland.
An Unusual Case of Lichen Planus in a Negro. J. L. Kirby-Smith.

The Pharmacopœia and the Practice of Medicine.—S. Solis-Cohen would have the pharmacopœia take under its protection everything that can be applied with advantage in the medicinal treatment of the sick. As science discovers or invents new substances, animal, mineral, or vegetable, natural or synthetic; as these new substances are found to possess real therapeutical power and to be capable of standardization; and as the knowledge concerning them, experimental or clinical, becomes sufficient to permit of their practical employment, they should be taken under the wing of the pharmacopœia.

Inspection.—M. I. Knapp believes that this method is not accorded its proper place in the physical examination of the body.

Patients' Histories.—B. Robinson states that hospital case histories may be improved by an appended abstract of the history. By reading this the attending physician can ascertain whether or not he wishes to consult the complete history. It is also desirable to supplement the history with data obtained from the patient or a member of his family, as to the patient's progress after he leaves the hospital. Patients who are sent abroad for treatment should be given a written history of their case.

Sigmoidoscopy.—A. Bassler has devised a new instrument for this purpose.

Wassermann Reaction.—H. LeB. Peters notes that, in doing a routine Wassermann reaction without regard to the hemolytic content of the serum used, one is liable to error on the negative side in at least one-half the cases. In over 50 per cent. of sera the addition of artificial immune serum is unnecessary, as the requisite two units are already present in the reaction, and after the preliminary incubation of patient's serum, antigen, and complement, instead of adding sensitized sheep corpuscles, the corpuscle solution alone is necessary.

Exophthalmos in Nephritis.—L. A. Levison states that exophthalmos occurs in chronic nephritis to a much greater extent than has been supposed. The reported cases have been few and confined to the American literature. The diagnosis of exophthalmos is not always a simple matter as, in the absence of lid retraction, slight degrees of exophthalmos are very easily missed. There is no definite correlation between the various lid phenomena of Graves' disease and exophthalmos. The position of the eyeball is not constant and is influenced by the contraction of the upper lid. Exophthalmos is absent in 23.2 per cent. of cases of Graves' disease. When present, it bears no relation to the severity of the disease. Exophthalmos is not limited to the human being and has been observed in the dog, rabbit, horse, and cow. The cause of exophthalmos is not conclusively determined. The two main theories are the circulatory and muscle causes. Neither theory explains all conditions satisfactorily.

Tumor of the Fourth Ventricle.—G. R. Lafora reports a case of ependymoglioma the size of a hazel nut, and of a small angioma in the lemniscus medialis in the pons, together with a number of miliary plaques in the cortex of the brain. The clinical history was as follows: There was a cranial injury seventeen years previous to death, since which injury there was observed a change in the conduct of the patient, especially manifested in the form of attacks of depression and excitation, marked religious tendency, frequent conflicts with others. Two years ago the patient showed a self appreciation (insight) of his mental trouble. There was no history of syphilis or of alcoholism. When brought to the hospital in consequence of a recent conflict on the street, the patient appeared to be very excited during the eight days he remained in the hospital, with great motor activity, but without showing distractibility nor tendency to rapid associations of the manic type of cases. The continuous bath did not produce any beneficial effect. Later, there were rapid respiration and rapid pulse, slight cyanosis of the hands developed, without evidence of pulmonary or cardiac involvement, and these conditions continued until the patient died.

Purpura.—D. Elliott and H. S. Martland report a case of purpura fulminans.

Lichen Planus.—J. L. Kirby Smith reports a case of this rare condition occurring in a negro.

Journal of the American Medical Association.

November 18, 1911.

Visceral Syphilis. F. Billings.
Laboratory Diagnosis of Syphilis. L. S. Schmitt.
The Value of the Wassermann Reaction and of Salvarsan. A. Keidel and J. T. Geraghty.
The Disadvantages Incident to the Administration of Salvarsan. D. W. Montgomery.
The Use of Salvarsan. J. O. Hirschfelder.
The Influence of Treatment on the Wassermann Reaction in Syphilis. R. W. Matson and M. A. Reasoner.
Eight Months' Experience with Salvarsan at the New York Skin and Cancer Hospital. H. Fox and W. B. Trimble.
A New Esophagoscope. R. Lewisohn.
A New Method in Operating for Ectropion. A. E. Davis.
The Etiology of Pellagra. K. H. Beall.
Pellagrous Symptoms Produced Experimentally in Fowls by Feeding Maize Spoiled by Inoculation with a Specific Bacterium.. Preliminary Note. C. C. Bass.
Epidemic Poliomyelitis. Eleventh Note: Relation of the Virus to the Tonsils, Blood and Cerebrospinal Fluid; Races of the Virus. S. Flexner and P. F. Clark.
Routine Mercurial Treatment in Syphilis Even After the Injection of Salvarsan. J. S. Eisenstaedt.
Pellagra Treated with Salvarsan. Report of Nineteen Cases. P. M. King and A. J. Crowell.
A Case of Pellagra. T. Frazer.
Diet and Pellagra. A Warning Against Ill-Advised Attacks Against Food Stuffs. G. A. Zeller.
Cholecystitis and Cholelithiasis in Their Relation to Pregnancy. L. H. Bramson.
Ruptured Pus-Tube. A Cause of Diffuse Septic Peritonitis With Report of Two Cases. A. P. Stoner.

Visceral Syphilis.—By F. Billings. (See MEDICAL RECORD, July 8, 1911 page 94.)

Laboratory Diagnosis of Syphilis.—By L. S. Schmitt. (See MEDICAL RECORD, July 8, 1911, page 94.)

Wassermann Reaction and Salvarsan.—By A. Keidel and J. T. Geraghty. (See MEDICAL RECORD, July 8, 1911, page 95.)

Administration of Salvarsan.—By D. W. Montgomery. (See MEDICAL RECORD, July 8, 1911, page 95.)

Salvarsan.—J. O. Hirschfelder concludes that (1) salvarsan is one of the most powerful weapons in the treatment of syphilis. (2) In the early stages of the disease it exerts its greatest influence. (3) As a rule a single injection will not suffice to cure. (4) It is best used in combination with mercury. (5) It should not be employed after other arsenic preparations have been used. (6) It should be avoided in severe affections of the brain or heart, in putrid bronchitis, in severe diabetes, and in all conditions of decrepitude. (7) It is of service in various diseases due to spirillæ.

Effect of Treatment on Wassermann Reaction.—R. W. Matson and M. A. Reasoner state that the early administration of mercury may cause a disappearance of manifestations, with little influence on the spirochetes, the organisms remaining latent for years, and under favorable conditions renewing their activity with reappearance of manifestations. A positive reaction may be made to disappear by energetic, specific treatment, and this sustains the conclusion that a positive reaction means active syphilis, even though there be no other evidence, and speaks for renewal of treatment. Patients who have been well treated give negative reactions, whereas those poorly treated give positive reactions even years later. The number of inunctions or injections of mercury or salvarsan injections necessary to convert a positive into a negative reaction varies with each patient and should be controlled by the blood examination. A positive reaction in tabes is little affected by treatment. In patients recently treated by mercury, and giving a positive reaction, the time required for a negative Wassermann with salvarsan may be much reduced. In very recent cases, or older cases not under the influence of mercury, there may be no shortening of the time.

Salvarsan.—H. Fox and W. B. Trimble, as the result of eight months' experience with this remedy conclude that (1) salvarsan is a powerful symptomatic remedy for the treatment of syphilis. (2) It acts with greatest rapidity on lesions of the mucous membranes. (3) It is of decided value in obstinate palmar and plantar syphilids. (4) The permanence of its action cannot be determined until a numbers of years have elapsed. (5) Salvarsan should be used in conjunction with mercury and cannot entirely replace this valuable remedy, except in a few selected cases. (6) The effect of salvarsan on the Wassermann reaction is less favorable than on the clinical manifestations of syphilis. (7) Its effect on the Wassermann reaction is in general analogous to that of mercury. (8) The intramuscular and intravenous methods of administration are probably of equal efficiency. (9) The intravenous method is the one of choice where rapidity of action and the comfort of the patient are factors to be considered.

Exophagoscope.—H. Lewisohn has devised an instrument built on a rectangular plan similar to the gastroscope models of Poirier and Eckstein, although it differs from these in one essential particular. Their esophageal tube was a jointed one, while the author's is a telescope formed by six small tubes which fit into one another. Each tube is 5 cm. long, and the diameter varies from 9 to 14 mm. The image is transferred at the rectangular junction by a mirror, while another perforated mirror in the eye-piece is used for the purposes of light reflection.

Ectropion.—H. E. Davis describes a new principle in the treatment of ectropion. It consists in shortening the tarsus at the temporal extremity and then attaching this extremity to the periosteum of the temporal border of the orbit on a level, slightly above the lid commissure, if the lower lid is affected, and below the commissure if the upper lid is in fault.

Pellagra.—K. H. Beall finds that in Texas this disease appears particularly to attack females. Out of 189 deaths from the disease reported to the State health officer only thirty-six were males. The author does not believe that the females are less susceptible or more resistant but thinks that for some reasons they must be more exposed. Another interesting fact is that of the thirty-six male deaths there were only seven between the ages of 20 and 50, or those years in which they would be most away from home. This suggests to the author that the agent may be active in the daytime only and be something about the house or home.

Pellagrous Symptoms in Fowls.—C. C. Bass states that he has succeeded in producing pellagrous symptoms in a fowl by feeding the latter with cornmeal inoculated with cultures of bacteria obtained from the stools of pellegra patients.

Poliomyelitis.—S. Flexner and P. F. Clark state that the virus of poliomyelitis has been detected outside the central nervous system, including the intervertebral ganglia, of affected human beings and monkeys. The only place where it occurs with any constancy, however, is in the nasopharyngeal mucosa. The virus also exists in the tonsils and pharynx of human beings who succumb to poliomyelitis as constantly as in monkeys after any intracerebral inoculation. It has not been found in the blood of human beings, though it has in that of monkeys at the height of the acute disease, when large quantities are withdrawn and injected intravenously into a healthy monkey. The cerebrospinal fluid is devoid of demonstrable virus at the onset in human beings and in monkeys, though it has been detected in that of monkeys before the onset of paralysis and during the incubation period. The authors have succeeded in implanting on monkeys all the ten strains of human virus with which they have experimented. The latter infect monkeys less readily than do the modified or monkey strains and the experimental disease produced by them is less severe and fatal, but after becoming adapted to the monkey the paralytic disease appears in more severe form. The artificially evolved monkey strains of the virus may have lost in some degree the power to infect human beings.

Salvarsan and Mercury.—J. S. Eisenstaedt believes that one should look on salvarsan as an adjuvant to mercurial treatment, and accord it a place in the therapeutics of specific disease, but that one should carefully select the cases for treatment with it. Also, after having obtained benefit from the preparation, one should hope for the maintenance of this good effect only by the use of classical routine mercurial therapy.

Pellagra and Salvarsan.—P. M. King and A. J. Crowell report satisfactory results in the treatment of cases of pellagra with salvarsan.

Pellagra.—T. Frazer reports a case of this condition.

Diet and Pellagra.—G. A. Zeller states that the maize theory has tenaciously survived for a century and a half, and has, in the judgment of those who enter the field of study with open minds, done much to retard the true solution of the cause of the disease.

Cholecystitis and Cholelithiasis in Relations to Pregnancy.—By L. H. Branson. (See MEDICAL RECORD, July 8, 1911, page 106.)

Ruptured Pus Tube.—A. P. Stoner reports a case of diffuse septic peritonitis resulting from the rupture of a pus-tube.

The Lancet.

November 11, 1911.

Recent Developments in the Recognition, Treatment, and Prophylaxis of Syphilis. H. C. French.
The Diagnosis and Treatment of Urinary Tuberculosis. S. West.
Wassermann Reaction in General Paralysis. The Control of a Series of Wassermann Reactions in Cases of General Paralysis by Post-Mortem Examination. J. P. Candler.
On an Epidemic of Coniunctivitis Associated with the Presence of a Gram-Positive Diplococcus Resembling, but Distinct from, the Pneumococcus. J. P. McGowan.
Intestinal Obstruction Caused by Gallstones: A Clinical Memorandum. E. Owen.
"Comforter" Caries. E. H. R. Harries.
The Blood Changes in Bilharziasis, with Special Reference to Egyptian Anemia. H. B. Day.
The Comparative Value of the Various Treatments as Estimated by the Wassermann Reaction. H. W. Bayly.
Remarks on the Modern Methods of Diagnosis as Illustrated by a Case of Tumor of the Lung. N. Dalton.

Recent Developments in Syphilis.—H. C. French reviews this subject.

Urinary Tuberculosis.—S. West states that the first symptoms that bring the patient under observation are usually (1) increased frequency of micturition; (2) occasional hematuria; and (3) pain, vesical or renal as the case may be. The cases fall into two clinical groups according

as the symptoms are those of cystitis or pyelitis. The symptoms of subacute cystitis of long standing in a young person would excite grave suspicion of tuberculosis. It would be necessary to exclude gonorrhea and calculus as causes, and new growth too, though this would be unlikely. Tuberculosis would be almost certain if this condition were found in the testicle, to which it might be secondary. The kidney symptoms are pain in the loin and tenderness on pressure, or a tumor which may be felt or demonstrated by the *x*-rays. In this case calculus especially, and possibly new growth, would have to be excluded, as well as *Bacillus coli* infection. If with symptoms of cystitis there are renal symptoms as well, the probability of the kidney being also tuberculous is very great.

Wassermann Reaction in Paresis.—J. P. Candler, as the result of his clinical studies, concludes that a positive Wassermann reaction was obtained with the cerebrospinal fluid of 67 out of 69 cases of paresis (a percentage incidence of positive reactions of 97 per cent.).

Epidemic of Conjunctivitis.—J. P. McGowan and W. Macrae Taylor state that from five cases of an epidemic of conjunctivitis in an institution they have obtained in each case a pure culture of a Gram-positive diplococcus, with elongated and lancet-shaped elements. The superficial examination ordinarily employed in ophthalmic practice is insufficient to distinguish it from the pneumococcus, from which it really differs markedly.

Intestinal Obstruction Caused by Gallstones.—E. Owen reports a case which at first sight was very like one of appendicitis, showing, as it did, general distress, abdominal pains, a tender mass in the right iliac fossa, and vomiting. But there was absence of that constant sign of appendicitis—rigidity of the lower part of the rectus and of the neighboring muscles.

"Comforter" Caries.—E. H. R. Harries describes a condition of asymmetrical hypertrophy of the upper lip and caries of the central incisors present in young children as the result of indulgence in the "comforter."

Blood in Bilharziasis.—H. B. Day concludes that bilharziasis is characterised by a slight general leucocytosis due to a considerable increase in eosinophile and large mononuclear cells, the polynuclears being diminished. 2. These changes are roughly proportional to the intensity of the disease provided the patient's general condition is good. The presence of grave anemia, sepsis, or complicating disease obscures these changes, which reappear on improvement. 3. Secondary anemia is present to a moderate degree in most cases. Even when the red corpuscles show no reduction in numbers there is a loss of hemoglobin. 4. Profound anemia may be caused by excessive loss of blood, prolonged suppuration, and especially chronic diarrhea. 5. Bilharziasis is the commonest worm infection in Egypt and is responsible for most cases of moderate anemia in children. 6. Ankylostomiasis incapacitates a larger proportion of the population than does bilharziasis. 7. Ankylostomiasis is a much more frequent cause of severe anemia than is bilharziasis. The term "Egyptian chlorosis," if used at all, should not be applied to the secondary anemia produced by bilharziasis. 8. The combination of both infections or the association with other diseases, such as cirrhosis, tends to aggravate the anemia.

Treatment of Syphilis.—W. W. Bayly notes that if rapidity of change of reaction be taken as a test of efficiency of treatment he would place salvarsan first, inunction or intramuscular injection of insoluble mercurial compounds second, and mercurial pills and suppositories a bad third. He considers that the results obtained suggest the advisability of combined salvarsan and mercurial treatment.

Tumor of the Lung.—N. Dalton reports a case of sarcoma of the lung, the points of interest in which are the apparent acute onset and the rapid growth of the tumor and the high leucocyte count and the high fever which made the case appear one of abscess. A leucocytosis of 38,800 is most rare in a case of tumor. This may be explained by the intense pneumonia which was found after death. In fact, the patient had septicemia as well as a rapidly growing and a rapidly degenerating tumor. Still, the leucocytosis was a source of error. The *x*-ray department was, in this case, more useful than the laboratory.

British Medical Journal.

November 11, 1911.

The Use of Our Authority. S. Paget.
The Factor of Commonness in the Diagnosis of Cancer. W. Gordon.
Torsion of the Great Omentum. A Case Clinically Resembling Ovarian Cyst with Twisted Pedicle. J. P. Hedley.
A Case of Antenatal Pneumonia. A. T. I. Macdonald.
A Case of Hemochromatosis, or Pigmentary Cirrhosis of the Liver with Glycosuria. M. D. Roberts.
Removal of the Eyeball: A Quick and Easy Method. W. Robinson.

Authority and the Medical Profession.—S. Paget notes that physicians are bound by their calling to speak with authority on subjects such as food and drink, vaccination, animal experimentation, and Christian Science.

The Factor of Commonness in the Diagnosis of Cancer.—W. Gordon, on the basis of statistical investigations, concludes that by far the commonest of all cancers are cancer of the stomach in both sexes and cancer of the uterus and breast in women. The next commonest come cancer of the liver, rectum, and intestines in men and women. Next come cancer of the esophagus and tongue in men. All the rest are much less common. The rarest of all is cancer of the heart and pericardium. Most organs are more often cancerous in men than in women The older the patient from 45 onward the greater the relative chance of a cancer being intestinal. The older the patient from 35 onward the less the relative chance of a cancer being pancreatic. The older the patient the less the relative chance of a cancer being renal as compared with the chance of its being vesical (primary cancer of the urethra is extremely rare). In women the chances of renal and vesical cancers are more nearly balanced than in men. In men the older the patient the greater the relative frequency of prostatic cancer.

Torsion of the Great Omentum.—J. P. Hedley reports a case of this condition in which the signs and symptoms very closely resembled those produced by the twisting of the pedicle of an ovarian cyst.

Antenatal Pneumonia.—A. T. I. Macdonald reports the case of an infant that died twenty-eight hours after birth. The mother had pneumonia at the time of delivery. Autopsy in the infant showed a condition of lobar pneumonia. From the advanced inflammatory changes present in the fetal lungs so soon after birth it is probable that the pneumonic condition originated *in utero*. Had the pneumonia arisen from insufflation of liquor amnii or vaginal discharge before delivery it would have had a lobular rather than a lobar distribution. In this case there was no insufflation of morbid material, rupture of the membranes preceding the birth of the child by twenty minutes only.

Hemochromatosis.—M. D. Roberts report a case of this condition.

Removal of the Eyeball.—W. Robinsson describes a quick method of performing this operation.

Berliner klinische Wochenschrift.

November 6, 1911.

Eclampsia.—Wolff-Eisner believes that the time is favorable for the accumulation of statistics on eclampsia to supplement the laboratory and clinical data which have now become so numerous. He would address circular inquiry blanks to practitioners and would press into serv-

ice the veterinarians, for it is claimed that bitches and cows suffer from puerperal affections which may or may not be analogous to human eclampsia. Experiments on animals should also be made along certain special lines, especially in regard to the anaphylactic theory. In the dog the eclampsia-like affection yields readily to morphine. The so called eclampsia of cows is not a convulsive but a paralytic affection and appears to be due to a special oversensitiveness of the vasomotor center. The anaphylactoxic substance may be derived from the newly formed colostrum, or more literally from the casein content of the latter. The eclampsia of cows may be readily cured by the insufflation of air into the milk ducts. The rationale of this treatment may however be bound up with a reflex stimulation of the vasomotor center. Some of the questions to be addressed to practitioners are as follows: How many cases of eclampsia have you seen? What was the parity of the subject and what the character of the next birth? Were second cases milder or more severe than first ones? What was the mortality of first and second cases? What was the effect of emptying the uterus? How often were there evidences of neuropathy, particularly of vasomotor instability, in the mother, and in her ascendants and descendants respectively? The author anticipates that the data to accrue from such a research would point to an anaphylactic disease. Already considerable clinical testimony has accumulated along this line. Much problematic morbidity and mortality during gestation can only be explained by anaphylaxis. Again, the general semeiology of the latter runs parallel with the morbidity of gestation (exanthema, fever, swollen lymphnodes and joints, leucopenia, edema, albuminuria, emaciation, leucocytosis, paralyses, convulsions, headache, asthma, etc., etc.). Naturally only a small portion of the entire complex occurs in any one individual for a given cause. Much depends on the forthcoming statistics concerning second and subsequent cases of eclampsia, which with the anaphylactic theory should be more severe than the first, although not invariably so.

Progress in the Treatment of Diphtheria.—Meyer considers in order the curative effects of serum, the prophylactic effects of the same, and the non-specific treatment. It has been abundantly shown that the intravenous injection is superior to the subcutaneous method, and should be preferred in all cases which give early information of severity, such as hemorrhagic forms of the disease. The technical difficulties, however, are too great to permit of routine application. If the vein cannot be exposed properly the intramuscular injection should at once be practised, and must suffice whenever the intravenous method seems impracticable. If injected in maximal high doses, antitoxin by the intramuscular route may have the curative power of intravenous injections. But if a massive early intramuscular dose is inoperative it may be best to make the next injection into a vein, and the latter would be the method of necessity in cases seen late. Evidently a practitioner of expert knowledge might need to be summoned for an intravenous injection. Serum disease is variously combated with thyreoidin, aspirin, and calcium salts. Under large, promptly given and promptly acting doses many favorable statistics confined to grave types of disease are accumulating. On the other hand prophylactic injection seems to be overdone, and many authorities would restrict its use to certain categories of those exposed. Serum disease is by no means confined to those who had already received an injection. Sensitiveness to horse serum is found in many who spend their time in stables, while some people are so supersensitive in this way that a mere temporary exposure may cause asthma or other vasomotor disorder. Asthmatics of any kind and those with respiratory affections in general seem predisposed to severe serum disease. The immunizer should have everything ready to treat sudden collapse after a serum injection, rare as the need for it may be. There have been no advances in the nonspecific treatment of diphtheria which have received general acceptance.

The Rôle of the Spleen in Cancer Immunity.—According to Braunstein recent experiments are showing a possible protecting influence of the spleen in securing cancer immunity. This organ is very rarely the seat of metastases, and if cancer tissue is implanted therein it soon dies. Splenectomized animals are not resistent to cancer inoculation from heterologous sources. The spleen appears to be the chief seat for the manufacture of antibodies and splenic extracts seem to confer a considerable degree of immunity when obtained from animals affected with cancer.

Münchener medizinische Wochenschrift.

October 24 and 31, 1911.

Cerebral Influenza.—Stepp discusses the cerebral localizations of influenza, which often impose themselves on the practitioner as diseases *sui generis*. Our knowledge of them has not kept pace with what we know of other phases of this polymorphous affection. One author mentions meningitis and focal encephalitis; another describes a hemorrhagic encephalitis. Secondary consequences are aphasia and monoplegias. Analogous lesions occur in the cord. The author narrates three personal cases. In the first, in a healthy subject, influenza presented a typical onset. By the second day, partial left facial paralysis had developed as a forerunner of complete left hemiplegia. Ultimately use of the leg returned, but the arm became contractured. The second patient similarly came down with typical influenza, and a violent bronchitis persisted for fourteen days. Three weeks after the onset right facial paralysis developed, to be followed at once by complete right hemiplegia. This subject, like the first, was perfectly sound when first attacked. After another three weeks left hemiparesis developed, the leg alone showing complete paralysis. The left side recovered completely, but on the right side, which had suffered least, the return to the normal had not been complete. The third case was of the same type, but diabetes was present. In the absence of autopsy findings the author is forced to suppose that influenza—bacilli or toxins—can attack the finer capillaries of the brain with production of a serious edema and some extravasation of blood. Such lesions may end in complete resolution.

Fatal Sepsis Complicating Varicella.—Blühdorn reports a case of streptococcus sepsis of which the exciting cause was varicella. The lesion which first appeared suggested a suppurative parotitis of one side, which could be a natural complication of almost any acute infectious disease. It soon became apparent that the lesion was purely edematous. It was incised and drained. There were no evidences of local infection at first but severe general sepsis developed. Hemolytic streptococci were found in the blood and eventually in pus which formed in the wound. Autopsy was not obtained. From a survey of the literature and by legitimate deductions from the case itself it seemed probable that the sepsis was otogenous.

Disappearance of Warts after Ablation from Opposite Hand.—Genewein first mentions a case in which excision of a solitary wart on one hand was at once followed by spontaneous disappearance of all the warts on the other hand. On a subsequent occasion removal by caustic of a solitary wart on the back of the hand was followed promptly by disappearance of a nevus on the bearded chin. The author then deliberately tested the matter on a third patient who had numerous warts on both hands. Removal of those on one side by trichloracetic acid was followed by spontaneous disappearance of the warts on the other hand. Rothbaum also states in a com-

mentary on Genewein's article that he had an opportunity of verifying these cases by experiments from which it appeared that whenever a wart on one hand was burned off improvement very speedily followed in warts on the other hand.

Muscle Excitability in Tetany.—Schultze has studied the mechanical muscle excitability in adults with tetany and finds that certain muscles show a peculiar behavior. The latter consists in a prolonged contraction, which is evident especially in the tongue and facial muscles. The contraction is not continuous but consists of serial twitches with brief, regular intervals. This behavior serves to differentiate tetany from myotonia. It is known that in the latter affection percussion of the tongue causes a pronounced circumscribed muscle contraction, which causes a recess or depression to appear in that organ. The latter by percussion in separate areas may be transformed in general contour. The author found what he at first regarded as the same induced phenomenon in tetany. Study of other muscles showed that analogous phenomena could be obtained in the orbicularis palpebrarum, nasal muscles, etc. The contraction persisted for a minute at times as a result simply of percussion and without invoking the electric current. These contractions are obtained by direct percussion over the muscles; and while in some cases the entire musculature supplied by the facialis may apparently be reflexly excited, there is no necessary connection between these reactions and Trousseau's phenomenon, although the latter may usually be induced. From the behavior of other muscles it is also inferred that the tongue phenomenon in tetany differs from that in myotonia although further research is required to differentiate fully. In the sole tetany case examined by the author the tongue contraction persisted for more than a minute, for so long a period of time, indeed, that the affected organ could be photographed.

Cancer Statistics from Baden.—Werner draws numerous conclusions from the recently compiled cancer statistics of Baden. The cause should not be biologico-hereditary, and physical, chemical, and parasitic factors must be no longer relegated to the background. Grouping of cases cannot well be set down to mere contact infection, but to the general residential surroundings. Direct hereditary transmission and misplaced embryonal residues are unable to throw light on the genesis of cancer as a whole. Relative frequency of the disease by individual territorial localities should be the means of throwing light on the nature of cancer. It is conceded that the latter is distributed in much the same manner as would be the case were it an infectious (not contagious) disease. To such an extent is this so, Werner contends, that we can no longer avoid the conclusion that there must necessarily be a parasitic cause for at least the majority of all cases of cancer.

Treatment of Hemophilia.—Schilling relates a single case of favorable result in a boy aged 5, whose brother and mother were also bleeders. The degree of hemophilia did not appear to be high. Other members of the family seemed sound. The mother was not an habitual hemophilic but nearly bled to death on one occasion. The older brother suffered constantly from purpura hemorrhagica. The patient first showed incoercible hemorrhage from the gums. Hemoglobin fell to 25 per cent. Death being impending, direct transfusion was practised. High fever resulted but by the third day the patient was normal and bleeding had ceased. Bearing in mind the temporary character of the improvement which sometimes results in these cases the author used *x*-rays every third day over the spleen and long bones, exactly as in the case of a leucemic patient. The hemoglobin went up to 60 per cent. and the blood count also showed a marked regeneration picture.

Deutsche medizinische Wochenschrift.

November 2, 1911.

Treatment of Cancer.—Czerny regards as all-important the answer to this query: is cancer in any way amenable to therapeutic influences? If it is so, ever so slightly and transitorily, we may experience some hope from research concentrated along such lines. He discusses all our resources in succession, beginning with the knife, which does not guarantee against recurrence even under favorable circumstances. In cases where recurrence is most to be dreaded he uses the electric arc light in the form of the socalled Forest's cold cautery, and high-frequency Herzian waves. He has replaced fulguration with diathermy to a large extent. In using these substitutes for the knife he is of course actuated by the belief that the thermopenetration which results may tend to devitalize the cancer cells. Radiotherapy, including both radium emanations and *x*-rays, finds a very wide field of application, since both kinds of rays are able to destroy tumor cells. Tumors at first inoperable have thereby been rendered operable, and the influence of the rays is in all respects palliative. We are thus far only in the empirical stage of this form of therapeutics. There is considerable to be hoped for along such lines as chemotherapy, toxin and antiserum therapy as soon as experimental pathology can furnish us a sound rational basis. In conclusion the author relates a number of cases in which the cold cautery and radiotherapy were used very successfully in cases of cancer with bad outlook.

Parkinson's Disease.—Schultze considers some aspects of paralysis agitans, with especial reference to nosology. The disease may be present without paralysis and without trembling. The so-called palsy is really a helplessness due to muscular rigidity. True paralysis only occurs late in the disease. The author would therefore continue to call the affection Parkinson's disease. With a few others he has noted the frequency of the so-called Stellwag symptom—involuntary snapping of the eyelids at long intervals—in this condition. He found it present in over half his patients. Kocher found about the same incidence of this symptom in Basedow's disease. The phenomenon seems to be due to an increased tonus in the levator palpebrarum corresponding to the general muscular rigidity in Parkinson's disease, although the same result might occur from hypotonus of the orbicularis palpebrarum. Tremor when at rest, so characteristic of Parkinson's disease, may constitute the sole evidence of the latter. In such a case we look on the disease as present in an abortive form. In rare instances in the young differentiation from multiple sclerosis becomes very difficult. Dependence is usually placed on the character of the tendon reflexes, but these may sometimes be increased in Parkinson's disease and the author has even found the achilles reflex absent. The thyreogenous theory of the disease receives some slight special support from the presence of Stellwag's symptom in both it and Graves' disease. The blood count is said to be the same for both affections, and tremor is conspicuous in each. Moebius claimed to have seen the two syndromes occurring in the same individual.

Paroxysmal Hemoglobinuria.—Grafe relates a case of this affection which differs perhaps in certain respects from any upon record. The patient was a child with hereditary syphilis. The paroxysms were in no wise affected even by the widest variations in external temperature. Blood tests gave conflicting results. The conception of this affection has heretofore been a hemolysis determined by the action of cold external temperatures on a labile vasomotor system. Withdraw the element of cold and there is nothing to account for the vasomotor reaction. A psychical element can be excluded. We can only say provisionally that the hemolysis occurred spontaneously from conditions originating in the blood itself.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

Diseases of the Digestive System.—In this class of diseases, more than any other probably, there are conditions in which difficulty in diagnosis is frequently encountered and in which grave and menacing disorders may be associated with and masked by symptoms pointing apparently to comparatively unimportant ailments. At the time of the examination all signs of these disturbances may have departed, and yet the primary trouble may remain dormant or is liable to recur. With these possibilities in mind, even though the examiner has gathered all the history obtainable and reports a negative result from his examination, a medical director will often find it necessary to ask the applicant to furnish a certificate from the physician who attended him during the illness and who is therefore the only one in a position to give a well-defined idea of the real nature of the trouble. After all these precautions have been observed, so much doubt may still remain that the applicant will be postponed or rejected in order that the company may be given the benefit of the doubt.

Dyspepsia, Indigestion, Biliousness.—Ascertain the frequency, duration and cause, and the date of the last attack. These disturbances, so common in America, are not usually regarded as worthy of much comment, and in most cases this attitude is justified. When, however, the attacks come frequently or the condition is more or less chronic, they should be looked upon as an important factor in the selection of risks, especially if the weight of the applicant is under the standard or there is a poor family history. Dyspepsia or indigestion may be an early symptom in tuberculosis or various organic diseases, but the chief point of interest, probably, is whether or not the attacks are indications of or associated with appendicitis or affections of the gall bladder.

Given, then, a history of dyspepsia, indigestion, or biliousness, the examiner should use his best efforts in trying to find out whether the trouble was primary or whether it was secondary to one of the more serious maladies. The medical staff at the home office will often want a certificate from the attending physician in cases of fairly recent disorders of the digestive system in order that gall stones and appendicitis may be eliminated as far as possible.

Hematemesis.—Give the number of times the applicant vomited blood and the date of each occurrence. The conditions which cause hematemesis are so serious and apt to recur, even after recovery has apparently taken place, that a long period should elapse before such a risk will be accepted.

Diarrhea.—Report the date, duration, frequency, and cause if the attack was a prolonged one or if there were several of them.

Appendicitis.—Give the date and duration of each attack, and the date of the last attack. If there has been an operation, ascertain the date, whether the appendix was removed, whether there was pus, whether there were adhesions and, if so, how extensive, and whether there was healing by first intention.

When there have been one or more well-defined attacks it is easy to get a true history, but unfortunately many of the cases develop insidiously and without the typical signs. A number of cases occur to the writer as illustrations, but the following instances will be sufficient to emphasize the point:

1. A physician was affected, as it seemed to him and his medical friends, with severe intestinal indigestion and fermentation for about a year, the malady refusing to yield to remedies and out-of-door life. At the end of the year the trouble resolved itself into a fairly typical attack of appendicitis. The appendix when removed gave evidence of an inflammatory condition of long standing and the intestinal indigestion began to depart on recovery from the operation.

2. Another interesting case which came under the writer's observation and caused considerable comment at the time is that of a young man with a history of typhoid fever one year previous to his application for insurance. The typhoid was followed by mild attacks of intestinal cramps of an hour's duration about once a month. The physicians, men of reputation, believed that the cramps were caused by an irritable colon as a sequel to the typhoid fever. Two years after the supposed typhoid an operation revealed the presence of chronic appendicitis with extensive adhesions. The patient was relieved of his disagreeable symptoms by the operation.

3. This case is one of common occurrence. The applicant admitted in an examination in August, 1911, that he had some biliousness in the previous year. A certificate from the attending physician was asked for and from this it was learned that the so-called biliousness consisted of two attacks of mild catarrhal appendicitis with some colic.

The subject of appendicitis has been treated at some length on account of the atypical courses followed by the disease and the high mortality experienced as a result of it, notwithstanding the perfected technique of abdominal surgery. The examiner cannot be too searching in his questions and examination whenever the applicant admits gastric or intestinal pains or any other symptom, no matter how mild, pointing to trouble in the gastrointestinal tract.

Colic.—Recurrent attacks of abdominal pain or even one attack when recent should suggest appendicitis, gall stones, renal colic or plumbism, and lead the examiner to be very inquisitive in eliciting the personal history with this probability in mind. Full details as to dates, duration, severity and cause, as well as the date of the last attack will be required.

Disease of the Liver.—Aside from cancer and cirrhosis, the serious forms of liver troubles are seldom met in this country. A history of gastroenteritis, the so-called bilious attack, is unimportant unless it was severe, protracted or recurrent, and its association with some condition of a graver nature cannot be excluded.

Jaundice.—Ascertain the dates, frequency, duration, severity and cause; also whether there were other symptoms such as pain or tenderness. The examiner should never regard these cases lightly, as too frequently when it was assumed that the jaundice was due to a catarrhal condition it was found later that gall stones were the real cause. The failure to find the calculi in the stools is by no means positive proof that they were not at the bottom of the trouble, as it is such a simple matter for them to escape discovery.

When the jaundice was due to malaria this should be reported, as it usually affords evidence of a type more severe than the ordinary.

Gallstones.—Gallstones are a source of constant danger as long as they remain in the gall-bladder or common duct. To make matters worse, it is not always easy to determine whether they are present or not. Physicians familiar with the work in any of the large hospitals recognize the fallibility of even the best diagnosticians through the unexpected revelations of the surgeon's knife at times, and affections of the gall bladder and ducts are probably responsible for as great a number of errors as those of any other organ in the abdominal cavity. How difficult, then, will it be to discover the underlying cause in some cases in which the indications, merely some passing pain, digestive disturbance, slight tenderness apt to escape notice, or a little jaundice, were too indefinite and vague to occasion more than a casual visit to the attending physician. And yet in these cases, as well as in those with well-pronounced symptoms, the stones are a menace to life as long as they remain. In consideration of the facts presented, the examiner should be unusually persistent and careful in getting at the full history of any one of the symptoms, however mild and vague, which may have indicated the presence of hepatic calculi.

In operative cases, it will be necessary to have the applicant procure a statement from the surgeon as to the part involved. It seems to make but little difference from a life insurance point of view whether the gall bladder was drained or removed. When, however, the common duct was involved in the incision, the case is looked upon as more serious and as one in the later stage of gall-stone disease with dilated ducts into which the stones may slip out of sight, with denser adhesions to surrounding structures and with a greater liability to malignancy or other serious complications.

The best way to treat these cases at the home office is to refuse to issue insurance when no operation has been performed until at least five years have elapsed since the attack. If there have been several attacks it may be wiser to lengthen the period. The risk may be assumed after a shorter period when there has been an operation for drainage or removal of the gall-bladder, but a much longer time should elapse when the common duct was invaded.

Hemorrhoids.—These will require no comment, whether external or internal, unless considerable blood is lost. When the applicant has had an operation performed at an age of forty or older, he may be required to furnish a certificate from his attending physician as to whether or not there was any suspicion of malignancy.

Fistula.—It must always be definitely settled whether there was any suspicion of tuberculosis. The date and duration should be given.

Tapeworm.—Ascertain if the head passed away at the time of removal. If the head was not found, it is better to wait a few months before accepting the risk.

The Use of Alcohol and the Life Insurance Risk.—By Dr. T. F. McMahon. (See page 1121.)

Occupation Hazards.—See page 1131.

The Association of Life Insurance Presidents will hold its fifth annual convention at the Hotel Astor in New York City on December 13 and 14, with John R. Hegeman, president of the Metropolitan Life Insurance Company, as chairman.

The Families of the Tuberculous.—As a contribution to the discussion of the action of heredity in the etiology of tuberculosis, José Codina Castellvé of Madrid gives the results of an inquiry into the antecedents of 135 cases of tuberculosis occurring in his practice. Of this number 56, or 41 per cent., either asserted that their parents were healthy or were unable to give a family history. The remaining 79, or 59 per cent., gave a family history of tuberculosis or some other pathological condition presumably more or less active as a predisposing cause of the disease from which they suffered. Of these patients 66 per cent. were males, 34 per cent. females. Of the diseases of the grandparents, when these could be ascertained, the most frequent was tuberculosis, which occurred in 31 per cent. In these cases the disease affected the parents as well. In more than half of the cases giving a pathological family history the disease from which the parents suffered was tuberculosis, the father being affected more frequently than the mother in the proportion of about 3 to 2. Next to tuberculosis the most common affections in the antecedents were intoxications and chronic infections and diseases of the respiratory tract. More than half of the children of tuberculous parents (52 per cent.) suffered from pulmonary tuberculosis, and if we take into account the extrapulmonary localizations of tuberculosis and other more or less related affections, such as adenoid vegetations, scrofula, and lymphadenoma, the percentage of diseased children of the tuberculous was 69. Tuberculosis occurred in the uncles and aunts of the patients, the parents being unaffected, in only 16 per cent. The cases of tuberculosis affecting both husband and wife were, in Castellvé's experience, very few in number.—*Gaceta Médica Catalana*, October 15, 1911.

Race Biology and Life Insurance.—Grasse says that among Caucasian races the higher classes are not as fruitful as the lower classes, while the opposite is the fact among Chinese, for instance. The disadvantage of the latter condition consists in the progressive "descent" of members of the higher classes to the lower classes, such members being physically and mentally inferior. This results in deterioration of the race. Among Caucasian races, on the other hand, the danger is in too great a diminution of fertility in the higher classes, so that even mediocre individuals from the lower classes are called upon to do the work of the former. A great many social, political, and economic circumstances have taken the places of natural selection in the growth and development of a strong race. The problem of race biology consists in determining the number of individuals that should be brought forth into a society, and the work of strengthening such elements in the race as preserve its vitality and its capacity to develop to the full extent in meeting the demands of the struggle for existence. So far as insurance is concerned, many genealogical trees, family histories, etc., give data casting much light upon the expectation of life and health of individuals. Another concern of race biology is to prevent the union in marriage of sickly or otherwise unsuitable individuals, and here life insurance can play a very important rôle. The public must be simply educated to expect that every prospective bridegroom and bride should be insured before marriage; if either one were denied insurance by the companies, it should be his or her duty to prove to the parents of the bride or the groom, as the case might be, that the grounds for refusing insurance were not equally strong grounds against entering into the married state. If this custom, Grasse says, should become universal, life insurance would indeed become a great factor in the preservation of the strength and health of the race.—*Blätter für Vertrauensärzte der Lebensversicherung*, September and October, 1911.

Book Reviews.

Die palpablen Gebilde des normalen menschlichen Körpers und deren methodische Palpation. Nach eigenen Untersuchungen an der Leiche und am Lebenden, von Dr. Toby Cohn, Nervenarzt in Berlin. III. Teil: Hals und Kopf. Mit 33 Abbildungen, davon 18 im Text und 15 auf 7 Tafeln. Berlin: Verlag von S. Karger, 1911.

The first two volumes of Dr. Cohn's special study of the palpable structures of the human body dealt with the upper and the lower extremities. The present volume considers the face and neck. Dr. Cohn takes each separate region of these divisions of the body and describes the parts that can be seen, then palpated, as well as nerves, vessels, etc., that are found in intimate relation to the palpable organs. The thoroughness of the work is shown by its extent, over five hundred pages being devoted to the subject. Its importance to the surgeon and especially to the neurologist is manifest: it is a regional anatomy *de luxe*, pointing out minutest subdivisions of body parts that can be found by careful palpation. The complete work will form a monumental labor, an example of the thorough and painstaking medical study, so characteristic of the German physicians.

Education. How Old the New. By James J. Walsh, M.D., Ph.D., Litt.D., Dean and Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine; Professor of Physiological Psychology at the Cathedral College, New York. Price, $2.00. New York: Fordham University Press, 1910.

This is a volume of addresses, dealing with education in the past. Much of what the author states in this book is worthy of study, and readers of his previous works will know what to expect. Perhaps the best address is that on the "Origins in American Education," which shows the excellent work that was being done in Spanish-America long before there was any university in what is now known as the United States. Other addresses of interest to physicians are those on "Medieval Scientific Universities," "The Medical Profession for Six Thousand Years," and "University Medical Schools." The address on "New Englandism" seems to strike a discordant note, and while quite entertaining to "foreigners" is very likely to displease "New Englanders." It is possible that the author does not intend all of his statements to be taken seriously and literally, for example: "I recommend the reading of Juvenal to the college young woman of the modern time, not only for its classic but for its social value." But perhaps he forgets the very satire from which some of his previous quotations are taken. Those who are acquainted with this satire (the sixth) would hardly select it for the "college young woman." We would like some more explicit reference to the statement on page 127 that "various methods of anesthesia, one of them by inhalation . . . were invented" in medieval times.

A Text-Book of Physiology: for Medical Students and Physicians. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology, Johns Hopkins University, Baltimore. Fourth Edition. Revised. Cloth, $4.00 net; Half Morocco, $5.50 net. Philadelphia and London: W. B. Saunders Company, 1911.

While the mosaic style of book making appears to be growing in poularity, and the plan of having many authors contribute small sections of a subject has undoubted advantages, the difficulty of securing homogeneity in the result is admittedly great. Almost invariably disconcerting gaps or repetitions occur, and from the standpoint of the student, at least, something akin to the skill of the expert in picture puzzles is required to derive from the separate fragments a uniformly proportioned representation of an entire department of knowledge. The "one man treatise," therefore, whatever it may lack in minuteness of detail, will always remain the most desirable text-book for the beginner, whose needs demand above all an intelligent correlation of the various categories of facts to which he is being introduced. This is especially true of physiology, which shares with anatomy the responsibility of supporting the whole fabric of the medical edifice, but differs from the latter in the complexity of the units of which it is composed. Howell's text-book has already been recognized as ranking with the masterpieces of Hermann, Foster and Tigerstedt, and in its present edition it takes first place as a sufficiently comprehensive but readily assimilable presentation of the entire domain of physiology in its most modern developments. Recent advances have been most conspicuous perhaps in the provinces pertaining to the mechanism of circulation and heart action, the activities of the ductless glands, and the principles of nutrition and metabolism, and the chapters on these topics may be singled out for especial mention as being fully representative of the progress that has been made. Although the desirability of a certain degree of dogmatism in dealing with students has not been lost sight of, in the treatment of controversial points the author constantly leaves sufficient latitude to the reader's discriminaion to stimulate independent thought and indicate the necessity for further investigation. In comparison with the distinguished characteristics of the text the illustrations and typography must take a minor place.

Experimentelle Grundlagen der Chemotherapie der Spirochætenkrankheiten, mit besonderer Berücksichtigung der Syphilis. Gesammelte Abhandlungen von Prof. Dr. Paul Uhlenhuth, Geh. Reg.-Rat und Direktor der bacteriologoschen Abteilung im Kaiserlichen Gesundheitsamt Berlin. Mit vier Tafeln. Price, 16 marks. Berlin and Vienna: Urban & Schwarzenberg, 1911.

This volume contains twenty-three papers published by Uhlenhuth between 1907 and 1911, dealing with the experimental study of diseases caused by spirochetes and their therapy. Most of them concern the action of atoxyl and its derivatives, especially its combination with mercury, a preparation in which Uhlenhuth placed much hope, that has been but little realised. Several of the later papers deal with Ehrlich's work in chemotherapy and give some consideration to salvarsan. Uhlenhuth cannot hide in these papers the chagrin of a man who has devoted much time and ability in developing scientific chemotherapy, only to see his own results eclipsed and almost forgotten by Ehrlich and his school. This volume, therefore, is of most interest to the medical historian tracing the development of a new departure in therapeutics; to the practitioner it can have but a passing interest.

Hygiene for Nurses. Theoretical and Practical. By Herbert W. G. Macleod, B.Sc., M.D., M.S. Edin., M.R.C.P. Lond., D.P.H. Lond., D.P.H. Camb. With Illustrations. Price, $1.50. New York: William Wood & Company, 1911.

This unpretentious little volume contains the most important facts in hygiene which are essential to a nurse in her daily work. The subjects discussed are: Air, Ventilation, Heating and Lighting, Water, Drainage and Sewerage, Disposal of Sewage, Infection, Disinfection, Food and Milk, etc., and Personal Hygiene (including Baths, Clothing, Games, Exercises, Habits, Fashions). The book is well written, the language is simple, the statements are concise and accurate; the volume cannot fail to be of practical value to every nurse.

Cesare Lombroso. A Modern Man of Science. By Hans Kurella, M.D., Author of "Natural History of the Criminal," etc. Translated from the German by M. Eden Paul, M.D. Price, $1.50. New York: Rebman Company, 1911.

This book is something more than a biography. It is a critical and sympathetic analysis of the modern science of criminology by one of its distinguished founders. The development of Lombroso's theories, from his early student days, when he wrote an appreciative critical review of a work which endeavored by means of comparative philology to explain the origin of the earliest religions and legal institutions, to his declining years, when he wrote his last volume, which was published after his death, namely, "Researches on the Phenomena of Hypnotism and Spiritism," this development is followed step by step. The author presents a lucid exposition of the principles of criminal anthropology; summarizes Lombroso's views on woman as criminal, on the political criminal, and on criminal psychology; describes Lombroso's life-work as a social reformer, his methods, and his philosophy; and discusses his views on criminal jurisprudence, pellagra, agrarian reform, environment, and the nature of genius. To the physician, the psychologist, the lawyer, and the social worker this book cannot fail to be of interest and profit.

Malaria, its Prevention and Control. By Graham E. Henson, E. Van Hood and E. W. Warren, Special Committee of the Florida Medical Association for the Control and Prevention of Malaria. Jacksonville: State Board of Health of Florida, 1911.

This excellent pamphlet, dealing with a subject of vital importance to the people of the State in which it is issued, may serve as a model for similar publications in other States, though not necessarily on the same subject. In popular style the various aspects of malaria are discussed in their economic and hygienic bearings. The pamphlet is made up of a series of articles that were published in separate bulletins in the daily press.

Society Reports.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held October 16, 1911.

THE PRESIDENT, DR. REYNOLD WEBB WILCOX, IN THE CHAIR.

The Treatment of Diarrheas in Bottle-Fed Infants.—Dr. ROGER H. DENNETT read this paper (see page 1123.)

Dr. RANSFORD E. VAN GIESON said that after a careful study he had not been convinced that sugar, in normal proportions, is causative of infantile diarrhea, but he believed that in the treatment of this affection we must reduce *all* the constituents of cows' milk to a minimum adapted to the individual case. He had never used cow lactose in his milk modifications. As to the "eiweiss mixture" (which by the way was a misnomer, since it contained no egg albumin), this was a compound of sifted, separated whole milk casein and buttermilk. Many years ago he had reached the conclusion that if cow casein were separated and diluted simply with water and ½ per cent. of gelatin with 10 to 20 per cent. of lime water it would be more easily digested. It was requisite that the milk should be bottom or skim milk. It was coagulated with rennin and well shaken in a capacious bottle. By this method the casein was much more finely separated than by rubbing it through a sieve, and there was less danger of infection. Diluted 2½ volumes it would give 1 per cent. lactose and less than 1 per cent. undissolved casein. The percentage of fat was a very small fraction. For a temporary food this, alternating with 25 per cent. cream diluted to ten volumes, with 20 per cent. lime water, was productive of good results. The great point was the adaptation of this foreign substance—cows' milk—to the weakened digestion of the infant, and the treatment, he believed, was chiefly prophylactic. Dr. Dennett's classification of diarrheas he thought was excellent.

Dr. GEORGE DOW SCOTT said that he was not a little startled when he first heard of this use of boiled milk, as all the teaching for many years was to the effect that boiled milk was indigestible. The results which Dr. Dennett had obtained, however, showed that we must modify our views in regard to the matter. Some of us had been trying all sorts of methods in infant feeding, and had now come down ot the use of the pure raw milk furnished by the milkman, modified with a certain amount of water and with lime water to make the mixture alkaline. Sugar, in proper quantity, acted as a tonic, but too much of it would excite diarrhea. Every mixture should be such as the child would like to take, and it was important to remember that it should contain the three elements, proteid, fat, and carbohydrate. It was a mistake to prepare a milk mixture for twenty-four hours at a time. Every feeding should be freshly made, and the lime water added at the last minute.

Dr. L. W. ZWISOHN said that twenty years ago or more it was recognized as the rule to give boiled milk. In the treatment of infantile diarrhea much depended upon the child itself and its condition, and it was often a question of not so much what to give but how to give it.

Colon Bacillus Infections, with Report of Double Pneumonia and Purulent Bronchitis (Colon Infection) with Recovery.—Dr. ROBERT COLEMAN KEMP reported the case of a male patient, forty-eight years of age, who on March 1, 1910, was operated on in the New York Hospital by Dr. Frank Hartley for a right inguinal hernia. Shortly afterward pyelitis, first of the left kidney and then of the right, developed, and on March 14, when a small pneumonic area was discovered at the base of the right lung, Dr. Kemp was asked to take charge of the case. On March 16 there was a sudden attack of heart failure, with fall of temperature, which very nearly proved fatal. After that there was gradual improvement until midnight, March 24, when the patient was taken with an extremely severe chill, which lasted half an hour. The temperature shot up to 104°, dropped to normal, and then gradually rose to 102°. As there was no apparent cause for this condition, and as the pyelitis was still in evidence, Dr. Kemp, having known of a number of cases of colon bacillus infection with the same type of chill, suspected the presence of this infection and, without waiting for the examination of the urine for the organism, at once increased the amount of urotropin (which the patient had been taking for the pyelitis) from ten grains three times a day to ten grains every three hours, and added ten grains of sodium benzoate to each dose. In the morning a large number of gram-negative bacilli were reported in the urine. The urotropin and sodium benzoate, in these doses, were continued every three hours, both day and night—a total of 80 grains of each per day; and later pure cultures of colon bacilli were reported in the urine. Resolution of the lung was slow, and the temperature, having declined to 99.5°, remained about this point. There was little expectoration, but abundant colon bacilli were found in the sputum. In early May a sharp attack of colitis occurred. Irrigations of the colon with acetozone and dissolved lactic acid bacilli tablets were then begun and kept up thereafter. Subsequently there was a second attack of pneumonia (this time at the left base), and colon bacilli were again found in the sputum. It was mild in character, though resolution was slow, and it was believed that the saturation of the patient with urotropin was undoubtedly contributory to this mildness. Next came a sudden attack of acute purulent bronchitis. So thick was the pus that a pulmonary abscess was feared, and culture showed enormous numbers of colon bacilli and some streptococci. Autogenous vaccines were then begun. The bronchitis improved, but there was no disappearance of the bacilli from the urine, although the vaccines were given daily by advice of the pathologist. At the end of three weeks these caused marked reaction, and they were therefore stopped. By the end of May the patient's condition was so far improved that he was removed to his home. In June there occurred an exacerbation of the pyelitis and a coincident attack of colitis—a very suggestive circumstance which tended to confirm Dr. Kemp's opinion that the colon bacillus infection was autogenous from the gut. The vaccines were again administered, but as considerable reaction was caused which rather alarmed the patient they were discontinued. Early in July he went to the country. At this time there were evidences of a mild myocarditis, which was believed to be chiefly due to the toxemia. Twice each week the urine was sent to New York for examination, and early in August the colon bacilli disappeared from it. It remained free from them until October. On the first of that month the patient, who was a broker, returned to the Stock Exchange and, against advice, persisted in full days' work. In a few days he began to have chilly feelings, with a slight rise of temperature, and the colon bacilli reappeared in the urine, though not in great numbers. These gradually diminished under treatment. Dr. Wm. H. Thomson, seen in consultation, agreed with Dr. Kemp that further rest was necessary, and the patient accordingly went abroad. On December 24 he wrote that his temperature remained normal, though a few colon bacilli still persisted in the urine. In this case no evidence of renal irritation from the large amount of urotropin taken could at any time be discovered. In January the patient reported that the bacilli had disappeared from his urine. On May 1, 1911, he returned to New York and resumed business. The urine remained free from colon bacilli until some time in July, when he had a sudden attack of tonsillitis, with an immediate re-

turn of the bacilluria. Under rest and the use of the urinary antiseptic the condition gradually improved.

In this paper Dr. Kemp said he desired to call attention to the various conditions which infection by the colon bacillus might produce. In some instances these simulated other diseases, and hence serious errors in diagnosis were liable to result unless we considered the possibility of this type of infection. Doubtless in a large percentage of cases the selective point of infection was in the urinary tract, though infection occurred elsewhere with considerable frequency. Fortunately, in the majority we could determine the source of trouble by the discovery of colon bacilluria, even though there were no urinary symptoms. A temporary bacilluria might occur with slight or no symptoms, but the presence of colon bacilli in the urine was a pathological condition, one which might produce serious results at any moment and which called for immediate treatment. The following were the modes of infection of the urinary tract: Ascending infection, through the urethra; descending through the blood stream; infection by contiguity. In the case of the first the greatest number of instances apparently occurred among females, due probably to the short urethra and its proximity to the vulva and anus. Hematogenous infection Dr. Kemp considered the commonest mode. Most frequently there was a solution of continuity or ulceration in the intestinal tract, and he had seen such infection in typhoid fever, intestinal ulcer, and intestinal catarrh. In this connection he discussed the effects of colon bacilli upon the liver, and stated that bacterial infection might influence, and even determine, the development of hepatic cirrhosis. In treating of the third mode of infection he said that the colon bacillus had a definite relation to certain infections in the gastrointestinal tract. Thus, it had been shown to be a factor in acute appendicitis and it had been found in the fluids of acute peritonitis. It had been responsible for inflammation of the pancreas and gall-bladder, and these bacilli had been found as the nucleus of gallstones and of pancreatic calculi. R. T. Morris believed that it might be responsible for some cases of duodenal ulcer, and A. Charlton, in his reasearches at McGill University, had suggested the possibility that pernicious anemia might at times result from colon bacillus infection. H. G. Harris had reported a case of infantile paralysis in which colon bacilli were found in abundance in the urine. In view of the changes produced experimentally in the spinal cord by the injection of colon bacilli into the circulation, this clinical instance was of unusual interest.

The urine in colon bacilluria, unlike other urines decomposed by the bacteria (giving an alkaline reaction and ammoniacal odor), usually remained strongly acid. In mild cases it might appear quite clear, while in more marked cases there might be varying degrees of turbidity, and often it had an opalescent appearance, with a faint mucous cloud. The symptoms of acute colon bacillus infection of the kidneys were well illustrated in a case seen in consultation with Dr. Robert Ahbe, which Dr. William H. Thomson reported in the Medical Record of May 28, 1910. Charles R. Box, of St. Thomas' Hospital, London, in an article in the *Lancet* had observed that in many cases when the kidneys were involved in typhoid fever, scarlet fever, measles and diphtheria the organism found in the urine was the colon bacillus, and Dr. Kemp himself had seen several cases of acute nephritis in the course of typhoid fever which were due to colon bacillus infection. In one instance the patient, having suffered from many of the complications of typhoid, suddenly on the eighty-fifth day of the disease developed severe chills, with rise of temperature and marked oliguria, while albumin, blood, casts, and numerous colon bacilli were found in the urine. Pulmonary edema quickly set in, and the patient died in a few days. A case occurred in the practice of Dr. A. Seibert during the course of scarlet fever in which the patient, a girl of eleven years, in the sixth week of the disease suffered from nausea and incessant vomiting, universal edema, uremic convulsions, and total blindness, with some cystitis and marked oliguria.

Dr. William H. Thomson said he had been struck by the fact that so many well-known medical men were still unaware of the importance of these colon bacillus infections. Not long since he had been called by a prominent surgeon to see in consultation a patient with a pelvic hematoma who had had a sudden attack characterized by high temperature (104°), delirium, and twitching of the face. Dr. Thomson at once asked to see the urine, and it was found to present an appearance which was perfectly characteristic of this type of infection, namely, a peculiar white haziness. When he told him that without doubt the kidneys had become infected by the colon bacillus, the surgeon was taken aback, as he had never so much as heard of such an occurrence. The laboratory examination of the urine showed the presence of the organism in great numbers, and appropriate treatment, with ten grains each of urotropin and sodium benzoate every three hours, was commenced. It was well known that urotropin, when given alone, was apt now and then to cause more or less irritation of the urinary passages. When, however, it was given in combination with the sodium benzoate he had never known it to produce any such effect, and in many instances he had continued its use for months at a time. When, in typhoid fever, the patient, who up to that time might have been doing well, was taken in the third or fourth week with a violent chill, this could in every instance be ascribed to colon bacillus infection. The same thing was true when in cases of chronic nephritis there suddenly appeared oliguria with suppression; a condition which would prove fatal unless treatment were immediately begun. Attacks of this kind were always preceded by an attack of some acute infection of the intestinal tract, such as cholera morbus, and hence, as Dr. Kemp had mentioned, he always dreaded cholera morbus in elderly persons. In these cases, in which the kidneys were completely stuffed with the colon bacilli, the temperature rose very high. In a case which he had seen in consultation with Dr. Brewer it was 106°, and the patient was comatose. Death resulted, and the post-mortem exmaination showed that the kidneys were riddled with collections of the bacilli in pure culture. All persons suffering from nephritis, he thought, should be warned that if at any time they were attacked with some acute trouble they should at once have their urine examined for the presence of this organism. Dr. Thomson had also met with cases of fever apparently of malarial character, but in which the administration of quinine was attended with no benefit. These were really instances of colon bacillus infection. Enuresis in children was frequently due to this cause, and this was especially the case in girls. The same was true in regard to chronic inflammation of the adnexa of the uterus, and every case of supposed pernicious anemia ought to be examined for the colon bacillus. This infection might produce a condition similar to pernicious anemia, but not identical with it. Finally, it might be set down as a rule that nine cases out of ten of cholecystitis were due to this cause. Here the condition was most commonly preceded by chronic constipation.

Dr. Harlow Brooks expressed the opinion that the general lack of appreciation of the grave results of colon bacillus infection lay largely at the door of the bacteriologist. In the books this bacillus was commonly classified among the non-pathogenic organisms. It was true that it might be non-pathogenic, but it was now coming to be recognized that this was certainly by no means always or even generally the case. He did not think that the colon bacillus could invariably be found in the urine, even in

cases of long-standing colon infection. The pyelitis due to this infection was more commonly met with in children, and he had seen a considerable number of such instances. Here the condition was not usually so severe as in some other forms of pyelitis. It was not so strictly inflammatory as that due to the streptococcus or pneumococcus, and was more toxic in character. Indeed, these characters more or less typified all colon infections. As to the treatment, at first he had been sceptical as to the value of the remedies advocated by Dr. Thomson; but after he had seen patients who he thought were going to die recover under these remedies he could no longer doubt. Since then he had personally employed this method of treatment to a considerable extent, and with very satisfactory results. He still believed, however, that where the infection was localized the use of autogenous vaccines was preferable.

Dr. Robert T. Morris contrasted the effects of certain microbic infections on some kinds of animals, such as hares and lemmings, among which the entire family was sometimes nearly wiped out, with those upon the human race, in whom, owing to more elaborate defense organs, the results were less disastrous. Until recently it had been held that the tubercle bacillus group was responsible for more deaths than any other cause. He would not be surprised, he said, if in a short time we should be informed that the colon bacillus group came next to that group in fatality. Its work was certainly very insidious. Dr. Brooks had told us that the bacteriologists had not for the most part made reports on this subject. In medicine we could find everything that we looked for. We had not found the colon bacillus often enough because this required a special investigation to detect, and such investigation had not been systematically made. In a case of nocturnal enuresis in a girl of fourteen to which he was called in consultation he found the urinary report negative as regards the colon bacillus. Ascertaining that this had not been specially looked for, he requested that such a special examination be made, and the result was that colon bacilli were found in great abundance. Under the treatment described by Dr. Thomson the patient, with whom all other measures failed, was now steadily improving. Many of the cases in which the clinical diagnosis of tuberculosis of the bladder was now made he thought might really be due to colon bacillus infection. In the attic of the abdomen certain hieroglyphics were found which showed that toxic influences were very frequent in this region. The adhesions met with there demanded an explanation, and he was now engaged in making an investigation into the matter. Working with him, Dr. B. B. Stroud had found some bacteria resembling the colon bacillus, but whether we had to do with the colon bacillus group or with toxins of this group it was impossible to say at present in connection with these cobwebs of the abdominal attic. As to duodenal ulcer, Dr. Morris believed that in a great many instances of this and of pyloric ulcer a direct toxic infection stood in a causative relation, and that the toxins of the colon bacillus are locally excreted at these points. Such toxins might act in two ways. First, they might cause a spasm of the sheaths of the terminal arteries which, by interfering with the blood supply, brought about a localized anemia and exposed the part to digestive processes and also to bacterial processes. Second, they occasioned a toxic proliferating endarteritis which occluded branches of the terminal arteries. In this way an area corresponding to the distribution of any one terminal artery was rendered vulnerable.

Dr. H. A. Haubold said the colon bacillus appeared to migrate from the gastrointestinal tract, its usual habitat, to various other parts, where it set up an inflammatory action, and the real origin of the local trouble no doubt frequently escaped notice. Personally, he believed that this organism was a very common causative factor. From the surgeon's standpoint it was a very difficult matter to sterilize the gastrointestinal canal. As a preliminary step to operative procedure it was desirable to reduce its flora as much as possible by dilution, sedimentation, and exhaustion, and something could be accomplished in this direction by giving the patient for forty-eight hours before the operation a sterile diet and one which called for hypersecretion of the digestive fluids.

Dr. E. M. Alger said that as regards choroiditis Dr. Gould had reported a historic case, and at least one other similar case had been published. We all knew that this affection might result from infection, and it was now evident that the colon bacillus might be a causative factor.

The president, Dr. Wilcox, said it was remarkable, after the bacteriologists had told us for so many years that the colon bacillus was non-pathogenic, that in a comparatively short time it was discovered that it was responsible for so many serious ills as were set forth in Dr. Kemp's exhaustive paper, and it was also very remarkable that so soon after this discovery we should be in possession of a remedy such as that for which we were indebted to Dr. Thomson.

Dr. Kemp, in closing, said that he had been misunderstood on one point by Dr. Brooks. In the paper he had not stated that the colon bacillus could be found in the urine of all infected patients, but that this was the case "in a large percentage of cases." That the remedy employed was free from injurious effects seemed to be pretty clearly shown in the case reported, where 80 grains a day were taken continuously from March 1 until August without any untoward results. Several cases were on record in which 120 grains a day were given, and one in which no less than 240 grains in the twenty-four hours. In this latter instance some irritation was produced, as shown by the appearance of albumin, casts, and blood in the urine, but it subsided when the drug was temporarily suspended. After it was resumed there was no further trouble, and the patient went on to recovery.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-seventh Annual Meeting, Held at Nashville, Tenn., October 17, 18, and 19, 1911.

The President, Dr. Robert H. Babcock of Chicago, in the Chair.

(*Continued from page* 1098.)

The General Management of Tuberculosis. — Dr. Thomas D. Coleman of Augusta, Ga., stated it was scientifically susceptible of proof that this disease could be stamped out in a few generations. If every human being capable of spreading tuberculosis could be kept in a sanatorium until he was incapable of spreading the disease, it would not be long before it would be as infrequent as cholera, yellow fever, and smallpox. Wealth, social influence, ignorance, and lack of sufficient sanatoria made this for the present impossible, so that the great weight of the problem must for many years rest on the shoulders of the general practitioner, and his work was that not only of curing the sick, but educating the sound. Under proper medical direction, when a reasonable hygienic régime could be procured, he believed results little if any short of those obtained in sanatoria could be secured. These could be gained through education of the public and intelligent medical oversight. The earlier the diagnosis the greater the promise of cure, for no one acquainted with the problem doubted the curability of tuberculosis in its earlier stages. That an antitoxin of the nature desired and needed would be discovered he had not the slightest doubt. As no tuberculin, whatever the name, had been discovered to improve

upon or even equal the results of Koch's, he would content himself with summarizing what might be expected by its employment: 1. In diagnosis in human beings it had been found efficient in from 60 to 75 per cent. of cases; in cattle from 95 to 97 per cent. In the treatment of certain incipient and quiescent cases in human beings, in the hands of experienced observers, it had produced beneficial results. 3. Its use was contraindicated in cases of active tuberculosis and in far advanced cases. 4. Its untoward effects in certain cases made it inexpedient to recommend it as a routine treatment to the general practitioner. We were, therefore, left in the treatment of this disease to the sum total of the experience of the ages in its management. From this we gathered encouragement from two indisputable facts, even in the absence of a specific cure. These were that without further discovery we could by prophylaxis and our own methods of treating the disease make it as infrequent as smallpox, yellow fever, or other like pests. The sanatorium treatment was in the main the ideal treatment, but individual advantage, the large number of tuberculous patients, and the relatively small number of sanatoria made the problem one which the general practitioner must solve, and the responsibility was in a large measure his. Tuberculosis in its early stages was a curable disease; when far advanced it was incurable. Its early diagnosis was therefore most desirable. In all cases four requisites were necessary, namely, fresh air, food, rest, or directed exercise and intelligent direction. Climate had its effect on the production and course of the disease. No climate cured all cases, but some climates were beneficial to most cases; some were prejudicial. In any climate fresh air had a more favorable influence than bad air. A bad climate with fresh air was better than a good climate with bad air. It followed that it was better for a patient to stay in a bad climate where he had pure air rather than to go to a good climate where he had bad air. Naturally this problem of pure air was encountered in his housing. He was a firm believer in the beneficial influence of climate. Every tuberculous patient should have all the sunlight possible.

Hemorrhage in Typhoid Fever.—Dr. Walter F. Boggess of Louisville stated that for the past fifteen years it had been his habit to give every patient with typhoid fever five grains of salol, ten grains of urotropin, twenty grains each of subnitrate and subgallate of bismuth in suspension every four to eight hours. In a condition of intense catarrh from the tip of the tongue to the colon with ulceration, with or without constipation, it appeared to him that the bismuth salts were indicated. The urotropin and salol being intestinal, genitourinary, and systemic in their antiseptic properties, could be given with good effect. These were a dose of castor oil every three or four hours, and normal saline enemata each day, whether or not diarrhea was present, were given. In 223 cases of typhoid fever thus handled not a single one of them showed any hemorrhage. The three severe hemorrhages that he had mentioned occurred in ambulatory patients, and his first visit was during the hemorrhage. He felt sure that this treatment was prophylactic and curative. As to the treatment of the hemorrhage itself, at first glance the indications were threefold: first, to put the bowel at rest by lessening peristalsis; second, to increase the coagulability of the blood, either local or systemic, or both; and, third to sustain the patient; the after-treatment was also a matter of some importance. Prophylaxis was a matter of great importance as obtained by the proper handling and treatment of the case, and hemorrhage, when it did occur, while alarming, was not a symptom *per se* of gravity, and each individual case was a study unto itself, and the physician who used good sense, applying his remedies physiologically and scientifically, had a bulwark, a means of defense, security, and safety, that would ordinarily carry him safely to a successful end.

Dr. George Dock of St. Louis said that the first thing to do in such cases was to give the patient enough morphia to quiet him, because he had hardly seen one who did not need quieting. When to move the bowels was an important point, and he had come to solve this in rather an empirical way. As long as the patient was comfortable, he waited often three or four days, but if the patient showed the slightest discomfort in the lower bowel he did not hesitate to give him an enema, either a saline solution, or even a soap suds enema containing castor oil. He thought this was better even though it would start a little hemorrhage.

Hygienic and Dietetic Treatment of Arterial Tension.—Dr. Arthur R. Elliott of Chicago said that we must not lose sight of the fact that high blood pressure was a symptom, not a disease. In the present state of knowledge hypertension appeared to be due to toxemia, certain secondary organic changes, arterial fibrosis, and cardiac hypertrophy, following from overfunctioning of the cardiovascular apparatus produced by the circulatory toxins. The existence of arterial hypertension was not necessarily an indication for treatment. It was difficult often to decide whether we should attempt to lower blood pressure at all in any given case. A blood pressure of 200 mm. or higher might be essential to the maintenance of circulatory efficiency. This was true of most cases of chronic nephritis. Again, the symptoms ordinarily attributed to high blood pressure might be more dependent on disturbance of heart function than on elevated blood pressure *per se*. Even in matters of diet and hygiene we might by over-strictness impair the patient's strength and reduce his circulatory efficiency. This symptom was met with alike among the rich and poor, the thin and the fat. Owing to variation in type and circumstances it was difficult to lay down any absolute rules to govern diet and hygiene that would be appropriate for any major group of cases. Preliminary investigation should be directed to put the patient in as good general condition as possible, and especially to eliminate toxic factors. Tobacco should be interdicted in severe cases and cases with bad hearts, and strictly controlled in all. Exercise and activities should be regulated on the physiological level, using methods suggested by the work of Gräupner and Lowsley to estimate the individual capacity for exertion so as to keep within the physiological limit and so avoid overstrain to the heart and brain circulation. Such rest should be enforced and periodical "bed weeks" advised in cases with weak hearts. The diet should be individualized according to age, activity, and the state of the heart. Corpulent individuals should be reduced, and thin patients gain somewhat in weight. Reduction in total bulk of food was desirable in the former types. Limitation of protein within the physiological ratio of 90 gms. should be enforced in all cases, and in severe cases, especially when renal in type. The quota of protein should fall to fifty grams, or even lower. Hypertension waves or crises should be combated by rest, starvation, or a low diet of milk and cereals, or bread and fruit with limitation of fluids. Fluids should be restricted in ratio to the amount of urine secreted. The greatest parsimony was practised in cases with small urinary flow. Salt restriction was advisable in all cases, and salt withdrawal in every case showing edema, however slight. As these patients were very nervous and impressionable, they should be habitually encouraged and should not be informed of the fluctuations in their blood pressure.

Dr. Alfred C. Croftan of Chicago said an important point in Dr. Elliott's paper was that every case of arterial hypertension did not necessarily call for regulation. This was simply a broad rule which applied to almost every morbid phenomenon. It might call for regulation, or it might call for encouragement. A symptom of that kind might be one of the means of defense against disease. As to diet, he had been inclined to the mechanical rather than the chemical side. He tried to give these patients a diet which did not distend the stomach and colon unduly with

solids, liquids or gas. The diastolic action of the heart was always impaired in these cases, and anything that pressed upward on the diaphragm was not good. Hydrotherapy, Dr. Croftan said, was a therapeutic measure of the very greatest importance in the treatment of cases of arterial hypertension.

Dr. Robert B. Preble of Chicago said the successful handling of these cases required, first, that our knowledge must be more complete than it was now, so that we might be able to direct our patients intelligently. Second, our patients must be sufficiently intelligent to carry out the directions which we gave them. Third, the very practical difficulty which we frequently encountered was a question of dollars and cents. These conditions were extremely common among the poor, and Dr. Preble said it was utterly useless to talk to the average poor patient about the unattainable things one would like to have him do that would be for his good.

Dr. Fenton B. Turck of Chicago said we were ignorant of the etiology of this condition, but in the last ten years a great deal of experimental work had been done, and we were advancing and were using methods that were giving us a good basis for continuing along lines never before followed.

Dr. Albert E. Sterne of Indianapolis said there were two classes of these cases: one in which there were manifested organic conditions which had to be dealt with—cardiovascular, renal, or hepatic. But where there seemed to be a manifest discrepancy between the peripheral tension and the central heart force we were dealing largely with that mysterious system, the sympathetic nervous system. In some instances these cases would react to the simple mechanical treatment, but in those in which there were manifest cardiovascular changes and commensurately strong central action systematic venesection was one of the best remedies he had had at his disposal. It was true that after a comparatively shorter or longer lapse of time the rise in peripheral tension recurred, but when the procedure was systematically carried out, Dr. Sterne said he had found venesection in selected cases a valuable therapeutic agent.

The Treatment of Cerebral Hemorrhage.—Dr. E. M. Hummell of New Orleans emphasized the necessity of taking into consideration the conditions that conduce to cerebral hemorrhage, namely, renal, circulatory, and arterial disease. The most important of these was the blood pressure. In the light of recent research the most active agents in raising and maintaining high blood pressure were the derivatives of tyrosin. Hence the great necessity for avoiding foods which contained these substances in excess. Chief among these were meat, eggs, and milk. The treatment of the immediate and remote results of apoplexy was passed over rather cursorily, but certain important points were dwelt upon, such as the necessity for making a distinct diagnosis of the presence or absence of syphilis, which must be done by cytological examination of the spinal fluid instead of by the Wassermann test. Reference was made to the sensory symptoms, and emotional disturbances provoked by hemorrhage in the optic thalamus. The value of iodide of potassium in nonsyphilitic cases of arterial disease was questionable, Dr. Hummell said, and preference was given to the alkaline treatment recommended by Lauder Brunton.

Digitalis.—Dr. Frederic Tice of Chicago reviewed briefly the physiological action of digitalis. It was quite generally agreed that digitalis was a cardiovascular tonic, but just how it produced its results opinions were divided. Some believed that its action was neurogenic, others that it was myogenic, while some maintained that it acted by both nerves and muscles. At present, in view of the recent progress in the anatomy and physiology of the heart, the myogenic theory was most acceptable. According to Gaskell, the heart muscle possessed the functions of rhythmicity, excitability, contractility, conductivity, and tonicity. Cushny stated that the influence of digitalis on the vagus produced not only a slowing, but also reduced the strength of the contraction, the conductivity, and the tone of the myocardium, while the direct effect on the muscle increased the strength of contraction, the excitability, and the tone; but the effect on conduction had not been definitely determined. The arterioles were contracted by direct effect on the muscular walls. Therefore, when digitalis was administered it affected both the heart and arterioles; the heart was slowed and the beats were strengthened, while the arterioles were contracted. The effect on the hart was beneficial in several ways. The slowing of the heart prolonged diastole, permitting more rest, more opportunity for repair, and greater accumulation of energy for the oncoming beats. The increase of force not only emptied the heart more completely, thus better filling the arteries, but the increased suction action during diastole assisted the onward flow by withdrawing the blood from the overdistnded veins. So far as the left heart was concerned, the slowing and increased force of contraction, producing a more complete emptying and better filling, would be of service but for the incompetent valves. At the same time the peripheral resistance was increased, so no advantage was gained. On the right heart, however, the results were much different. As there was no influence by digitalis upon the pulmonary arterioles, the whole effect was exerted upon the right auricle and ventricle, which were more completely emptied and better filled. In mitral stenosis digitalis might or might not be beneficial, for the conditions were not so favorable. The literature contained considerable on the use of digitalis in aortic insufficiency. When the failure was manifest by mitral insufficiency and a venous stasis, the same favorable conditions were present as in a primary mitral insufficiency and digitalis would be of assistance. The ideal preparation was one representing the active principle of digitalis in definite strength, one that was suitable for hypodermic or oral administration and devoid of the disturbing effects either locally or upon the gastrointestinal canal. The intravenous method was to be preferred as no pain or reaction was produced and the effects were prompt. It was by this method that digalen was of the greatest service. Under ordinary circumstances, where digitalis was indicated, 1 c.c. in twenty-four hours was sufficient, but the amount and the frequency, one or both, might be increased as occasion arose, to meet the demand in any individual case. The same vein might be employed repeatedly without the least discomfort so long as the digalen was injected into and not about the vessel.

The Rôle and Methods of Psychotherapy in the Care of Psychasthenia Tending Toward Inebriety.—Dr. Tom A. Williams of Washington, D. C., read this paper (see page 919).

Dr. Curran Pope of Louisville said that in the practical treatment of these cases they naturally presented the two sides the essayist mentioned, namely, the physical and the psychasthenic side, and it seemed to him that where a physician regarded either side alone he made a mistake. The physical demanded just as much attention as the psychasthenic, and the man who bore this in mind was more apt to reach a truer solution of the case than he who did not. In these cases great benefit arose from rational treatment, such as diet, exercise, etc., but he did believe that no cases were really ever cured until physicians found by psychological analysis the various underlying factors of the mentality of the patient upon which these conditions were built. As soon as these tenets were established one would benefit the patients, or would cure the patients.

(To be continued.)

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Sixth Annual Meeting, Held at Oklahoma City, Okla., October 10 and 11, 1911.

THE PRESIDENT, DR. M. L. PERRY OF PARSONS, KAN., IN THE CHAIR.

(*Concluded from page 953.*)

Chronic Colonic Intoxication.—Dr. JOHN F. BINNIE of Kansas City, Mo., drew the following conclusions: 1. Chronic intestinal stasis was exceedingly common. It gave rise to diverse and obscure symptoms, and was at least one cause of neurasthenia. 2. It might be due to various causes, but the real etiology was yet unknown. 3. Failure to obtain relief from symptoms of appendicitis after appendectomy was often due to the fact that appendicitis, if present at all, was merely an accident in the course of a case of chronic intestinal stasis. 4. In every operation for chronic appendicitis the surgeon ought to examine the whole cecum and the terminal segment of the ileum.

Dr. H. C. CROWELL of Kansas City, Mo., said there were some forms of intestinal stasis that were doubtless benefited by attention to diet and different forms of medication, but a large number of patients suffered from chronic autointoxication and neurasthenia, on account of adhesions or interference with the peristalsis of the gastrointestinal tract, and it was the duty of every surgeon who opened the abdomen to make a careful examination in every case, not only for pelvic lesions and lesions which he was going to attack, but he should make a general survey to see if there did not exist adhesions which might interfere with peristalsis. He had seen several cases of pericolitis since his attention had been directed to it by Dr. Jackson, and he was able to make a diagnosis from his description before operating and to find the membrane. He believed this membrane was congenital, as it did not bear out the conditions, pathologically or histologically, of an inflammatory product.

Dr. A. L. BLESH of Oklahoma City said he did not believe we were dealing with a single pathological condition, but with many. He was called to see a young man in this city who was said to have appendicitis, and in the family at the time there was a case of typhoid fever. In examining this patient and taking the history he found he had had several such attacks as he was then suffering from. These attacks consisted in pain, more or less marked, without marked radiating tendencies, in the right iliac region, at the region near McBurney's point, but he was not able exactly to define the exact point of the pain. The man's condition at the time he examined him was one of profound toxemia. He was fearful he would have an attack of typhoid fever, and that the soreness in the right side was due to a typhoid perforation at the lower end of the ileum. Since there was no danger from waiting, he suggested to the family physician that they wait a week or ten days so as to eliminate typhoid fever. They waited and the condition cleared up. These cases were peculiar in that they did not have a febrile reaction. In other words, they were toxemic.

Dr. JOHN G. SHELDON of Kansas City, Mo., said that these patients should be carefully prepared, for whenever one operated upon the large intestine, whether he did a resection or an anastomosis, he felt he was doing something out of the ordinary.

Surgical Incisions.—Dr. JOHN G. SHELDON of Kansas City, Mo., said that with every surgical incision there were certain points in the anatomy of the skin that should be considered. The importance and significance of muscle in making surgical incisions depended entirely on the part involved and the ability to overcome postoperative tension in the muscles or aponeuroses in question. Muscles united firmly and surely, but their division should be avoided when possible, for tension or suppuration, or both, might prevent a firm union. The incisions of Kocher, Mayo-Robson, and Bevan gave good exposure to the biliary apparatus, not because they were anatomically designed, but because they destroyed the overlying structures as was done in post-mortem work. The long axis of the operative field in surgery of the biliary apparatus extended from the ninth costal cartilage downward and toward the median line, parallel to the fibers of the external oblique, and the fibers of the internal oblique and transversalis were almost parallel to the incision. Such an incision, beginning at the ninth costal cartilage and made parallel to the fibers of the external oblique and separating the aponeurosis of the internal oblique and transversalis, would preserve everything in this region involved except the fibers of the rectus muscle and would give good exposure of the parts, as it was parallel to the long axis of the operative field. He had used such an incision for four years. It had proved so satisfactory that he had no intention of returning to the old incisions and felt that this incision had sufficient merit to call attention to it.

Dr. H. C. CROWELL of Kansas City, Mo., stated that if this incision did the work it would be an improvement over the old incisions that surgeons had been using. He had had more or less trouble in closing some of his incisions, and he would like to see the incision recommended put into practice.

Dr. HOWARD HILL of Kansas City, Mo., said the closure of a vertical incision was the hardest part, but with the incision recommended by Dr. Sheldon it was easy because tension was not great.

Pellagra.—Dr. R. M. GRIMM, Assistant Surgeon, United States Public Health and Marine-Hospital Service, delivered an address on this subject, in which he reviewed the history and treatment of this disease. His remarks were illustrated by numerous stereopticon slides.

Trifacial Reflexes.—Dr. A. H. ANDREWS of Chicago followed with an address on this subject.

Significance of Pain in the Upper Abdomen.—Dr. ARTHUR W. MCARTHUR of Kansas City, Mo., emphasized the point that he attached no importance to a diagnosis of hysteria in conditions in which there was pain in the upper abdominal region, and that it was his firm conviction that there was always a definite underlying pathology connected with these cases. The present generation of physicians might not live to see the day, but he believed it would come when exploratory incisions and a diagnosis of hysteria to account for pain would be unknown.

Abdominal Drainage.—Dr. CHARLES BLICKENSDERFER of Shawnee, Okla., said that in the ordinary cases he preferred the small cigarette drain made by rolling gauze into gutta percha tissue and thoroughly moistened in physiological salt solution. The length was to be governed by the length of the drainage tract to be established. In thick, fat abdominal walls a short drain of this character extending from the muscular fascia to the surface for a period of twelve hours would prevent mural abscess. Where pus was to be drained, a soft tube of proper caliber might be wrapped with gauze and enveloped in rubber tissue. It was sometimes wise to have a strand of straight gauze lying within the central tube. This could be removed and replaced by others when necessary. The surgeon should not drain if it was possible to avoid doing so. He should not use dry gauze for drainage. He should not tuck or fold back and forth gauze to be used as a drain. Gauze packs were useful to control hemorrhage, but often acted as plugs where drainage was sought. One should not use a long drain if a shorter one would suffice. The drain should be removed as soon as its service had been performed, remembering that in pus cases drains were useful for a much longer time than in relatively clean cases.

Dr. JOHN G. SHELDON said there were people who were primarily neurasthenic. They were born with a deficiency

in gray matter; they were sick all their lives and were apt to complain of pain in the abdomen. There were other cases that were secondarily neurasthenic, on account of some pathological condition which resulted in autointoxication or some continued nerve irritation. He believed that some of these cases were surgical and the surgeon should try to find out what was the matter and remove the pathology before the changes in the nervous system had become permanent.

Dr. JOHN F. BINNIE said, with regard to the paper on darinage, that, instead of the familiar cigarette drain, it was a good plan to take some strands of ordinary wool, such as is used in making thick socks, sterilize it, and use it with a hard rubber tube, and it would be found better than gauze.

Dr. J. W. JOLLY of Oklahoma City stated that in all wounds, if the surgeon had an idea that infection had taken place, the proper thing was to drain. He had closed wounds, not having any extra trouble at the time, but had to reopen them, which was unsatisfactory. As to pain in the upper abdomen, he felt sure patients frequently had these pains without the surgeon being able to find any pathological condition to account for them. He had operated for what he supposed was some inflammatory condition, but was unable to find anything abnormal.

Dr. J. D. GRIFFITH of Kansas City, Mo., said with regard to drainage that if he wanted rapid exosmosis he used sterile vaseline mixed with normal salt solution. This, being of greater specific gravity than the exudate that was to come out, would produce exosmosis in the capillary attraction. He had been using it for some time and it cut drainage short and gave him an abundance of drainage. If one put one-quarter sterile vaseline on the gauze he would find the exudate would be increased very materially.

Dr. S. H. MAYBERRY of Enid, Okla., thought future investigation would show that the greatest amount of pain in the abdomen would come from an inflammatory condition of the parietal peritoneum or from some tension on the mesentery, and not the intestine, the stomach, the gall-bladder, and appendix. By bearing this in mind he had been enabled to make a diagnosis where before he had failed.

Dr. MCARTHUR, in closing, stated that abdominal pain always meant some definite pathology; that this might be medical or surgical pathology.

Dr. BLICKENSDERFER, in closing, said the necessity for drainage depended largely on the man who operated. If the surgeon was quick in operating, as a rule no drainage was required, but if the operator was slow in the vast majojrity of cases drainage would be required.

Dr. L. H. HUFFMAN of Hobart, Okla., presented a comparative study of the practice of surgery in Mexico and the United States.

Septic Infection.—Dr. W. J. JOLLY of Oklahoma City stated that in puerperal septicemia we were helpless so far as specific treatment was concerned. The local treatment usually used, curettage, was harmful and only opened up new avenues for the absorption of toxins and aggravated the condition rather than benefited it. It was only justifiable in cases where there was known to be retained placenta. While it was the ideal treatment in sapremia caused by a blood clot or retained placenta, it was to be condemned in true septicemia. The use of the sera he believed to be worthless after a thorough trial of them. He knew a few cases got well under any kind of treatment, but in his own experience they did not modify the disease in the least. The only treatment for general septicemia was supportive, easily digested, nourishing food, and stimulants to sustain the patient until Nature manufactured antibactericidal serums or opsonins to destroy the bacteria. Urotropin was used internally with the object of carrying an antiseptic into the blood and destroying the bacteria. Theoretically it was a good treatment, but practically it was a question of getting enough of the drug into the circulation to accomplish a great amount of good.

Dr. S. M. MAYBERRY said he believed in the use of the curette in removing portions of retained placenta, and he thought there were times when this instrument, if not properly used, would necessarily carry infection into the healthy muscular coat and do harm. When it came to washing fresh wounds, after removing all foreign material he favored the use of tincture of iodine and the application of a hot, moist boracic acid and alcohol dressing, using 95 per cent. alcohol.

DR. JOHN F. BINNIE said that many years ago a Berlin surgeon made some investigations as to the sterilization of wounds, and unfortunately in the laboratory found that when bacteria had been in contact with a wound for so many seconds or minutes there was no use in trying to do anything. The bacteria were absorbed according to the laboratory experiments. This would have brought about to a large extent therapeutic nihilism if there had not been found "a nigger in the woodpile" as regards these experiments. More recently Frederic, carrying on similar experiments, found that bacteria in a freshly made wound might be reached by aseptic or antiseptic means for a period of six or seven hours after the wound had been infected. Methods of treatment of fresh wounds had changed in the last few years.

DR. JOLLY, in closing, said that where it was known that there was retained placenta in the uterus he would advocate removing it, but in true septicemia the bacteria had left the surface and had gained entrance to the circulation, and curettage would do no good whatever in such cases, and would produce more or less traumatism even with a dull instrument. He believed the use of the curette in the majority of such cases did harm.

Cancer and Its Treatment.—Dr. W. L. KENDALL of Enid, Okla., said, regarding the treatment of this disease, that the remedies that had been proposed for its cure were legion, and the result of every investigation had convinced him that the only cure was in the hands of the surgeon. The field of usefulness of the various nonoperative procedures had steadily narrowed down to the inoperable and irremovable cancer. The *x*-ray was absolutely valueless in deep-seated cancer, and its field of usefulness was limited to a few varieties of superficial epithelioma and lupus. Radium was of no more value than the *x*-ray, and should never be employed where the case was amenable to the surgeon's knife.

Dr. H. C. CROWELL of Kansas City stated that, according to the latest statistics, 100,000 people died annually of cancer. Three-fourths of this number were cases of cancer of the uterus, due largely to the fact that the patients were seen late by the surgeon. People should be educated to the necessity of early recognition of this disease. A woman with the manifestation of leucorrhea, purulent discharges, and the appearance of blood from the uterus should consult a doctor early. Good results were obtained by operating on some of these cases early.

DR. BACON SAUNDERS stated that there was a time in the history of every cancer when it was curable, and this should be kept before the eyes of both the public and the profession.

Dr. DAVID A. MYERS of Lawton, Okla., said that, if in three-fourths of the cases of uterine cancer the disease was due to laceration of the cervix, why not educate the general practitioner to repair the cervix at the proper time, which was the puerperium. While we could not prevent cancer *per se* by repairing the lacerated cervix, we could prevent the thing which we found in the majority of cases was causing the cancer.

DR. GEORGE B. NORBERRY of Kansas City, Mo., said he

believed every woman with a lacerated cervix would be better off to have it repaired, no matter whether it was causing trouble or not. He had tried the use of the galvanocautery in these cases and it was remarkable the amount of good it did.

Dr. John F. Kuhn of Oklahoma City said that the cautery must not be heated to its greatest intensity, but hot enough so that when it was long enough in contact with the tissues, the deeper structures were robbed of their vitality by its heat. It was a mistake to use the cautery so hot that it would sear the superficial surfaces and not cauterize the deeper structures.

Dr. J. D. Griffith of Kansas City said that the cautery should be heated to a cherry-red, then it would do its work.

Dr. H. C. Crowell said that in the advanced cases of cancer it was a question whether to resort to hysterectomy or to cauterization with the hot iron, chlorid of zinc, or with acetone.

Dr. Griffith stated that in the advanced inoperable cases he had used what was known as the acetone pack and had taught the patients to apply it themselves.

Dr. Norberry asked how these patients guarded against burning the vagina with the use of the acetone pack.

Dr. Griffith replied that the acetone pack would not burn the vagina if it was protected by vaseline.

Operative Treatment of Inguinal Hernia.—Dr. A. C. Scott of Temple, Texas, stated that operative treatment of strangulated hernia differed in many respects from that of deliberate operation for radical cure. First, in the unpreparedness of the patient; second, the amount of trauma produced on attempts at reduction caused discoloration and great edema of the coverings, the sac and its contents; third, if the strangulation was complete, there might exist gangrene of the omentum or gut, perforation and peritonitis, which might render the situation very grave or wellnigh hopeless. The above remarks applied to hernia in general. Since 1902 he had been endeavoring to overcome the weak points in the two most excellent operations of Bassini and Halstead by transplanting the cord high enough to obtain strong muscular fibers to be sutured around the cord, at its point of exit, and by suturing the aponeurosis of the external oblique under the cord in the lower half of the canal, thus closing the external inguinal ring and giving the wall double strength where it needed it most in all the direct and many of the oblique hernias. After describing the technique of the operation, Dr. Scott stated that of the 238 operations made by him he had found but one unsatisfactory feature, namely, that when the aponeurosis was drawn too close around the cord it might impede the return circulation sufficient to cause marked swelling of the testicle. The swelling usually subsided by the time the patient was ready to resume work, but such a result was unnecessary and could be avoided by placing the two sutures which formed the new external ring at a sufficient distance apart to give ample room, or in case the cord appeared to be unduly encroached upon after the sutures were in place, the ring, or more properly speaking, the gap in the aponeurosis, could be widened by snipping its edges with blunt scissors. It was safe to stitch the internal oblique close around the cord, but not so with the external oblique without snipping the margins to widen the aperture which closed somewhat like the blades of a pair of scissors. With due caution in this respect, he could not see much more to be desired in the technic for radical cure.

Total or Subtotal Hysterectomy.—Dr. H. C. Crowell of Kansas City, Mo., said that no operation in his experience had given so much satisfaction as had total hysterectomy, most of his patients recovering speedily, going home in two weeks as a rule. The shock from total hysterectomy was little, if any, more than from amputation, as the loss of blood, if successfully done, was no more. The only difference was it took a little longer. The desirability of total hysterectomy in preference to the subtotal, operation, he felt, must be obvious, as it removed the cervix entirely, which had so often proven a reflection to the subtotal operation. Better drainage and fewer adhesions resulted from total hysterectomy, and finally more uniform results. After a not inconsiderable experience he had no hesitation in urging a more generous consideration of complete hysterectomy with the full confidence that better results would obtain than from amputation.

Do You Do Your Duty in the Obstetrical Chamber?—Dr. David A. Myers of Lawton, Okla., said that a wholesome surgical fear and a good surgical conscience were two very essential things for a physician. He should not let his surgical fear extend to the end that he would not repair a lacerated cervix following childbirth, and he should not let his conscience dig him for not doing so. The technique, when once tried, was very simple, and the results were so good that the procedure should occupy the same place as the immediate repair of the perineum.

High Frequency Current in Chronic Urethral Affections.—Dr. W. T. Wooton of Hot Springs, Ark., related his experience in the use of the high-frequency current in treating 41 cases of chronic gonorrhea, 41 cases of gleet, 31 cases of stricture, 11 cases of prostatitis, 7 cases of urethral hyperesthesia, and 1 case of fibrosis. In favor of the high-frequency current in this work, he felt that he could get rid of the morning drop in 90 per cent. of the cases applying for treatment. Previous to the use of the current treatment was most disappointing, and the drop very persistent. Strictures dilated with less pain and did not contract afterward to the extent that they did when treated by galvanism or the steel sound.

Cerebrospinal Meningitis.—Dr. Wilmer Allison of Fort Worth, Texas, reported a case of this disease. The interesting features were the prolonged course after marked improvement which followed the use of the serum; the violent reaction which followed the last four doses of serum, the internal hydrocephalus, the relief of which was followed immediately by marked improvement, the retained clear mentality throughout the case, and the increased growth of hair over the entire body.

Modern Methods of Diagnosis and Treatment of Syphilis.—Dr. William Frick of Kansas City, Mo., said that the clinical diagnosis of syphilis was most important but generally sufficient, but should be supplemented by laboratory diagnosis in the primary stage or in doubtful cases later on. It was not wise to lay aside the old reliable remedies for the treatment of syphilis just because a powerful new remedy had made its appearance; because the new remedy might be attended with dangers and discomforts which outweighed its advantages.

The Treatment of Pellagra.—Dr. E. H. Martin of Hot Springs, Ark., stated that his conclusions concerning salvarsan were based on close observation of patients receiving 220 doses, either first, or second, or third, or fourth doses. His conclusions and opinions as to the curability of pellagra were based upon the personal treatment of 41 cases, ranging from the mildest to the most severe. 1. Soamin would relieve all of the symptoms of most cases of pellagra. It failed only when the condition of the patient was so feeble, complications so severe, or the disease so aggressive that it could not be given in sufficiently large doses. Usually it caused no reaction unless given in over five-grain doses. Some cases would require more and could not stand the reaction from the endotoxins. Given in ordinary doses it must be kept up for several years; the time yet uncertain. It was probable that if ten-grain doses were safe that there would be no relapse. 2. Salvarsan caused no symptoms if properly given to healthy people. In short, no disease germs, no reaction. 3. The fever following the administration of salvarsan to a case of syphilis was not due to the drug, but to the endotoxins released

from the killed germs, and was both diagnostic and prognostic. 4. The fever following the administration of salvarsan to a case of pellagra was not due to the drug, but to the endotoxins which were released from the killed germs, was also diagnostic and prognostic, and further proved beyond a doubt that pellagra was a parasitic disease caused by a microorganism vulnerable to salvarsan. 5. That it was at least reasonable to believe that this organism was a spirochete or a spirillum. 6. That the character of the reaction, the duration of the fever especially, showed that the germs of pellagra were located principally in the brain and spinal cord. 7. That the endotoxins which were released by the destruction of the pellagra germs were so highly toxic to the human host that the dose of the drug must be proportioned so as not to destroy too many microorganisms at one time, or the results might be disastrous to the patient. Observing patients given large doses of salvarsan one could readily believe that in some cases a condition paralleling the so-called "congestive chill" in malaria might be produced. 8. Salvarsan did not cure pellagra in one dose, owing to the invulnerability of the germs at an early stage of development. 9. Prompt disappearance of symptoms showed that the older germs were killed. 10. That small and increasing doses, repeated within the time required for the development of the germs from the invulnerable stage to just before the stage of reproduction, gave us a rational treatment for pellagra, and should offer as much certainty of a cure as quinine did in malaria when properly given with respect to the seventh day.

Several other papers were read before the sections on surgery, general medicine, and eye, ear, nose and throat.

Officers.—The following officers were elected for the ensuing year: *President,* Dr. A. L. Blesh, Oklahoma City; *Vice-Presidents*—for Arkansas, Dr. T. B. Young, Springdale; for Missouri, Dr. H. S. Crossen, St. Louis; for Texas, Dr. Freeman; for Kansas, Dr. W. S. Lindsay, Topeka; *Secretary-Treasurer,* Dr. F. H. Clark, El Reno.

Hot Springs, Ark., was selected as the place for holding the next meeting.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

TENNESSEE STATE BOARD OF MEDICAL EXAMINERS.

May, 1911.

ANATOMY.

1. Describe the portal system.
2. Name the ductless glands.
3. What cranial nerve has the widest distribution?
4. Give the origin and insertion of the humeral biceps muscle.
5. Mention any one muscle that moves the humerus forward, backward or inward.
6. Describe Hunter's canal; (*a*) what passes through it?
7. Describe the periosteum.
8. What muscles are attached to the tendo Achillis?

PHYSIOLOGY.

1. Give composition and properties of chyle.
2. Give composition of the blood.
3. Describe secretion, properties, and composition of gastric juice.
4. Give the physiological anatomy of the testicles.
5. Describe the physiological anatomy of the tongue.
6. Give the physiological anatomy of the mammary glands.
7. Describe the excretion of urine.
8. Name all the enzymes required to digest bread.

PATHOLOGY.

1. What is stomatitis? Give the pathology of ulcerative stomatitis.
2. Describe any one pathological condition caused by the excessive use of alcohol.
3. Describe the pathological changes which take place in the lung in lobar pneumonia.
4. Give the pathology of parenchymatous goitre.
5. Describe the pathology of the inflammation of any one serous membrane.
6. Describe the pathology of chronic lead poison.
7. Describe the pathology of cerebrospinal meningitis.
8. Describe the pathological condition caused by the bite of a mosquito.

MATERIA MEDICA.

1. Write a prescription for chronic malaria and state how long the patient should take it.
2. Name two medicines which increase the flow of urine. The source and dose of each.
3. What is the source of digitalis and hyoscyamus? What preparation would you use and the dose of each?
4. What is the source of potassium iodide and what is the dose? Name three diseases for which you would give it.
5. Give the source of iodide of lime and iodide of soda and the dose of each.
6. What is sodium sulphate?
7. What is the source of tetanus antitoxin?
8. What is the source of cascara sagrada? What preparation would you use and what would be the dose?

CHEMISTRY.

1. Describe Esbach's albuminometer and give a quantitative test for albumin.
2. Give a chemical test for pus in the urine; (*a*) for blood.
3. What is urea? (*a*) Its estimation? (*b*) Of what significance in nephritis?
4. What are alcohols and how classified?
5. Give chemical formula for iodoform; (*a*) how prepared; (*b*) physiological effects.
6. What is a simple ether? (*a*) compound ether? (*b*) formula for sulphuric ether?
7. What is benzine? (*a*) chemical formula and properties?
8. What is arsenic? (*a*) occurrence? (*b*) preparation? (*c*) properties? (*d*) Reinsch's test for arsenic?

OBSTETRICS.

1. Describe, anatomically, the internal generative organs of the female; (*a*) state the function of each.
2. What are the dangers of traction on the child and on the placenta?
3. What is involution? (*a*) how long a time is usually required for this process? (*b*) What causes may operate to delay or prevent it?
4. Describe the immediate care of the new-born child when from any cause the mother cannot nurse it; (*a*) give rules for artificial feeding.
5. Differentiate eutocia and dystocia. Mention important varieties of the latter and give their management.
6. In a labor otherwise normal but tedious, how soon would it be proper to interfere, and what symptoms would prompt such a course.
7. When does it become proper to perform craniotomy, and how should that operation be performed?
8. Define puerperal phlebitis and give its pathology, symptoms, and treatment.

SURGERY.

1. How would you diagnose a case of complete inguinal hernia from a hydrocele, and describe the radical cure for hydrocele?
2. Describe in full Bassini's method of operation for the radical cure of hernia.
3. Give the nature of treatment of Pott's fracture.
4. Where does senile gangrene most often occur, and what is the usual cause?
5. Give symptoms and treatment of cholelithiasis.
6. Define peritonitis. State three ways in which the peritoneum may be invaded by bacteria.
7. What are the causes and treatment of paraphimosis?
8. Differentiate dislocation of the head of the femur from fracture of the neck, and give main essentials of treatment of each.

PRACTICE.

1. Name the organic diseases of the heart. Define aortic stenosis. Give the physical signs of it.
2. Define lobar pneumonia. Give general symptoms and diagnosis. Give briefly a treatment.
3. What is the pulse? Name some of the varieties of the pulse and their significance.
4. Define acute Bright's disease. What are the most frequent etiological factors which produce this form of kidney disease? Give a treatment.
5. Define leucocytosis. Define leukopenia. Name four

diseases in which the leucocytes are increased in number. Name four diseases in which the leucocytes are normal or diminished.

6. Define diabetes mellitus. Differentiate between diabetes mellitus and diabetes insipidus. Give a diet for diabetes mellitus.

7. Define dropsy. Name four diseases which it accompanies. Given a disease producing it, how would you treat dropsy?

8. Name some of the common forms of tuberculosis. Give a modern treatment for pulmonary tuberculosis.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

Tennessee State Board of Medical Examiners.

May, 1911.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 901; or Gray's "Anatomy" (1910), page 754.

2. *The ductless glands* are: Spleen, thyroid, parathyroids, thymus, suprarenals, carotid, coccygeal, pituitary, and pineal.

3. The tenth cranial (pneumogastric) nerve has the widest distribution.

4. Biceps. *Origin:* Apex of coracoid process of scapula, and upper margin of glenoid cavity of scapula. *Insertion:* Back part of tuberosity of radius.

5. Humerus is moved *forward*, by the Biceps; *backward*, by the Triceps; and *inward*, by Teres major.

6. *Hunter's Canal* "extends from the apex of Scarpa's triangle to the opening in the adductor magnus muscle. The anterointernal boundary or roof of Hunter's canal is the sartorius and the aponeurotic expansion from the adductors to the vastus internus. It is bounded externally by the vastus internus. The adductor longus and magnus constitute its floor or the posterointernal boundary. The canal contains the femoral artery, femoral vein, the long saphenous nerve, and the nerve to the vastus internus. (Gray.)

7. See Cunningham's "Anatomy" (1909), page 71; or Gray's "Anatomy" (1910), page 38.

8. The *Tendo Achillis* is the common tendon of the Gastrocnemius and Soleus.

PHYSIOLOGY.

1. Chyle. *Composition:* Water, proteids, fat, cholesterin, lecithin, and inorganic salts.

Properties: Chyle is a clear, colorless or slightly yellow fluid, alkaline in reaction, coagulable; during absorption it becomes creamy, owing to the presence of fat; its specific gravity is about 1006 to 1022.

2. *Physiological composition* of the blood:

1. Plasma.
2. Corpuscles { Colored. Colorless. Blood-plates.

The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (proteid, leuconuclein, lecithin, histon, etc.).

3. *Gastric juice* is a thin, colorless fluid; acid in reaction; specific gravity about 1002 to 1010; and containing about 1 per cent. of solids. The daily secretion amounts to 10 or 15 pints. It contains: Water, pepsin, rennin, hydrochloric acid, chlorides (of calcium, sodium, and potassium), and phosphates (of calcium, magnesium, and iron). Its function is to change proteids into proteoses and peptones, and to curdle the casein of milk; it is also slightly antiseptic, and inverts cane sugar into dextrose and levulose.

The pepsin and rennin come from the central cells in the cardiac glands and from the cells of the pyloric glands. In both of these glands the pepsin pre-exists as pepsinogen. The hydrochloric acid is formed by the oxyntic cells. Just how a free acid is formed from the alkaline blood and lymph is not known. It has been suggested that it may occur as follows:

(1) $2Na_2HPO_4 + 3CaCl_2 = Ca_3(PO_4)_2 + 4NaCl + 2HCl$

or (2) $Na_2HPO_4 + H_2O + CO_2 = NaHCO_3 + NaH_2PO_4$;

and then $NaH_2PO_4 + NaCl = Na_2HPO_4 + HCl$.

4. See Cunningham's "Anatomy" (1909), page 1159; or Gray's "Anatomy" (1910), page 1373.

5. See Cunningham's "Anatomy" (1909), page 1000; or Gray's "Anatomy" (1910), page 1219.

6. See Cunningham's "Anatomy" (1909), page 1207; or Gray's "Anatomy" (1910), page 1430.

7. The mechanism of the *secretion of urine by the kidneys* is twofold: (1) By filtration, most, if not all, of the fluid is eliminated, and also inorganic salts; this depends upon blood pressure, and takes place in the glomeruli. (2) By cell activity and selection, in the cells of the convoluted tubules, the urea, and principal solids are eliminated.

8. *Enzymes required to digest bread:* Ptyalin and amylopsin are the main ones; also pepsin, trypsin, and steapsin.

PATHOLOGY.

1. *Stomatitis* is inflammation of the mucous membrane of the mouth. See French's "Practice of Medicine" (1910), page 725; or Osler's "Practice of Medicine" (1909), page 435.

2. Atrophic cirrhosis of the liver. See French's "Practice of Medicine" (1910), page 843; or Osler's "Practice of Medicine" (1909), page 57.

3. See French's "Practice of Medicine" (1910), page 154; or Osler's "Practice of Medicine" (1909), page 170.

4. "Parenchymatous goiter is a variety in which the glandular tissues or acini undergo more or less active hyperplasia. The gland is generally uniformly enlarged, but sometimes presents lobular or nodular elevations. The tissue is ordinarily somewhat elastic, like that of the normal thyroid, but may in other instances be very firm. Occasionally cystic forms occur, and a subvariety is sometimes distinguished by the term *cystic goiter*. Microscopically there may be found merely a uniform hyperplasia of the glandular acini, without any notable change in the structure of the tissue. In other cases the acini are larger and more irregular than in the normal thyroid, suggesting the structure of an adenoma, and the term *struma adenomatosa* is applied. In most instances the acini contain but small quantities of colloid material, as is the case in the normal gland. Sometimes, however, there is abundant production of colloid, and the acini are greatly distended; the term *colloid goiter* may be applied in such instances. In certain cases the walls of the acini are destroyed and the colloid of adjacent acini runs together, forming considerable cysts. In these instances the thyroid consists of numerous cystic excavations. Changes in the interstitial connective tissue of the gland may be comparatively slight, but may in other cases become conspicuous. The capsule of the gland may be thickened, and the stroma may predominate over the glandular elements. The term *fibrous goiter* has been suggested for such cases."—(Stengel's *Pathology*.)

5. See French's "Practice of Medicine" (1910), page 706; or Osler's "Practice of Medicine" (1909), page 654.

6. See French's "Practice of Medicine" (1910), page 991; or Osler's "Practice of Medicine" (1909), page 376.

7. See French's "Practice of Medicine" (1910), page 141; or Osler's "Practice of Medicine" (1909), page 159.

8. See French's "Practice of Medicine" (1910), pages 239 or 270; or Osler's "Practice of Medicine" (1909), pages 15 or 236.

MATERIA MEDICA.

1. *For chronic malaria:*

℞. Quininæ hydrochloridi gr. xlviij.
Ferri pyrophosphatis solubilis gr. xxiv
Arseni trioxidi gr. ss
Oleoresinæ capsici gr vj.
Misce, divide in capsulas no. xxiv.

Signa:—Take one three times a day, after meals.

This should be continued so long as malarial parasites are found in the blood.

2. *Two medicines which increase the flow of urine:* (1) Digitalis; *source*, leaves of digitalis purpurea; *dose*, two drams of the infusion. (2) Caffeine; *source*, seed of coffea arabica; *dose*, citrated caffeine, 2 grains.

3. Digitalis. *Source:* Leaves of digitalis purpurea. *Preparations:* Fluidextract, ♏j; extract, gr. 1/5; infusion, ʒij; tincture, ♏xv.

Hyoscyamus. *Source:* Leaves and tops of hyoscyamus niger. *Preparations:* Fluidextract, ♏iij; extract, gr. j; tincture, ♏xv.

4. Potassium iodide. *Source:* Iodine is dissolved in a hot solution of potassium hydroxide. *Dose*, gr. vijss. May be used in syphilis, pleurisy, and asthma.

5. There is no such preparation as *iodide of lime*.

Iodide of sodium (not soda) is obtained by dissolving iodine in a hot solution of sodium hydroxide. *Dose*, gr. vijss.

6. *Sodium sulphate* is a colorless, transparent solid, with a bitter, salty taste, and no odor. It is sometimes called Glauber's salt.

7. *Tetanus antitoxin* is derived from the coagulated blood of a horse which has been immunized by inoculation with tetanus toxin.

8. Cascara sagrada. *Source:* Bark of rhamnus purshiana. *Preparations:* Extract, dose, gr. iv; fluidextract, dose, ℥xv; aromatic fluidextract, dose, ℥xv.

CHEMISTRY.

1. "*Esbach's albuminometer* is merely a glass tube graduated and lettered, and used for the quantitative determination of albumin. This tube is filled to the letter U with urine, if necessary previously diluted until its specific gravity is 1008 or lower, and a solution of picric acid (picric acid, 10; crystalline citric acid, 20; distilled water, 1000) is added until the level of the liquid has reached the letter R. A rubber stopper is then inserted, the tube is inverted several times to thoroughly mix the urine and test solution and is then set aside for from 24 to 48 hours. The albumin is precipitated and its height, measured by the numerals upon the scale, represents in gms. the amount of albumin present in one liter (1000 c.c.) of the urine." (Greene's *Medical Diagnosis.*)

2. Chemical test for *Pus* in the urine: Acidify the urine with acetic acid, then filter it, and treat the filter with a few drops of freshly prepared tincture of guaiacum; a deep blue color denotes the presence of pus.

Test for Blood: To the urine add a solution of potassium hydroxide to distinct alkaline reaction; heat nearly to boiling (do not boil). A red precipitate is produced.

3. *Urea* is the end product of the proteid metabolism of the body. It has the formula $CO(NH_2)_2$. It is a crystalline solid, soluble in water, colorless, odorless, with a slightly bitter taste; it is neutral in reaction, but basic in character; dilute aqueous solutions are not decomposed by boiling, but by prolonged boiling urea is hydrolyzed to ammonia and carbon dioxide; urea forms compounds with acids and also with certain salts and oxides.

Quantitative test for urea: A comparatively easy test is that of Fowler, based upon the loss of the specific gravity of the urine after the decomposition of the urea by hypochlorite. "To apply this method the specific gravity of the urine is carefully determined, as well as that of the liquor sodæ chlorinatæ (Squibb's). One volume of the urine is then mixed with exactly seven volumes of the liquor sodæ chlorinatæ, and, after the first violence of the reaction has subsided, the mixture is shaken from time to time during an hour, when the decomposition is complete; the specific gravity of the mixture is then determined. As the reaction begins instantaneously when the urine and reagent are mixed, the specific gravity of the mixture must be calculated by adding together once the specific gravity of the urine and seven times the specific gravity of the liquor sodæ chlorinatæ, and dividing the sum by eight. From the quotient so obtained the specific gravity of the mixture after decomposition is subtracted; every degree of loss in specific gravity indicates 0.7791 gram of urea in 100 c.c. of urine. The specific gravity determinations must all be made at the same temperature; and that of the mixture only when the evolution of gas has ceased entirely." (Witthaus' *Manual of Chemistry.*)

In *nephritis,* urea is generally diminished, and also varies periodically.

A sudden diminution in quantity is a danger signal.

4. *Alcohols* are hydroxides of hydrocarbon redicles, and are capable of entering into double decomposition with acids to form esters and water. They are classified as monoatomic or monohydric, diatomic or dihydric, triatomic or trihydric, etc., according to the number of hydroxyl groups (OH) they possess.

5. Iodoform. *Formula:* CHI_3. *Preparation:* By heating alcohol, iodine, and potassium bicarbonate:
$C_2H_5OH + 2I_2 + 2KHCO_3 = 2KI + 3H_2O + 2CO_2 + 2CHI_3$.
Physiological effects: Analgesic; disinfectant (this has been denied); it may cause delirium, mania, or collapse; it weakens and accelerates the heart.

6. An *Ether is* the oxide of a hydrocarbon radical. In *simple ethers* the radicals are the same, as $(C_2H_5)_2O$, ethyl ether; in *mixed ethers* the radicals are different, as $CH_3.C_2H_5O$, methyl ethyl ether. A *compound ether* is a substance derived from an acid by replacing the hydrogen of the acid by a hydrocarbon radical, thus $C_2H_5NO_2O$, ethyl nitrate or nitric ether; compound ethers are now generally called *esters.*

Sulphuric ether is an old (and incorrect) name for ethyl ether $(C_2H_5)_2O$.

7. *Benzine* is a derivative of methane, CH_4. It is not a definite compound, and so has no formula; but it consists of hexane, heptane, octane, etc., and is used as a solvent for paints and varnishes. It is very inflammable and has a strong and characteristic odor.

8. Arsenic is an element, with symbol As, atomic weight of 75, molecular weight of 300, valence of three or five; it generally occurs in combination with sulphur; is a brittle, crystalline solid, or an amorphous powder, insoluble in water. It is poisonous. If pure it has no odor or taste. It is used in the manufacture of fly poison, rat poison, shot, pigment, and fireworks. It is prepared by heating arsenic trioxide and charcoal.

9. *Reinsch's test for arsenic is as follows:* To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean, dry glass tube, open at both ends, and apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), pages 35, etc.; or Hirst's "Obstetrics" (1909), pages 45, etc.

Function of ovaries: To develop ova, and an internal secretion.

Function of Fallopian Tubes: To carry ova to the uterine cavity.

Function of uterus: To receive, and lodge the fecundated ovum; to retain the fetus till it is mature, then to expel it.

Function of vagina: During coitus it receives the penis; during parturition it becomes part of the birth canal; it also serves as a channel for the escape of the menstrual and other uterine secretions.

2. *Traction on the child* may cause abrasions, contusions, laceration of skin, depression or fracture of cranial bones, laceration of blood-vessels, temporary facial paralysis from injury to facial nerve.

Traction on the placenta tends to pull the placenta flatwise (like a button in a button hole) and thus obstructs its egress, also to cause inversion of the uterus, and to tear cord or placenta and leave portion of placenta behind.

3. See Williams' "Obstetrics" (1909, pages 332 and 904; or Hirst's "Obstetrics" (1909), pages 348 and 645.

4. See Williams' "Obstetrics" (1909), pages 346 and 357; or Hirst's "Obstetrics" (1909), pages 373 and 928.

5. *Eutocia* is normal labor which terminates without artificial aid and without injury to mother or fetus.

Dystocia is labor which without artificial aid would be difficult or impossible, or dangerous to mother or fetus.

See Williams' "Obstetrics" (1909), pages 658, etc.; or Hirst's "Obstetrics" (1909), pages 439, etc.

6. See Williams' "Obstetrics" (1909), page 660; or Hirst's "Obstetrics" (1909), page 439.

	COMPLETE INGUINAL HERNIA	CONGENITAL HYDROCELE.	ACQUIRED HYDROCELE.
1. Location	Swelling continuous with inguinal region.	Same as hernia.	Swelling terminates at upper end of scrotum, can feel cord above tumor.
2. Impulse	Distinct on coughing.	No impulse.	No impulse.
3. Translucency	Not translucent, as a rule. Rarely so in children.	Translucent.	Translucent unless greatly thickened sac.
4. If reduced	Feel gurgling if contains intestine, reappears rapidly on coughing.	Reduction very slow. Reappears slowly.	Cannot be reduced.
5. Relation to testis and cord	Lies above or in front of testis and in front of cord.	Same as in hernia.	Lies in intimate relation to testis, latter felt usually below and behind tumor.
6. Palpation and percussion.	Soft, semi-elastic; dull if omentum; tympanitic if intestine.	Harder and more tense; dull on percussion.	Pear-shaped swelling; harder and tense; dull on percussion.

(Eisendrath's *Surgical Diagnosis.*)

7. See Williams' "Obstetrics" (1909), pages 463 and 464; or Hirst's "Obstetrics" (1909), pages 842 and 846.
8. See Williams' "Obstetrics" (1909), page 852, etc.; or Hirst's "Obstetrics" (1909), page 759.

SURGERY.

1. See table on preceding page. For a description of the medical operation, see Rose and Carless' "Surgery" (1909), page 1267; or Da Costa's "Surgery" (1908), page 1201.
2. See Rose and Carless' "Surgery" (1908), page 1081; or Da Costa's "Surgery" (1908), page 978.
3. See Rose and Carless' "Surgery" (1908), page 561; or Da Costa's "Surgery" (1908), page 542.
4. See Rose and Carless' "Surgery" (1908), page 105; or Da Costa's "Surgery" (1908), page 170.
5. See Rose and Carless' "Surgery" (1908), pages 1059 and 1061; or Da Costa's "Surgery" (1908), pages 891 and 854.
6. See Rose and Carless' "Surgery" (1908), page 972; or Da Costa's "Surgery" (1908), pages 865 and 866.
7. See Rose and Carless' "Surgery" (1908), page 1249.
8. See Rose and Carless' "Surgery" (1908), pages 630 and 539; or Da Costa's "Surgery" (1908), pages 601 and 516.

PRACTICE.

1. See French's "Practice of Medicine" (1910), pages 587, etc., and 603; or Osler's "Practice of Medicine"(1909), pages 796, etc., and 802.
2. See French's "Practice of Medicine" (1910), pages 151, 156, 171, and 174; or Osler's "Practice of Medicine" (1909), pages 164, 172, 188, and 189.
3. *Pulse* is the rhythmical dilatation of an artery due to the increased volume of blood thrown into the vessel by the cardiac systole.

Tachycardia is found in: Exophthalmic goiter, fevers, heart diseases.

Bradycardia, in jaundice, aortic stenosis, some brain diseases.

Intermittent pulse, in myocardial disease, dyspepsia, excessive use of alcohol or tobacco.

Irregular pulse, in mitral regurgitation.

Dicrotic pulse, in typhoid fever.

Corrigan's pulse, in aortic regurgitation.

Small pulse, in mitral stenosis, Bright's disease.

4. See French's "Practice of Medicine" (1910), pages 910 and 915; or Osler's "Practice of Medicine" (1909), pages 686 and 690.
5. *Leucocytosis* is an increase in the number of white blood cells.

Leucopenia is a reduction in the number of white blood cells.

Four diseases in which the leucocytes are increased: Leukemia, pernicious anemia, diseases of the lymphatic glands, and inflammatory conditions.

Four diseases in which the leucocytes are normal or diminished: Typhoid, malaria, influenza, and measles.

6. See French's "Practice of Medicine" (1909), pages 965, 973, 978, and 974; or Osler's "Practice of Medicine" (1909), pages 408, 419, 425, and 420.
7. *Dropsy* "is the accumulation of a watery fluid in one or more of the serous cavities, or a diffusion of such fluid through the areolar tissue of the body or its organs, or a combination of these conditions."—(Butler.) It may be found in heart disease, nephritis, cirrhosis of the liver, and aneurysm.

See French's "Practice of Medicine" (1910), page 891; or Osler's "Practice of Medicine" (1909), page 591.

8. *Some common forms of tuberculosis:* Acute miliary tuberculosis, pulmonary phthisis, fibroid phthisis, tuberculosis of serous membranes, tuberculosis of lymphatic glands, tuberculosis of genitourinary organs.

See French's "Practice of Medicine" (1910), page 397; or Osler's "Practice of Medicine" (1909), page 352.

Connecticut.—During the year 1910 there were eighty-four candidates for a certificate to practise medicine in this State. Of these sixty-one, or 72.6 per cent., were successful, and twenty-three, or 27.4 per cent., failed. This is the highest percentage of failures ever recorded in this State.

Kansas.—Of the seventeen applicants who were examined the second week in October before the Kansas State Board of Medical Registration and Examination, eight were successful. The board conducted the examination in the assembly rooms of the National Hotel in Topeka and voted to hold all future meetings at the same place. This means that no more meetings will be held in Kansas City, Kan., as has been the custom in the past. The board meets on the second Tuesday in February, June and October of each year.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended November 25, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	405	170
Diphtheria	260	15
Measles	154	2
Scarlet Fever	178	2
Smallpox	2	—
Varicella	217	—
Typhoid Fever	87	14
Whooping Cough	42	1
Cerebrospinal Meningitis	5	2
Malarial Fever	—	—
Totals	1350	206

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended November 24, 1911:

CHOLERA

Places	Date	Cases	Deaths
Algeria: Algiers	Sept. 1–30	1	1
Ceylon: Colombo	Oct. 1–7	1	1
Egypt: Alexandria	Aug. 1–Sept. 30	3	3
Of these two cases in Sept. were from s. s. *Saidieh* from Constantinople			
India: Calcutta	Sept. 24–30	..	12
Indo-China: Saigon	Sept. 18–24	3	3
Italy	Oct. 8–14	..	..
Total: Cases, 249; deaths, 89.			
Provinces—Catania	Oct. 8–14	5	.
Catania	Oct. 8–14	3	.
Genoa	Oct. 8–14	3	1
Genoa	Oct. 8–14	..	1
Naples	Oct. 8–14	6	4
Naples	Oct. 8–14	1	1
Palermo	Oct. 8–14	3	1
Palermo	Oct. 8–14	7	1
Rome	Oct. 8–14	13	5
22 other provinces	Oct. 8–14	208	75
Italy	Oct. 15–21	..	..
Total: Cases, 247; deaths, 105.			
Provinces—Catania	Oct. 15–21	11	2
Catania	Oct. 15–21	9	1
Genoa	Oct. 15–21	1	1
Genoa	Oct. 15–21	3	2
Naples	Oct. 15–21	6	2
Naples	Oct. 15–21	1	..
Palermo	Oct. 15–21	6	1
Palermo	Oct. 15–21	6	2
Rome	Oct. 15–21	10	1
19 other provinces	Oct. 15–21	194	93
Java: Batavia	Oct. 1–7	12	5
Siam: Bangkok	Sept. 5–Oct. 7	..	26
Turkey in Asia: Kharput	Oct. 8–14	5	2

YELLOW FEVER

Brazil: Manaos	Oct. 15–21		1
Pernambuco	Oct. 16–30	..	2
Venezuela: Caracas	Oct. 8–21	14	..

PLAGUE

Brazil: Pernambuco	Sept. 16–30	..	4
India: Calcutta	Sept. 24–30	..	6
Indo-China: Saigon	Sept. 18–Oct. 1	10	2
Java: Pasoeroean Residency	Oct. 1–7	20	7
Peru: Departments—Arequipa		..	..
Sept. 5, present in Mollendo.			
Callao	July 23–Sept. 16	9	6
Chiclayo	July 23–Sept. 16	8	5
Libertad	July 23–Sept. 16	9	4
Lima	July 23–Sept. 16	26	17
Siam: Bangkok	Sept. 5–Oct. 7	..	1
Venezuela: Caracas	Oct. 8–14	3	.

SMALLPOX

Algeria: Algiers	Sept. 1–30	.	2
Argentina: Buenos Aires	Aug. 1–31	..	9
Brazil: Para	Oct. 22–28	1	.
Pernambuco	Sept. 16–30	.	105
Canada: Quebec	Nov. 5–11	14	..
Chile: Antofagasta	Sept. 2	15	6
Egypt: Alexandria	Aug. 1–31	1	..
	Sept. 1–30	2	..
Germany			.
Total, Oct. 29–Nov. 4, Cases, 4.			
Indo-China: Saigon	Sept. 18–Oct. 1	5	1
Italy: Genoa	Oct. 16–31	7	.
Leghorn	Oct. 22–28	1	..
Naples	Oct. 15–28	15	..
Palermo	Oct. 15–21	217	210
Portugal: Lisbon	Oct. 22–28	2	..
Mexico: Juarez	Nov. 5–11	2	.
Mazatlan	Nov. 1–7	.	1
Porfirio Diaz	Oct. 29–Nov. 11	6	6
Tampico	Oct. 21–31	.	1
Russia: Riga	Oct. 15–28	3	..
Siam: Bangkok	Sept. 5–Oct. 7	..	54
Spain: Seville	Oct. 1–31	.	6
Valencia	Oct. 22–28	8	..
Turkey in Europe: Constantinople	Oct. 23–29	.	1

Medical Record

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Original Articles.

THE CORRECTION OF NASAL DEFORMITIES BY MECHANICAL MEANS AND BY THE TRANSPLANTATION OF BONE.*

By WILLIAM WESLEY CARTER, A.M., M.D.,

NEW YORK,

ASSISTANT SURGEON MANHATTAN EYE, EAR, AND THROAT HOSPITAL.

"AN INCH off the end of a man's nose makes a lot of difference." This axiom embodies the mainspring of cosmetic rhinological surgery, and sounds the keynote to the situation, namely, that the appearance of the individual is to a large extent dependent upon a symmetrical nose and one bearing a correct proportion to its facial environment. Any departure from this is a blemish, but it is only when there is a pronounced deformity that the case comes under our present consideration.

It is necessary for me to review briefly some of the work that I have already published, and with which, no doubt, many are familiar, in order that I may make clear my position in regard to the correction of nasal deformities; namely, that in all cases correction should be attempted either by the readjustment of the displaced parts, or when there is a deficiency in construction material, that this should be supplied from some other part of the patient's body. This review is necessary also in order that we may make a clear differentiation between the cases adapted to each of these methods.

It is my purpose in this paper to describe these two methods of procedure, to report the clinical results obtained, and to record the conclusions I have drawn from this experience. Though it would please me greatly to review the excellent work done by those who have labored in this field of surgery, the time allotted me does not permit of this digression.

Nasal deformities from a broad surgical point of view may be divided into: (1) Those without loss of bony tissue. (2) Those in which a portion, or all of the bony framework of the nose has been destroyed either by disease or by traumatism. In the first class of cases, which are usually traumatic, we have all of the bone originally in the nose, and in addition, if the case is an old one, the callus formed about the displaced fragments. In such cases and in recent fractures of the nose I have found the bridge-splint operation most effective. For this reason, and because of an enlarged experience gained by the use of this method during the past five years, I feel that I may be pardoned for again describing an operation which, no doubt, is familiar to many.

*Read at the annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, at Indianapolis, Ind., September 26, 1911.

The bridge-splint consists of a fenestrated steel bridge, the wings of which are connected by a hinge. The distance to which these wings may be separated is regulated by a thumb-screw. The second part of

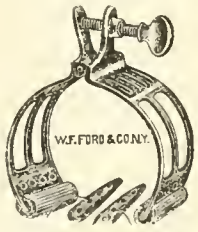

Fig. 1.—Bridge and intranasal splint for correcting depressed deformities of the nose.

the instrument consists of two hard rubber splints perforated by several small holes. The instrument depends for its efficiency upon the fact that when properly placed in position it exerts force along the lines that would tend to construct a perfectly symmetrical nose. In other words it duplicates as nearly as possible the forces employed by Nature in the development of the flattened nose of the infant into the more shapely organ of the adult. When applied in a case of depressed nasal bridge, its influence directly opposes the forces that produced this deformity.

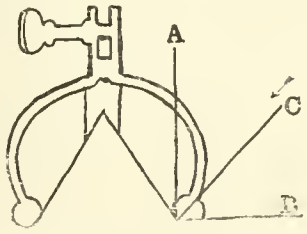

Fig. 2.—Illustrating the mechanics of the intranasal splint and bridge.

Application of the Instrument.—Let us assume that we have a recent fracture, or, in the case of an old deformity, that the bony structure of the nose has been thoroughly mobilized by means of the author's special chisel and chisel-forceps in the manner described in my previous presentation of this subject.* A piece of No. 14 silk is passed through one of the holes in the hard rubber splint and knotted, or preferably a splint molded from gutta-percha to suit the case is used. The other end of the suture is threaded into a medium-size curved needle; this is passed from within the nose through the cartilaginous dorsum just below its attachment to the nasal bones. This operation is repeated on the opposite side and the splints are adjusted to the roof of the nose. The bridge is then applied and the wings, the edges of which have been previously padded with gauze, are adjusted by means of the thumb-screw so as to give the proper support to the

**Journal of the American Medical Association*, December 4, 1909.

base of the nasal triangle. The dorsum of the nose is then pulled up into its proper position by means of the sutures and the latter are tied together over the hinge of the bridge. The instrument is left in position for about two weeks. If the bridge is anchored to the forehead by means of adhesive straps the patient need not be confined to bed after the second day.

I have operated upon about fifty patients by this method. This series includes recent fractures, old depressed, irregular, and lateral deformities. There were only two failures, and these occurred early in my experience before I fully realized the limitations of the operation, namely, that it is not applicable when there is insufficient bony framework to support the nose after the removal of the bridge. In several instances it was necessary to do the submucous operation before correcting the external deformity; but in the majority of the cases the intranasal deformity was corrected by the bridge-splint operation. This is one of the strongest arguments in favor of the latter procedure. In many cases I found that the septum was so short that it did not permit of the bridge being raised. In these instances, in order to lengthen it, I incised the septum from the floor of one nostril diagonally through to the roof of the other. This allowed the upper segment to slide by the lower when the bridge was raised without leaving a perforation. My experience during the past five years and the present condition of the patients operated upon enable me to give this method of treating nasal deformities my hearty endorsement.

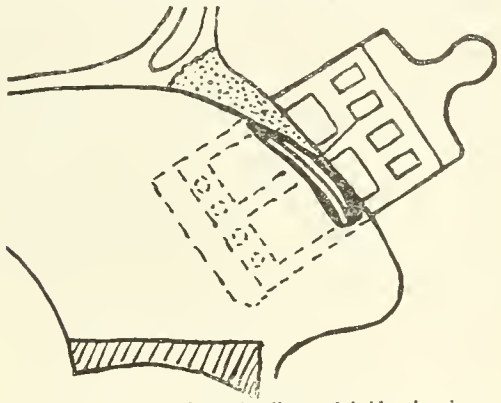

Fig. 3.—Sectional view of splint and bridge in place.

The following observations, drawn from this experience, may be worthy of record: (1) Great care should be exercised in the selection of cases. No case should be attempted by this method alone, where there is not a sufficient amount of bony framework to support the nose after the removal of the bridge. In certain cases, however, where it is necessary to transplant bone, the bridge-splint is a valuable adjunct. In these cases it does not seem to complicate the operation. (2) The bony framework must be thoroughly mobilized, and when the septum is too short it must be lengthened by the incision previously described. (3) The wings of the bridge must be well padded with gauze and the skin upon which these rest must be frequently inspected and bathed with alcohol, lest pressure necrosis occur at these points. (4) The intranasal splints must be made to conform to the roof of the nose. It is best to mold these out of guttapercha to suit each case. (Personally I never use the splints that come with the instrument.) (5) The liberal use of vaseline in the nose following the operation greatly relieves the tumefaction of the tissues and lessens the liability to infection. (6) Casts both before and after the operation should be made.

Nasal Deformities Attended by Loss of Bone.—The treatment of nasal deformities where there has been a loss of bony framework is an entirely different problem; the use of the bridge-splint being inadequate, because there is nothing to retain the shape of the nose after the removal of the bridge. For these cases little has hitherto been done, and no satisfactory expedient for their relief has been adopted. They are unsuitable for paraffin on account of the large amount of fibrous tissue which is always present, and then too there is no solid foundation upon which the latter can rest. Paraffin, even though it be skillfully injected, may spread into undesirable locations; or if properly placed it may later shift its position. At best it is a foreign body, and as such is subject to the uncertainties that surround such substances when held in the living tissues. The essential element lacking in the cases is bone, and this must be supplied.

The efforts of those who have experimented in this field of surgery have been confined chiefly to supplying defects in the long bones and those of the skull. It has been demonstrated by these men (1) that the autoplastic operation, *i.e.* the transference of bone from one part of the body to another, gives the quickest and best results; (2) that homoplastic transplantation, *i.e.* from one animal to another of the same species, is frequently successful; (3) that heteroplastic transplantation, *i.e.* from one animal to another of a different species, is unsuccessful. Most of these observers believe that it is necessary to include the periosteum with the bone graft. With this view I do not concur for the following reasons: (1) Soft tissues (which would include the periosteum) are successfully transplanted with much more difficulty than bone. (2) When the bone is introduced into the nose we desire only that it shall be nourished, and that it shall remain *in situ*. We do not desire to grow bone, hence we can dispense with the osteogenetic layer of the periosteum. (3) The bone when deprived of its periosteum comes in more intimate contact with the soft tissues which surround it in its new location and from which is quickly formed an envelope of connective tissue which nourishes it.

In my work in this field I have confined myself to the autoplastic operation, the rib having been selected for transplantation for the following reasons: The ninth rib, at about its middle, is thinly covered by muscle; a segment at this point can be easily shelled out of its periosteum. The operation causes the patient little discomfort and the rib is promptly regenerated from the periosteum. (2) The rib is especially adapted for transplantation into the nose because of its shape and structure; the slight curve being an advantage. The fact that the rib is richly supplied with minute nutrient foramina favors its nutrition when introduced into the tissues of the nose. For these reasons also it is a bone which may be used to advantage in general surgery when it is necessary to transplant bone to supply defects in the long bones, bones of the skull, &c.

Description of Bone-Transplantation.—The following is a general description of the operation, which I have performed nine times. It has been modified in some instances to meet special requirements, but these modifications will be referred to later in the specific report of these cases. The skin over the nose and over the right side of the chest corresponding to the ninth rib is prepared for an

aseptic operation. A curvilinear incision (convexity downward) about ¾ of an inch long is made down to the bone over the nasofrontal process. Through this incision the skin and subcutaneous tissues over the dorsum and sides of the nose are elevated with a long, thin, two-edged knife, curved

Fig. 4.—General view of the bridge after its application to the nose.

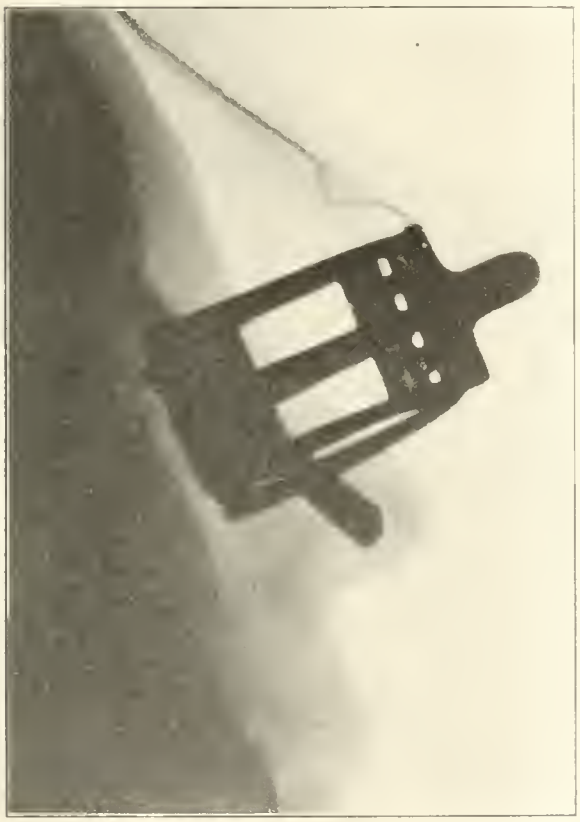

Fig. 5.—X-Ray plate showing bridge-splint and intranasal splints.

on the flat. Above this incision the periosteum over the nasofrontal process is elevated for about a quarter of an inch. This wound is then covered with sterile gauze. The ninth rib, at about its middle, is then exposed, and a portion two inches long is shelled out of its periosteum and removed. I then split this section of rib in its transverse diameter. All of the medullary tissue is then carefully scraped from the outer half and the thin strip of compact bone is shaped to suit the deformity. If the medullary tissue is not removed from the transplanted bone, it has been found that it causes irritation and an aseptic fever, the graft being more apt to slough out. It is desirable to transfer the bone to the nose as quickly as possible and that too without placing it in any solution. The strip of bone is inserted into the wound in the nose previously made for its reception, the lower end reaching nearly to the tip of the nose, and the upper being carefully anchored under the periosteum over the nasofrontal process. This latter procedure is greatly facilitated by turning up the curved flap made at the time of the original incision. The wound is closed with horse-hair sutures and dressed with sterile gauze. If the case is progressing satisfactorily the dressing is not disturbed for a week.

Several of the following cases are from Dr. Harmon Smith's clinic at the Manhattan Eye, Ear, and Throat Hospital; the first three of these, having been previously reported, are mentioned again for the purpose of showing their present condition.

Case I.—This patient was a little girl, aged 6, who, when two years old, fell on her nose, fracturing it. The nose retained its infantile type, developing broad and flat and scarcely protruding beyond the level of the face. No nasal bones could be demonstrated. After the operation, which was performed on June 21, 1910, the profile was almost perfect and has remained so up to the present time.

Case II.—A woman, aged 25, who fell on her nose when she was 7 years old, the injury being followed by a septal abscess. In this case there was no history of syphilis, and the woman says that she always enjoyed the best of health. The deformity was marked, and was of the flattened, concave variety. Operation was performed on June 25, 1910. In this instance the concavity was so great that two

Fig. 6.—Bone-transplantation for nasal deformity. The central figure shows the method of raising the skin and subcutaneous tissue; the insert figure shows the bone in place.

layers of bone grafts had to be superimposed. The bridge is completely reconstructed, and has remained so. The bone is firmly imbedded, and the x-ray plate seems to show that bony union has occurred between the two implanted fragments.

Case III.—A railroad man, aged 47. This pa-

tient claimed to have been perfectly healthy previous to a railroad accident in which his nose was injured, the injury being followed by erysipelas, when much bony tissue sloughed out. Since my first report of this case I have been informed by the physician who attended him at the time that the injury to his nose was trivial, and that his deformity

Fig. 7.—Nasal deformity attended by loss of bone. Case III. H. C. W., before bone-transplantation operation.

was due to syphilis for which he received treatment. The bridge was badly depressed and flattened, and a large scar bound the skin to the subjacent tissue. The septum was almost completely destroyed. The case presented a very unfavorable outlook for correction by any method of treatment. The operation was done October 20, 1910. The normal contour of the nose was immediately restored. The grafted bone acted as a rafter, and, being firmly supported by the nasofrontal process, which served as a fulcrum, it continued to exert a gradual traction on the soft tissues of the nose, which, having been unsupported, had subsided into folds on either side of the nose. These folds constitute one of the most

Fig. 9.—X-Ray plate showing transplanted bone in position.

disagreeable features of depressed nasal deformities. In this case, within two weeks, the folds had completely disappeared, the tissue having been drawn up into it proper place in the nose. The result in this case was practically perfect. I have recently heard from this patient, and he assures me that the good results have been maintained.

Fig. 8.—Case III. H. C. W., after bone-transplantation operation

Case IV.—A woman, 38 years of age, fell from her cradle when she was three years old, striking on her nose; the injury was followed by a septal abscess. There is no history of syphilis. The nose retained its infantile type, being broad and flat. The deformity became much more marked at about the age of 18. When she was 21 years old she consulted Dr. William T. Bull, who put a silver bridge into her nose: this sloughed out in a short time. She then came under the observation of Dr. Robert F. Weir, who introduced a celluloid bridge; this also promptly sloughed out. Owing to the extensive sloughing that had occurred, the nasal bones and the septum had been completely destroyed, and the nose was a mass of scar tissue. The nasal deformity was much more pronounced, and in addition both nostrils were completely closed by cicatricial tissue. Four years ago she came to Dr. Harmon Smith, who restored the integrity of the nasal passages and injected paraffin into the bridge, partially building it up. The improvement was great, but there still remained some depression and the cheek folds were very pronounced. About a year ago she noticed a deep furrow developing across the nasal bridge. In March, 1911, she returned to Dr. Smith, who noticed that there had been some shifting upward of the paraffin. On account of the large amount of scar tissue present he did not regard it as a case for further prosthesis and referred it to me for bone-transplantation. The operation was done March 10, 1911. After removing the paraffin, which came out *en masse* from its capsule of connective tissue, I found that there was absolutely no support for the bone-graft. In order to support the dorsal piece, reaching from the nasofrontal process to the tip of the nose, I made an inverted V-shaped pier out of two additional pieces of bone; these were introduced through the same wound. The apex of the pier rested under the dorsal strip of bone and the other ends on the superior maxilla on either side of the nasal notch. This framework supported the nose in its correct position, so that the wound was closed in the usual manner. Healing occurred promptly, and but for a slight infection which became apparent on the tenth day, and which re-

sponded to treatment, recovery was uneventful, the patient being discharged from the hospital on March 30, twenty days after the operation. The result, though satisfactory to the patient, could, I believe, be improved by grafting in another piece of bone, as we now have a firm foundation upon which to work.

Fig. 10.—Case IX, specific deformity, before bone-transplantation operation.

Case V.—A young man, aged 21, no specific history. This patient's nose was fractured several years ago by a blow from a baseball bat. The nasal bridge was broad, flat, and depressed. There was considerable nasal obstruction, due to a thick, irregular septum. The operation was done May 10, 1911. In addition to bone-transplantation, I did also the bridge-splint operation; the latter procedure being necessary in order to relieve the nasal obstruction and make the nose narrower by bringing the nasal processes of the superior maxillæ nearer together. Both operations were done at the same time, and neither proved to be a menace to the other. Recovery was uneventful and the result was entirely satisfactory, and has remained so.

Case VI.—A married man, aged 31 years, the father of two healthy children. This patient had syphilis eight years ago, was treated for eight months. There being no signs of the disease, he discontinued the treatment. Five years ago there began a profuse fetid discharge from the nose, and several pieces of bone came away. He immediately began treatment and has kept it up more or less continuously ever since, under the guidance of his physician. Three years ago the bridge of his nose began to fall in. Examination showed the nasal bridge to be considerably depressed and flattened. The nasal bones were slightly separated, and running down the center of the nose was a deep furrow, giving one the impression that the upper edge of the septum had dropped from its position between the lateral cartilages; and this no doubt had occurred. The septum was completely destroyed, and there was a large hole in the hard palate, which he covered with an obturator when speaking. The nose and throat were filled with cicatricial tissue, and he was suffering from a very foul rhinopharyngitis atrophica. The Wassermann test was negative. Bone transplantation was done June 14, 1911. Recovery was uneventful and the excellent result obtained in this case has remained up to the present time.

Case VII.—A young man, aged 31 years, having a congenital depressed deformity and pug-nose. No specific history. Bone transplantation July 6, 1911. Recovery uneventful. Deformity completely corrected and has remained so.

Case VIII.—A young man 21 years of age, practically blind from choroiditis. No specific history. Patient ran into a post three months ago and fractured his nose. On examination the nasal bones were found intact and in correct position, but the entire cartilaginous dorsum had caved in, producing a hooked deformity. Bone transplantation was done July 18, 1911. The deformity was completely corrected. Seven days after the operation there was some inflammation at the site of the incision; the wound was opened and irrigated. After this healing took place promptly and the patient was discharged from the hospital on August 3, sixteen days after the operation. The result in this case was entirely satisfactory and has remained so.

Fig. 11.—Case IX, after bone-transplantation operation.

Case IX.—This was by far the most difficult case that I have attempted. This patient, a young man 28 years of age, had been healthy up to eight years ago, when he contracted syphilis. The secondary symptoms were most severe, and he was confined to his bed for some time. He has been under treatment at Hot Springs almost continuously during the past three years, and at times has taken as high as 320 grs., of potassium iodide per day. Six years ago the nose became involved and large pieces of bone sloughed out, later a very pronounced deformity developed. Examination showed a very bad depressed nasal deformity. The tip of the nose was elevated and the nasal bridge was folded back upon itself at such an acute angle that free nasal respiration was rendered impossible. The nostrils pointed directly forward. The septum, hard and soft palate were almost completely destroyed. Cicatricial tissue was present in abundance and there was present a foul and very active purulent rhinopharyngitis. The patient's general physical condition was poor. The Wassermann test was negative at the time of the operation, which was performed July 31, 1911. Owing to the acute angular depression of the bridge, the tissues were elevated only with great difficulty. It was found necessary, on account of the large amount of dense cicatricial tissue, to elevate over the entire nose and far out under either cheek. When the bone graft was inserted, the tension on the skin was so great that it became blanched. This tension was relieved by the bridge-splint operation, which was rendered necessary in order to restore the integrity of the nasal chambers. The bridge-

splint was removed at the end of a week. The result was very satisfactory, both from a cosmetic and functional point of view. Sixteen days after the operation there was a slight bulging on the right side of the nose. An incision was made and a small amount of pus evacuated. The wound was irrigated for a few days, and the discharge having almost ceased the patient, on account of urgent business, was allowed to return to his home in the West. I have recently seen this patient; the discharge has ceased completely and the deformity remains corrected. I believe that the primary good result will be maintained, for the firm implantation of the bone seems not to have been affected by the infection, which I feel confident came from the nasal cavity. The rib in this case presented a very interesting condition; the compact bone was very thin, and extremely brittle, so much so that I found it difficult to shape a piece to suit the deformity. I attributed this to the virulence of the disease and the large amount of potassium iodide that the patient had been taking for a long time.

It is interesting to note that in none of these cases did the introduction of bone into the tissues seem to cause the slightest irritation. This I believe is due to the fact that the transplated bone is of the same chemical constitution as the surrounding tissue; there is, therefore, no antagonism between the two. None of my patients had any fever, and all were discharged from the hospital within ten days, with the exception of Case VIII, which was in the hospital two weeks.

The mechanics of the operation involve the principle of the lever; the short arm is fixed beneath the periosteum; the nasal process of the frontal or the nasal bones as the case may be act as the fulcrum, and the long arm of the lever does the work of lifting up the depressed bridge. The long continued lifting power of this lever elevates the objectionable cheek folds into their proper position in the sides of the nose, and this is one of the most desirable effects produced by the operation. There is left beneath the transplanted bone a pyramidal space which immediately becomes filled with a blood-clot, and which in the ideal operation becomes organized. The conditions here are extremely favorable for the introduction of infection; and this I believe will occasionally occur in spite of every precautionary measure. It is interesting, however, to note that infection does not necessarily mean a failure of the operation.

It would seem that syphilitic deformities are amenable to this method of treatment, provided that the disease has been cured, or at least mitigated, as shown by a negative Wassermann reaction. These cases, however, are more difficult on account of the large amount of cicatricial tissue, the atrophic rhinitis, and the general condition of the patient. It is my belief that the transplanted bone continues to live in its new position, and that it receives its nourishment from the surrounding tissues through the medium of an envelope of connective tissue which quickly forms about it.

In this work I have not hesitated to attempt the most difficult cases, and in some instances those which were seemingly hopeless. I feel, therefore, that the efficiency of this method of treating a class of cases for which hitherto so little has been done has been subjected to a fair test, and that the results obtained should commend it to your serious consideration.

69 West Fiftieth Street.

PEDIATRIC MEMORANDA.*

MEGACOLON CONGENITUM. ATRESIA ANI ET INTESTINI RECTI.

By HERMAN B. SHEFFIELD, M.D.,
NEW YORK.

1. *Megacolon Congenitum.*—The classical form of congenital megacolon is the one which is manifested immediately after birth by obstinate constipation, intense meteorism, and retention in the colon of comparatively large quantities of fluids injected for the purpose of emptying the lower bowels. Since the first description of the disease by Dr. Hirschsprung in 1880, however, there has been a growing tendency to include under this heading also the cases developing several weeks or months after birth, as long as they are traceable to some congenital intestinal anomaly, such as constriction,

Fig. 1.—Megacolon Congenitum.

kinking, or displacement of the lower portion of the colon or rectum. The case I am about to describe belongs to the latter category. The child was apparently robust at birth; passed meconium the same day, and continued to have several thin movements daily for several weeks thereafter. Her stools were often green and mixed with mucus, especially after passing through a severe attack of colic, but as she was breast fed, no particular attention was paid to the intestinal disturbance. When six months old, or thereabouts, the baby's dietary was enlarged by the addition of zwieback, thin gruel with milk and baked potato with butter, and it was about this time that obstinate constipation and pronounced meteorism made their appearance. At first the constipation was relieved by laxatives, and later these and enemas had to be resorted to. If left constipated, the child would greatly suffer from colic, occasional vomiting, and

*See pages 913 and 1062.

after administering an active cathartic, the stools would be found mixed with large quantities of mucus in the form of irregular pieces of membrane and, now and then, also with blood. The child was treated in several clinics and by private physicians, but notwithstanding faithful compliance with the prescribed dietaries and the application of different therapeutic measures, her condition grew perceptibly worse. The little patient came under my observation at about three years of age. As can readily be seen from the accompanying illustration (See Fig. 1) the abdomen was immense in size. It was as tense as a kettle drum, glossy and bluish in color, and traversed by numerous tortuous veins. She was greatly emaciated, and showed marked symptoms of rachitis, hence on the first examination it appeared to me that I was dealing either with a pronounced case of rickets or tuberculous peritonitis, more probably the latter, since her temperature at the time was 1½° F. above normal. As the mother was reluctant to leave the child in the hospital, I prescribed an antirachitic diet, and the syrup iodid of iron in

Fig. 2.—Atresia Ani et Recti.

an emulsion of cod liver oil, and directed her to report to me twice a week at the outdoor department. The child's condition grew worse from week to week, and, finally, after six weeks' futile therapeutic efforts, she was admitted to the hospital. By this time I was fully convinced that the lesion was somewhere in the colon, consisting of an obstruction probably of tuberculous nature: she vomited repeatedly, lost greatly in weight (weighed only 18 lbs.), ran an irregular temperature of from one to two degrees F. above normal, and was invariably constipated, unless given an active cathartic, which with intense pain produced a watery movement containing mucus and traces of blood. Digital examination of the rectum proved negative. I referred the patient to the late Dr. Th. H. Manley for operation. On opening the abdomen we found the descending colon widely dilated, cornet shaped, its widest extremity (measuring about 6½ inches in circumference) terminating at the sigmoid flexure. At this point the intestine was abruptly contracted, scarcely measuring 1 inch in circumference, and continued at the same width down to the rectum.

The surgeon wisely decided to leave the patient alone, for she was barely alive when removed from the operating room. She died the following day. Judging by the findings at the operation we gained the impression that her life would probably have been saved had an operation been undertaken a year or so earlier.

2. *Atresia ani et recti.*—This case is of interest principally from a teratological point of view. The family history presented nothing extraordinary. It was the first child and born at full term. The mother suffered greatly during the entire pregnancy and claimed not to have felt life until about the middle of the sixth month. The child was delivered instrumentally, after Dührssen incisions, by Dr. A. Sturmdorf (who kindly referred the case to me). It was a monstrosity from head to foot. (See Fig. 2.) The head was soft and deformed, the ears were turned inward and hung loosely like those of a dachshund, the forearms were contracted, the legs were short and sharply curved inward, and the feet in *talipes varus* position. Scrotum and its contents were absent, and a thick, flat imperforate piece of skin represented the penis. There was no anus nor even an indication of one. On opening the abdomen we found that the intestines terminated at the left iliac fossa in a large blind pouch filled with meconium. The kidneys and bladder were rudimentary. The thoracic organs were apparently normal in development. The mother has since been more fortunate with the second child, though this one also shows slight deformities of the ears and fingers.

127 West Eighty-seventh Street.

THE ODYSSEY OF A DIAGNOSIS.

By CECIL KENT AUSTIN, M.D.,

PARIS, FRANCE.

The many methods of physical exploration of the body that have been introduced into medical practice during the last generation, and in particular the *x*-ray, have of course very materially improved our chances of attaining accuracy of diagnosis; in correlation with this progress, however, must be admitted the counterpart, that they have undoubtedly widened, to a considerable extent, our liability to error—to give only one instance, through faulty interpretation of images. The humiliating history of the following case is so much to the point, in this connection, that it has seemed worth bringing to the notice of the medical public.

There is in medicine an old and unfortunately very true saying, that it is through our mistakes that we advance in knowledge; just at present certainly no one is more fully convinced of the truth of this axiom than the five medical men who were called on to examine this patient. By a fortunate occurrence the notes on the case were committed to paper at each of its successive phases; they give, therefore, a very exact picture of the widely differing views held at its various stages. Brief consideration, then, of the startling vicissitudes through which this diagnosis passed will enable the reader to form an idea of the chastened frame of mind in which the above-mentioned physicians found themselves when the facts of the situation were finally revealed.

The patient, a married woman of fifty, had had

two children; one is now a grown man, the other died of some indefinite disorder at eight months of age in charge of relatives in the country. There had been no miscarriages. Twenty-six years ago she had a severe attack of left pleurisy with effusion, which resorbed spontaneously. I had known and visited this patient for over ten years, during which she had on the whole appeared well and cheerful. The relatives about her, however, said that for some time past she had been complaining a good deal, and in particular, during the last five years, of neuralgic pains in the lower left anterior portion of the thorax, apparently more noticeable before her periods. This symptom had, however, not seemed very important, and was laid to intercostal neuralgia or rheumatism.

About two and a half years ago she began to manifest what appeared to be an idiosyncrasy for tobacco; the odor of this smoke became sufficient at any time to induce retching, during which she would bring up a mucous secretion, or, if soon after a meal, the food she had eaten. These efforts would continue until nothing remained to come up, and so sensitive did she become to tobacco that it was not even necessary for anyone to actually smoke in her presence, the mere fact that a person smelled of smoke was enough to bring on the nausea. In the matter vomited the patient never noticed any remnants of food of former meals; nor had she in previous years ever manifested any special sensitiveness to tobacco. In the early part of April, 1911, she began to complain, quite suddenly, of severe pain in the left side of the epigastrium, pain deep-seated, fore and aft, possibly more pronounced in the lower part of the back than in front, where it appeared to extend downward and outward toward the hollow of the flank. There was marked sensitiveness to pressure just below the left thoracic edge at the epigastrium, but that was all, neither swelling nor induration could be detected. She never vomited except when upset by tobacco; there was constipation and apprehension against taking food, and her temperature and pulse were normal.

I knew that this woman led a life at high pressure, under severe and unquestionable nervous strain; so my first diagnosis was acid dyspepsia, and I prescribed the diet and alkaline treatment that usually relieve such cases very promptly. My surprise was therefore considerable when after a few days I found the situation practically unchanged; and it became greater still when in one of the patient's attacks of tobacco-nausea she experienced a severe tearing sensation in the left side of the epigastrium, and the pain became intense, necessitating the use of opium. The idea of perforated ulcer was naturally the first to occur to the mind; but after watching her closely and finding no signs of acute general reaction of the peritoneum I asked a surgeon to take a look at her with me to see whether she might not be developing a subphrenic abscess. He, however, could detect nothing surgical, and I continued to follow the case with attention. A milk of bismuth treatment was next tried, but it likewise gave no appreciable result.

The situation so far had, consequently, summed itself up entirely in the symptom *pain*; and pain *in the abdomen*, not at all in the thorax. Although the patient complained that the taking of food caused her much suffering, that was manifestly not the real cause of the pain; besides, her nights as a general thing were worse than her days. Furthermore, she was by this time eating so little that that alone could not possibly account for her distress. She next spoke to us of a very curious sensation, and this feature opened the second, or *obstruction* phase of the case. She said that not only was the swallowing of food painful, but that she had a feeling as though what she ate went down *in successive stages,* like a child descending a series of steps, one at a time; nor could she any longer take very much at one meal, as it did not seem to pass. The symptoms had, however, so far been so exclusively abdominal that the idea of any esophageal disorder never entered our heads, and we laid this fresh development either to the patient's imagination, or possibly to a spastic condition of the esophagus due to her suffering and nervous irritability.

The patient's pain, however, continuing, and the amount of food consumed being altogether insufficient, it became necessary to make further efforts to arrive at some precise diagnosis. There was neither vomiting after food, nor blood in the stools, and the pain did not in any way resemble that of ulcus rotundum or neoplasm; furthermore, the condition present had had an *acute* beginning. We were therefore evidently dealing with one of the more unusual painful disorders of the epigastric region. There were no signs of tabes, so a gastric crisis was ruled out; I thought of the pancreatic diseases, and of the uncommon forms of hernia, diaphragmatic, etc.; of abdominal angina pectoris, or arteriosclerosis of the celiac trunk; and of aneurysm of the abdominal portion of the aorta. Finally on April 19 I sent her to a medical friend with the request to examine her before the fluorescent screen, which he did in conjunction with the *x*-ray expert of his hospital.

The notes written at this moment read as follows: "This gave us at last the solution of the enigma. On the patient's swallowing a glass of bismuth emulsion, a mixture of bismuth carbonate in a solution of gum arabic, it is seen to pass down the esophagus, not into the stomach, but first into a long, stocking-shaped diverticulum, undoubtedly congenital, that opens into the esophagus at about the level of the third dorsal vertebra, and that has a pointed lower extremity advancing in the direction of the anterior mediastinum and to the *left*. This diverticulum is animated with movements communicated to it by the cardiac pulsations. It appears to have a well-developed muscular coat; when it is full a little bismuth can be made out overflowing and passing down the esophagus; a second examination, made three hours later, showed that the diverticulum had entirely emptied itself of its bismuth contents. The screen examination of the stomach is absolutely normal. In the lungs there are calcified tuberculous lymphnodes about both hili, and the apices are not transparent. To say that the result of this examination was a surprise would be to depict the situation in sober terms; a congenital diverticulum of the esophagus is not a condition that the practitioner meets with very frequently; and a diverticulum opening high up, but with an almost exclusively abdominal symptomatology, must be rarer still. Besides, how is this complete silence up to the age of fifty, followed by this sudden and extremely painful condition, to be explained? What can have been the origin of that sudden tearing sensation that the patient experienced; and what is the meaning of the present constant severe pain, mostly in the lower left side

of the back? Also, how can the patient's actual mode of alimentation be interpreted? For she now tells us that so soon as six tablespoonfuls of food are exceeded the remainder is regurgitated, spontaneously, without effort, whereas a month ago she could eat and drink like anyone else.

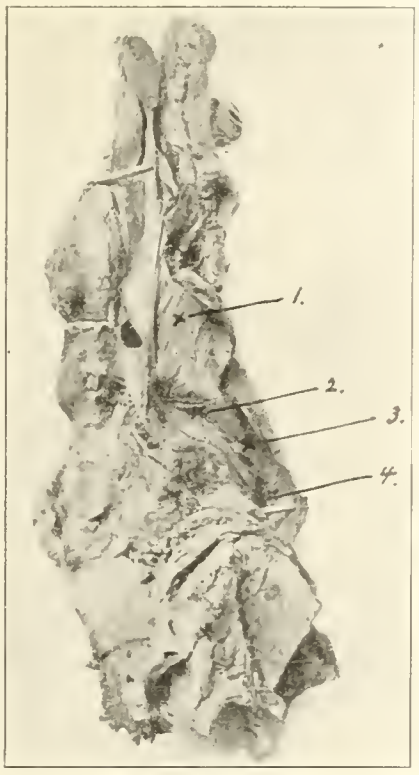

FIG. 1.—1, the dilated esophagus above the obstacle (corresponding to the vertical part of the shadow on the radiogram). 2, the deflected part of the esophagus ending in an apparent point (the horizontal part of the shadow on the radiogram). 3, point where the wall between esophagus and aneurysm was transparent (perforation made during examination of the specimen). 4, portion of esophagus below the stricture, forming a species of pocket above the diaphragm.

"The interpretation of the situation seems to be the following. Before the present condition came on this diverticulum existed in a latent state, with a non-patent, or at any rate, very small orifice, the food passing over it and on directly into the stomach. But a short time ago, and particularly at the moment of the tearing sensation, this orifice was forced open by some cause at present unknown, foreign body, or possibly owing to malignant degeneration of the edge of the orifice, and now all food swallowed passes first into the pocket, whence it is transmitted little by little to the stomach. When the pouch is full it probably presses on and flattens the esophagus, thus preventing the taking of more than a certain amount of food at one time, the index of the pouch's capacity being apparently six tablespoonfuls."

Such, then, was our opinion at this stage of the case. The next question was, naturally, what was there to be done, the patient's condition having become really serious through suffering, bad nights, and altogether insufficient alimentation. If the supposition of a sudden and forcible irruption into a hitherto virtual cavity were correct, there seemed a possibility that by putting the region at rest the orifice might be got to close again, or at least become too small to admit of the ready passage of food, although the chances of this were small, as upwards of three weeks had elapsed between the time of the supposed accident and the detection of the diverticulum. How then could the region be best put at rest? A simple means at once suggested itself, that of trying to find a position for the patient in which, while taking food, its tendency to pass into the pocket would be counteracted. The right decubitus posture seemed to succeed for a while, but we soon perceived that this plan was a delusion. We next thought of feeding with the gastric sound, or, possibly, of gastrostomy. But before proceeding any further we decided to make an esophagoscopic examination under cocaine, to verify the situation and size of the orifice, the condition of the mucous membrane about it, and, in general, to satisfy ourselves as to the safety of passing sounds down such an esophagus. Incidentally arose the question of the possibility of a radical removal of the diverticulum by means of a surgical intervention, as the outlook for the patient did not seem particularly brilliant unless some pretty active measures of relief were devised before the lapse of much more time.

On April 18 the patient had a sudden, violent and unexplained attack of tachycardia, which lasted a couple of hours, the pulse being at 180 and perfectly regular. She was at this period suffering so severely that she could hardly be persuaded to touch even liquid food, and was losing flesh rapidly. On the 19th, 20th and 22nd she had to have an injection of a quater of a grain of morphine, and on the 22nd her temperature was 98.4° and her pulse 78.

At that moment, then, we four physicians were quite convinced that our patient's condition was due to a congenital diverticulum of the esophagus, with an orifice situated high up, near the third dorsal

FIG. 2.—The aneurysmal pouch emptied of its clots. The aorta above and below the aneurysm is covered with patches of atheroma.

vertebra. We thereupon took unto ourselves a fifth excellent confrère, very skilled in the use of the esophagoscope. He, however, asked to be first allowed to examine the patient again before the screen with the bismuth test; this was done on the 23rd, with results very similar to those of the

previous examinations. A mercury-loaded catheter was also used at this séance, but it was seen to pass directly into the diverticulum and to stop at its extremity. The examination by esophagoscopy was carried out under cocaine that same evening, carefully and at leisure, and revealed further surprises. No high-situated opening into a diverticulum could be detected. The tube passed smoothly along a normal esophagus until at about 30 cm. from the upper incisors, at which point it was stopped, a crescent shaped fissure being visible just beyond, in front and to the right, with its concavity pointing back and to the left. No other opening could be found, nor was there any degeneration of the mucosa to be seen. The instrument was then removed and the patient permitted to rest, and in the meantime a small esophageal catheter was pro-

Fig. 3.—X-Ray picture showing the apparent diverticulum.

cured; the tube was then inserted a second time and the catheter passed down it, through the crescent, and into the stomach. It was then fastened to a tooth, in a breach where several were lacking, and a large feed of milk was administered by its agency. There was no doubt about the catheter being really in the stomach, as the quantity of food given, two or three tumblers at the least, was enormously in excess of anything she had been able to take for some time previously. The patient was then sent back to bed.

The next day, April 24, she was again examined before the screen, as she had vomited her milk of the previous evening, and could since then no longer be fed by the tube. A wire inserted into the catheter was stopped at the 30 cm. limit, and some bismuth, swallowed down along the side of the tube, collected in the diverticulum as before. It was evident that the catheter, which was a silk and gum one, had kinked, possibly under the strain of the vomiting the evening before. So it was withdrawn. At this séance, the patient standing in an almost transverse position, a small and indistinct portion of the shadow of an apparently round body of about the size of a mandarine orange was seen slightly overlapping the image of the point of the heart; this disc section extended a little to the left but principally downward below the outline of the heart apex, seemed less distinct than the latter, and did not pulsate. This was the first time that this detail was detected.

After these last examinations we were of the opinion that the orifice of the diverticulum must be low down in the esophagus; that the latter was considerably dilated above it, and that the pouch, when filled, pressed on and obstructed the esophagus. This is altogether exceptional in the matter of diverticula, most of which originate high up, so much so that forty or fifty of them have been removed by operation. The most probable explanation of the case, then, seemed to be that it was not a congenital pouch, but an acquired traction diverticulum, due to adhesions subsequent to the patient's pleurisy of twenty-six years ago. Our esophagoscopic friend, however, was not at all satisfied with the results of his prolonged and careful examinations; in fact, he said very plainly that the whole situation seemed to him most obscure.

Something, however, had to be done to prevent the patient's succumbing to actual inanition, and gastrostomy was performed on the following day under chloroform; the operation was very short, a Ricard apparatus was used, and the quantity of anesthetic administered was small. By one of those strange fatalities the patient's urine, which had been saved prior to operation for analysis, was heedlessly thrown away by a servant at the last moment, so that the usual tests could not be made. On the 26th all was well, and 1 liter of urine, normal in appearance, had been passed; but during the afternoon of the 27th the patient developed signs of acute postoperative dilatation of the stomach, with vomiting of blackish fluid. This was relieved at 4 P. M. by abundant flushing through the gastrostomy tube. The urine at that moment was scanty, dark, and with a thick deposit; but no special attention was paid to this, as the patient's symptoms seemed sufficient to explain the condition. When seen at 9 P. M. the vomiting had not recurred, she appeared perfectly well, and soon afterward settled down quietly to sleep. On the morning of the 28th she had passed a good night, but she was very somnolent and could not be got to answer questions properly; both thumbs were contracted tightly into the palms of her hands, and her head moved from side to side; there was also slight conjunctival subicterus. There had been 500 c.c. of urine during the 24 hours, which gave a dense precipitate with nitric acid, though the Esbach test showed next morning only 1 gram per liter. Casts were not looked for. On the day previous there had been neither headache, puffiness of the eyelids, nor sight trouble. She then became rapidly comatose. At 2 P. M.: "No urine since A. M.; sphincters normal; T. 37°; pulse 90, regular and good; R. normal, 18. Continues to turn her head from side to side on the pillow." At 9 P. M.: "Much worse; pulse 150; constant, quiet convulsions, one every minute or so." These increased in severity during the night. Toward morning, April 29, she urinated involuntarily in bed. Death occurred at 7 A.M., three days and a half after the operation, in this

uremic condition, the entire illness having lasted just four weeks.

Post-mortem, performed twenty-six hours after death, showed that we had been entirely at sea all through the case. The disorder that had given rise to the symptoms that had baffled us was in reality a small, sacciform aneurysm of the thoracic aorta situated immediately above the diaphragm; this tumor had first deflected the esophagus from its course, and then obstructed it by flattening and kinking. What we had taken for a diverticulum was the deviated and dilated esophagus running forward and to the right (*not* to the left, as one of the *x*-ray operators had asserted so positively), and finishing in an *apparent* point where it was flattened. The faint round shadow seen back of the heart apex at the last screen examination, on the 24th, which at the time was thought to be due possibly to some accumulation of bismuth, was evidently the image of this aneurysm.

All the apex of the left lung was adherent; on the right side there were slight adhesions at the apex and total symphysis of the base. On the inner portion of the right apex there was an extensive zone of scar tissue. Curiously enough, in view of the diagnosis of traction diverticulum that had been made, there was a limited area of adhesion in the left pleura corresponding to the aneurysmal tumor. The kidneys were large, the left one more so than the right, and there was intense congestion about the base of the pyramids. More careful dissection, some time later, after the specimen had hardened in a solution of formalin, gave further interesting details. Above the tumor the esophagus was uniformly distended for some distance (Fig. 1); its lower portion was thrown forward and to the right by the tumor, but then made a short and sharp turn backward and to the left, immediately above the diaphragm, forming a sort of blind pocket. The entire inside of the aorta was covered with large patches of atheroma, both above and below the pouch, and the main celiac vessel was also diseased.

The aneurysm, the size of a large Spanish onion, was situated to the left of the vessel and rather forward; it was clearly sacciform, with a round, moderate-sized, neatly stamped out opening into the main vessel. (See Fig. 2.) The impression given was that a large patch of atheroma in the wall of the aorta had yielded, and that the tumor had formed itself by degrees in the depths of the adjacent tissues. The pouch was packed tight with stratified and adherent clots, pale and dense at the periphery but red and fresh at the center, that weighed 80 grams when extracted; it was evident that such an aneurysm could have no movements of expansion. At one point the wall between the pouch and the esophagus was so thin that when the clots were extracted light could be seen through it: it had been, however, protected by these layers of stratified clots. A second aneurysm, just across from the main one, had begun to form at the expense of another patch of atheroma. The left pneumogastric nerve was found running down over the larger aneurysm and closely adherent to its wall. A flat, calcified lymphnode was laid bare beneath the left bronchus.

In looking back over this case and endeavoring to account for its vicissitudes, we meet many obscurities. Two main suppositions are possible: (1) that the aneurysm was of ancient date, and that it was to it that the chronic pain of the preceding five years had been due; (2) that the long-standing pain was produced by chronic aortitis, and that the sudden, tearing sensation had been caused by the brusque giving way of one of the patches of atheroma. It is the second hypothesis that best satisfies the mind and explains the symptoms presented by the patient, and in particular the suddenness of the entire affair, and the acute suffering and obstruction. Histological sections of the periphery of the pouch showed, furthermore, that only a small portion was formed of arterial tissue, that in immediate connection with the edge of the opening in the vessel, the remainder consisting of connective tissue only; it was consequently a false aneurysm. The patient was unfortunately never questioned as to any possible antecedent syphilis. No explanation of the sudden appearance of this woman's idiosyncrasy for tobacco has occurred to us.

The violent atack of tachycardia was very likely due to some action of the tumor, pressure or inflammation, on the portion of the pneumogastric that was found in such intimate connection with its wall. What the patient described as her "swallowing in steps" was most probably caused by the dilated esophageal pouch emptying itself of its contents by successive efforts of contraction; but the overflowing of the bismuth from the supposed diverticulum into the esophagus through an opening high situated, was clearly a hallucination of the observer's mind. It is possible that the reason why the round shadow of the tumor was only seen at the last examination was that the latter had previously been completely masked by the heart, but that on account of its progressive extension into the loose tissues of the mediastinum it had finally worked itself out beyond the limits of the heart's shadow; at the same time it is not impossible that the reason why we saw the tumor at this séance and not at the others was that on this occasion we happened to examine from a more favorable point of incidence for the rays. The extreme thinness of the wall between the aneurysm and esophagus, noted at post-mortem, should be borne in mind by those who handle the esophagoscope; it is remarkable in our case that during the repeated maneuvers with this instrument and with catheters this wall did not give way, since it yielded almost at the first touch on actual manipulation.

Whether the uremic condition to which the patient succumbed was due to preexisting nephritis, or to the action of chloroform, we shall never know, as the renal tissues were already so decomposed when removed that sections were of no use although made. Certainly the patient had never shown signs of nephritis before or during her illness, and the numerous injections of morphine which her condition demanded had been followed by no ill effects.

This case again illustrates, finally, the difficulty physicians experience in changing their views, once the latter are firmly established. From the time that the initial stage of total uncertainty with this patient was replaced by an apparently positive diagnosis, that of diverticulum, everything was made to fall into line with that conception; although it is now evident that the absence of any high orifice, and the shadow behind the heart-apex, ought to have awakened serious misgivings in our minds, not to speak of the unlikelihood of any sudden appearance of acute symptoms in a congenital diverticulum at the age of fifty.

STRABISMUS IN INFANTS AND YOUNG CHILDREN.*

By ISAAC M. HELLER, M.D.,

NEW YORK,

ADJUNCT OPHTHALMOLOGIST, LARYNGOLOGIST, AND OTOLOGIST TO THE LEBANON HOSPITAL.

The strides of preventive medicine have been so rapid along those lines which concern the community that the individual has reason to feel slighted at his neglect. Strabismus has received little attention from the profession, which until recently has been content to stand idly by waiting for the child to outgrow his trouble, or after the damage has been done advises an operation, which at best can attain only a cosmetic result. It may be so because squint is an affliction rather than a disease.

In this day of keen commercial competition a cross-eyed young man is seriously handicapped in his efforts to gain a livelihood. Certain occupations which require accurate binocular vision, such as engineering of various sorts, in the army, navy, police and fire departments, and some mercantile lines, are shut out to him entirely, so that his range of usefulness is limited to a few vocations, for which he may be unfitted. This is not on account of his personal appearance alone, but, as will be shown later, because the squinting eye becomes almost blind, thus rendering its possessor as visually helpless as if he really had but one eye. A squinting young lady is almost as badly situated, for, while commercially the damage may be less, the deformity affects woman's most precious asset—her personal beauty. This might mean an actual interference with her opportunities of marriage and a consequent disappointment for life. The superstition surrounding "cross-eyed and wall-eyed" people, even in this enlightened age, is by no means a negligible quantity, and the number is not small who will have nothing to do with one so afflicted. It is apparent, then, that we have to deal with a factor of real economic importance to the individual who is entitled to a fair share of the practitioner's consideration.

Etiology.—Each mother gives a different reason why her child squints, and all the infantile diseases and accidents imaginable have at some time been blamed therefor. The usual story is that the infant was born with perfectly straight eyes, but that after some sickness, or sore eyes, or after the nurse held the baby in a peculiar position, or permitting the child to associate with and imitate others who were cross-eyed, besides other reasons too numerous to mention, it was noticed that the little one started to turn his eyes in, or, less often, outward.

Careful investigation shows there can be only a contributing factor in any of these reasons at most. What is nearer the truth is that the baby had a tendency to squint, or this was so occasional as to escape detection of those about him. Then his acute illness overtakes him and in his weakened condition he loses some of his strong muscular power, and this relaxation allows his squint to become apparent to his now watchful mother. It is surprising how marked a strabismus can be perfectly apparent to strangers and yet pass unnoticed by doting relatives. The exception to the above is diphtheria, which causes a true paralytic strabismus, but which rarely becomes permanent, and does not come under the consideration of comitant squint. Of the numberless theories offered there are but three worthy of serious consideration, viz., the short-muscle theory, the refraction theory, and the fusion theory.

1. The short-muscle theory: It seems most obvious to regard an internal strabismus as due to a short internus muscle or a divergent squint to an overacting externus. The equally obvious remedy then would be to cut that offending muscle. This theory is easily disproved by showing that each eye moves freely in all directions; that the squint may affect either eye alternately, and in the beginning is not infrequently occasional, and that during sleep or anesthesia, or after the instillation of atropine the eyes are frequently perfectly straight. It was formerly common practice to tenotomize these cases with many disappointing functional results.

2. Refraction theory: Donders was the first to call attention to the fact that convergent strabismus was usually accompanied by hyperopia alone or in combination with astigmatism. Worth found this true in 1,729 out of 2,337 cases, or over 74 per cent. The idea was as follows: A normal eye looking at an object twenty or more feet away uses none of its accommodation an dthe eyes are parallel. On looking at an object thirteen inches off, the average reading distance, he exerts three diopters of accommodation. Inasmuch as accommodation and convergence are inseparable, he must at the same time exert his interni to the equivalent of three diopters or three meter angles in order to bring his lines of vision together at the required point. A hyperope of say three diopters must use his accommodation just that much to see things at twenty feet and his eyes tend to converge even for distance. Now, when such a person wants to read ordinary print he also must accommodate three diopters, which, added to his three diopter handicap, means six diopters that he is now using. As stated, accommodation without convergence is impossible, hence his eyes turn to a point six meter angles or six and two-thirds inches off. The eyes pointing thus receive a very imperfect image of an object thirteen inches away, since the rays do not fall on the fovea directly. To correct this, the patient unconsciously rotates one eye (the better one) outward until the macula is reached. As you well know, the outward rotation of each eye is inseparably associated with the inward motion of the other. The result is an excess inward rotation of the squinting eye. The rays now fall on the fovea in the fixing eye and on the nasal side thereof in the squinting eye. Impressions recorded here are never clear and the child soon learns to ignore them completely. Where the vision of each eye is equal the strabismus alternates until one eye becomes fixed definitely. This theory held for a long time, although it failed to satisfy those cases where there was no refractive error and where internal strabismus was associated with myopia. Moreover, it did not explain that large number of hyperopes who show no tendency to squint whatever. For a time it was believed that an eye turned in or out because its congenital vision was so inferior to that of its fellow and its image so blurred that the eye deviated from the true line of vision the more easily to disregard his diplopia. This poor vision or amblyopia is now considered an effect rather than a cause of squint. That is a sort of atrophy of the rods and cones following disuse just as a limb atrophies in a cast after a fracture. Worth believes that a true congenital ambly-

*Read before the Medical Society of the Borough of The Bronx, April 12, 1911.

opia is extremely rare and that most cases so regarded are really due to undiscovered or neglected squint. In the thousands of cases that have come under his notice there are but twenty-three which he counts as truly congenital. In general it may be said that the earlier in a child's life a squint develops the greater is the chance of that eye becoming amblyopic.

3. The fusion theory: Claude Worth of London in 1903 wrote an excellent monograph on the etiology and pathology of squint, calling attention to a new factor. His list includes 2,337 cases of all varieties of strabismus, covering a period of ten years, of which 90 per cent. developed before the age of six. He shows that none of the preexisting theories accounts for all cases, so he looks about for one which does. Few of us with normal vision realize that we really see everything twice—that one distinct picture is projected on the retina of each eye. This you can readily prove to your own satisfaction by pressing gently on one eyeball and on looking at a light you will clearly see two. Each spot on the retina of one eye has its relative area on the retina of the other with the exception of the extreme nasal sides. All rays falling on these corelative points are perceived as one by the sense of fusion situated in the visual center of the brain. This fusion is very important, since it gives us our sense of proportion and perspective, without which all things would seem flat. Worth claims this fusion faculty is absent at birth and bases his conclusions on the following observations. He placed children a few hours old in a dark room and threw the image of a candle by means of a concave mirror into their eyes. The infants would fix the light for an instant and then turn away. This is probably a purely reflex act. At the end of two to three weeks the infants would fix the light steadily for several seconds at a time with one eye, but would not converge both visual axes. At five to six weeks, as a rule, the positions of the reflections were symmetrical on the cornea, showing a binocular fixation, but now and then one eye would deviate a little inward, or more rarely outward, while the other fixed the light. During these first few months of life the eye movements are uncertain, not completely controlled by the higher brain centers. At five to six months, however, the child's attention can be engaged by almost any bright object, while one may slip a 12-degree prism, base out, before one eye, which will rotate in, showing there is an effort made to maintain binocular vision. In other words, the vision of each eye is present at birth at the macular region. The convergence which tends to subserve binocular vision develops during the first few months so that it is evident by the seventh month and goes on to perfection up to the age of six years. During this period, should anything occur to interfere with this development, it is a question whether an effort be made to overcome it or whether the newly acquired art shall be abandoned and the vision of that eye suppressed. After the sixth year the fusion sense is fully developed and nothing can occur to destroy it save a true paralysis of one or more muscles. The commonest provocations contributing to the overflow of binocular fusion are the following: 1. Hyperopia, which has already been considered. 2. Anisometropia, that is where there is a marked difference in the refraction of the two eyes, such as one eye being normal and the other ten diopters myopic. 3. Hyperphoria, which is an imbalance of those muscles which raise and lower the eyes. 4. Esophoria and exophoria an imbalance of the lateral eye muscles. 5. Specific fevers. These children usually have considerable hyperopia and in their enfeebled condidition find accommodation, coupled with a poorly developed fusion sense, quite an effort. This upsets their unstable equilibrium and the squint becomes apparent. 6. Violent mental disturbance such as convulsions, severe fright, etc., may, in the absence of the fusion faculty, upset the equilibrium of the convergence center. One influential factor must not be overlooked—that of heredity. In a fair number of my cases there was a distinct history of strabismus in one or more members of the immediate family and Worth found it so in 52 per cent. where his information was reliable.

Symptoms and Course.—Usually in the beginning the squint is not constant but appears when the child is fatigued or toward evening. At the same time he may be restless and irritable or if old enough may complain of headache. This is due to the muscular effort endeavoring to maintain binocular vision. Later on it is noticed that the squint is present most of the time but alternates from one eye to the other. The child is now thought to be manipulating his eyes purposely and is frequently admonished for it. Soon, however, the squint becomes fixed in one eye and remains there permanently unless artificially relieved. No effort is made to secure binocular vision, consequently these patients are not particularly subject to headaches.

Diagnosis.—In well-developed cases the diagnosis is made at a glance though it may sometimes be difficult to determine which is the squinting eye. The simplest method is to take the child into a dark room and hold a lighted candle three feet from his eyes. He will immediately look at it and the reflections thereof will be plainly seen on each cornea. In the fixing eye it will be at the center, while in the squinting one it is far to one side. It is particularly in the undeveloped cases that considerable attention must be given to detect the slight changes of position and repeated observations made to come to a correct conclusion. In general it is a safe rule to follow that any child over six months who squints, even occasionally, should have atropine dropped into his eyes and his refraction carefully measured.

Treatment.—This is after all the most important part of this paper. Formerly nothing was done for these unfortunates until they were old enough to read. Now we realize a child is never too young to receive some treatment for his strabismus and it is just among infants that we can do the most good. We first test the vision of each eye separately after carefully binding up its mate. Then we use Worth's globes, which are no more than white marbles of five sizes ranging from ½ to 1½ inches in diameter. The largest ball is thrown on the floor with a twist so as to make it "break" its direction, then the next smaller, and so on until the smallest is reached. At the same time we must watch the direction of the child's eye to determine if he follows the ball. If he is old enough several are thrown together and he is asked to pick them up. By this means one can readily tell if the child has vision in each eye and approximately how much. The better eye is tested first so as to give him the benefit of the experience and the poorer eye compared with it. The refraction is then carefully determined by retinoscopy after the instillation of atropine and the results recorded. Infants under ten or twelve months

should now have a ¼ to ½ per cent. solution of atropine placed in the better eye daily to paralyze its accommodation and compel the use of the poorer one. Some oculists put the atropine in both eyes for quite a long time. This is a mistake, since the accommodation of both eyes is suppressed and there is no opportunity to exercise either. The object is to force the use of the steadily growing weaker eye and develop its function by exercise just as we endeavor to develop a weak part elsewhere in the body. It has been my practice, too, to order a pair of cheap, empty spectacle frames to be tied about the little one's head so as to make him familiar with the sensation of wearing something about his eyes and ears. After one year we order the proper glasses as we would for an adult. It is marvelous how naturally these little tots take to a well fitted pair of specs. My youngest case was eleven months and there is another of fifteen months. Both these children wear their correction constantly while awake and take them off only when the lenses are dirty, causing blurred vision. The eyes are quite straight with the glasses and evidently feel comfortable with them and seem lost without them. At first these patients will need watching that they do not pull the specs off and bend the frames, but a little patient training with a judicious slap on the hands now and then will do wonders. Even these cases should have a weak solution of atropine instilled into the stronger eye once daily for a month at a time to exercise the weaker one. The main objection to a baby's wearing glasses is that in falling he might break the lenses and the splinters injure his eyes. This danger is more fancied than real, because glasses properly made with secure rims do not splinter but crack, and personally I have never heard of an injury by this means. As soon as the patient is old enough to understand what is wanted he should be made to exercise his fusion with the amblyoscope of Worth. Starting with the simple figures he is taught to recognize two different but related objects simultaneously. For instance, the picture of a bird is put in one side of the scope and that of a cage on the other. By varying the intensity of the light behind the pictures he can be made conscious of both. He is then told to try to put the bird into the cage, which can readily be done by changing the distance of the arms. Weekly exercises of this sort, gradually increasing the complexity of the figures, train the fusion sense and binocular vision to a degree hitherto unhoped for. It goes without saying that these children require constant attention and periodic supervision, but the prize is well worth the effort.

This plan of treatment conscientiously pursued will at least preserve the sight of the squinting eye even if it does not overcome the strabismus and secure binocular vision. Now, if after all this the child reaches the age of seven or eight years and still squints then an operation to straighten the eyes will be indicated and if successful will result in two useful eyes. It will be found, however, that where these means have been thoroughly tried out the cases requiring later operation will become progressively fewer. The difficulty lies partly with the physician who believes that the child will outgrow his strabismus and partly with the misguided mother who, only too willing to coincide with him, hates to have her "darling's beauty marred" with glasses, little realizing that the squint is far more of a deformity than a pair of well fitted specs. It must be clearly understood that they rarely outgrow their affliction and when they do one eye is badly damaged. It is a plea for a square deal for the little "cock-eyed kid" who is to be the butt of his playmates' jokes and later in life heavily handicapped in this already sufficiently close race for existence that I would ask you not to neglect these cases but do something as soon as you discover them.

450 Tremont Avenue, East.

REPORT OF CASES.

By J. P. KENNEDY, M.D.,

WINGHAM, ONTARIO.

SURGEON TO THE WINGHAM GENERAL HOSPITAL.

In the preface of his recent work, entitled "One Hundred Surgical Problems," Mumford says: "The teachings of practice are conveyed by example as well as by precept. Until recent years writers knew and availed themselves of this fact. They set forth their lessons by case illustrations. Galen did this; so did Paré, that master of the method; so did Wiseman and Le Dran, Hunter and Petit, Cooper and Paget. The method in proper hands is luminous, and the lessons are instantly comprehensible. We abused and nearly lost that method with the development of the statistical, analytical practice of the last century." The report of our successful cases is naturally more agreeable than the report of our failures, but the latter may be more instructive and interesting.

I have before me notes of three cases which died shortly after operation, not perhaps through any fault of technique, but in one of the cases, at least, because the operation was not submitted to sooner, although the patient had been warned six years before that she should be operated upon. One of the other two cases had never consulted a physician in regard to her condition until the day before the operation was undertaken, and the condition had insidiously become so far advanced that it was beyond the aid of surgery.

Case I.—Mrs. S. was referred to me by Dr. Gordon of Lucknow on March 21, 1910. Age 43 years. Housewife. Family history: Father living and well, age 85. Mother dead at 74 from "knotting of the bowels." Brothers, one dead, age 34, from epilepsy. Six brothers living and well. One sister living and well. No history of tuberculosis, malignancy, heart, kidney, or mental disease in family. Personal history: Patient began to menstruate at 14. Painful, regular, lasted three days, the last period three weeks ago.

Marital history: Married at 24 years of age. Never pregnant. Husband living and healthy. Previous illnesses: Always strong and healthy until present illness. About January, 1909, began to get bloated after meals, had to unfasten dress to get relief. Took soda with relief, but always felt tired. In April caught a cold, and had severe pains in the knees and across the back for about one month, but still did work. Felt weak all summer. In August pain in the stomach became worse. Was troubled with gas after meals; this was followed by vomiting of watery material. Consulted Dr. Spence of Lucknow and was under his treatment until March, 1910. Stomach improved, but about the middle of February began to have smarting pains just after urinating. Then noticed that she did not urinate so often during the day. Always

urinated two or three times during the night. Says quantity was less than usual, but never had suppression. Had been constipated since summer of 1909. For past month has had crampy pains all through bowels, especially when bowels moved. During the same time has noticed blood and matter in the stools, that is, she says, "streaks of blood."

She now came under the care of Dr. D. M. Gordon of Lucknow, who referred her to me. Upon examination I found a small slight woman with rather an anemic appearance, weighing possibly 115 or 120 pounds. The principal thing she complained of was pains and distress across the abdomen, loss of appetite, general weakness, and malaise. Upon examining her I found the abdomen very much distended and fluctuating. The examination of the blood showed hemoglobin, 80 per cent.; erythrocytes, 4,600,000; and leucocytes, 15,000. Her heart and chest were negative. I was inclined to think her condition was tubercular peritonitis. She positively refused to permit me to make any vaginal examination, but permitted my assistant, Dr. Margaret Calder, to make a rather unsatisfactory one. Dr. Calder told me that she was sure there was at least a small lump in the pelvis, which I concluded might be due to tuberculous tubes. Urinary analysis was negative. On April 5, in the Wingham General Hospital, I opened the abdomen. At once a large amount of turbid fluid escaped, of a slightly bloody color. On exploring the abdomen I found nothing abnormal until I reached the pelvis, when I came in contact with a mass about the size of a cantaloupe. This I brought up and found it to be a cyst of the left ovary. I transfixed the broad ligament, removed it, and closed the abdomen. On the third night after the operation I was hurriedly summoned to the hospital because the nurse told me that the dressings were all saturated with blood. When I arrived at the hospital I found that the lips of the wound had slightly separated, and what the nurses supposed to be blood was merely the escape of some blood-tinged fluid from the abdomen. Mrs. S. gradually sank and died April 12, one week after operation. The tumor itself, as I have said, was about the size of a cantaloupe. It was filled with fluid. The pathological examination of the specimen, made by Professor McKenzie of Chicago, showed it to be a large round celled sarcoma. I cannot see how this woman's life could have been saved, as at no time in the history of her case would she submit to a proper vaginal examination.

Case II.—This was referred to me by Dr. Chambers of Tiverton, with the following history. Mrs. M. Age 51 years. Family history: Mother living and well. Father dead, cause unknown. Husband died at 40 from tuberculosis. One daughter died at 18 from tuberculosis. A son and daughter living. Personal history: Mrs. M. was a tall angular woman, who had apparently had a rugged constitution. She was quite bright and alert mentally. Had always lived on the farm. Worked hard, and had been healthy until about one year ago, when she began to feel tired upon exertion. Lost in flesh. Had a great deal of "gas in the stomach," and coughed up a good deal of "phlegm" during the year. Did all her own work, however, until March, 1911. At this time she began to vomit this "phlegm," and thought food did not agree with her. She also noticed in April that she began to get "bloated." This had steadily increased and since then she became thinner about the face, neck and thorax, and noticed shortness of breath. She was not constipated and menstruated regularly, last in February. The "bloating," as she expressed it, kept increasing. On June 27 Dr. Chambers was called in to see her and found her with an enormously enlarged abdomen, which fluctuated on percussion. He suspected ascites, and aspirated, but to his surprise nothing came through the trocar. He told her that she might possibly have some malignant trouble. He then advised that she consult a surgeon, and very kindly brought her over to the hospital the same afternoon in his automobile. Upon examination I could not make a positive diagnosis, but as she had been a very robust, strong woman and was yet apparently in very fair condition, I determined to make an exploratory incision. This I did at the hospital the following morning. Upon opening the abdomen I found it filled with a jelly-like substance, which I could scoop up in handfuls. I concluded at once that I had a malignant disease, probably colloid cancer, and after taking out two or three basins full to give her relief in breathing, closed the abdomen. The wound healed by primary union, and she was able to go home July 15, but died from exhaustion the following day. The pathological examination of this substance was made by Professor Duncan McKenzie of Chicago, who pronounced it a large, round-celled sarcoma of the omentum and peritoneum. Perhaps in this case it might have been better not to have operated, but I took the chance of the possibility of it being a large multilocular cyst, and I do not know that the operation hastened her death. It certainly relieved her breathing and made her easier for a week or ten days.

Case III.—This case was referred to me by my assistant, Dr. M. C. Calder. Mrs. J. was examined by us at our offices on January 10, 1911. Her appearance was tall, spare, and anemic. I had known Mrs. J. by sight for the past 17 or 18 years, and she always had an anxious anemic facies. Family history: Father died at 51 years of age from cancer of the stomach. Mother living and well. One sister died some time after an operation for pelvic tumor, which was said to be malignant. Personal history: Patient's age 39 years. Her menstrual history has always been normal, periods painless, and regular every 28 days. Has been married 18 years. Three children, youngest seven years of age. No miscarriages. After the birth of her youngest child she did not regain her strength quickly and consulted her physician here, who made a vaginal examination. She was told at this time that she had a tumor on the left side of the pelvis, and was advised to have an operation. Shortly after this she consulted a surgeon in Toronto, who confirmed the diagnosis, and also advised an operation. For the last three months the tumor, she said, had been growing rapidly, otherwise she felt fairly well, although more easily tired than formerly. She mentioned especially that she had noticed the enlargement increasing very rapidly during the past six weeks. Upon examination found a large fluctuating abdominal tumor. Heart and chest normal. Temperature normal. Her blood examination at this time showed hemoglobin, 70 per cent.; erythrocytes, 5,000,000; leucocytes, 9,200.

Diagnosis: Ovarian cyst. Advised operation. She entered the hospital January 22, 1911. I opened the abdomen the following morning. Found

no free fluid in the abdominal cavity and removed what appeared to me to be an ordinary multilocular ovarian cyst. Stitches removed on the seventh day after operation. The wound was apparently healed. The following day, however, it was noticed there had been quite a considerable oozing of blood on the dressings from the upper part of the wound. This subsided in a day or two, when there appeared a nodule along the right side of the wound. After the bleeding in the line of the wound and the formation of the nodule I became suspicious of malignancy and had a portion of tumor sent to Professor Duncan McKenzie of Chicago for a pathological examination. His report is as follows: "I failed to find any evidence of sarcoma. It is not sarcomatous, neither it is carcinomatous, nor tuberculous. It shows every evidence of long standing. I will send you the slides and you will find that it is benign cystadenoma." She left the hospital February 12. After returning home she seemed to gain in strength. For a time she was able to perform her household duties, and to go about town. She gradually began to feel her strength failing toward the latter part of May. She came back and consulted us on June 15. Upon examination we found that the nodule along the abdominal wound had increased considerably in size, to about that of a walnut. Upon vaginal examination I discovered another pelvic tumor somewhat larger than a grape fruit. She complained of stinging pain in the abdominal nodule and also a good deal of pain in the left hip, which ran down the leg and resembled sciatica. I thought possibly this was due to the pressure of the pelvic tumor. Having sent only part of the specimen to Professor McKenzie for examination, I thought possibly that I had selected a part not malignant, and decided to send the entire specimen to Dr. O. R. Mabee, pathologist, Toronto General Hospital, for a complete examination. I received the following report from him July 7. "Microscopic examination shows the condition to be a papillary cystadenoma of the ovary. In reference to the malignancy of the condition I may say that if they are entirely encapsulated and have not ruptured, or are not ruptured in taking out, they do not recur. If, however, the contents and cells come in contact with the peritoneum, secondaries develop on the peritoneum, or in the wound, by direct transplantation. It would seem to me that this had occurred in your case. The condition, however, is never extremely malignant. We had a case recently who lived five years with the secondaries on the peritoneum. If you wish to be absolutely sure, it would be best to excise the nodule in the wound." After getting Dr. Mabee's report I recommended that she submit to further operation. This she delayed until July 25, when I again opened the abdomen and removed an ovarian cyst of the right ovary, about the size already described. I also removed a nodule attached to the line of old incision and also to the omentum. Professor McKenzie examined both tumor and nodule and pronounced them both papillary cystadenomata. Her convalescence after this operation was somewhat delayed. She left the hospital, however, on August 15. She now suffered a great deal of abdominal pain. Tumors gradually appeared all over the abdomen. The inguinal glands on both sides were enlarged. Several nodules formed in the popliteal space and quite a large one in the calf of the left leg. She lost appetite, wasted rapidly, and died from exhaustion on September 26. In my opinion this is a case in which delayed operation caused death. Undoubtedly if this patient had submitted to operation six years ago she would still be alive and well.

A cystadenoma may not be malignant at times, but it certainly appeared to be so in this case. Kelly and Noble (vol. 1, page 190) say: "Often it is impossible to determine from a pathological anatomy whether the tumor is benign or malignant." "The papillary growths in the interior of the cysts may break through the wall and appear on the peritoneal surface of the tumor, or primary papillary masses may develop in this region. Inoculation growths upon the omentum and general peritoneum are very frequent; the growths may disappear spontaneously after removal of the primary lesion, but often remain and pursue a semimalignant course." "Distant metastases occasionally develop, but are rare." Delafield and Prudden, in the last edition of their "Pathology" (page 834), say: "The papillary outgrowths (of the cystadenoma) often break through the cyst walls and may be transplanted to the peritoneal or other surface in the form of multiple cystic or papillary tumors." Whether this happened just previously to my first operation, I cannot say. However, I was careful to avoid, as far as possible, allowing any of the fluid contents of the cyst to get into the abdominal cavity or against the edges of the wound, but I may have failed. In the second operation the cyst was so tightly embedded in the pelvis that I found it impossible to dislodge it without breaking it. Needless to say that in all three cases the surgeon was censured by the laity for not saving the patient's life.

THE REAL VALUE OF CARBOHYDRATE FEEDING IN TYPHOID FEVER.

By E. R. GARDNER, M.D.,

PITTSBURGH, PA.

VOLUMES have been written on typhoid fever, its symptomatology and treatment, and it is not my purpose to burden the reader with a résumé of the many different treatments that have gone before, but to offer for consideration a method of treatment developed along the lines of bacteriological investigations in which an attempt has been made actually to combat the invading organisms themselves. Dr. Theobald Smith, in his paper entitled "Certain Aspects in the Life History of Pathogenic Microorganisms," has put it clearly when he says "It is what bacteria do, rather than what they are, that commands our attention since our interest centers in the host, rather than in the parasite." In typhoid fever we have a bacillary infection and invasion with lesions referable primarily to the intestinal tract. We are dealing furthermore with a self-limited disease presenting a symptom-complex with one characteristic feature common to all, namely that of a long-drawn-out battle between the host and the disease. But this is not to imply that we are not able to modify the severity of the symptoms and thereby gain much in comfort to the patient. On the contrary it is a notable fact that in recent years there has been a decided fall in the mortality, brought about no doubt by a more intimate knowledge of the disease and the application of modern laboratory and clinical findings. Through the activities of the trained worker in the laboratory the true pathology of the disease was

brought to light, and this, together with our added knowledge of the functions of metabolism in health and disease, has wrought a great change in the treatment of typhoid fever. In the light of our present-day conception of typhoid fever we are made aware of the fact that the internal antiseptic form of treatment is based on an erroneous conception of the disease.

Drugs to be of any value in the modern scientific sense must influence the infection directly or indirectly. Antiseptics of all known kinds are practically worthless in the treatment of bacterial infections; indeed, according to many good observers they may even seem to favor rather than retard the bacterial growth and in many cases interfere with digestion. Friedenwald and Leitz in their experiments on the bactericidal properties of intestinal antiseptics have arrived at these conclusions: (1) That most intestinal antiseptics markedly interfere with gastric digestion. (2) That this disturbance varies largely with the nature of the gastric secretion and the motility of the stomach. (3) That salol, salicylates, and lactobacilline are the least harmful to the gastric digestion; that betanaphthol, aspirin, ichthalbin, thymol, salicylic acid, and creosote are most apt to interfere with gastric digestion.

It would appear then that the administration of intestinal antiseptics in the treatment of typhoid fever is purely empirical and of no avail in influencing the course of the disease. The course of treatment usually followed is supportive and symptomatic, with much careful nursing and relying on nature to bring the case to a successful termination. In the absence of any specific therapy what shall constitute our treatment of typhoid fever? It is known that in all fevers the body requires as much energy and heat as at rest in health, and in typhoid fever at least 25 per cent. more is required to meet the increased loss due to febrile heat production. We should not starve our patients, for starvation in itself is a disease. The loss in body nitrogen during fever is due to (1) starvation, (2) the fever itself, and (3) toxic destruction.

The wasting in typhoid is usually marked, and this loss can be avoided to a greater or lesser degree by food. One would naturally turn to proteins to make good this loss of nitrogen, but it has been proven that sufficient amounts to meet the daily needs are all that is required. Seventy grams of protein is sufficient for daily body needs, and any excess must be destroyed and eliminated which adds an extra burden to the already weakened organism. Fats are of high caloric value but on account of their tendency to disturb digestion and produce diarrhea should be used with caution. Carbohydrates are known to protect body nitrogen better than any other food; again the absorption of fat and protein in typhoid fever is 10 to 15 per cent. below normal, but Folin has shown that the absorption of carbohydrates in this disease is practically normal. In the selection of a diet no hard and fast rules can be laid down, for all patients cannot be freely fed, but a dietary of easily assimilable foods would be sufficient for all ordinary cases.

Lactose is the carbohydrate of choice for the following reasons: (1) It is the natural sugar of the mammalia—man, dogs, and herbivorous animals. (2) Its caloric value as a food is high. (3) It is a powerful diuretic, without any deleterious effect on the kidneys. (4) It protects the body nitrogen, and the nitrogen of the food. (5) It is not bulky, does not produce nausea, and does not ferment easily. (6) It prevents bacterial decomposition of protein by changing the character of the bacteria of the intestinal tract from the putrefactive to the fermentative type. (7) It is easily assimilated.

Supportive measures by the administration of food sufficiently high in caloric value to supply the dynamic needs of the body would seem to be the logical method to pursue, and in this diet can we not include a food yielding a goodly number of calories and at the same time modify the intestinal organisms, and change the type of bacterial activity? Escherich, in 1886, noticed a decided increase in the number of liquefying bacteria in the feces of dogs fed on a purely protein diet.

Metchnikoff was the first to attempt to change the intestinal flora by alterations in diet, but he along with Tissier, Moro, Finkelstein, and others did not recognize the importance of the study of the biology and chemistry of the intestinal flora, and therefore failed to appreciate the fact that the diet of the patient exercises a marked influence on the character of the metabolism of the organisms in his intestinal tract. Dr. A. I. Kendall, of Boston, in his study of the biochemistry of the intestinal flora in bacillary dysentery has shown that if there are incorporated in the diet of the patient utilizable carbohydrates, the organisms will attack the sugar in preference to the protein, and if there is an excess of sugar so that the bacilli form acid (*B. Typhosus* has the capacity to form acid from sugar) very little toxin is produced.

From the work of Kendall may be drawn these conclusions: (1) Most bacteria in the presence of carbohydrate utilize carbohydrate in preference to protein. (2) The bacterial toxins so far as is known are associated with the breakdown of protein, and sugar appears to prevent their formation in appreciable amounts. (3) Expressed thus, fermentation (the hydrolysis of carbohydrates) takes precedence over putrefaction (the breakdown of protein).

In dysentery, as in acute infectious diseases, there is during the acute stage a great loss of body nitrogen, a loss far greater than can be accounted for by simple starvation, and the term toxic loss of nitrogen has been used by many observers to express this condition. According to Kendall toxic loss is due to the action of bacterial toxins which are absorbed. The initial damage cannot be undone, but it appears to be possible to prevent in part at least further insult in this direction by applying the principles stated above; namely, by adding sugar to the diet of the patient. The sugar serves a two-fold purpose: (1) The character of the bacteria of the intestinal tract is changed from the putrefactive to the fermentative type. (2) The patient is provided with the food high in caloric value and most easily assimilated.

Lactose is used because it is broken down, according to physiologists, in the intestinal wall so that the sugar is broken up just where the lesions are to be found. This breakdown of the sugar provides dextrose, which is utilized by the *B. dysenteriæ*, thus shielding the nitrogen of the body and probably tending to arrest the further erosion of the mucosa as well as to prevent further toxin formation.

In typhoid fever, in which, as in bacilliary dysentery, the etiological agent is of exogenous origin and where the primary lesion is in the intestinal tract, why could not the same principle be applied as in dysentery, since the conditions are similar?

It would appear rational to add lactose to the diet of typhoid fever patients to protect the body nitrogen, rather than to feed a diet potentially purely protein, in order to change the character and metabolism concerned in the morbid process and to provide an easily assimilable food. Kendall even hints that the toxin formation of typhoid bacilli which have penetrated the body may be influenced by keeping the dextrose content of the blood up to the usual limit, and the lactose may be fed with this end in view.

Lactose has been used extensively by a number of clinicians in the dietary of typhoid fever patients, chiefly for the high caloric value it contained, but the real value underlying the use of lactose (or of any sugar for that matter) is not simply a matter of feeding calories which made the use of sugar so valuable, but the prevention of toxin formation. The practical application of the foregoing statements has been made in only one case of typhoid fever,* but it seems to me that enough has been proven by the results obtained to justify a continuance of the treatment.

The patient, a young man, 18 years of age, was seen one week after his illness began; he had a temperature of 103°, and exhibited the clinical symptoms of typhoid fever; he was put to bed, and a Widal test proved positive. The treatment used was a carefully regulated diet (including a carbohydrate) and taking into account the caloric value of the foods used. No attempt will be made to give the chemical composition and caloric value of food; they may be found in Atwater's table. Bulletin No. 21, U. S. Department of Agriculture. Feeding hours were 7 and 10 A. M., and 1, 4, 7, and 10 P. M. There were no night feedings unless the patient was awake, when the milk mixture described below was given. A milk mixture containing 7 ounces of milk, 1 ounce of cream, and 1 ounce of sugar of milk was administered every three hours during the entire course of the fever.

With the above mixture the nurse was allowed according to the wishes of the patient to feed any of the following foods: One soft boiled egg, soft toast (without crust) and butter, or stale bread and butter, tomato or bean soup (strained, 8 ounces); beef, lamb, and chicken broth (8 ounces) thickened with powdered rice (Q. S.); oatmeal gruel (strained) containing the white of one egg (5 ounces), cocoa, cup custard, and ice cream. Large amounts of cool water were given the patient daily, as was lemon albumin and lemonade, and in fact he was urged to consume large quantities of water. Water is an essential element of food, and it is undoubtedly true that it increases the digestion and absorption of food. Possibly the greatest benefit derived from the taking of large amounts of water is the stimulation of all the excretions, whereby the toxins are eliminated. When the water is given cold in large amounts it has the properties of an antipyretic, and obviates the necessity of frequent baths.

The benefits which seemed to follow this form of treatment were briefly: The absence of the typical typhoid facies, a good appetite, markedly less toxemia, nervousness, and mental depression. There was no extreme emaciation; the stools were formed and well digested. There was a rapid return to normal health and good general condition.

513 Empire Building.

*Since this paper was written four other cases have been treated along these lines with the same result as the case described above.

A CONVENIENT INSTRUMENT FOR READY CLINICAL INVESTIGATION OF THE SENSIBILITY TO COOLNESS AND WARMTH.

By TOM A. WILLIAMS, M.B., C.M., Edin.,

WASHINGTON, D. C.

When the spinal column is injured, it becomes of great importance to the surgeon to know whether a consequent paralysis or loss of sensibility arises from damage to the cord itself or implication of the roots or of a plexus in the vicinity. Since the researches of Head and Sherren,[1] and Head and Thompson,[2] the means for making this distinction are clinically available. It will be recalled that stimuli, as they pass from periphery to central end organ, are grouped in quite a different way in the peripheral nerves to the manner in which they are collected in the spinal cord. Thus, it has long been known that in the latter all the impulses of painful sensations run together in the heterolateral Gowers' tract, and that a lesion which interferes with any kind of pain always interfers with all kinds of pain. As is well known, the sensibility to cold and heat is conducted along the same tract as that of pain, although not in the same fibers; for one may be lost without the other, and either or both may be lost while the sensibility to pain is intact, and vice versa, although any of these combinations is rare, on account of the close proximity and interlacement of the conducting paths. Again, the knowledge of the attitude of our limbs is derived from impulses which mount the cord in the homolateral dorsal column, and they are there accompanied by fibers which make possible our appreciation of the locality of touch and of the distinguishing of the simultaneous touch of two points, at a distance from one another which varies on different parts of the body.

On the other hand, this latter test is the most convenient for determining whether a lesion is in the cord or in the periphery; for in the latter case, the loss of spacing sense is always accompanied by a proportionate loss of the superficial sensibility for distinguishing light touches and appreciating coolness and warmth, that is, temperatures between about 20° C and 40° C. In a lesion of the cord, however, there may be a loss of spacing sense without the least incapacity to appreciate either heat or cold and without loss of feeling to the lightest touches with cotton wool; but there is then always a concomitant loss of the sense of attitudes. In the lower limbs the compass test is not of great applicability, for the circle of discrimination is very wide, and people are not accustomed to this type of discrimination. The hairiness of the lower limbs, moreover, vitiates the testing of fine touch with cotton wool, for the order of sensibility excited by the stimulation of a hair is different from the "epicritic" (as Head has called it) resident in smooth skin. Hence, to distinguish between peripheral lesions and those of the cord clinical practicability requires the use of a different quantitative test; and it is for convenience in making this that I have devised the instrument now presented.

For estimating degrees of sensibility to temperature, Head had used silver test tubes containing water at a temperature ascertained by a thermometer placed in the tube. Now, silver tubes are expensive, and the insertion of a thermometer is inconvenient. Besides, in a small tube the loss of

temperature is rapid. So, in my instrument, copper is used, for it is nearly as good a conductor and much less expensive. It is used in a block, and not as a tube, again saving expense. The thermometer is firmly attached to the instrument, which greatly adds to its convenience; and lastly, rapid loss of heat is compensated for very simply; for the desired temperature is reached by plunging the base of the instrument into water in a large vessel, the total body of which retains its temperature much longer than does an instrument of any practicable size unless electrically heated as in the instrument recently devised by Mills,[3] the expense of which precludes its general use.

The apparatus consists of a cube of cast copper, 3 x 3 x 3 centimeters tunnelled out in the center to within two millimeters of the opposite surface. Into the tunnel is inserted the bulb of a thermometer of the kind used in storage warehouses. It registers from 10° to 140° Fahr. This thermometer has been selected only for its availability, for the range of temperature need not be so great, but it is a safeguard against breakage. The whole is mounted upon a wooden holder along a groove in which the thermometer is embeded for protection. The scale is easy to read as it lies in the furrow. For convenience of manufacture, the copper block is made in two equal parts, furrowed in such a way that the approximation of the grooves forms a circular tunnel for the thermometer. The two halves are clamped together with four copper screws; and the whole is in turn screwed to a strip of brass 3 mm. thick and 3 cm. wide. The brass fits along a bevelled out surface of the block, which extends to within 2 mm. of the foot. The brass strip is screwed also into the wooden handle which carries the thermometer scale, thus making the whole solid and giving a uniform surface of copper to place against the skin of the patient.

To use the instrument it is plunged into a large jug of water at a temperature approximating to that desired, say 25° C. when testing for appreciation of coolness, or 40° C. when testing the appreciation of warmth. It is very easy by adding cold water or hot water to obtain any temperature desired in the large vessel; and this will remain practically constant long enough to enable a series of observations to be taken sufficiently complete for current clinical use. Of course, it is easier to obtain accurate results when two instruments are used, one cool, the other warm; for it is then more easy to control the tendency of patients to continue to call all temperature stimuli by the name they used for the first stimulus felt. Any indifferent metallic substance may, however, be employed satisfactorily to eliminate this fallacy.

In thus aiding the clinician to diagnose between injuries and diseases of roots, central nervous systems, and peripheral nerves, of course, the instrument does not pretend to be a substitute for clinical acumen; no apparatus can do that; but it is a convenience, and furthermore affords a ready means for ascertaining data for purposes of comparison with the cases of other observers. It is thus useful both in the practice of medical, and especially surgical, art and in the compilation of the records which further the advancement of science.

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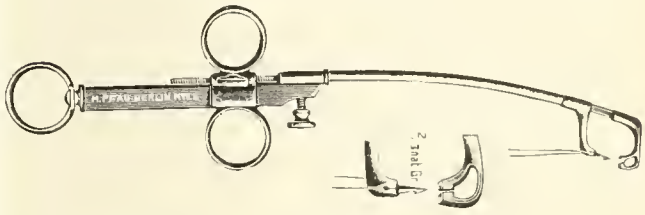
1758 K Street.

The Value of the Epiglottic Suture in Direct Laryngoscopy.—The following is the substance of a paper read by Cyril Horsford, M.D., F.R.C.S., of London, at the Fifth International Rhino-Laryngological Congress held in September last at Berlin.

The object of the communication was to draw the attention of laryngologists to the fact that the field of vision obtained by indirect laryngoscopy can be greatly improved by the passage of a suture through the epiglottis, and that this suture can now be rapidly and safely passed. He recommends the suture as a substitute more efficient in all respects than the many forms of epiglottis lifters introduced to facilitate intralaryngeal inspection. He further finds it frequently more acceptable than the direct method, especially for the removal of a growth situated near the anterior commissure. He has practised the method in a large number of cases since July, 1906, when the idea first occurred to him. References are given to the work of others in this field of enquiry (Türck, Jurasz, Semon, Gleitsmann). He has devised several instruments for the purpose, but the latest, the epiglottis suture forceps No. 2 (see illustration), made by H. Pfau, of Berlin, and Mayer & Meltzer, of London, is the most efficient.

"Its successful use depends, as in other intralaryngeal operations, upon the efficient preparation of the patient by local anæthesia. The needle is first threaded with a long piece of silk and the whole carefully streilized. With the aid of a laryngeal



mirror the suture is passed through the epiglottis and the ends brought over the center of the tongue and gripped by a pair of large artery forceps, which are then allowed to hang a little distance below the jaw. The tongue is then held for examination in the usual way, and it will be seen that the epiglottis is held up against the root of the tongue by the weight of the forceps only, and the intralaryngeal view greatly improved. The suture can thus be rapidly, easily, and safely passed. It causes no discomfort to the patient, occupies no space in the mouth, and it does not require the assistance of a third hand. It further helps to steady the larynx and increases the intralaryngeal illumination."

The author referred in his article to a case in which by this means he had succeeded at his first visit in removing a small fibroma from the vocal cord of a singer which had resisted numerous attempts at removal by the indirect and direct methods in other hands.

Significance of Pavor Nocturnus.—G. P. Boncour states that night terrors are a symptom indicative of an increased irritability of the nerve centers, and may be due to the most varied causes, including tuberculous meningitis. Sometimes pavor nocturnus is an isolated clinical picture, in which case it is associated with restlessness and psychomotor incoordination. Mental hygiene is, Boncour says, the chief therapeutic measure—*Progrès Médicale.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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PHYSICAL MANIFESTATIONS OF EMOTION.

IT is reported that a girl of eighteen, who had previously suffered a gastric affection, became jaundiced twenty-four hours after seeing a woman knocked down by a tramcar. Such cases of emotional icterus are not rare. One was cited by Oliver Wendell Holmes: "I remember a young wife who had to part from her husband for a while. She did not write a mournful pæan; indeed, she was a silent person and hardly said a word about it; but she quietly turned of a deep orange color with jaundice."

The influence of the emotions upon the bodily functions is oftentimes potent; and its possibility should never be disregarded. It is routine work for the practitioner to elicit a well-defined train of symptoms with a number of physical signs, and upon this anamnesis to make a diagnosis. But it is oftentimes as essential to the happy issue of a case to discover psychic factors which, though they have not been directly causative of a lesion, may nevertheless have contributed to its development. The latter procedure is the more difficult; because thought not being a tangible factor, we cannot accurately estimate to what extent it may influence the making of a blood cell, the production of lymph, the cardiac pulse rate, the digestion of food, the secretions (as of bile), and the like. But that thought does constantly influence such functional processes in the economy no one can doubt. "Mind healers" and all that kind of people would persuade the laity that their "mind cures" (which so often, in their inexperienced hands, intensify mental aberrations), are a twentieth century revelation. But recognition of the fact that the mind can be either salutary or baneful in its influence upon the bodily functions is abundant in literature, ancient, medieval, and modern. To instance only Plato: "Physicians cure the body with the mind; and the mind which is or has been sick can cure nothing."

It is a very old truism that thought strongly directed to any part of the body tends to increase its vascularity (its blood supply), and hence its tendency to inflammation. John Hunter's experience with Mesmer is classic: "I was asked to go to be mesmerized; but first refused because the spasm on my vital parts was very likely to be brought on by a state of mind anxious about any event; and I feared lest it should be imputed to animal magnetism. But considering that, if any person was afflicted by it, it must be by the imagination being worked up by the attention to the part expected to be affected, and thinking I could counteract this, I went; and accordingly when I went I was convinced by the apparatus that everything was calculated to affect the imagination. When the magnetizer began his operations, and informed me that I should feel it first at the roots of the nails of that hand nearest the apparatus, I fixed my attention on my great toe, where I was wishing to have a fit of the gout; and I am confident that I can fix my attention to any part until I have a sensation in that part. Whenever I found myself attending to his tricks I fell to work with my great toe, working it about, etc., by which means I prevented it having any effect upon me."

Tuke made a memorable division of mind into intellect, will, and the emotions. The intellect and the will are mostly concerned with the cerebrospinal portion of the psychic machinery—that portion which contains (in the cerebrum) the higher centers—those centers which under normal conditions dominate the body. The growth of these centers is coordinate with the race; they represent the latest development in the evolution of living creatures. They are concerned with speech, memory, ideation, judgment, reason, and the like. It is these centers which under abnormal conditions (such as profound shock or tremendous emotional stress) are held in abeyance and put temporarily out of action. The emotions react mainly upon the ganglia of the sympathetic system, which are mostly in the thorax and the abdomen; the fibers from these ganglia control largely the involuntary functions of the various organs in those cavities—the liver, the heart, the lungs, and the like. Thus are such emotions as grief, joy, terror, anguish, anger, love, hatred, oftentimes mirrored in the flesh. It is repeatedly observed how powerful emotions excite or depress the action of sympathetic ganglia, and through their filaments effect changes in excretion, secretion, and other important functions. Violent emotions modify nutrition; diseases growing out of perverted or defective nutrition may well have originated in acute shock more or less profound, in chronic shock, or in other emotional disturbance. And the possibility of such cause and effect should ever be taken into consideration in practice.

ALCOHOL A DEPRESSANT.

THE fact that alcohol is in large doses physiologically a depressant, so often ignored by the public and by their preceptors, the physicians, as well, acquires additional importance from the circumstance that the majority of men and women will not do to excess what they know is harmful to them. Great is the evil that has come to the human race through the misuse of the term stimulant for depressant. If it is the duty of the medical man to teach his public that the familiar house-fly is a "typhoid fly," surely it is his duty to instruct his public that alcohol is a depressant, "crushing," and "subduing" rather than a stimulant "goading on" to increased activity—asthenic and almost never sthenic. The

immeasurable misery caused by alcohol in this world of ours, as is generally recognized, lies largely in two of the circumstances related to alcohol: one of these is that the drug is a sedative and financially, as well as otherwise, a very expensive one; the other one is that habituation to its use is both easy and enslaving. Let us see then how it is a depressant in each essential phase of its physiological working.

In metabolism it acts always, even in small amounts, to lower the body temperature, and in quantity it cools the tissue-protoplasm beyond recovery. The sense of body heat, of course, arises almost wholly in the skin and alcohol raises the surface temperature by a marked vasodilatation. This effect far outbalances whatever increase of heat-production comes from its endogenous combustion. Herein is the most essential of all possible modes of depression. Despite the fact that in amounts of not over 50 or 60 c.c. daily alcohol is oxidized largely in the musculature, the action of the muscles is disorganized and rendered less powerful as well as far less efficient. The apparent stimulation of the heart in rate and vigor, recent physiology construes as in reality a depression of the vagal influence over the ventricles —two negatives thus making a positive. But even so, the rest-periods of the organ are shortened materially, its total strength being therefore literally depressed in a period which is long enough to involve fatigue.

Respiration is markedly affected by large doses of alcohol, the medullary centers being apparently directly depressed by the poison in the blood. Digestion is checked by alcohol in large amount, the action being local on the mucosa as well as reflex and sympathetic. The nervous system is typically depressed by alcohol, as one may often see in the immunity of intoxicated persons to falls and blows upon the head and other seats of nerve-masses. Mental action, too, is depressed in nearly every case with the exception of the imagination and certain phases of emotional activity of less efficiency and value than the intellectual faculties. The depression exerted on the all-important chromaffin and thyroidean system by alcohol may be presumed from their close dependence on normal metabolic conditions, but the action of alcohol in this respect remains to be worked out. The "stimulating" effects of alcohol, then, are rather apparent than real, for in nearly every case the phenomena may be shown to be really depressions of the inhibitory phase of the balance-control which is so common in the organic functions.

Admitting that there are some unsolved points still in the physiological action of large doses of alcohol, the above statements seem at the present time wholly safe as a rule of advice for physicians to use in their practice, especially since in this grave matter it is undeniably expedient always to be on the safe side. Here one can be at the same time pragmatic and entirely scientific and sincere. It is to practical medical men that the world will most gladly listen in this as in other respects relating to their physical welfare and the true physician will always recognize in his responsibility a privilege.

FERMENTATION DISEASES.

Beriberi, scurvy, cholera nostras, pellagra, and aphthæ tropicæ which are believed by many to be caused, to some extent at least, by some error in alimentation, are grouped by Kohlbrugge (*Centralblatt für Bakteriologie*, etc. I Abt. Orig., Bd. 60 Heft 3 and 4) under the name of fermentation diseases. In the article mentioned he attempts to establish certain analogies between the different members of the group. Working principally with beriberi he found that it resulted from the ingestion of polished rice, and that it could be prevented or even cured by the feeding of rice bran. If rice is sterilized at 120° C. and then exposed to the air it undergoes a fermentation due to the growth of a short, thick bacillus which he has named *Bacillus oryzæ*. Fowl, when fed with sterilized rice, together with a culture of this organism, developed a disease which was apparently identical with beriberi in man. The organism seemed, however, to be harmless when injected into the peritoneal cavity, or into the muscles. This organism is a constant inhabitant of the air, although its virulence is markedly influenced by the season. Kohlbrugge found, also, that it occurs plentifully in the mortar of walls, and offers this in explanation of the existence of "beriberi houses." It develops first in the water-soluble starch in the interior of the grain, and when the rice is cooked in a large quantity of water so as to wash out the starch, or together with bran so that the starch is not dissolved, the bacillus does not grow. Rice so prepared has always failed to produce the disease in fowls.

The same organism was found in the peritoneum and duodenum of guinea pigs suffering with experimental scurvy, and Kohlbrugge thinks it has a causal relation to this disease as well. Whether the fermentative processes caused by this bacillus result in the production of toxic substances or whether they break down some substance necessary to the body is a problem the solution of which will probably be accompanied by a clearing up of the whole question. Scurvy is effectually treated with the acid juices of the citrus fruits and green vegetables. Cholera nostras patients are frequently benefited by the ingestion of hydrochloric acid or the lactic acid bacillus. Aphthæ tropicæ or sprue is usually treated with the acid juice of the pineapple. In the same way Kohlbrugge finds that rice bran under favorable circumstances develops a very marked acidity, and it is to the absence of the acidity so produced that he attributes the causative action of polished rice in beriberi. Certain it is that the development of this bacillus is strongly hindered in the presence of acids, although he admits that these curative foods may act in some other way than simply by acid formation.

In view of the remarkable analogy in certain things which he has been able to demonstrate in these diseases, he seems justified in the formation of the group. Pellagra, he has not touched, but it is to be expected that he will try the effect of his new bacillus upon sterilized corn and in this way may furnish us with valuable information.

QUIET ZONES FOR SCHOOLS.

The movement for quiet zones for hospitals, begun in this city several years ago by Mrs. Isaac L. Rice, the indefatigable founder of the Society for the Suppression of Unnecessary Noises, so commended itself to physicians and all interested in the welfare of the sick that it has spread with rapidity, and the "hospital zones" are now established in a large number of cities thoughout the United States. Encouraged by the success of this undertaking, Mrs. Rice now suggests the establishment of similar quiet zones around school houses in the large cities. In the *Forum* for December, in an article outlining the plan, she urges the importance of "protecting the young from the injurious effect of outside noise, which, by rendering concentration difficult, increases the mental effort required for school tasks, and by preventing free ventilation menaces the physical well being of the child. This is a matter so grave and so far-reaching in its consequences that its utter neglect is little short of incredible." It was while she was talking to the children in the schools on the duty of keeping quiet in the neighborhood of hospitals that the matter was brought forcibly to Mrs. Rice's notice. She was then astonished, she says, to discover the amount of preventable noise which penetrated the classrooms and the foulness of the air within them, this being due to the fact that in most cases the windows were tightly closed. The children seemed dull and apathetic, a fact which, under the circumstances, was not at all surprising, and the teachers complained bitterly of the noise which compelled them to keep the windows closed.

That no attempt has ever before been made to mitigate this evil is evidently due to the fact that it was not brought to public notice, for immediately upon their attention being directed to this question educational and health boards all over the country addressed themselves to the abatement of the evil. Within a few weeks after Mrs. Rice exposed her plan for quiet zones around schools it was enthusiastically endorsed by twenty-five State boards of health and by the school superintendents of seventy cities. The New York Board of Aldermen on November 21 passed an ordinance establishing school zones in this city and their example will doubtless soon be followed by other municipal governments. The task will not be an easy one, for many of the school houses are in parts of the city where the street traffic is heavy and where the necessities of business and manufacture are incompatible with absolute quiet. In many districts, however, relative quiet can be easily enforced and in all some improvement can certainly be obtained.

THE ATTACK ON DR. DOTY.

The report of C. N. Bulger of Oswego, who was appointed last summer by Governor Dix to investigate the affairs of the New York Quarantine, has, after many months, been presented to the Governor. Of course the report is adverse, for the examiner made it very evident by his actions last summer that he considered himself in the light of a prosecutor rather than of an impartial investigator. There are few injunctions of the Decalogue that he does not accuse Dr. Doty of having broken, either himself or through his subordinates. He would have been wise, however, to stop there, for any man is deemed competent to call another a thief and a liar, but when he comes to charges of medical mismanagement Mr. Bulger flounders ludicrously. He is a lawyer from the shores of Lake Ontario and knows as much of medicine and of quarantine methods as such a man might be supposed to know. Furthermore, he comes from a cool climate, and the extreme heat of New York during last summer evidently affected him in such a way as at times to warp his judgment. The report recommends the dismissal of the Health Officer, but we doubt not Governor Dix will hesitate before doing as Mr. Bulger advises. He knows, as evidently the examiner does not, the danger to which this city and the entire country would be exposed were an inexperienced man in charge of quarantine during the coming summer when cholera will be threatening us from both Russia and Italy, from the North Sea ports and from the Mediterranean. He knows also that if cholera becomes epidemic in New York next summer some one will be held responsible for it, and whoever he may be there will be none to envy him.

A REGRETTABLE OCCURRENCE.

In our news columns last week reference was made to an article, apparently inspired, in the *New York Times* of Sunday, November 26, upon the treatment of arteriosclerosis by means of an aphrodisiac drug. The article was entitled, "Can dreaded hardening of arteries now be cured?" and was in the usual Sunday supplement style, illustrated, and adorned with the picture of Dr. Bruno Fellner, Jr., of Franzensbad, Austria, who was announced as the bearer of this message of salvation to the aging and the aged. The article was said to have been read by Dr. Fellner before the Medical Association of the Greater City of New York. It began with a reprint, without credit, of an editorial note in the MEDICAL RECORD, and closed with a description of the operating pavilion for thoracic surgery at the German Hospital in this city, taken from an article by Dr. Willy Meyer in the MEDICAL RECORD of June 17 of this year. The reference to thoracic surgery had no logical connection with the subject of the article, but seemed to have been dragged in solely to give the impression that the New York surgeon endorsed Dr. Fellner's work, and Dr. Meyer has requested us to state that he had never heard of the writer or his work, and that the extract from the paper on thoracic surgery was printed without his permission even being asked.

The above, and more, was already in type when a communication was received from Dr. Fellner, too late for insertion, which shows him to have been more sinned against than sinning. His statement, in brief, is that upon his arrival here, a stranger to the ways of the country (and probably, we may add, with the idea so prevalent in Europe that this is the land of *réclame*), he was advised by a friend to see some of the physicians in New York and also the medical editor of the *New York Times*. His friend explained that it was customary for physicians to announce their discoveries in the Sunday papers, instancing an article relating to the work of the Drs. Mayo, another descriptive of some wonderful operation said to have been recently performed in Phil-

adelphia, etc. Dr. Fellner says he gave the medical editor some German reprints and had but a very brief talk with him, the editor doing the rest. He denies that he said he was to read the paper before the Medical Association of the Greater City of New York, he said and knew nothing of Dr. Willy Meyer's work at the German Hospital, and he had never before had the privilege of reading the editorial note purloined from the MEDICAL RECORD. We are glad to give publicity to this disclaimer, for the article in the *New York Times* had created a very painful impression among the medical profession of the city, and without an explanation Dr. Fellner would have suffered in reputation.

News of the Week.

Death Rate of New York City Increases.—The death rate for the week ending November 25 was 14.43, while for the corresponding week of 1910 it was 13.95 per 1,000 population. The increase was in 14 deaths from typhoid fever, which was nearly three times as many as last year, 200 from pneumonia, 170 from pulmonary tuberculosis, and 187 from heart disease. There were 330 deaths of children under five years of age, an increase of 28 over last year.

Vital Statistics in Kansas.—For the first time in the history of the State vital statistics have been collected for almost a month. The compilation has been made under the new vital statistics law passed by the last Legislature. The total number of deaths recorded was 896. There were more deaths of infants than of any other class. Tuberculosis, which it was supposed was causing more deaths than any other disease was third in the list; diarrhea caused more deaths than tuberculosis.

Railroad Accidents Increase.—The Public Service Commission reports that for the month of October there was a considerable increase in the number of railway accidents but a decrease in the number of deaths and serious injuries as compared with the same months last year. The accidents numbered 5,488 against 5,302 in October, 1910, and 4,447 in October, 1909. There were 19 persons killed and 139 seriously injured, while in 1910 27 were killed and 226 seriously injured.

Steamship Brings Smallpox.—The steamship *Calabria*, which reached quarantine on November 28, had on board a case of smallpox in a two-year-old child. All of the steerage passengers have been held for observation.

Typhoid Epidemic in Prison.—There are at present one hundred cases of typhoid fever in the New Jersey State prison at Trenton and it is feared that the disease will become general among the inmates.

"Typhoid Mary" Sues for Damages.—Mary Mallon, who was designated as a "typhoid carrier" by the Board of Health of New York City several years ago and confined for a time on North Brother Island, is to bring suit against the city for $50,000. When she was released from the Island she agreed that she would not again take a place as cook, and she now alleges that this, together with her notoriety as a germ carrier, makes it impossible for her to gain a livelihood.

Pure Food Policy of the New York Health Department.—Possessing powers that rival those of the Department of Agriculture at Washington, the New York Health Department has entered upon a campaign for the enforcement of pure food laws. It no longer places great reliance on condemnation of food by the inspectors, since by this the offender suffers only the loss of the material condemned. Dr. Lederle is receiving the effective cooperation from the judges of the Court of Special Sessions and feels assured that with the imposition of substantial fines and jail sentences the offenders against the food sections of the Sanitary Code will be found more anxious to obey the law. On November 20 the Commissioner of Health has 101 cases on the calendar of the court on account of different varieties of food exposed for sale that were unfit for human consumption, and this is typical of the Health Department's activities for several months past.

Overcrowding in the Tombs.—At the third annual State Conference of Magistrates to be held in Albany, Dr. George M. Parker, examiner for the New York Prison Association, will present the subjects of overcrowding and insanity in the Tombs. During his inspections of the past three years he has found the Tombs very much overcrowded and suggests as a remedy the building of a psychopathic ward and hospital. During his service he has seen 200 cases of the most violent, maniacal, depressed, and suicidal forms of insanity, but he claims that if the percentage of mental defectives is proportionate to that in Europe there have been during the past three years 1,500 belonging to the defective or insane classes. If this analogy holds good there have been 1,300 insane or defective prisoners in whom the prison authorities have failed to recognize the condition. For many reasons these should be segregated from the other prisoners.

May Ostracize Lodge Doctors.—The Omaha Douglas County Medical Society has appointed a committee to consider and recommend a proper penalty to be imposed on members who do not respect the resolutions of the Society forbidding lodge practice. This action has been brought about by the situation in Council Bluffs where fraternal lodges sprang up in such numbers that 12,000 people, more than one-third of the population of the city, were being given free medical treatment by the physicians of their orders. It is reported that physicians were getting as low as twenty-five cents per call.

Physicians' Names Barred from Newspaper Stories.—The physicians of Moberly, Mo., have formed a union pledging themselves to stand by a new schedule of fees and to pay a fine of not less than $25 nor more than $100 for each infraction of the scale. They have also agreed to forbid the use of any physician's name in connection with the news story of a case. The penalty for an infraction of this agreement is that the paper will be boycotted by the physicians.

Licenses to Practise Medicine Few in Idaho.—The State Board of Medical Examiners announces that of the twenty-two applicants for licenses to practise medicine in Idaho, only sixteen were successful, and a number of these passed by a very small margin.

Court Upholds Health Board.—The Appellate Division of the Supreme Court handed down a decision on December 1 upholding the appeal of the Department of Health of New York City from a lower court order granting Dr. William H. Allen of the Bureau of Municipal Research permission to examine its records. The Appellate Division holds that public policy is opposed to the policy of giving taxpayers the right to inspect the private records

of a department of the character of the Health Department. It is also denied that the Bureau of Municipal Research has any peculiar rights to delve into the records of the department. The Legislature appreciated the evil that might arise from indiscriminate publicity of the records of the Department of Health and left it to the Department to determine what safeguards should protect the privacy of its records.

Christian Scientists Arraigned.—A Mrs. Mosbach of New York City, whose child died recently from diphtheria while under Christian Science treatment, has been arrested under a warrant issued by Coroner Shongut, charging her with homicide. The County Medical Society has also begun an investigation of the case and was represented at the inquest, and will endeavor to make out a case against Mr. and Mrs. Ephraim Roberts, the Christian Scientist practitioners, who treated the child.

Dr. Robert W. Brace, assistant demonstrator of anatomy in Jefferson Medical College, has been appointed Colonial Surgeon for the Bahama Islands.

Dr. Edward Livingston Hunt has been appointed Associate Consulting Neurologist to St. Luke's Hospital.

Dr. De Keating Hart of Paris lectured at the New York Skin and Cancer Hospital on the evening of December 4 on "The Fulguration Treatment of Cancer." On the following days of the week he gave practical demonstrations on patients using the new fulguration apparatus of the hospital.

Dr. George Gray Ward, Jr., has moved to 71 W. 50th street.

A Doctor in the Pulpit.—Dr. Richard C. Cabot of the Harvard Medical School and Massachusetts General Hospital of Boston spoke on "The Modern Conception of Medical Service with a Retrospect," Sunday, December 3, at the Mount Morris Baptist Church. He was introduced to the congregation by Dr. Abraham Jacobi. Others on the platform were Dr. William M. Polk and Dr. Wendell C. Phillips.

The Presbyterian Hospital celebrated the forty-third anniversary of its founding on the afternoon of December 2. Dr. William H. Welch of Baltimore made the address on this occasion, taking as his theme "The Advantage to a Charitable Hospital of Affiliation with a University Medical School. His address was largely commendatory of the step the Presbyterian Hospital had taken in affiliating itself with the College of Physicians and Surgeons of Columbia University. He thought that by taking this step they had done a great service to medical education. It was announced that the offer of Edward S. Harkness to erect a surgical pavilion of 150 beds and a laboratory fully equipped for advanced research work, and also the offer of an endowment fund of $1,300,000 to be known as the Harkness Fund had been accepted.

Tuberculosis Hospital for Westchester.—The Board of Supervisors of Westchester County has decided to build a hospital which will accommodate about 200 tuberculosis patients and will cost about $200,000.

The New Solarium of the Methodist Hospital of Philadelphia, erected at a cost of $11,000 by Mr. Frank A. Freeman, was dedicated on November 25. It is said to be one of the finest and best equipped structures of its kind in the United States.

Charitable Bequests.—By the will of the late Leile H. Sharpless of Philadelphia $5,000 is bequeathed to the Home of the Merciful Saviour for Crippled Children for the establishment of a free bed in memory of Caroline Norris Horwitz. The Heaton Hospital of Montpelier, Vt., has received a bequest of $5,000 under the will of Mary Walton Dewey of Cambridge, Mass. Thrall Hospital at Middletown, N. Y., received a Thanksgiving gift of $5,000 from the Ontario and Western Railroad, and also a residuary bequest of $1,000.

The Surgeon-General of the Marine-Hospital Service.—The names of two candidates are mentioned as successor of Dr. Wyman as Surgeon-General of the Public Health and Marine-Hospital Service. These are Dr. Rupert Blue, at present in Hawaii, who had charge of the plague campaign in San Francisco, and Dr. J. H. White, at present in New Orleans. It is stated in the papers that the appointment has been tendered to Dr. Blue.

A New Hospital in The Bronx.—The State Board of Charities has approved the application of the Bronx Hospital Organization and has granted a charter authorizing the establishment of the hospital. The medical staff of the hospital is constituted as follows: Internal Medicine, Drs. A. Jacobi, Samuel W. Lambert, M. Aronson, Alex. Goldman; General Surgery, Drs. Willy Meyer, Arpad Gerster, A. A. Berg, Martin Rehling, J. C. Arpad Gerster, J. M. Lipschutz, A. L. Goldwater; Gynecology, Drs. Joseph Brettauer, Francis Foerster, R. T. Frank, Ulysses S. Kahn; Pediatrics, Drs. Henry Heiman, Henry Schumer, S. Feldstein; Nervous Diseases, Dr. George W. Jacoby; Genito-urinary Diseases and Dermatology, Dr. William J. Robinson; Ophthalmology, Drs. Emil Gruening Otto Schirmer, M. Aronson; Ear, Nose and Throat, Drs. W. Freudenthal, I. M. Heller, Alfred Braun.

The United States Civil Service Commission announces an examination to be held on December 6 to secure eligibles from which to fill a vacancy in the position of aid in the Division of Physical Anthropology, U. S. National Museum.

The Bronx Medical Society will meet on the evening of December 13, when Dr. Charles E. Nammack of Bellevue and St. Vincent Hospitals will read a paper on "The Treatment of Acute Lobar Pneumonia."

The Sixth Harvey Society Lecture will be delivered at the New York Academy of Medicine on December 16 by Prof. Walter B. Cannon of Harvard University. His subject will be "A Consideration of the Nature of Hunger."

The "New York Medical Times" has been purchased and will hereafter be published by Mr. Romaine Pierson, publisher of the *Practical Druggist.*

National Association for the Study and Education of Exceptional Children.—The Second Annual Conference on the Problem of the Exceptional Child was held December 1 and 2 under the presidency of Dr. A. Emil Schmitt of New York City. There was a very good attendance and nineteen papers were read. The following are among the activities of this association: The gathering of statistics and other information as to the number and various types of exceptional children, and provisions for their care, in the United States, and eventually abroad; a reference library; an information bureau; a publicity bureau; a pedagogical library; a sanatorium school; an odservation clinic for the care and study of borderland cases, where a positive prognosis of eventual restoration to a fair degree of normality, or of permanent defectiveness must be based on extended observa-

tion; an adolescent department for ineffective persons between the ages of 16 and 25; courses for the training of teachers.

Medical Society of the County of New York.—At the meeting held November 27 the following officers were elected: *President,* Dr. Charles Gilmore Kerley; *First Vice-President,* Dr. Brooks H. Wells; *Second Vice-President,* Dr. T. Passmore Berens; *Secretary,* Dr. John Van Doren Young; *Assistant Secretary,* Dr. J. Milton Mabbott; *Treasurer,* Dr. Charles H. Richardson; *Censors* (to serve three years), Drs. Edward S. Peck, H. Seymour Houghton, and Frederick E. Sondern.

German Medical Society of the City of New York.—At the meeting of this society held December 4, the following officers were elected: *President,* Dr. Carl Pfister; *Vice-President,* Dr. A. Ripperger; *Recording Secretary,* Dr. H. O. Klein; *Corresponding Secretary,* Dr. A. Herzfeld; *Treasurer,* Dr. S. Breitenfeld.

The International Congress of Hygiene and Demography will hold its fifteenth annual meeting in Washington, D. C., September 23-28, 1912. Although this congress has been in existence for many years this will be the first time that it has met on American soil.

Society of Sanitary and Moral Prophylaxis.—A meeting of this Society will be held at the New York Academy of Medicine on December 14. The general subject for discussion will be "Practical Eugenics," opened by a paper, based on observation of several hundred cases of sterilization of criminals, by Dr. F. N. Hurty, Secretary of the Indiana State Board of Health.

The Missouri Association for the Relief and Control of Tuberculosis, which met in Jefferson City on November 13, elected the following officers: *President,* Dr. George Dock of St. Louis; *Treasurer,* Mr. Saunders Norvell of St. Louis; *Secretary,* Dr. Walter McN. Miller of Columbia. It was agreed that the Association would undertake the organization of county societies and should endeavor to enlist the cooperation of the press, medical men, the clergy, and organizations and people interested in public welfare.

The Fourth District Medical Association of South Carolina met in Union on November 20, when the following officers were elected: *President,* Dr. Theodore Maddox of Union; *Vice-President,* Dr. Fred H. Potts of Spartanburg; *Secretary,* Dr. W. E. Carpenter of Greenville.

The Lebanon Hospital.—The dedication of the new dispensary building of Lebanon Hospital and the inauguration of a department of social service will take place on Sunday, December 17, at 3 o'clock. Addresses will be delivered by Dr. Abraham Jacobi and the Rev. Dr. Stephen Wise.

The New Utrecht Medical Society is the name of a new organization established in the Borough Park section of Brooklyn. The following officers have been elected: *President,* Dr. J. Bertram Dowd; *Vice-President,* Dr. Henry M. Kalvin; *Secretary,* Dr. Murray B. Gordon; *Treasurer,* Dr. Max S. Ittelson; *Trustees,* Drs. John J. Masterson, Abraham J. Schwartz, and Thomas E. Waldil.

Obituary Notes.—Dr. Henry Phelps Perkins died suddenly at his home in West Newton, Mass., on November 26. He was born in Lowell in 1860, and was graduated from the Harvard Medical School in 1881. He was senior surgeon at the Newton Hospital.

Dr. Oscar A. Bemis of Whitman, Mass., dropped dead on the street, November 21. He was 65 years of age and a graduate of the Homeopathic Hospital of Philadelphia.

Dr. James B. Kelly died in Portland, Ore., on November 2 at the age of 51.

Dr. Augustus Beekman Smith died at his home in New Haven, Conn., November 12. He was a well-known dentist and brought to perfection the first set of teeth ever set in vulcanized rubber. He was 85 years old.

Dr. Michael Nienhardt of Lafayette, Ind., a graduate of the Indiana Medical College in 1897, died on November 10 at the age of 70.

Dr. J. E. Perry of Welborn, Fla., died in a sanatorium in Atlanta, Ga., on November 4 at the age of 64.

Dr. Walter Washington of Bowling Green, Va., died on November 7 after a long illness at the age of 87.

Dr. Ethel M. Kirk of Pittsburgh, Pa., was found dead in her apartment on November 16. She was 30 years old.

Dr. Asa D. Smith, a graduate of the Boston University Medical School in 1878, and a Civil War veteran, died suddenly at his home in Boston on November 25 at the age of 76 years.

Dr. Oscar L. Lyndon of Athens, Ga., dropped dead in Atlanta on November 20, immediately after witnessing a football game. He was graduated from the University of Georgia in 1899.

Dr. Frederick C. Graves died of pneumonia at his home in New Bedford, Mass., on November 22. He was born in 1874 and was graduated from the Homeopathic Medical College and Flower Hospital, New York, in 1899. He was a member of the local health board and a medical inspector for the schools.

Dr. Orville E. Evans died at his home in Gowrie, Iowa, on November 22. He was born in 1846, was a Civil War veteran, and a graduate of the College of Physicians and Surgeons, Keokuk, Iowa, in 1878.

Dr. Frederick A. Leahey, a graduate of Harvard Medical School in 1900, died at his home in Lowell, Mass., on November 24 at the age of 34 years.

Dr. Charles D. King died at his home in Brockton, Mass., on November 24 at the age of 64 years. He formerly practised medicine in Minneapolis and St. Paul, Minn., and moved to Brockton about twenty years ago.

Dr. Henry C. Bullock, one of the oldest practising dentists in the State of Connecticut, died at his home in Hartford on November 23. He was born in 1846 and was prominent in the affairs of the First Regiment, C. N. G., being a lieutenant on the staff of Colonel Philip Hedson at the time of the Centennial Exposition in Philadelphia in 1876.

Dr. Oliver Fairfield Wadsworth died at his residence on Beacon street, Boston, after an illness of a year, on November 29 at the age of 73 years. He was graduated from Harvard in 1860, and three years later took his A. M. degree. In 1865 he was graduated from the Harvard Medical School, where he was an instructor in ophthalmoscopy from 1881 to 1891; he was then appointed professor of ophthalmoscopy, which position he held until he received the appointment as Williams professor. He was ophthalmic surgeon at the Boston City Hospital and consulting surgeon at the Massachusetts Eye and Ear Hospital and also at the Massachusetts General Hospital for a number of years.

Correspondence.

THE REMSEN BOARD AND DR. WILEY.

To the Editor of the Medical Record:

Sir:—The public has been so thoroughly hoodwinked regarding the scientific work of Dr. Wiley that it seems necessary that some one who understands the truth of the matter should speak.

A few years ago Dr. Wiley established a poison squad. A number of young men were given benzoate of soda with their food, and it was found that they became ill. The maximal amount received by any individual in this series of experiments was 41 grams (about 1½ ounces) distributed in small doses through a period of twenty days. As the result of these experiments, Dr. Wiley has never ceased to insist that benzoate of soda is a poison. Reiteration of this statement has made people believe that the statement itself is true.

The work of the scientist is usually accomplished in the quiet of his laboratory without flourish of trumpets, without newspaper notoriety. An earnest endeavor to separate scientific truth from the influence of psychic turmoil must be the aim of the scientific man. Dr. Wiley's experiments on the contrary were trumpeted abroad. The young men who were the victims must have been more than human not to have been influenced mentally by this course of their chief. They had a fever, many of them, and Dr. Wiley was so alarmed that he discontinued the experiments. Authorities have, however, suggested that the febrile symptoms noticed in this group of men were in reality those of an epidemic of the grippe. It appeared to many that the experiments were not entirely satisfactory, especially after it was learned through an investigation held in Washington that the majority of the individuals employed in the experiment had been used as subjects in previous experiments in which they had been made ill as a result of their ingestion of various deleterious substances. Some of them testified that they fully expected to be made ill by benzoate of soda. Furthermore, the benzoate was administered in capsules and not in diffused state as it would have been had it been taken in preserved food.

It did not seem to be right that the judgment of a single man should be accepted as final scientific truth, especially when the course of experimental procedure employed by that individual was open to criticism. In recognition of this fact the Remsen board was appointed by the Government. It has been freely stated that it would be very much cheaper for the government to abolish the Remsen board and to place the judgment with regard to all such matters in the hands of Dr. Wiley solely. The proposition appears to be that doctrines taught by one man should be accepted as the truth by 90,000,000 people. If the popular state of mind be such, that personal idolatry of Dr. Wiley is to crown him with the added attribute of infallibility, one must go back to the middle ages to find in the worship of the authority of Galen a similar parallel. It will be remembered that Galen, who was born at Troy and who died at Rome in the year 200 A.D., taught medical doctrines, disbelief in which was held to be heresy by the medieval church.

Dr. Wiley and the newspapers unite together in proclaiming that the work of Dr. Wiley is hampered by the Remsen board. Who are the men who are hampering Dr. Wiley? President Remsen of the Johns Hopkins University is the chairman of the Remsen board. Remsen received his education in Germany. It was he who discovered saccharin which was placed upon the market by a German firm, it having been patented without his permission, the profits going to the German patentee. In my student days in Germany a translation of Remsen's book on organic chemistry was largely sold to German students. He is a man of undoubted integrity and high culture.

Professor Chittenden, Dean of the Sheffield Scientific School, is one of the few Americans who have developed a school of trained pupils. One speaks of the school of Liebig, meaning the men whom Liebig trained. One speaks of the men of the Chittenden School, meaning the physiological chemists who, throughout the country, hold important chairs of physiological chemistry and of physiology, as members of the Chittenden school. He is a man of great power and great capacity.

The late Dr. Christian A. Herter was a man of high ideals, a man who endowed lectureships at the Johns Hopkins and at the University of Bellevue Hospital Medical School, a man who was acquainted with the great scientists of the world. Dr. Herter's private laboratory was carried on at his own expense. One of his chief assistants was Dr. Dakin, an Englishman whom the English considered the best chemist they had in their country.

Professor Long is a man of experience and long service, who has done much work for the United States government in the examination of food and drugs for the Indian Service. Associated with him in the work of the Remsen board was Dr. Stanley R. Benedict, one of my colleagues at Cornell.

One of my own assistants, Dr. A. I. Ringer, was in the laboratory of Dr. Herter, and for his careful accuracy I can vouch. These men are men whom I know personally, whose integrity I am sure of, whose work I can rely upon, and these men, after many months of hard labor, came to the conclusion that Dr. Wiley's results were absolutely wrong. Investigations were carried on in three laboratories. In Dr. Herter's in New York City, in Dr. Chittenden's in New Haven, and in Professor Long's in Chicago. It was thought best that all of the experiments should be as independent as possible, so that the truth should be arrived at without bias. On account of Dr. Wiley's belief that benzoate of soda was a poison, it was at first given only in small doses. Dr. Herter, however, learned that Lewinsky, a pupil in the clinic of the great Minkowski, had given nearly two ounces (50 grams) of benzoate of soda to a man in one dose without injuring him. Dr. Herter increased the dose which he gave. Dr. Ringer, for example, took a fifth of an ounce of benzoate of soda (6 grams) without the slightest change in his condition, which could be interpreted as being detrimental. He, with the other men employed, took, through a period of three or four months, dietaries containing from 0.3 to 6 grams of benzoate of soda daily.

Here then were three individual laboratories working under the care of great and experienced men, all arriving at the same result, and all of them deciding that Dr. Wiley's experiments were wrong. These men were the ones to whom the country particularly could look to decide this question, and Dr. Wiley has stated that he has a very slight opinion of their scientific worth. It seems to those who are really in a position to know the truth about the matter that there has been no controversy in this country where the general public has been more com-

pletely and absolutely misled as in this question of the relative reliability of Dr. Wiley's statement on the one side and the statement of the Remsen board on the other. Every newspaper from one end of the land to the other is, apparently, willing to place complete control of the regulation of the preservation of food in the hands of a man whose experimental work has been shown to be erroneous.

Certain experiments made by Dr. Lucas have been widely quoted. Dr. Lucas was one of the subjects in Dr. Herter's laboratory. During his stay in this laboratory information was given to the newspapers which was traced to a conversation of Dr. Lucas. In consequence of this, Dr. Lucas received a severe reprimand from Dr. Herter. Passing from Dr. Herter's laboratory, he went to another, from which he published an article in direct antagonism to the findings of the Remsen board. Dr. Herter, criticising this work of Lucas, stated "Dr. D. R. Lucas has published certain statements in regard to the action of benzoate of soda which are so much at variance with the facts as to call for criticism and correction. I deem it my duty to make at least some comment, despite the fact that this work is highly distasteful to me." Dr. Herter, after reviewing the work of Dr. Lucas, stated that "if it were worth while to cite further examples of untrue statements with which this paper abounds it would be an easy undertaking." The newspaper press which quotes the article of Lucas does not measure the relative personal equation which distinguishes Dr. Lucas from the scientific men whose pupil he was in the Herter laboratory. These experiments of Lucas are the only ones ever reported as confirming Dr. Wiley.

The quantity of benzoate of soda which the law permitted to be used as a preservative in three-quarters of a pound of beef was 0.3 of a gram. The subjects experimented on by the Remsen board received twenty times this quantity or one-fifth of an ounce without affecting their health. As above stated, nearly two ounces have been given to a man without injuring him. However, there must be a limit to the dose which can be given. In the laboratory of the writer Dr. Ringer has found that more than an ounce of benzoate of soda may be given to a goat weighing eighty pounds without any disturbing symptoms other than a loss of appetite. Two ounces given in one dose to this same goat killed the animal. This, however, does not conflict with the statement that in small doses benzoate of soda is absolutely innocuous.

As regards the normal action of benzoate of soda, the following facts may be of interest. In the bodies of all animals there is a constant production of a substance called glycocoll. This substance is not a poison, but a normal product of the living tissues. When natural foods containing substances which are convertible into benzoic acid are taken by an animal the benzoic acid unites with glycocoll to form hippuric acid. Hippuric acid is not a poisonous substance.* It is eliminated by the kidneys and is found in the urine. Grass and hay contain substances which form benzoic acid in large quantities, and so there is a large formation of hippuric acid in horses, cattle, goats, rabbits and all herbivorous animals. The same process takes place in man. If huckleberries or cranberries or other related fruits be eaten benzoic acid arises from them in such quantity that the amount of hippuric acid formed may be very considerable. In the same way, when benzoate of soda is given to man with his food it forms benzoic acid, which unites with glycocoll to form hippuric acid, and this passes out in the urine. This capacity does not have to be acquired. It is always present, even in infants. There is nothing mysterious about this. It is based on well-known physiological functions. The organism is adapted to render harmless benzoic acid administered to it in small quantities.

The argument here presented is in no way intended to dispute the decision of the Prussian Deputation for Medical Affairs that to allow the use of benzoate of soda in the preservation of food would enable the manufacturer to practice methods less cleanly than he should.

And finally let the reader consider for a moment the following illuminating testimony given by Mr. McCabe (Committee on Expenditures in the Department of Agriculture, August 7, 1911, p. 511.) "There was a correspondent here in Washington almost from the time that the board was created who sent out any number of copies of articles reproduced by a typewritten process abusing the Secretary, abusing the referee board, impugning the motives of the Secretary for creating the board, attacking the personnel of the referee board; and those articles have continued to be sent out up to within certainly a very few days."

This letter has been written for the public statement of the truth regarding the relations of benzoate of soda to health. It has seemed a public duty which ought not to be evaded.

GRAHAM LUSK.

DEPARTMENT OF PHYSIOLOGY, CORNELL UNIVERSITY MEDICAL COLLEGE, NEW YORK.

*Wiley, with a reckless disregard for well-established fact, told Congress (the Committee on Interstate and Foreign Commerce, February 26, 1906, p. 245), the following: "If the kidneys should cease to act for twenty-four hours there is not a man on this committee who would not be at death's door from hippuric acid and the urea which would be in the blood. Hippuric acid is perhaps far more poisonous than urea. It is a deadly poison."

RHEUMATISM AND APPENDICITIS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In view of your editorial comment in the issue of November 18, the following quotation from Sir Frederick Treves's address in 1907 at the University College of Liverpool, seems appropriate at the present time, *apropos* of appendicitis and its treatment. He said: "A man may possess all the learning that a well-equipped library may contain and all the erudition attentive observation in the wards may bestow, and yet know too little of man himself and the fixed natural laws which govern his existence. . . . Disease is the result of the violation of some of Nature's laws, and it is the duty of the physician to find out the law which has been violated, and as a remedy, impress upon the patient the necessity of mending his conduct, so as to more fully comply with the laws of Nature."

In appendicitis the frequent underlying cause is rheumatism and the evidence pathologically, from even the late remarkable experimental proof of it by Poynton and Paine, is the accompanying local peritonitis which is often present.

The localized peritoneal inflammation not infrequently starts, as I believe, the inflammation in the appendix and not the appendix the inflammation in the peritoneum.

In either case, get rid if possible, of the primary cause by diet, habits, régime, and the use of salicin

or salicylate of soda, and the number of cases of appendicitis will greatly diminish.

Institute rational, effective treatment at the beginning of an attack and fewer operations will be required.

As to fulminating cases, operate immediately, or preferably, as I believe, wait for one of two things: (1) Perforation; (2) local abscess. In either of these circumstances operation is surely indicated.

It must be remembered, however, that acute general peritonitis does not invariably mean perforation, and as this is true, when no perforation exists, even immediate operation does not increase the chances of the patients' recovery as compared with those from wise medical treatment.

Further, there are many cases of appendicitis confounded with, or preceded and caused by, colitis. If we get rid of the colitis the appendicitis, when it exists, will disappear also.

BEVERLEY ROBINSON, M.D.

NEW YORK.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

MEETING AT ROYAL COLLEGE OF SURGEONS; OBJECTIONS TO INSURANCE BILL—PARLIAMENTARY CRITICISM ALSO—PHTHISIS COMPULSORILY NOTIFIABLE—NAVAL MEDICAL REFORMS—WASSERMANN REACTION (HUNTERIAN LECTURE, ETC.) ANESTHESIA—BALNEOLOGY—OBITUARY.

LONDON, November 17, 1911.

YESTERDAY the annual meeting of the Fellows and members of the Royal College of Surgeons was held. Mr. Godlee presided, and in opening referred sympathetically to the resignation of Sir H. T. Butlin on account of ill health. A message of sympathy was sent from the assembly. Mr. Nelson Handy moved a resolution thanking the Council for writing to the Chancellor of the Exchequer on the insurance bill, regretting the unsatisfactory reply and trusting no Fellow or Member will assist the scheme until the points in dispute are arranged. Mr. Handy pointed out that the Chancellor spoke of the Council's proposals being in accordance with his own, whereas when parliament placed the medical benefits in the control of the Health Committees the Chancellor promised the Friendly Societies to reverse it on report. Moreover, he has so far refused to reduce the income limit which the Council urged and the profession is determined upon. Mr. Maude seconded and said the Chancellor's amendments gave back to the clubs 50 per cent. representatives and only 2 per cent. to the profession.

Mr. Collingwood insisted on payment by fee, however small it might be, rather than any form of contract practice. Another member said the Chancellor is not to be trusted, and on a member expressing dissent, added that by his action about health committees he had annulled his promises to the profession. Another member said that without the help of the profession the Chancellor's scheme must fail, and they could refuse any assistance if it meant continuing the old slavery to the clubs. The resolution was carried, with two dissentients.

While the Chancellor's conduct was being thus condemned in a medical meeting, he was defending himself as well as he could in the House of Commons against charges of misrepresentation about his bill and the opposition. He does not often lose his temper in the house, but this time he seemed to do so. The chairman of the committee had to request him to confine himself to the question. There were several new clauses put forward by the Chancellor, one of which, he admitted, affected numerous and important bodies of employees. There were some remarks upon it and then, with 18 others, it received the happy dispatch of the guillotine. It seems absurd to call these proceedings discussion.

Yesterday the local government board issued to all health authorities a general order extending compulsory notification of all cases of pulmonary tuberculosis. The disease was previously notifiable in hospitals, infirmaries and similar institutions, but henceforth it becomes the duty of every medical practitioner to notify every case occurring in the course either of his public or of his private practice.

The naval medical service appreciates the reforms recently carried out by the Director-General, Sir James Porter, on the recommendation of the Burnford committee. One of the most satisfactory is the recognition of professional ability as a claim for promotion in place of too much consideration of seniority or war service. To give every opportunity, the new school at the Royal Naval College at Greenwich with its laboratories will, it is hoped, be in working order by the end of the year. The Seamen's Hospital (Dreadnought) close by will furnish a field for clinical study. The School of Tropical Medicine, also near, will be of great use. As soon as he enters the service the naval surgeon will take a two months' course at Greenwich and then pass to Haslar. After four months there he will go to a ship. In from four to six he will obtain another six months' course and must then pass the examination for staff surgeon. When he has attained fourteen years' seniority he can take a final three months' course. It is obvious that these regulations afford full opportunity for keeping in touch with the advances of medical science and practice. "Conspicuous professional merit" is at length recognized as of the first importance and as the proper qualification for promotion. Coincidentally with these reforms, the pay of the naval medical service is to be increased. The medical officer of the senior flagship of a fleet is the principal medical officer of that fleet and will have direct access to the commander-in-chief, which will give satisfaction well understood in the service.

I should add here that great improvements have been effected in the equipment of naval hospitals. This is especially noticeable in their operating theaters, which, I am assured, are in no way inferior to those of our great civil hospitals. The open-air treatment is being tried in the grounds of Haslar Hospital. Electric, x-ray, and other methods are mostly under the care of specialists on the staffs of these hospitals and, of course, trained anesthetists are attached to them. It is well to find that the service is no longer to be neglected by the admiralty or ignored by politicians.

The Wassermann reaction has been so frequent a topic of conversation of late that it may well occupy a little of your space. A very important pronouncement was made by Major French, R.A.M.C., in his recent Hunterian lectures at the Royal College of Surgeons, when he took for subject recent developments in the "recognition, treatment, and prophylaxis of syphilis." Confining my notice to-day to the Wassermann test, he dealt with it from the clinical side, as Professor Emery had considered its pathological aspects in last year's Hunterian lectures. Major French said laboratory methods and

clinical facts as to the test do not always correspond as he found at Malta. The controls, with few exceptions, were negative in soldiers giving no history of infection. In the primary stage the results were disappointing, as others had found. In the secondary stage, in patients on a final course of mercury or earlier, the results were positive in 40 out of 43 cases. The reaction was positive in 14 out of 18 cases on their second, third, or fourth mercurial course by intramuscular injections of insoluble grey oil. In one recent case the man was a heavy drinker. In 36 other men who had had two years' treatment by these injections the reaction was positive in 25. In one man who had mercurial stomatitis it was negative. In another negative case gummatous ulceration was present. These results were obtained by Fleming's modification and as regards secondary cases compare favorably with Wassermann's original method. As regards early cases, the results were so difficult of interpretation that the lecturer preferred to relate cases in detail. A year ago he wrote that in the primary period the test had been uncertain in his experience and mentioned then 10 or 12 cases in which a positive reaction was reported to him, but no syphilis supervened, though no mercury was given. If it be suggested that the testing was defective he would add that the pathologist obtained 98 per cent. of positive results in secondary cases—*i.e.* after the rash had appeared. The lecturer quoted the statements of a number of authorities in support of this, and asked whether the assertion of a bacteriologist who said there would be no appeal from a positive finding could be accepted, even with certain limits said to be understood.

In addition to the lecturer's cases of positive reaction in non-infecting, soft sores he cited observations of several observers who reported this reaction in other diseases as yaws (fairly constant), leprosy (very high percentage), malaria (35 per cent.), lupus, enteric fever, and other diseases, in some persons under narcosis and even in dead bodies. In his conclusion, having spoken also of the spirochetes and the clinical evidence, Major French said it "must be admitted that in many instances we are as dependent to-day on a correct clinical interpretation of what we see as in the past, when John Hunter wrote."

At the Liverpool Medical Institution Wassermann has also been under discussion, and one or two of the points brought forward may be quoted. The paper was by Dr. F. P. Wilson, who spoke of the unstable nature of the materials used in the test which necessitated frequent standardization. All apparatus hitherto tried in the consulting room, he declared useless, and a well equipped laboratory was essential. Salvarsan affected the test more rapidly than mercury. The test was not absolute, but rather an adjuvant to the clinical examination. When no symptoms remained after thorough treatment, except a persisting reaction, it could not be asserted that the patient was not cured. But the evidence pointed to such a conclusion. Dr. MacKenna thought the original test better than any modification. He had found the reaction in the third week. It was frequent in the second stage and more so in the third. In a congenital case, with no symptoms until the twenty-fifth year, he had found a strong positive reaction. When two injections of salvarsan were given, separated by a course of mercury, the reaction usually became negative in three or four weeks.

In the section of anesthetics (R.S.M.) on the third inst. three deaths were reported, as well as some cases involving anxiety. Of the latter was one of acute bronchitis, with perhaps pleurisy, in a man of 34, who had 15 ounces of ether by the open method during a long operation. No drug was injected previously. Dr. Silk, who reported the case, thought it was probably one of pulmonary collapse and supported the view that the open method might cause troubles identical with those met with in the closed method. Another case was of persistent vomiting during anesthesia for extraction of teeth. The patient was a girl and had had breakfast. Gas and oxygen were given and afterwards gas alone. Next day she had no breakfast and gas alone was tried and then two doses of ethyl chloride. On the third day ethyl chloride alone was given and the last of the teeth extracted. On every occasion and with every drug vomiting was produced. In the discussion there were suggestions as to preventives, previous gargling with dilute carbolized lotion, or a small dose of cocaine, or increase of pressure in the bag.

Mr. Bellamy Gardner then read a paper insisting on the absolute necessity of maintaining a free oral airway by mouth-prop and tongue clip as a routine in every administration. Nasal breathing, he said, was quite inefficient, and to impress students he suggested the words "asphyxial death space" might be used in teaching.

The opening meeting of the balneological and climatological section was very encouraging to those interested in that department. The president, Dr. Thompson of Buxton gave an address containing reflections and suggestions as to spa treatment and the duty of health resorts to promote the study of their advantages and provide for the necessary accessories. The investigations of Professor His open a new field and the equipment for treatment by radium emanations should be provided in all spas. The president, after his address, invited Dr. Monod of Vichy, who has been sent by the French government to study and report on British health resorts, to explain his mission. Accordingly, Dr. Monod said Dr. Neville Wood's paper last session had evoked much interest abroad and was, he thought, partly responsible for his government's action. He said that the equipment of the spas he had so far visited had impressed him by their completeness for treatment. He considered that many of his countrymen, for whom thorough change of surroundings would be beneficial, might find in England resources not available at home. He closed with a suggestion that spa treatment might well be placed on an international basis. I should think after his testimony those who have rather slighted British spas will give them a higher place in their therapeutic views.

Dr. Samuel McBean, professor of materia medica and therapeutics died on the 6th of November, aged 72. He qualified in 1862 and the same year entered the navy as assistant surgeon. In 1863 he had charge of the naval hospital Yokohama. In 1864 he was at the bombardment of Simonosaki. In 1867 he was in the Niger expedition, and on his return was appointed surgeon to the Chatham Hospital. He retired from the service a year or two later and soon was appointed to the Chair of Botany, afterwards to therapeutics in the Durham University. He wrote the "Origin and Development of Medicine," and contributed to the journals and societies.

The Medico-Psychological Asosciation loses one of its prominent members in the death of Dr. Mur-

ray Lindsay, who was president in 1893. He had been superintendent of the asylums at Derby and Hanwell and held other appointments.

Dr. Kraemar of St. Leonards-on-Sea died on the 15th inst., aged 57. He was M.A. (Edin.), 1878, and subsequently filled the medical curriculum and took M.D. in 1897.

Progress of Medical Science.

Boston Medical and Surgical Journal.

November 23, 1911.

An Economic Study of Five Hundred Consumptives Treated in the Boston Consumptives' Hospital. E. A. Locke and C. Floyd.
The Gilman-Coca Vaccine Emulsion Treatment of Cancer. E. H. Risley.
Metabolism Studies in a Case of Diabetes Insipidus. H. W. Goodall.
Open-Air Rooms and Hospital Schools. G. S. C. Badger and J. B. Hawes, 2d.
The Copenhagen Institution for Cripples. Its History, Work, and Results. D. C. McMurtrie.

Economic Study of Tuberculosis.—E. A. Locke and C. Floyd note that the total losses in wages, together with the cost of care in public institutions, of 500 patients treated in the Boston Consumptives' Hospital was $500,023. The total potential loss in a group of 244 fatal cases was $1,366,400.

Vaccine Emulsion Treatment of Cancer.—E. H. Risley has subjected to a practical test in twenty cases the method employed by Gilman and Coca of the Philippine General Hospital in the treatment of cancer with a vaccine consisting of an emulsion of the living tumor cells of the patient, removed at operation. The conclusions arrived at are that emulsions or extracts of cancer injected into the inoperable or recently operated patient with recurrent cancer have no effect in retarding the growth or preventing recurrence, but in a great proportion of cases produce an increased activity on the part of the cancer cells, so that tumors grow with greater rapidity, and that the danger of sepsis is marked, such sepsis being in no wise beneficial to the patient.

Metabolism in Diabetes Insipidus.—H. W. Goodall states that all recent investigations of the metabolism in cases of diabetes insipidus conclude that the disease is a functional disorder. The much-discussed question as to whether the polyuria or the polydipsia is the primary symptom is as yet undecided. There is also a difference of opinion as to whether the intake of large amounts of water increases the catabolism of body protein. The author investigated this subject in a female patient aged twenty-eight years, who had suffered from polyuria and polydipsia since she was twelve years of age. He reached the following conclusions: polydipsia was the probable primary cause of the neurosis in this particular case, since with the restriction of liquid intake the kidney excreted a more concentrated urine. The increased catabolism of body protein is the result of undernourishment rather than the ingestion of large quantities of water.

Open-Air Rooms and Hospital Schools.—G. S. C. Badger and J. B. Hawes, 2d, call attention to the fact that it is not fresh-air rooms or hospital schools alone which are to solve the problem of caring for anemic and tuberculous children. These are but two factors in the far wider subject of school hygiene. It is by strengthening, broadening, and combining all forces that the condition of the child is to be improved. Children must be properly taught the principles of hygiene and right living; fresh air must be provided for all school children; trained school physicians must be properly paid for the work they do; school nurses must everywhere be made a part of the system as the most important means of making the school physicians' work effective; there must be fresh-air rooms for ailing children; proper hospital facilities for acutely sick children, and tuberculosis camps or wards for consumptive children. Above all, the public must be educated to see the reason for all this, and to insist upon it.

The Copenhagen Institution for Cripples.—D. C. McMurtrie states that this institution, which was founded in 1872 by Pastor Hans Knudsen, furnishes surgical care and appliances and educates the children with a view to their becoming self-supporting.

New York Medical Journal.

November 25, 1911.

The Surgery of Myopia. G. W. Vandegrift.
Full-Term Ectopic Gestation. E. McDonald.
Defective Memory as a Sole Residual Symptom in Brain Syphilis C. W. Burr.
On Palpation and a New Method for Its Execution. M. I. Knapp.
The Influence of Milk Station Work on the Reduction of Infant Mortality. G. R. Pisek.
The Principles of the Reduction of Infant Mortality. S. J. Baker.
Disease of the Verumontanum. E. W. Ruggles.
A Simple Method of Viewing Röntgenograms in Three Dimensions. M. Girsdansky.
A By Result of the Administration of Salvarsan. D. W. Montgomery.

Surgery of Myopia.—G. W. Vandegrift concludes that *ablatio lentis* must not be done in myopia of less than sixteen diopters. Success depends largely upon the youth of the patient and state of health of the eyeball. Extensive degeneration of the tunics of the eye, particularly in the macular region, contraindicates operation. The danger of detachment of the retina is only slightly, if at all, increased by operation. The progress of myopia and macular disease is not necessarily checked. Discission, single or multiple, in childhood; discission and linear extraction in the adult; and primary extraction after the lens nucleus has become sclerosed are the operative procedures of choice.

Full Term Ectopic Gestation.—E. McDonald presents a study of this subject. The chief difficulty in the later months is to differentiate the condition from normal pregnancy. The gravid tumor develops beside the uterus, which is pushed to one side. There is a retrouterine fulness, and the head or breach cannot infrequently be felt through the vagina. If the child is transverse, the retrouterine fulness will be found to fluctuate. The cervix is commonly enlarged and softened, but not to the extent of a normal pregnancy, and will be found to be harder and firmer than the duration of a normal pregnancy would allow. The history of the passage of decidua and the presence of the small uterus aid in the diagnosis. The use of the sound is justified when the uterus is plainly felt, but it should be remembered that normal pregnancy is most frequently mistaken for this condition.

Defective Memory in Brain Syphilis.—C. W. Burr reports the case of a man who at the age of twenty-three had an initial lesion, underwent treatment for two years, and four years later developed brain syphilis, including convulsions, hemiplegia, and aphasia. Under treatment he recovered with the exception that he was left with a defective memory.

Palpation.—M. I. Knapp describes a method of palpating the abdomen, with the patient in a slanting position with the head down. The examiner stands at the head of the patient and, using the fingers lightly flexed, gently palpates the abdominal organs, which are relieved of the tension of the abdominal wall.

Milk Station Work and Infant Mortality.—By G. R. Pisek. (See MEDICAL RECORD, October 21, 1911, page 848.)

Reduction of Infant Mortality.—By S. J. Baker. (See MEDICAL RECORD, October 21, 1911, page 849.)

Disease of the Verumontanum.—By E. W. Ruggles, (See MEDICAL RECORD, October 7, 1911, page 747.)

Röntgenograms in Three Dimensions—M. Girsdansky presents a concluding report on his simple method of viewing röntgenograms in three dimensions.

A By-Result of the Administration of Salvarsan.—D. W. Montgomery and G. D. Culver report the case of

a man who for twenty years had suffered from hyperkeratosis of the soles of the feet. On the theory that this might have been of syphilitic origin, he was given while in Europe two injections of salvarsan into the buttocks. These left hard indurations, one of which broke down, with the formation of a fistula discharging blood serum and shreds of necrotic tissue.

Journal of the American Medical Association.

November 25, 1911.

Disturbances of Respiration Due to Nuclear and Infranuclear Disease. C. F. Hoover.
The Proper Operative Period and Methods of Drainage in Pelvic Infections. L. G. Bowers.
Two Years' Experience with Vaccines in Pelvic Infections. J. O. Polak.
The Problem of State Care of Drug and Alcoholic Habitués. D. Crosby.
Chronic Alcoholism: What Can and What Cannot Be Accomplished by Treatment. G. E. Pettey.
A Rapid Method of Inoculation Against Typhoid Fever. Method of Administration of Vaccine in Some 3,500 Injections in the Eighteenth United States Infantry, Maneuver Division, San Antonio, Tex. K. Nelson and W. E. Hall.
Idiopathic Non-Purulent Acute Thyroiditis. Report of a Case with Complete Recovery. H. V. Dutrow.
An Unusual Foreign Body in the Intestines. E. H. Moss.
Woody Phelgmon of Reclus. E. J. Pantzner.
A New Medicine-Dropper Clip. P. R. Wood.

Disturbances of Respiration Due to Nuclear and Infranuclear Disease.—C. F. Hoover calls attention to the nervous disturbances of respiration occurring after small doses of morphine in certain diseases: tabes dorsalis, sclerosis of brain arteries, tuberculosis of the mediastinal lymphnodes, and aneurysm of the first portion of the aorta. Some years ago he had reported such disturbances (loss of consciousness, cessation of breathing, vasomotor relaxation) calling for active artificial respiration, and in one case, which he mentions, ending fatally. The tolerance for morphine was regained after the disease had progressed. In tabetic cases the process is limited to the bulbar nuclei and is not associated with disturbances in the higher cerebral structures such as occur in arteriosclerosis. The practical point is that one should be very cautious in the use of respiratory depressants when there is any reason for suspecting degeneration in the respiratory center, but impulses from the cerebral cortex may share in the respiratory symptoms, which have been attributed solely to changes in the bulbar center.

Drainage in Pelvic Infections.—By L. G. Bowers. (See MEDICAL RECORD, July 8, 1911, page 105.)

Vaccines in Pelvic Infections.—By J. O. Polak. (See MEDICAL RECORD, July 8, 1911, page 105.)

Alcohol and Drug Habitués.—D. Crosby advocates state control of drug and alcohol habitués. If one will estimate the tremendous cost of present methods, jail and police court expenses, and maintenance of inebriates in public hospitals and almshouses, one can easily gather data to show the taxpaying public the economic value of the cure of curable and the control of incurable drug and alcohol habitués.

Chronic Alcoholism.—G. E. Pettey states that probably 80 per cent. of all habitual drinkers form the habit inadvertently and unintentionally. A small percentage of persons are born with or have acquired in early life from disease a defective physique and an unbalanced nervous system, leading them to become ready victims of the seductive influence of alcohol. A third class includes a relatively small portion of regular drinkers who drink as a pure dissipation, having no moral fiber whatever and who would return to the use of alcoholic drinks even if cured. Dipsomania, or the imperative impulse to drink at some periods, would be better defined as periodic insanity taking the form of an uncontrollable desire for alcohol. In a majority of these cases the attack occurs only when the individual is excited by an added systemic derangement, an acute intestinal trouble, or autotoxemia. Another, and probably the most hopeless, class of periodic drinkers are the moral cowards who deliberately take to drink as a refuge from evils which they have not the manhood or moral courage to resist otherwise. In another class the sprees are due to bad environment coupled with instability of character. These are the social drinkers who lose control of themselves when one drink has been taken, but who in better environment and out of temptation would remain sober. Still another type are those who have an inherited or acquired craving for liquor, which they resist under ordinary conditions but succumb to when in bad associations or under temptation. These are the most amenable to treatment.

Inoculation Against Typhoid.—K. Nelson and W. E. Hall describe the methods of antityphoid inoculation used by them in the Eighteenth United States Infantry Regiment. Thirty-five hundred separate inoculations were made. Two hypodermic syringes and six separate needles were used, the needles being sterilized after each inoculation. There was not in the whole number a single case in which the temperature rose to 102°, and there was no suspicion of infection or ill effect which could be attributed to the vaccine. Care must be taken to give the vaccine subcutaneously and not intravenously. In the one case in which this latter occurred the reaction lasted three days, though the local reaction did not appear. In the 12,000 men in the encampment at San Antonio there was but one case of typhoid fever, and that was in a civilian teamster who had never been inoculated against typhoid.

Acute Thyroiditis.—H. V. Dutrow reports a case of idiopathic, non-purulent acute thyroiditis occurring in a male laborer thirty years of age.

Foreign Body in Intestine.—E. H. Moss reports the case of a maniacal female patient aged twenty-seven years who swallowed a mass of rope, her gown, bed sheeting, and hair. Ten months later this mass, which weighed two and a half pounds, was passed per rectum.

Woody Phlegmon of Reclus.—E. J. Panzner reports a case of this condition in a woman aged twenty-five years. Following an attack of pharyngitis, a boardlike mass developed in the cervical region. The mass was hard except for a small fluctuating area. There was no pain, no rise in temperature, nor dyspnea. One month later pus was evacuated. During the following four months pus flowed from several small sinuses, the mass became smaller and softer, and finally disappeared.

Medicine-Dropper Clip.—P. R. Wood has devised a clip which may be attached to the side of a bottle and which has two loops, the top one sufficiently large to engage loosely a pipette of any size, while the lower one engages and supports the tip.

The Lancet.

November 18, 1911.

Recent Developments in the Recognition, Treatment, and Prophylaxis of Syphilis. H. C. French.
Colotomy and Some Misconceptions of Its Results. P. Daniel.
The Differential Diagnosis of Syphilis and Parasyphilis of the Nervous System. F. W. Mott.
A Sphygmographic Method for the Estimation of Systolic and Diastolic Blood Pressure. J. D. Windle.
Preliminary Report on the Treatment of the Vaccination Site with Picric Acid Solutions. J. F. Schamberg and J. A. Kolmer.
A Note on the Cerebrospinal Fluid in Acute Poliomyelitis. J. G. Forbes.
Rupture of the Popliteal Artery and Vein: Diffuse Hematoma. D. Drew.
Two Rare Abnormalities Observed in the Course of Operations. J. D. Malcolm.

Treatment of Syphilis.—H. C. French advocates the early injection of salvarsan to expedite the healing of primary lesions, followed by a course of mercury, which he believes is the real curative agent.

Colotomy.—P. Daniel states that the supposed disabilities arising from a colotomy are loss of the sense of desire to defecate—*i.e.* warning; excessive number of actions—*i.e.* diarrhea; loss of control over defecation; excoriation of the skin; the wearing of an apparatus; and the presence of an artificial anus on the abdomen. The last two are inevitable, but in practice they are really the least

of the evils. If the surface of the colon is healthy—*i.e.* free from colitis—the débris of the food will gradually collect and remain in the sigmoid until sufficient bulk has accumulated to excite the normal peristaltic action, when an evacuation occurs. This bulk of stool usually represents in the normal patient the food débris of the preceding twenty-four hours; hence a second action should not be necessary, or possible even, for another twenty-four hours. If there is no oral sepsis or sepsis due to accessory sinus disease there is no diarrhea. Regulation of the diet permits of control of defecation.

Syphilis and Parasyphilis of the Nervous System.—By F. W. Mott. (See page 1193.)

Systolic and Diastolic Blood Pressure.—J. D. Windle describes a method of estimating these by means of the Mackenzie ink polygraph and the Riva-Rocci blood pressure apparatus.

Treatment of Vaccination Site.—J. F. Schamberg and J. A. Kolmer find that the use of a 4 per cent. alcoholic solution of picric acid upon the vaccinated area forty-eight hours after the insertion of the lymph does not interfere with the success of the vaccination. This treatment lessens the degree of the local inflammatory reaction. The patients are not so apt to exhibit constitutional disturbance. The epithelial covering of the vaccine lesion is hardened, and there is a decreased liability of extraneous bacterial infection. This is doubtless due in part to the antiseptic properties of the solution applied. Picric acid is about four times as efficient as phenol as a local antiseptic. The common organisms on the skin are lessened in number by the application of solutions of picric acid.

Cerebrospinal Fluid in Acute Poliomyelitis.—J. G. Forbes reports the results of the examination of the cerebrospinal fluid in thirty cases of poliomyelitis. The relation between an increase in amount of albumin and the presence of lymphocytes in excess appears to be fairly constant, and may reasonably be taken as evidence of tissue reaction in the presence of the hitherto unrecognized virus—a reaction shown in sections, by the perivascular lymphocytic infiltration in the substance of the cord, and also seen in the spinal meninges.

Rupture of Popliteal Artery and Vein.—D. Drew reports a case of this condition caused by trauma and resulting in the formation of a hematoma which was subsequently infected.

Abdominal Abnormalities.—J. D. Malcolm reports a case of the presence of the colon all on one side of the abdomen, which condition was discovered during an operation for appendicitis. He also reports a case of the shutting off of the small intestine from the general peritoneal cavity by a peritoneal membrane. This anomaly was discovered during an operation of gastrojejunal anastomosis for secondary cancer involving the stomach.

Münchener medizinische Wochenschrift

November 7, 1911.

Ventricular Puncture for Relief of Intracranial Pressure.—Anton and von Bramann report 50 cases of this form of intervention. The technique is simple. The cranium is perforated just behind the coronary suture near the middle line. The exposed dura is then incised, taking care to avoid a vein. A curved cannula is then passed along until it abuts against the falx cerebri. Using the latter as a guide, the cannula is now directed downward until it pierces the roof of the ventricle. As a rule from 10 to 30 c.c. of fluid are withdrawn, but in large hydrocephali from 50 to 70 c.c. may require withdrawal. The procedure is useful in congenital and acquired hydrocephalus, tumors of the hypophysis and organs adjacent to the ventricles, and in some tumors elsewhere in the brain. In many cases puncture serves as a prologue to a radical operation for extirpation of tumors. Puncture first relieves the tension on the roof of the lateral ventricles. A communication is opened between the ventricular cavity and the subdural space, and this opening may remain patent for months if desirable. By using the sound a passage may be opened between the third and the other ventricles. This is often desirable, as the third ventricle may be much distended with resulting prejudice to the subjacent optic chiasm. The puncture renders great service in preventing choked disks if there is any reason to suspect the existence of a tumor or cyst of the fourth ventricle.

Treatment of Frambesia with Salvarsan.—Flu of Dutch Guiana has treated 700 cases of yaws with salvarsan. The results are not only better than those obtained even in syphilis, but, according to the author, we have for the first time a true remedy for the former. This seems to imply that mercurials and iodides have not been very successful in the treatment of yaws as a folk plague. Concerning the relation of yaws to syphilis, this seems puzzling. A large number of manifestations are common to both diseases, so that a diagnosis from these alone would be impossible. It is possible but not necessary to divide yaws into primary, secondary, and tertiary. The primary lesion or mamma yaw may occur on the penis or vulva, but this is the exception. As a rule it comes on the foot. In children it may occur on the lips and groins, and in nursing women on the nipple. Like the primary syphiloma, it may begin as a papule, but when fully developed it occurs as an ulcer with undermined edges and lardaceous flow. The center may granulate and the border become elevated and wall-like. There is no mention of anything like the typical Hunterian chancre nor of a typical adenopathy. The most common secondary manifestation is a small papular exanthem, which, like its syphilitic analogue is persistent for a long time. Another form is seen in the raspberry-like lesions which originally gave the disease its name or names. The so-called crab-yaws are analogous to the palmar and plantar syphilides and ringworm yaws resemble serpiginous syphilides. Common in yaws but rare in syphilis is effusion into joint cavities.

Habitual Constipation and the Urinary Organs.—Asch calls attention to the fact that in habitual constipation several types of reaction affecting the urinary system may be recognized. The first is purely mechanical, due to the pressure of impacted feces on the bladder and prostate. The symptoms consist of desire for urination, phosphatic urine, and partial retention. The soft catheter may bring away as much as 3 liters. The syndrome is doubtless due to an acquired dystopia of the bladder. In a second group of patients, neuropathic and suffering doubtless from spastic constipation, the symptoms include vesical tenesmus, headache or migraine, listlessness, etc. This syndrome is ascribed to congestion of the pelvic viscera which is often augmented by the habitual use of purgatives. In the third group there is a coli bacilluria of intestinal origin. The patients may have albuminuria and cylindruria, leading to a false diagnosis of nephritis.

Deutsche medizinische Wochenschrift.

November 9 and 16, 1911.

Diagnosis of Sudden Plugging of the Coronary Arteries.—Hochhaus recently made the correct diagnosis in four cases, confirmed by autopsy. The first subject was an aged invalid who, however, had never presented cardiac symptoms. He was seized with precordial pains and dyspnea of severe character, becoming worse. Pulse very rapid, hardly palpable, but regular. Heart sounds very low, no palpable impulse. There were associated nausea, vomiting, and tympanites. The diagnosis was promptly made. Autopsy revealed thrombosis of the coronaries.

There was a high degree of arteriosclerosis. The left ventricle was much hypertrophied Most of the other finds seem to have been secondary to the closure of the coronaries, as the patient had lived five days after the sudden onset. He yielded only slightly to cardiac stimulation. The second case was in a much younger man (53) with a history of chronic cardiac disease. The symptoms were much the same as in the first case. Autopsy showed long standing sclerosis of the coronaries, which were closed by thrombosis. The heart was greatly hypertrophied and dilated. The diagnosis had never been in doubt as the history pointed plainly to coronary sclerosis (frequent attacks of precordial pain and dyspnea before the fatal attack). The third case, on the contrary, simulated pneumonia at the outset. There was no history of cardiac symptoms in the 54-year-old male patient. The correct diagnosis was apparent as soon as the patient was under observation, when the regional pain, dyspnea, and cardiac weakness were such as to preclude any other opinion. The fourth patient was an old woman, very stout, with a complication of diseases. The diagnosis was made through the sudden, persistent, and increasing type of precordial pain and dyspnea.

Improved Technique of Cesarean Section.—Freund has of late years modified his previous views until he recommends the following manual of procedure as far as the classic abdominal operation is concerned. The uterine incision is carried as deeply as possible downward in the anterior wall. That is, it is removed as much as possible from the fundus in order not to encounter the placenta. The danger of adhesions is also reduced to a minimum. If the uterus contracts the deepseated scar should form a concavity. The serosa should not be embraced in the deep uterine sutures, lest the proper union of the muscular planes be interfered with and a rupture occur during subsequent labor. Silk should be used for deep sutures, catgut for superficial ones. Small, frequently repeated doses of ergot should be given after the operation.

Mixed Inspection in Pulmonary Tuberculosis.—Kögel states than in 40 tests on 17 subjects he found hemolytic staphylococci in 5 cases only while hemolytic streptococci could not be found at all. In but one of the five cases with positive find was the disease a mixed infection from the clinical standpoint, although otherwise the type of disease was severe. The blood was invariably sterile. In five cases of cavernous phthisis ordinary anaerobic streptococci were present in the sputum. The author has become sceptical as to mixed infection. While it doubtless occurs, it can hardly be regarded as frequent. He concludes that the anaerobic cocci originally present in the lungs as saprophytes may by thriving in the diseased tissues develop hemolytic qualities.

Indications and Technique of Douche Therapy.—Brieger restricts the word douche to hydrotherapeutic procedures applied externally for heat and cold effects. Air and steam douches are also considered. The field of activity for these procedures is so extensive that a mention of contraindications is of more significance than the counter enumeration. These are advanced heart and lung diseases, atheroma of the arteries, and conditions of excitement. One should also avoid the head douche in arteriosclerosis, and the abdominal douche in pregnancy. It must also be borne in mind that habitual douching may increase nervousness, while it may further be followed in the aged by myalgias and neuralgias. Most of the uses of the various douches are old, but the alternating air douche, operated by a motor, has of late years had a good deal of vogue in rheumatoid and neuralgic complaints and skin diseases. The interrupted cold douche is extensively employed in congestions and atony of the abdominal viscera. The enlarged spleen of malaria may thereby be reduced in size.

Origin, Nature, and Significance of Fever.—Rolly begins an article on the subject and first discusses the fever syndrome. Rise in temperature is the most constant and characteristic symptom, but this may occur independent of fever, and a "fever" without temperature rise is theoretically possible. Nonfebrile pyrexia is usually spoken of as neurogenous and may be studied experimentally in the so-called puncture hyperthermia, caused by puncturing the corpus striatum in rabbits. The author was able to demonstrate that the temperature rise in such cases is due to increased glycogen metabolism. In true fever the cause is an infection. Both types of pyrexia are attended by increased metabolism. If no essential difference can be detected in the two, then one might be justified in believing that the toxin of the infectious process simply acts upon the nerve centers and that in both cases temperature rise is neurogenous. But the author has been able to show that a fundamental difference does exist, as follows: In infectious fever the toxin present causes a disintegration of tissue albumin, and this is in turn the cause of the pyrexia, which again sets up more metabolism. In neurogenous fever there is no initial disturbance of protein metabolism.

Free Arthroplasty.—Hinz, in connection with resection of both articular surfaces of a tuberculous kneejoint, replaced the diseased tissues with homologous material from a man dead of gunshot wound. There was some disparity in size, the structures from the cadaver being larger, which necessitated trimming them freely. The operation, while tedious, was successful and healing smooth enough. The second change in dressings showed a joint fistula which gave vent to a little serum only. The *x*-ray showed good position of the implanted structures, but a certain amount of crepitus showed that something was wrong and the fistula began to secrete pus. Believing that the segments had failed to heal in, an exploratory incision was made and the author was surprised to learn that the bone had united, the necrosis being confined to the cartilaginous surfaces. The purulent discharge gradually lessened and patient was placed in a walking splint. The discharge returned and there was no longer a doubt that the transplanted femur had become necrotic. A second resection was then done and all the transplanted tissues removed.

Treatment of Phlegmonous Inflammation of Waldeyer's Ring.—Winkler regards as a single infection with variations in location the following conditions: Tonsillar abscess (quinsy), retropharyngeal abscess, and phlegmon of the lingual tonsil. The nature of these processes is obscure, and we do not know why in a given case there should be a particular location in one portion of the ring. Although in retropharyngeal abscess the pus may burrow downward and point in the neck, the author does not apparently see any necessary connection between the suppurations in Waldeyer's ring and the other series of phenomena known collectively as Ludwig's angina, in which the primary foci of disease are in the floor of the mouth, lower pharynx, etc. He does not even allude to these lesions. Owing to the danger of recurrence and reinfection none of the suppurations should be treated with mere incision alone if it be possible to extirpate the entire focus of disease. While the tonsillar abscess may be reached handily through the natural passages, the other forms most commonly require attack through the neck.

Adrenalin in the Blood During Pregnancy.—M. Neu has found that adrenalinemia occurs during pregnancy, parturition, and the puerperium. The highest content in adrenalin was found in the serum obtained from a retroplacental hematoma and from the blood of the umbilical cord. The author suggests that adrenalin may be the immediate exciting cause of the uterine pains.—*Medizinische Klinik.*

Insurance Medicine.

DENTAL DISEASE AND LIFE INSURANCE.

Within recent years the clinical significance of diseased conditions in the mouth has forced itself more and more upon the attention of internists. The medical profession, particularly in England, has perceived more than a fancied connection between diseases of the teeth and pathological conditions of other organs. Pernicious anemia and gastric ulcer, to say nothing of the numerous disturbances of digestion and of metabolism, have been attributed by various observers to dental disease. It is unfortunate that until the present time the practice of dentistry has been divorced from the sphere of the general practitioner. This separation has prevented the timely recognition of the important rôle played in human pathology, by diseases of the teeth. This subject is admirably presented in a small volume just issued, from the pen of J. F. Colyer, with the assistance of S. Colyer.* In a manner indicative of their complete mastery of the subject, these observers describe normal and pathological dentition, the conditions which influence the growth of the jaws and the formation of the teeth, the pathology of dental caries, the diseases of the pulp tissue of the periodontal membrane, of the gums, and adjacent mucous membrane. The subject of oral sepsis and its influence on the body is one which will repay careful study by the general practitioner. Septic absorption from the teeth gives rise not only to local conditions in the upper respiratory tract, such as infection of the tonsils and chronic pharyngitis, but also to lymphadenitis, which is frequently tuberculous. Less frequent, though not less important, are the secondary infections caused by the passage of the infective material along the natural ducts. These secondary infections may be enumerated as follows: Septic gastritis, enteritis, and colitis, parotitis, pancreatitis, and septic cholangitis. In addition there are conditions due to the continuous passage of bacteria or toxins directly into the tissue. To this toxemia is attributed by Hunter the production of septic anemia and of pernicious anemia. Other observers have beheld in oral sepsis a potent cause in the production of certain cases of neurasthenia, neuritis, and even degeneration of the spinal cord. Recently a close connection has been traced between arthritis deformans and septic conditions in the mouth. In addition infective endocarditis and septicemia and pyemia have in many instances been traced to infection from the teeth.

The bearing of these facts upon the problems of life insurance is obvious. Indeed, the authors devote an entire chapter to this subject. They point out that the relation of dental disease to life insurance has not received adequate recognition, and that in the examination of applicants very little attention is paid to the condition of the mouth. This is the usual practice in spite of the supposition that individuals with oral sepsis have a shorter expectation of life, although there are no figures upon which this conjecture may be based. The uncertainty as to future dental defects is greatest in the case of children in whom environment plays a greater rôle than heredity, which at any rate must be disregarded in the estimation of dental tendencies. It is pointed out that the insurance companies, in the protection of their own interests, in the insurance of children, make the premiums large enough to cover the maximum risk. Possibly in the case of individuals with healthy mouths too high a premium is paid. In the insurance of adults, although at the time of examination the mouth may be in a healthy condition, one cannot be certain that the individual will be free from dental disease in the future. Of practical importance to the medical examiner are the following facts: If at the age of 23 to 25 years there are no signs of dental caries or of periodontal disease (pyorrhea alveolaris) and if the individual is one who is presumed to have sufficient intelligence to care for his teeth properly, one may assume that a healthy mouth will be retained throughout life. If there is extensive caries but no periodontal disease careful treatment will render the mouth healthy and this may remain so. The presence of periodontal disease, however, presents another picture. Even if this disease is in its early stage, in the majority of cases, in spite of rigid care of the mouth, the disease will make headway. As to the age incidence of this disease, when it does appear it is almost invariably present before the age of 30 years and usually before the age of 20.

Of particular importance to the medical examiner is the fact that in its early stages periodontal disease frequently escapes notice for two reasons: The disease is not easily detected and it is not fully understood. The presence of this condition must be regarded as a focus of infection that may remain with the applicant for years, a constant menace to his general health. The insidious nature of the condition, and the fact that the teeth may appear sound although the gums are congested and the alveoli are the seat of suppuration should make the examiner hesitate to accept a risk before he has made a thorough examination of the teeth. If periodontal disease is present the applicant should not be accepted, at least not as a first-class risk, while the condition remains.

*Dental Disease in Its Relation to General Medicine. With Illustrations. London, New York, Bombay, and Calcutta: Longmans, Green, and Co., 1911.

THE EVIL EFFECTS OF A MULTIPLICITY OF EXAMINERS.

Many requests for appointment as examiner are received by life insurance companies from physicians whose standing and qualifications are beyond all doubt. The companies are not in a position to avail themselves of the valuable services offered if they are already fully represented in the particular localities in which these physicians reside. The reluctance to make additional appointments may seem unreasonable to some in view of the fact that such action would not increase the expense account, and it is, therefore, the object of this brief article to offer a word of explanation.

It is the custom of nearly all life insurance companies to limit the appointment of medical examiners to the smallest number consistent with efficient service. It has been found that, generally speaking, one examiner can easily take care of all the examinations when the number of inhabitants in the community does not exceed one thousand. If the population is more than one thousand, two examiners are quite enough except in the larger cities. When this rule is rigidly observed, it works admirably in the interests of both the company and the examiner for the following reasons.

1. When there is a multiplicity of examiners, the agent, if he happens to be over-anxious or unscrupulous, has too much latitude and, as a result, it lies in his power to select one examiner to the exclusion of the others for looking over his cases. This arrangement lasts as long as the favored examiner recommends the risks for acceptance. Poor risks are sure to turn up, however, and very soon the examiner must make an adverse report or become derelict in his duty. The erstwhile cordial grasp of the agent, as well as all examinations, and then diverted to examiner number two, and so on through the list. In this way an agent can hold a threat, open or veiled, over the head of the examiner whose services are sought for the time being, a condition at once intolerable to the company and the examiner and which is practically impossible when the number of examiners is properly limited.

2. A company looks for and usually gets good service from its examiners and in return the position of examiner should be kept as remunerative as circumstances permit. This object can be attained by a steadfast refusal on the part of the company to appoint examiners in a district where there is already a full complement.

Syphilis and Parasyphilis of the Nervous System.—F. W. Mott states that the curve of incidence of onset of syphilitic affections of the nervous system reaches its maximum somewhere between 25 and 30, whereas the curve of the incidence of onset of general paralysis and tabes reaches its maximum between 35 and 40. Whereas, on the one hand, syphilis of the nervous system produces more or less sudden obtrusive symptoms indicative of gross lesions due to meningeal irritation and vascular occlusion of a random, kaleidoscopic character, with remissions and exacerbations causing new and variable paralytic and irritative phenomena; on the other hand, parasyphilitic affections are usually so insidious in origin that it may be difficult to fix the date of the onset. Syphilis of the nervous system, especially in the early stage, yields to treatment, while parasyphilitic affections are seldom arrested. The neurasthenia occurring in the secondary or active stage of syphilis is not characteristic in its symptoms. It is of importance to diagnose between the headache of such an induced neurasthenia and true syphilitic headache of the secondary period. In neurasthenia there is little real pain, while in syphilitic disease the pain is intense, lancinating, boring, tearing. Neurasthenic headache is generally diurnal and worse in the morning on arising, while syphilitic headache is worse at night. It is important to distinguish the neurasthenic state from tabes dorsalis in the early preataxic stage, when the knee-jerks may be present, and from general paralysis in the preparetic stage. The parasyphilitic affections may be definitely differentiated from neurasthenia by an examination of the cerebrospinal fluid. In the former conditions there is even in the earliest stages a lymphocytosis in the cerebrospinal fluid, which also shows in about half the cases of tabes and in practically every case of general paralysis a positive Wassermann reaction. Hysterical paralysis and hysteroepilepsy sometimes occur in the secondary stage of syphilis and the symptoms disappear under antisyphilitic treatment. Syphilis is one of the most important factors in the production of arteriosclerosis and Bright's disease. Chronic alcoholism and syphilis are often associated. There is no clinical symptom or group of symptoms characteristic of syphilitic disease of the spinal cord, but there are certain symptoms which, if they occur in young adults, particularly of the male sex, should lead one to suspect their specific origin. The early symptoms are spinal irritation, severe intercostal pains, worse at night, cramps, and contracture of the limbs, with pains radiating down them, bladder disturbances, disappearance and reappearance of the knee-jerks, the Brown-Séquard phenomenon; in fact, symptoms pointing to a local or more generalized meningitis or meningomyelitis, but usually without pyrexia unless there be some complication. As in cerebral syphilis, so in the spinal disease, the symptoms are particularly liable to remissions and regressions.—*Lancet*, November 18, 1911.

The Conservation Movement in Life Insurance—President W. A. Day of the Equitable Life Assurance Society has inaugurated a conservation department and has placed at its head E. E. Rittenhouse, former Commissioner of Insurance of Colorado. Regarding this new department, the following statement has been given out: "All life insurance companies suffer from two sources of waste or loss, which have been given much study and which continue to cost the policy holders large sums annually. One is the annual loss of life from preventable or postponable causes. The other is the loss due to the costly American habit of lapsing policies. The life companies of the country lost from this source last year over $700,000,000 of insurance already on their books, which cost the policy holders of the United States over $20,000,000 to put on the books. Our 25,000,000 policy holders are therefore personally and financially interested in the reduction of the loss from both these causes." In a recently published interview Mr. Rittenhouse pointed out the ways in which the insurance companies can join hands with government, state, and municipal authorities in lessening the waste of life, a waste estimated at the sacrifice of 600,000 lives annually in the United States. Through their enormous constituency of 28,000,000 people, it is hoped that the life insurance companies will awaken the public interest in measures for improving the health of the people, and that the latter will bring influence to bear upon their representatives for the enactment of health legislation. The national government should limit its activity to an educational campaign, while the State should carry on its work in two directions, first, the distribution of health bulletins, and the liberal use of medical inspectors; second, the provision of free medical examination periodically to any who may desire it for the purpose of detecting disease in time to check or cure it. Those who could afford it would doubtless prefer to go to their own physician for periodical examinations, and the fact that the state thought it necessary to conduct such a movement would induce many thousands of them to do so. Until the plan was well understood the applications for free examinations would not be very large, but they would come from the poor and the very poor—those that know the least about avoiding disease and are most exposed to it. Thus the benefits of free examinations would go directly to the very element of our population which is most in need of them. In addition to this indirect influence which it will bring to bear upon the authorities, the insurance company will carry on an educational campaign among its policy holders, will cooperate in the teaching of hygiene in the schools, and possibly will provide a system of traveling lecturers. It will begin a policy of providing periodical examinations for its policy holders. It will probably maintain a staff of sanitary experts which will be subject to the call of any community that wants advice. There are many small towns and cities which wish to institute modern methods of sanitation, but which are not able to employ experts. These will be the communities that the company will be able to assist. Any community that makes the request will have an expert sent to it immedately. The expert will look over the sewerage system, the water supply, garbage disposal, and the inspection of milk, meats, and perishable provisions. This expert, if he finds unsanitary conditions prevailing, will give advice as to how to remedy them. It is possible that the mortality statistics will be watched, and, if an unusual death rate is found prevailing in any community, an expert will be sent to the locality to look over the situation.

A State to Write Life Insurance.—The Wisconsin Legislature of 1911 passed a bill providing for a system of life insurance by the State. It is announced that the Insurance Commission is now drawing up forms for policies and as soon as these are ready the county officials will begin to accept risks.

Book Reviews.

THE MEDICAL RECORD VISITING LIST, OR PHYSICIAN'S DIARY FOR 1912. New Revised Edition. Price $1.25 (30 patients), $1.50 (60 patients). New York: William Wood and Company.

THE main portion of this pocket volume contains ruled blanks for daily visiting list, consultation practice, obstetric engagements, record of obstetrical practice and of vaccinations, register of deaths, addresses of nurses and patients, and cash account. It also contains much valuable information, such as treatment of poisoning and other emergencies, artificial respiration, signs of death, and tables of drugs and preparations with dosage. It is printed on good paper, suitable for either pen or pencil, and is handsomely bound in leather. The volume is useful and attractive, and is of convenient size.

THE CONCISE OXFORD DICTIONARY OF CURRENT ENGLISH. Adapted by H. W. FOWLER and F. G. FOWLER, authors of "The King's English," from the Oxford Dictionary. Price, $1.00 net. Oxford: At the Clarendon Press; New York: Henry Frowde, 1911.

THIS is a wonderfully complete and useful little dictionary, partly encyclopedic in character, founded upon the great "Oxford English Dictionary." The word "little" is used solely to note the size of the book, a duodecimo of 1,041 pages, but "great" more properly characterizes its contents. Its vocabulary, limited as the title states to current English, is enormous, and contains, as the reviewer has learned by a painstaking thumbing of the book in reading a number of works of the most varied character (not medical), nearly every word that any reader of modern English is likely to encounter. In order to condense such a mass of material into so small a space it has been necessary to resort to special type and diacritical marks, which are at first sight confusing, but which become intelligible enough after a careful reading of the explanatory prefarce.

The spelling is more "American" than we would expect to find in an English work. The *our* in the termination of words such as honour and favour is indeed retained, although the Oxford Dictionary gives *or* as permissible, but the suffixes *-ize* and *-ization* are given in place of *-ise* and *-isation*, and words such as judgment are given with this spelling in preference to judgement. The automobilist, whose eye is often strained by the *tyre* of English books and journals, will be pleased to find that this dictionary prefers the eminently correct *tire*. The final consonant is not doubled in derivatives of verbs such as *rivet* and *level*, though the editors balk at *traveler* and give only *traveller*. They frankly acknowledge their inconsistency in this spelling and in the varying use of the hyphen in compounds, confessing their inability to do aught than "welter in the prevailing chaos." In the etymology the Greek words are written with Roman characters, the fact being recognized that the great majority of users of the dictionary are unable to decipher the Greek letters.

The convenient size of the book, the wealth of the vocabulary, the mass of information compressed into small space, the authority of the Oxford Dictionary upon which it is founded, and the concessions to American usage will doubtless make this, as it deserves to become, a popular dictionary for all users of the English tongue.

AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. NEWMAN DORLAND, M.D., Editor "Dorland's American Illustrated Medical Dictionary." Seventh Edition. Flexible leather. Price, $1.00 net; thumb indexed, $1.25 net. Philadelphia and London: W. B Saunders Company, 1911.

To those who are content to use a condensed dictionary, with its necessarily unsatisfactory definitions and omission of much of the information that a dictionary should contain, this little book will commend itself as by far the best of its class. It is evidently the work of the editor himself and not a compilation by some unknown person put forth under the editor's name, and the definitions come as near being real definitions as is possible in a work of this kind.

THE PRACTITIONER'S VISITING LIST FOR 1912. Thirty Patients per Week. Price $1.25. Philadelphia and New York: Lea and Febinger.

THIS well-known visiting list, the successor of the *Medical News* Visiting List of former days, needs no detailed description. In addition to the blank pages for the record of visits and charges, the book contains a scheme of dentition, a table of weights and measures, instructions for urinary examination, a diagnostic table of the eruptive fevers, a dose table, an index of diseases and their remedies, illustrated directions for the ligation of arteries, and other useful information.

KLINISCHE PATHOLOGIE DES BLUTES NEBST EINER METHODIK DER BLUTUNTERSUCHUNGEN SPEZIELLER PATHOLOGIE UND THERAPIE DER BLUTKRANKHEITEN. Von Dr. ERNST GRAWITZ, Professor an der Universtät zu Berlin, Dirigierender Arzt der inneren Abteilung des städtischen Krankenhauses Charlottenburg-Westend. Mit 45 Figuren im Text, 6 Tafeln in Farbendruck und einer Tafel mit Mikrophotogrammen. Vierte vollstandig neu bearbeitete und vermehrte Auflage. Price, 30 marks. Leipzig: Georg Thieme, 1911.

THE fourth edition of the well known clinical pathology of the blood by the late Prof. Ernst Grawitz appears in a very much enlarged form. It still retains the features which have made it welcome in all clinical laboratories, the exquisite colored plates, and the extremely practical and sane treatment of the subject matter. The first seventy-five pages are devoted to technical methods employed in the study of the blood. There has been some revision in this chapter, especially in the portion dealing with staining methods, and a good deal has been added on the technique of the determination of coagulation and viscosity. The paragraph on alkalinity does not, however, take into consideration our recent physicochemical knowledge of ionic equilibrium in complex fluids. The section treating of blood coagulation has been revised. In the chapter on the morphology of the leucocytes there is an interesting new plate showing various types of cells taken with ultraviolet light. The vexed question of leucocytosis occupies forty pages and represents quite accurately the knowledge of the present day. The rest of the book is taken up with a discussion of the alterations in the blood in disease. The author still holds to his personal view of the curability of pernicious anemia, though this is not generally accepted even by his own countrymen; but inasmuch as he does not regard the blood picture of pernicious anemia as in any way specific it is easy to see that many of the severe hemorrhagic anemias might be included under this name, and that such patients might by the simplest of remedies be brought back to health. Many of them, in fact, do well even with rest in bed so long as the hemorrhage is checked. The question, after all, like so many of our problems in medicine, is merely one of definition; in other words, a distinction between a large series of anemias and the true Biermer's anemia, which seems to have a definite clinical course and a characteristic blood picture. Except for this phase of the book the author's attitude conforms to that of the majority of specialists. He wisely avoids the endless discussions which are now going on, especially in Germany, in regard to the minute points concerning the morphology of the blood cells and the nature of so-called diseases of the blood. In this freedom from discussion of useless details the volume makes a strong appeal to the practitioner, and it is sad to remember that Grawitz has not lived to enjoy the appreciation which every one must give to this most excellent book.

BEITRÄGE ZUR DIAGNOSTIK DER INNEREN UND CHIRURGISCHEN PANCREASERKRANKUNGEN. Von Dr. ALBERT ALBU, in Berlin. Price 2.50 marks. Halle a. S.: Carl Marhold, 1911.

SINCE the appearance in 1898 of the monographs on diseases of the pancreas by Oser and Körte, although the knowledge of this subject has grown more precise and extensive, it has been treated quite sparingly in general textbooks. The present volume includes all that is known on this subject at the present day. The author, employing a style that is at once clear and condensed, is able to present this subject within the limits of 104 pages. Particularly complete are the sections on general or functional and special diagnosis.

PROCEEDINGS, CONFERENCE ON MILK PROBLEMS. Under the auspices of the New York Milk Committee, December 2 and 3, 1910. Price $1.00. New York: New York Milk Committee, 1911.

THE many aspects of the problems of supplying pure milk and of its relation to the public health are clearly focused in the discussions that are recorded in this volume. The conference comprised four sessions, at which the following topics were taken up: milk economics, the public milk supplies and the public health milk standards, and milk commissions. Each of these topics included a number of subsidiary themes, such as milk transportation, milk supplies of villages, laboratory milk standards, state regulation of milk prices, etc. This book should be within easy reach of every health officer and pediatrist.

Pubertät und Sexualität. Untersuchungen zur Psychologie des Entwicklungsalters. Von Dr. August Kohl. Price, 1.50 marks. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

This small volume of 82 pages deals with a subject that interests the physician no less than the psychologist and the pedagogue. The author introduces the first chapter with the following quotations from Stanley Hall. "Neither the psychology nor the pedagogy of adolescence can be treated without careful consideration of the whole problem of sex." The sexual instinct irradiates the entire physical and psychical life of man. The study of the genesis of this instinct and its development through the phases of unconscious and then of conscious sexuality is presented by the author in the scholarly manner characteristic of German writers on this subject.

Handbuch der Speziellen Chirurgie des Ohres und der oberen Luftwege. Herausgegeben von Dr. L. Katz, Spezialarzt für Ohren, Nasen, und Halskrankheiten in Kaiserslautern; Dr. H. Preysing, Professor der Ohrenheilkunde, ord. Mitglied der Akad. für Prakt. Medizin zu Cöln a. Rh.; und Dr. F. Blumenfeld, Spezialarzt für Nasen, Hals, und Lungenkrankheiten in Wiesbaden. I Bd., 1 Hälfte, Lief. 6, price 7 marks; 1 Bd., 2 Halfte, Lief. 1, price 6 marks. III Bd. Lieferung 1 und 2, price 12 marks. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

The broad scope of this work has been indicated in recent reviews in the Medical Record. The sixth instalment of the first half of the first volume contains the subject of the topographical anatomy of the ear, with the presentation of many superb colored plates. In the first instalment of the second half of this volume the treatment of stenosis is discussed by Professor Pieniazek of Cracow. The subject of prosthetic surgery of the region of the face and skull is begun by Professor G. Port. In the first and second instalment of the third volume there are presented the subjects of the surgery of the external portion of the nose, by Professor O. Seifert of Würzburg; and of the operations on the nasal accessory sinuses, by Professor Dr. Boenninghaus of Breslau.

Veterinary Bacteriology. By Robert E. Buchanan, Ph.D., Professor of Bacteriology in the Iowa State College of Agriculture and Mechanic Arts, Division of Veterinary Medicine: Bacteriologist of the Iowa Agricultural Experiment Station. Illustrated. Price $3.00. Philadelphia and London: W. B. Saunders Company, 1911.

This volume is a revision of lectures delivered by the author and should prove a valuable addition to the library of the veterinarian. The first portion of the book deals with the morphology of microorganisms, laboratory technique, and a very complete discussion of the various phases of immunity, anaphylaxis, etc., as they are understood today. In its second portion are found the descriptions of the individual organisms and a brief consideration of the diagnosis and some points in the treatment of the disease caused by each. A group system of discussion has been adopted, and while it is perhaps not entirely satisfactory has proved very serviceable.

The methods given for the enumeration of bacterial vaccines are both inaccurate at best and it is unfortunate that the author has not included the method which utilizes the Thoma-Zeiss counting chamber and a diluting fluid which stains at the same time. The protozoa are fully described and the section on the diseases produced by ultramicroscopic organisms is a very satisfactory condensation of our present knowledge in that subject. The work is made complete by the inclusion of a number of organisms which are pathogenic only for man.

Laboratory Manual of Physiology. By Frederick C Busch, B.S., M.D., Professor of Physiology, Medical Department, University of Buffalo. Second Edition. Illustrated. Price $1.50. New York: William Wood & Company, 1911.

The second edition of this book has been thoroughly revised in order to bring it into harmony with the changes which have taken place in the five years since the issue of the first edition. Devised as a substitute for the lesson slips used in many schools, it is well arranged for its purpose. The directions for the performance of experiments are concise and clear, and space is not wasted in the wearisome and useless description of ordinary laboratory apparatus. The plan followed is to give directions for the performance of an experiment and to follow these with a series of questions designed to point the way in which the student should direct his observation. In this manner is obviated, as far as possible, his ever-present tendency simply to memorize the results and to neglect the method and applications. Many of the experiments in the chapter entitled Digestion, Secretion, Absorption might have been omitted, coming as they do under the head of physiological chemistry, in which department they are more fully and carefully considered than is possible in a course in physiology. The inclusion of the experiments on the thyroid, pancreas, and suprarenal is particularly commendable in view of the increasing importance which these glands are attaining in modern medicine. The book is substantially bound so as to survive the hard usage of the laboratory.

Nostrums and Quackery. Articles on the Nostrum Evil and Quackery from *The Journal of the American Medical Association*. Part I, Quackery. Part II, Nostrums. Part III, Miscellaneous. First Edition. Cloth. Price, $1; with individual's name on cover, 25 cents extra. Chicago: American Medical Association, 1911.

Both physicians and intelligent laymen will find this book of great service as an educator. It is a daily experience for the doctor to be told of some marvelous cure wrought by some patent medicine, and unless he knows the composition of the stuff he can speak only in generalities against all quack remedies and the danger of using them by guess. With this book before him, however, he may find an account of the very preparation in question, or at least of "something just as good," with the chemical analysis showing either that the stuff is made up of materials as potent as water or that perhaps it contains some ingredients of an absolutely poisonous character. By putting the book in the hands of his credulous patient he may be able to stop the "sure-cure" lie before it has gone far enough in that town or social circle to be dangerous. The book is an excellent one for the table of the doctor's waiting room and may be obtained for this purpose with the physician's name in the cover, with an injunction not to take it from the waiting room.

Moto-Sensory Development. Observations on the First Three Years of a Child. By George V. N. Dearborn, Professor of Physiology in the Tufts College Medical and Dental Schools, Boston; of the Relations of Body and Mind in the Sargent Normal School for Physical Education, Cambridge, etc.; Author of "A Textbook of Human Physiology," "The Emotion of Joy," etc. Price $1.50. Baltimore: Warwick and York, Inc., 1911.

Very few observations have been made on the mental development of the child. Preyer's study is the most notable of these. The present volume represents a valuable scientific contribution to the literature of psychology, for the author has set down in chronological order and with interpolated remarks his observations of the various reactions, reflex and voluntary, of his own little daughter, during the first three years of her life. The observations of the infant's reactions on the first day are most interesting, these reactions indicating to the author that the kinesthetic sense-organs already are in action and well connected with the centers concerned with emotional reactions, and because of the prompt inhibition demonstrated, also with the cortex of the hemispheres. The studies of Petersen, recently referred to in the editorial columns of the Medical Record, have been carried out along similar lines. The first-hand observations made by the author and his pithy commentary serve to make this book a most valuable and interesting one to the student of psychology.

Handbuch der Hygiene. Herausgegeben von Prof. Dr. M. Rubner, Geh. Medizinalrat, Berlin; Prof. Dr. M. V. Gruber, Obermedizinalrat, München; und Prof. Dr. M. Ficker, Berlin. II Band, 2. Abteilung Wasser und Abwasser. Mit 111 Abbildungen und 3 farbigen Tafeln. Price 15 marks. Leipzig: Verlag von S. Hirzel, 1911.

This is the second section of the second volume of a work on hygiene of which the title "handbook" gives only a modest hint of its monumental character. This section deals with the subjects of water supply and sewerage, which subjects are exhaustively treated by Professors Kolkwitz, Spitta, and Thumm of Berlin; Professor Schmidtmann of Marburg, and Building Inspector Reichle of Berlin. The biological and technical aspects of water supply and sewerage form a distinct chapter in public hygiene. The developments in these subjects during the past two decades are clearly mirrored in this volume, which shows the painstaking regard for detail which is characteristic of German scientific writers. The book is well written and profusely illustrated and forms a valuable addition to the literature of public hygiene.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held October 26, 1911.

DR. H. D. FURNISS IN THE CHAIR.

Two cases of Perplexing Diagnosis.—Dr. HERMAN J. BOLDT reported these cases.

CASE I.—This was a case of tuboovarian inflammation resembling ectopic gestation. The patient was thirty-two years of age, had been married three years, but was never pregnant. She presented herself on October 3, giving a history of atypical bleeding. She complained of pain in the left iliac fossa. There were a slight increase in the size of the uterus and some softening. To the left of the uterus an enlargement could be felt which was thought to be a distended Fallopian tube. Colostrum was present in the breasts. One symptom which Dr. Boldt's experience had taught him was important in the diagnosis of ectopic gestation was that pain was caused by moving the vaginal part of the cervix forward. If ectopic pregnancy existed this caused pain in the lower part of the rectum. At operation it was found that this patient had a small ovarian cyst, about the size of a walnut, with catarrhal salpingitis.

CASE II.—This case was one of tubal pregnancy with atypical symptoms in a woman twenty-six years of age. She consulted Dr. Boldt because of atypical bleeding which was thought both by herself and by a physician whom she had consulted to be due to an abortion. She had no other symptoms, not even the slightest pain. Examination revealed nothing pathological in the pelvis. The right adnexa had previously been removed on account of tubal pregnancy, according to the statement of the patient. After an intrauterine application the slight bleeding ceased. A short time afterward the patient again consulted Dr. Boldt and complained of dull pain on the left side at the site of the ovary, which was thought to be due to a mild ovaritis. The patient had suffered much pain during the night previous to consulting Dr. Boldt. Examination revealed nothing except that the pelvic peritoneum was sensitive throughout. While tubal pregnancy was suspected, nothing was said to the patient, as there were no definite objective symptoms. The patient was directed to secure a nurse and to go to bed and apply an icebag to the abdomen. Two days later she had another attack of pain and a physician called in made a diagnosis of ectopic pregnancy. The next afternoon when Dr. Boldt saw the patient there was no distension of the abdomen, but pressure in the left iliac fossa showed sensitiveness. There had been no attacks of fainting, no collapse, and no anemia. On the following day she for the first time showed the beginning of a hematocele in the left pelvic cavity. She now had pain when the vaginal part of the cervix was manipulated, but there was no distension. About two hours later an operation was performed and there were probably less than 100 c.c. of blood in the abdomen, including that which had coagulated. A small rent in the tube was found near the uterine cornu. No attempt was made to remove the blood, as experience had taught him that the less manipulation done in the abdomen, consistent with the conditions found, the better for the patient. The second day the patient suffered some from the absorption of the blood that had been left in the abdominal cavity, but these symptoms passed away in a few days. Usually all of these symptoms, elevation of temperature, accelerated pulse, thirst, nausea, vomiting ,and distension, disappeared after the intestines had regained peristalsis and a bowel movement had taken place. Salicylate of eserine was usually effective in these cases if no peritoneal inflammation was present; it should be given in doses of not less than one-fortieth of a grain subcutaneously, repeated at intervals of four hours, until four doses had been given. Dr. Boldt analyzed these cases to see if in the first case a diagnosis could have been made with certainty and, in the second instance, to see if the diagnosis could have been made at an earlier period, and concluded that in the first case it seemed perfectly reasonable to suspct tubal pregnancy, especially as the husband had had a specific urethritis; as to the second case physicians were too ready to curette such patients and there was no reason why they should be subjected to curettage when there was no change from the normal in the size, position, and consistency of the uterus, and if bleeding amounted only to spotting. The diagnosis of ectopic pregnancy under such circumstances was unjustifiable on the part of anyone not unusually expert. It was not justifiable to subject a patient to operation unless there was present more reason than the mere suspicion of ectopic pregnancy. In that class of patients where immediate operation was imperative there were objective symptoms that could not be mistaken, namely, acute anemia and an almost imperceptible pulse. An expert could also usually determine the presence of fluid in the abdomen. They occasionally read of making a diagnosis of ectopic pregnancy before the rupture of the tube, but it was a fact that in the greater number of cases there was no rupture of the tube, but tubal abortion took place. Furthermore, patients were not likely to consult a physician before the beginning of tubal abortion. Dr. Boldt thought that no one factor played as great a rôle in the etiology of ectopic gestation as gonorrhea. He did not recall a single instance of this kind where the husband had not at some time had a specific urethritis.

DR. SAMUEL M. BRICKNER said that no statement should be allowed to go from the Section on Obstetrics and Gynecology that the diagnosis of an extrauterine pregnancy was an easy matter. Gonorrhea was a constant etiological factor in extrauterine pregnancies, and 90 per cent. of the males would be found to have had this disease at some time or other. There might be found some malformation of the Fallopian tube, or a polyp, especially on the same side as the extrauterine gestation; again, there might be a reversion in the type of the tube, thus placing the origin upon a biological basis. In a great many cases it was absolutely impossible to discover an etiological factor for the extrauterine pregnancy except a preceding gonorrhea, and this statement should be accepted as a dictum.

DR. BOLDT did not believe that they could state positively that gonorrhea was a factor in the causation of extrauterine pregnancy. He believed, however, that it played an important rôle as an etiological factor.

Esthiomène and Secondary Elephantiasis Vulvae (Ulcus Vulvae Indurativum Edematosum).—Dr. ARTHUR STEIN and Dr. W. J. HEIMAN presented a patient, thirty-three years old, who had been married thirteen years. She had never been pregnant. Three years after her marriage her husband acquired what appeared to be gonorrhea and was supposed to have been cured. He denied any other infection. Shortly after this she noticed a painful discharge from the rectum which at times was bloody. She was treated for hemorrhoids, with some improvement in her condition. About six weeks ago she noticed a painless swelling about the anus. The external genitals became larger and harder. There was no pain on micturition. The constant secretion from the rectum continued to cause her annoyance. She was first seen in May, 1911; the lesions then involved an area from the mons veneris to an inch behind the anus, and about two inches laterally. The lesions over the mons veneris and labia majora consisted of pale, yellowish to orange-colored

macules, papules, and cysts, varying in size from a pinhead to a kidney bean. The lesions about the anus were fleshy, an inch or more in length, and so closely crowded as to mould each other by pressure. The labia were equal in size, enlarged, and in shape resembled a cucumber. They were movable and painless. The distribution of the lesions was shown by illustrations. The swellings of both labia covered over the introitus vaginæ. Now the cystic lesions had disappeared. The color was of a uniform dusky red, not yellowish. The distribution of the lesions was unchanged. There were a few small, superficial ulcers, but in no wise resembling those of tuberculosis or lues. The anus was completely concealed by the polypi. The rectal walls were covered with polypi and the periproctal tissue was indurated. The deductions to be drawn from this case were comparatively clean cut. There was a chronic disease characterized first by a destructive process, secondary to which there developed elephantiasis, lymphatic dilatations even to the point of cyst formation, and, finally, papillary hypertrophy or polypoid excrescences. The lesions were the manifestations of the chemical irritant contained in the discharge from her rectum and in the rectal stricture which was present, both being due to an earlier gonorrhea. Such a condition and process, at once destructive and hypertrophic, would correspond to what in recent years had come to be understood as esthiomène. In looking over the literature they found but one case that absolutely corresponded to the one they described. The patient was presented for examination. The first case in the literature, described by Tilbury and Calcott Fox in 1870, was one in which the lesions were located upon the perineum and the thighs.

Dr. Walter James Heiman said that he wished to speak of some points more or less dermatological in connection with this subject. There were three or four conditions which should be considered in the examination of cases of this type, and the first of these was condyloma acuminatum. This condition could be readily ruled out. There was another group of cases which was originally described by Tilbury and Calcott Fox in 1879 under the name of lymphangioma circumscriptum cutis. When the patient was seen for the first time the impression was that they had to deal with lymphangioma cysticum, or a circumscribed cystic lymphangioma. Upon a more careful study of the case they were unable to find any of the pathological features of this condition, and hence this diagnosis was ruled out. A diagnosis of esthiomène and secondary elephantiasis vulvæ was finally made, the excrescences appearing over the anus and gluteal regions. In the case described by Tilbury Fox the growths were found on the perineum. This was the only case in the literature in which this localization was to be found. It had occurred to Dr. Heiman that this might be the connecting link between lymphangioma and the type of esthiomène under discussion. The typical localization of the lesions of true lymphangioma were found to be around the shoulder girdle, the face, and occasionally on the tongue. In lymphangioma cysticum the cysts would be filled with a clear, limpid yellow fluid; the cysts varied in size from a pinpoint to a lentil. They were grouped in patches one to four inches in diameter. The bases upon which these cysts rested were non-inflammatory. Dr. Stein's case could not possibly be diagnosed as a circumscribed cystic lymphangioma. There were few clinical and no histological evidences characteristic of idiopathic cystic lymphangioma.

Prolapse of the Uterus.—Dr. William H. Wellington Knipe reported the case of a patient, fifty-four years old, who had had eight children and no miscarriages. After the birth of her seventh child she had a complete prolapsus uteri; this had been repaired at Bellevue Hospital. After the birth of her last child the prolapse recurred. In June, 1906, she came to Dr. Knipe for an operation for complete procidentia uteri and a supravaginal hysterectomy was performed with fixation of the cervical stump to the anterior abdominal wall, in conjunction with plastic work on the perineum. On account of the hard work she was subjected to the prolapse recurred at the end of two years and another operation was done, at which the remaining portion of the cervix, with the whole vagina, was removed. The cavity left was closed by a series of purse-string sutures, beginning at the upper part of the wound and ending at the introitus vaginæ. The structural result was perfect and the patient felt perfectly well. There was no operation for this condition which gave such uniformly good results. In this case the end justified the means.

Dr. Herman J. Boldt said that when the indications were so absolute as in the case reported by Dr. Knipe no criticism should be made, for it was the only operation in which a positive cure of the condition could be guaranteed.

A Review of Seventy-three Cases of Dudley's Operation for Dysmenorrhea and Sterility.—Dr. Samuel M. Brickner reviewed the history of this operation and described it in the words of the author. This operation had been performed at Mount Sinai Hospital 108 times in the past six years, but with certain modifications, as follows: (1) The omission of the denudation of the anterior wall, which they had not considered essential to the proper development of the operation, and which Dudley also now dispensed with; (2) the occasional but infrequent omission of the excision of the wedge-shaped piece of the posterior lip of the cervix; (3) the wide dilatation of the cervix, which rendered the operation easier; (4) using chromicized catgut to close the cervical wound. In all of the cases the operation had been preceded by a thorough and prolonged dilatation of the cervical canal and a light curettage. One of the direct results of this operation was that the position of the os externum in the vagina was changed, and instead of lying against the anterior vaginal wall, if the uterus was in sharp anteflexion, or midway between the anterior and posterior vaginal walls, if the uterus was moderately anteflexed, it now pointed toward the posterior wall and the reception of the semen into the uterus was very much fostered. The direction of the entire lower portion of the uterus was changed. In every case operated upon a careful selection of the cases was made; an examination of the husband was made to preclude the possibility of his being responsible for the sterility. No patient was subjected to the operation who had ever had an inflammatory pelvic disease, or in whom there was any gross pathological condition of the pelvis, or in whom there was diabetes, nephritis, tuberculosis, or grave cardiac disease. In general, the patients presented themselvs with a history of mere sterility dating from eight months to twelve years The other general class complained only of dysmenorrhea. The usual finding was a small anteflexed uterus with a long conical cervix. The external os could not be passed by a sound in many instances, and this constituted in the absence of contraindications an indication for the Dudley operation. Dr. Brickner had made inquiries from the 108 patients operated upon and had received answers from 73. The replies received from the ward patients showed that of 20 who had applied for relief of dysmenorrhea 16, or 55.1 per cent., had been relieved, while 12, or 41.3 per cent., were not relieved, and 1 was made worse. Of 29 who applied for relief of sterility 5, or 17.2 per cent., had been relieved, while 24, or 83.8 per cent., had not been relieved. Delivery had been instrumental in 20 per cent. of the relieved cases and 1 had aborted. Among the private patients 13 applied for relief from dysmenorrhea and 19 for both sterility and dysmenorrhea. Of those who applied for relief of dys-

menorrhea 11, or 84.5 per cent., were relieved and 2, or 15.4 per cent., were not relieved. Of the 19 who applied for the relief of both sterility and dysmenorrhea 42.1 per cent. were relieved of their sterility and 11, or 57.9 per cent., were not relieved of their sterility. Of those who became pregnant, 15.8 per cent. were delivered by instrumental methods. Combining the statistics for the 73 patients they had as a result the following: Of those who applied for relief from dysmenorrhea, 64.3 per cent. were relieved and 33.3 per cent. were not relieved, and 1 was made worse. For those applying for relief from sterility, 27 per cent. were relieved, while 73 per cent. were not relieved. Of the deliveries 8 per cent. were instrumental. Summary: (1) Dudley's operation of posterior sagittal incision of the cervix, with or without the excision of a bilateral wedge, for the relief of dysmenorrhea and sterility was a procedure to be recommended. (2) It was of greater service in the relief of dysmenorrhea than of sterility, although in the latter class of cases the effect was sometimes magical. (3) The resulting scar in the cervix offered no hindrance to labor, dilatation being as normal as possible. (4) Pathological anteflexion, or retroflexion of a hypoplastic uterus, with stenosis of the external or internal os, or of both, was a frequent cause of sterility and of dysmenorrhea. (5) These conditions could be relieved in about 50 per cent. of properly selected cases by Dudley's operation, but no operation for sterility should be performed until the husband was found to possess living spermatozoa, and no operation should be performed for dysmenorrhea without a thorough study of all the features of the case.

Dr. Robert T. Frank said that he had seen a large number of the cases Dr. Brickner had referred to and he could substantiate the statements made as to the value of this operation in selected cases of dysmenorrhea. Dysmenorrhea was relieved in a very large percentage of the cases, but the relief of sterility seemed to him to be rather doubtful. Though the statistics presented showed that only about 25 per cent. of the women were relieved, this was not to be placed to the discredit of the operation. The probability was that most women suffering from sterility had some condition not depending upon a mechanical form of obstruction. In his opinion mechanical obstruction played but a small rôle unless the obstruction was situated in the tube. Most of the other mechanical factors upon which attention was focused at the present day would sooner or later be recognized as negligible. All of them had met isolated cases of sterility supposed to be due to some mechanical factor; later these women became pregnant without operation. For instance, Dr. Frank recently saw a patient whom as a young girl he had treated for extreme dysmenorrhea by palliative measures. She was now married nine months. On account of vaginismus normal relations were impossible. Nevertheless, she was now four months pregnant. Here there was not only the supposed obstructive factor which caused her dysmenorrhea to be reckoned with, but also an additional hindrance, as the spermatozoa had to penetrate the introitus and ascend through the vagina and cervix before entering the uterus. He recalled another striking instance, that of a woman who had been sterile for seven years and who had been advised to submit to a Dudley operation. The patient refused immediate consent, and now, three months later, she had become pregnant. Again they were all familiar with cases of stenosis of the vagina; nevertheless, many of these women became pregnant. In one such case, which Dr. Brickner doubtless remembered, the upper part of the vagina had been reduced to a long, tortuous sinus barely admitting the finest probe. This patient promptly conceived. Coitus through the urethra, in cases of vesicovaginal fistulæ with obliteration of the introitus, were on record with resulting pregnancy. Here the spermatozoa had made their way through an infected bladder and false passage. It seemed to Dr. Frank that there were other causative factors that were more important and usually neglected. The chief factor, in his opinion, would eventually prove to be connected with ovulation. Probably there was a lack of coincidence between ovulation and the time during which the uterus was prepared to receive the ovum. As in animals, when certain pathological conditions were present rupture of the follicles might be delayed, until such a time that the uterus was no longer able to form a decidua for its reception. Dr. Reynolds had mentioned the fact that he could relieve, and had relieved, a number of women by operation in whom he found microcystic ovaries; after perforating these cysts the patients had been relieved of their sterility. It was not the fault of the Dudley operation that success in relieving sterility did not follow, but it was rather, in his opinion, the fault existing in some physical or pathological process, as yet undetermined, which caused a lack of synchronism between ovulation and the optimum time for the reception of the ovum in the uterus.

Dr. John O. Polak said he knew of no conditions more trying to the practitioner than those of dysmenorrhea and sterility associated with anteflexion of the uterus, and he knew of no operation that had given these patients such relief as the Dudley operation or some of its modifications. He found after listening to Dr. Brickner's paper and looking at the diagrams with which the Dudley operation was illustrated that during the last few years he had been doing a modification of that operation. In the first place the operation they did was more extensive; they slit up the posterior lip of the cervix, using a Wylie or a Palmer dilator introduced into the uterus as a guide. In this way they made a clean incision through the posterior lip and internal os that was in perfect alignment. They then removed an extensive wedge out of each side of the posterior lip, placing their sutures in a manner similar to that described by Dr. Brickner, which placed the external os well back at the posterior cervicovaginal junction. They were able to follow many of these women through pregnancy, and they had never seen any extensive cervical tears nor any trouble following labor after this modification of the Dudley operation was done. The character of the labor was not influenced by the operation, and the internal os would dilate far more readily than in other cases. He attributed this fact largely to this: that after the Dudley operation, or some modification of it, the endocervicitis was cured so that cervical hyperplasia no longer continued. When the Dudley operation was properly done and cervical drainage instituted the endocervicitis got well; this, together with the fact that the cervix was placed in the seminal pool, accounted for the sterility cures. A point already mentioned Dr. Polak had noted many times: he found that women with marked dysmenorrhea complained of ovarian pain; the ovaries would be found to be sensitive and enlarged. He had opened the abdomen in such cases and found ovaries with thickened tunica. The earlier a Dudley operation was done the better effect it would have upon the circulatory conditions in the pelvis and better drainage would result. Tender ovaries, beginning to border on the pathological, might be relieved by establishing better pelvic circulatory and uterine drainage. Dr. Polak said that he had also done excision and incision of cysts; this too he found had a decided influence on pregnancy by allowing a better ovarian function. It was now his custom to combine with the Dudley operation Reynold's procedure, separating the cellular tissues from the front of the uterus through a transverse incision at the uterovaginal junction anteriorly.

Dr. Dickinson was glad that so much stress had been laid upon the proper selection of cases for doing the

Dudley operation. The operation had a very limited field, and they were often disappointed in their results. In some patients the uterine canal might be stretched, or stems inserted, or some other simple means might be employed without having recourse to operation. The most successful cases in this line of work were the worst cases. He had used the stem for years for the relief of sterility and it was only within recent years that he had resorted to the Dudley operation.

Dr. Simon Marx said that he had done a few of the Dudley operations and he had seen similar results from other means. He thought that he could give 25 per cent. successful results, and even a greater percentage so far as dysmenorrhea was concerned, by the ordinary methods. In those cases of fairly marked diversions of the uterine canal he had seen them disappear after operation. In most of the cases that he had seen he had used the modified Wylie glass intrauterine stem instrument, which produced perfect drainage; this was used for months. Dr. Marx believed that the cause of dysmenorrhea and the cause of sterility was a mechanical one. In the first place there was a flexion of the uterus, especially marked at the internal os; the most successful results followed the stretching of the internal os as far as they could. The sphincter muscles should be paralyzed. He used a glass stem which had been thoroughly sterilized, and he got practically the same results. He admitted, however, in some of the cases in which the glass stem was used he met with high temperatures, in one case a temperature of 106° F. This case resulted in a failure.

Dr. Herman J. Boldt said that the most striking features of the paper, in addition to the statistics given, was the careful selection of the cases. Dr. Dudley had demonstrated the operation to him shortly after he devised it, and Dr. Boldt had been doing it since. If the cases were carefully selected the operation of Dudley in the class of cases with a marked anteflexion, dysmenorrhea, and sterility, dependent upon mechanical obstruction of the cervical canal, would be a good operation. Pozzi's operation likewise was an excellent one.

Dr. W. Gill Wylie said that this operation had been done years ago by Dr. Sims and he had seen some of the cases; as a rule the results were good. Any one, however, who divided the internal os seriously harmed the patient unless the internal os was thoroughly dilated and remained dilated for some time. The canal should be thoroughly divulsed and a drainage tube should be introduced which should be left in place for months. If this line of work was carried out skilfully he thought that one could guarantee a cure in nine out of ten cases of dysmenorrhea if there were no serious complications outside.

Dr. C. C. Sichel said that most of these cases of dysmenorrhea and sterility were either due to some mechanical obstruction or other causes; dilating operations usually resulted in a cure of these cases with mechanical obstructions. Dudley's operation did not absolutely cure the condition nor did it straighten the canal in all cases. The dilatation and curettage employed by him probably caused the cure and should be given the credit for the good result which followed the operation. In the limited number of instances in which he had performed the Dudley operation he felt that as the dilatation and stretching of the sphincter in operation for hemorrhoids was the point of paramount importance so, in Dudley's operation, dilatation and curettage of the cervix was a point of equal importance.

Dr. Samuel M. Brickner said there were many roads which led to Rome. He held no brief for this operation or other operations for the cure of dysmenorrhea. He believed, however, in reporting progress. He was a firm believer in this operation and he was at the same time aware that there were other methods which reached the same result. If he praised the Dudley operation he did so because in his experience it was fruitful and beneficial. In answer to Dr. Frank Dr. Brickner quoted the words of the Pharisee: "I know not, whereas I was blind, I now see." After the operation many of the women became pregnant within four or five weeks. This made him a firm believer in this operation; cause and effect, as in all biological relations, showed that there was some definite relation one with the other. In answer to Dr. Wylie, Dr. Brickner said that Dr. Sims never performed this operation, although no doubt his teachings had been influential in spreading bloody operations upon the cervix for dysmenorrhea and sterility.

Radiography of the Distended (Collargol, Argyrol, Oxygen) Renal Pelvis and Ureter.—Dr. Leopold Jaches and Dr. H. D. Furniss presented this communication and gave a lantern slide demonstration. It was not an uncommon occurrence that the routine *x*-ray examination of the urinary tract failed to satisfy either the röntgenologist or his colleague who referred the patient to him. Symptoms of obstruction, probably due to calculus, might be present, but no calculus could be seen. Means of determining the cause and location of the obstruction resulted in the introduction of the *x*-ray catheter, but this did not solve the problem. What was wanted was to make possible the reproduction on the *x*-ray plate of the renal pelvis and the lumen of the ureter and such constrictions as might be present. In 1906 Foelcker and v. Lichtenberg published a report with very satisfactory results, in which they used a 5 per cent. solution of collargol. Since then argyrol has been substituted by other investigators with equally good results. The information to be obtained by the technique they followed might be summarized as follows: (1) The extent and shape of the renal pelvis and its relation to the skeleton. (2) The angle at which the ureter entered the pelvis. (3) Constrictions of the ureter. (4) Kinks due to displacement of the kidney. (5) Renal tuberculosis and tumors.

Dr D. H. Furniss exhibited a number of radiographs made by Dr. Jaches and himself showing the kidneys and urters after injection with oxygen, argyrol, and collargol. Some of the radiographs showed mild and marked hydronephrosis, strictures of the upper and lower ends of the ureters, displacements of the kidneys, and in one the marked distortion of the renal pelvis due to a large hypernephroma. Dr. Furniss thought these good pictures were due to team work between himself and Dr. Jaches and believed that such team work was essential to good results. They had obtained the best results with 40 or 50 per cent. argyrol in a 2 per cent. boracic acid solution and injected with a piston syringe. They used a small ureteral catheter to allow the easy return of the solution along the catheter and thus prevented over-distension of the renal pelvis. The injection was started a minute before the exposure was begun and continued during the exposure. The only cases in which there was pain were those in which there was some form of ureteral obstruction, and in these the pain had been of the type for which the examination was made. In two cases of dilatation of the entire ureter, in each of which a number of examinations were made on different days, there was absolutely no sensation in the renal region. This seemed to be evidence that any pain that might be experienced was mechanical rather than due to the irritating effects of the injected solutions. After the radiograph was made the pelvis of the kidney was irrigated with boric acid solution, the return being alongside the catheter. Where there was marked dilatation of the whole ureter it was essential that the bladder be well filled if a picture of the ureter was to be had; otherwise the return flow was so rapid that the proper distension was not produced. Dr. Furniss said that from their experience they believed that in cases with symptoms referable

to the urinary tract in which other methods of diagnosis had failed to reveal the cause, such an examination was essential, and a negative opinion was not possible until such an examination had been made.

Dr. Eugene Wilson Caldwell said he could see no excuse for using air or oxygen in this work because of the confusion which might arise; it would be very hard to distinguish between gas contained in the renal pelvis and that contained in an overlying intestine. Between the use of collargol and argyrol there seemed to be but little choice. At the Mayo clinic at Rochester, Minn., over 650 patients had been examined; there they used a 10 per cent. solution of argyrol. Dr. Caldwell thought that the solutions should be weaker. The success of these examinations depended upon the success in the use of the cystoscope. Better work could be done with the employment of a better technique.

Dr. Wm. H. Stewart called attention to the advances that had been made in this line of work; in many cases of persistent renal colic the diagnosis could be cleared up which with the ordinary radiographic examination gave negative results. In these cases the indications were to examine the renal pelvis and ureters by means of the collargol injection, looking particularly for kinks or obstructions. Some surgeons had a certain amount of reticence about these injections and one surgeon did not wish him to use the collargol injection because he feared painful or disastrous results might follow. Dr. Stewart's procedure was to make a preliminary radiographic examination; this tended to educate the patient as to what was coming from the apparatus so that on further examinations perfect immobility could be secured. If this examination showed a suspicious shadow in the line of the ureter the question at once arose whether it was within or without the ureter. This was especially so in the pelvic region where so frequently shadows of the so-called phleboliths were seen. Given this condition he preferred to have an opaque or *x*-ray ureteral catheter passed for a radiographic examination *in situ* rather than the use of a stiletted catheter. If, however, the preliminary examination was negative and the symptoms persisted, the indications were to inject collargol into the pelvis of the kidney and ureter with the possibility of finding an obstruction. Even with this method one might get negative results; there were a number of instances recorded in which a kink was seen when the patient was in the upright position, but not seen in the recumbent position. This had been demonstrated by Dr. Stover of Denver, Col., a number of times. If the examination was to be of the renal pelvis, collargol was used immediately. He never set the compression diaphragm upon the patient before the injection of collargol, as it was possible to produce pressure enough to interfere with the free injection and produce an artificial obstruction. The cystoscopist commenced the injection; when the patient complained of distension the diaphragm was set and the exposure made, gentle distension being kept up by his team mate. Some improvement should be made in the cystoscope so that it could be removed after the catheter had been passed without the danger of pulling the catheter with it. He had seen expert cystoscopists neglect to lower the director or the cystoscope which gave them the impression of having met with an obstruction in the passage of the catheter; in one case this caused great confusion, as it was demonstrated afterward that the shadow was outside the ureter.

Dr. Edward L. Keyes, Jr., said he felt very uncertain regarding the interpretation of many of the pictures made, and it was very difficult to get patients to submit to the number of examinations required. The functional test of the kidney was after all much more important for the preliminary diagnosis in patients with pus in the urine than the argyrol injection test. The *x*-ray and functional tests were requisites. If there was pus in the kidney as a rule the argyrol injection did not tell anything of importance. Injection radiograms were only useful in the diagnosis of obscure renal pain.

Dr. Leo Buerger said that this useful method was very much neglected in the city of New York. In doing this work a prerequisite was a proper knowledge of the cystoscope and how to introduce the catheters quickly; one must master the technique.

Dr. Edwin Beer said that, judging from the remarks of the previous speakers, they seemed to lay very little stress on the dangers incidental to pyelography. There were distinct risks with this procedure and he wished to emphasize that pyelography was not an innocent procedure. He believed that much more work would have been done along these lines had not the danger of severe collapse been experienced by most experimenters. He had seen three such cases; with such experiences fresh in one's mind one naturally advised restricting pyelographic work to those cases in which it was strictly indicated. In addition to collapse, necrosis of the kidney had recently been reported after the use of this technique. The class of cases in which pyelography might serve a useful function were as follows: (1) Cases of suspected ureteral calculus where all other means had failed to make the diagnosis. In these cases the ureterograph would be capable of demonstrating a dilated ureter above a point of constriction the site of the calculus. (2) In strictures of the ureter, ureterographs would be as useful as under (1). (3) In demonstrating dilated pelves, *e.g.* hydronephroses due to mobile kidneys. In these cases, if the pelvic enlargement could be shown by injecting colored fluid through the ureteral catheter, and thus measuring its capacity, it was by far preferable to pyelography because less risk attended the work. He doubted very much the usefulness of pyelography to show the clinician the presence of a neoplasm which might distort the contour of the pelvis. No doubt such distortions occurred, and were significant as had been demonstrated, but whether necessary to the clinical picture, or essential to diagnosis, the future would have to show more definitely. With regard to the interpretations of ureterographs and pyelographs, if the pictures were very definite and the contrasts between dilated and stenosed parts very great, he believed that one was justified in drawing inferences. If not, one should be wary of spasmodic ureteral conditions which might simulate stenosis, and not rush in rashly and diagnose actual pathological stenoses. Dr. Beer concluded his discussion by stating that while the field for the work might be fruitful in carefully selected cases, indiscriminate work at this stage was harmful and he advised going slowly.

SECTION ON PEDIATRICS.

Stated Meeting, Held November 9, 1911.

Dr. William Shannon in the Chair.

This was a joint meeting with the Philadelphia Pediatric Society and the New England Pediatric Society.

Acute Duodenal Indigestion in Children.—Dr. Fritz B. Talbot of Boston read this paper. He said that the intestinal canal was sterile at birth, but soon became infected and remained so for the rest of life. The bacteria tended to belong to the acid-forming group when the infant was fed with human milk, and to the putrefactive or alkali-forming group when the food was cow's milk. Putrefaction commenced when the baby began to take cow's milk, which contained larger quantities of casein than human milk, and thus gave the putrefactive group of bacteria a suitable food upon which to grow. Bile had the property of activating the pancreatic proferment steapsinogen into steapsin. Fat emulsification was favored

by the presence of bile; when bile was occluded from the intestinal canal the absorption of fat was interfered with and metabolism was abnormal. Bile had no influence upon the digestion of sugar, but it had been known for a long time that sugars had an unfavorable influence upon patients with acute duodenal indigestion. This disease was a relatively common one; during the past year there had been 24 cases in the Children's Medical Out-Patient Department of the Massachusetts General Hospital. The onset of the disease might be sudden, with fever, vomiting, pain in the stomach, jaundice, clay-colored stools, bile in the urine, loss of appetite, etc.; or it might be insidious, without fever, following some indiscretion in diet, more especially as regards the intake of fats and sugars. The disease appeared as a complication of such infections as otitis media, diphtheria, and the exanthemata in 15 per cent. of the cases. The onset was sudden with fever and vomiting in 75 per cent.; the liver was enlarged in 74 per cent., and tender in 13 per cent.; the spleen was not felt in any case. Urobilinogen was absent from the urine in every case where there was complete obstruction to bile and was found in excessive amounts when the obstruction was removed. The stools were recorded as white in 36 per cent., creamy in 14 per cent., and clay-colored in 50 per cent. of the cases during obstruction. When there was complete obstruction of the common duct bile in the form of bilirubin was dammed back into the circulation, colored the tissues, and a part overflowed in the urine. The fat in the food was digested and absorbed only in part, and as a result there was a clay colored acholic stool which was composed almost entirely of fat. In the majority of the cases these fats were in the form of soaps. In some cases there was constipation, in others diarrhea; the latter was due to the prolonged irritation of the intestinal mucous membrane, due to the stagnation and decomposition of fat which was brought about by the action of the intestinal juices and bacteria, thus complicating the duodenal indigestion with a secondary intestinal indigestion. When the bile again flowed into the intestine the fat quickly disappeared and normal quantities of uribilinogen appeared in the urine. With regard to the treatment it was obvious that fats and sugars should be excluded from the diet. Proteins, especially meat, fat-free milk, or skimmed milk, and thoroughly cooked simple starches might be given with safety. Tincture of nux vomica should be given to stimulate the appetite. Any mucus plug in the bile duct might best be reached by large doses of an alkali, as, for instance, bicarbonate of soda.

Dr. Alfred Fabian Hess said that about one year ago he devised a duodenal tube which was a modification of the Gross tube used in adults. With this he found he could readily reach the duodenum, draw up the juices and make a study of the ferments. Although this tube worked fairly well he felt that it could be improved upon and, some months ago, he found that with a rubber Nelaton catheter he was enabled to pass through the stomach and enter the duodenum and more readily and quickly obtain the duodenal juices. This permitted him to make a study of the secretions, as well as of the functions of the pylorus and certain pathological conditions, such as spasm and stenosis of the pylorus. In acute catarrhal jaundice they met with one form of duodenal indigestion; the bile was dammed back, there was a lack of fat digestion, and fat appeared in the stools. This was a small part of duodenal digestion, for the duodenum into which various ferments were poured was the main seat of digestion. When anything interfered with these ferments duodenal indigestion might result. There could be motor as well as secretory indigestion. Sometimes the food passed through the duodenum more quickly than at other times. Where there was an interference with bile secretion jaundice did not necessarily result. The subject Dr. Talbot had brought before them was one that would develop greatly in the future and would be approached not by an examination of the urine and of the ferments in the stools, but by a study of the ferments themselves in the duodenum; this duodenal catheter enabled one to approach this study. They should know more about duodenal digestion.

Dr. Herman Schwarz emphasized the importance of knowing what was happening in various parts of the intestinal tract. Much knowledge had been gained in their work with animals, and Pawlow and his assistants had helped them. It was a step in the right direction to understand just what duodenal and other kinds of digestion were. Catarrhal jaundice and the effect on digestion of the absence of bile, especially on the digestion of fats, should be studied more and especially in that type of cases which occurred not so infrequently, congenital stenosis of the bile ducts. In this condition there was practically no digestion of fats and it was remarkable to find that, instead of 4 or 8 per cent. of fat, 60 or 70 per cent. of the fat would be found in the stools. It was almost impossible to dry stools with such a high percentage of fat. Under normal conditions it was surprising the amount of fat the small intestinal would take up.

Dr. Henry Dwight Chapin said that one year ago he had made a study of the motility of the stomach, especially in atrophic infants. The trouble in these cases was not so much with the secretions as it was with the deficient muscular action. Duodenal feeding in this class of patients was very promising.

Dr. John Lovett Morse of Boston said that duodenal indigestion occurring in young children was much more common than generally supposed. He had seen a number of instances occurring in the beginning of the first week in life. One should be on the lookout for this trouble at any age. He said he was particularly interested in Dr. Talbot's statement that these patients did not do well when given sugars, but that they did do well when given starches.

A Study of Streptococcus Antibodies in Scarlet Fever, with Special Reference to Complement Fixation Reactions.—Dr. John Albert Kolmer of Philadelphia said that the latest contribution to the bacteriology of scarlet fever had been made by Vipond. In his own investigations of the glands in 26 cases of scarlet fever he had failed to find any organism resembling those described by Vipond. The object of their studies had been twofold: 1st. To determine more accurately, if possible, by such a study the relations of streptococci to scarlet fever than was possible by morphological and biological studies alone. 2nd. To determine if the method of streptococcus immunization as practiced in Russia could be supported by laboratory investigation. The same cultures and immune sera were used in these experiments. These experiments led them to believe that a streptococcus produced a specific antibody up to a certain limit. The specific nature of these antibodies was seen by complement fixation reactions in high dilutions between a streptococcus immune serum and its antigen. With low dilutions the specific nature of the antibody was not brought out. Scarlet fever streptococci tended to produce their own specific immune serum, but streptococci causing septicemia and non-scarlatinal angina also produced their own immune sera. The fact that they found but 11.2 per cent. positive reactions in scarlet fever tended to show that streptococcus infection in scarlet fever severe enough to produce immune bodies was not so common as generally believed. One of three toxic or malignant cases yielded a positive reaction. Since it had been proven almost to a certainty that streptococcus was not

the cause of scarlet fever it was difficult to understand how immunization with streptococcus could prevent scarlet fever. They could understand, however, that such immunization might be of value in preventing or mitigating secondary streptococcic infections which were present in at least 11 per cent. of scarlet fever patients and responsible for severe primary lesions and complication. Likewise it was possible that such protection would result by an increase in opsonins against streptococci. In their study they had endeavored to ascertain if the streptococco-opsonic index could be raised by an injection of heat killed streptococci, and also to find out whether the opsonins produced by the different strains of streptococci were specific in nature. Their study had led them to conclude: 1. That it was possible to raise the streptococco-opsonic index by the injections of organisms killed by an exposure of 60° C. for one hour. This increase, however, was very slight with three or less injections and became apparent only after a relatively large number. 2. That the increase in the quantity of opsonin after three injections was so slight as to make the likelihood of establishing immunity against streptococcic infection very dubious. 3. That the opsonins were more or less specific toward the strains used in the process of immunization. They had also worked on the problem as to whether streptococci stimulated the production of agglutinins upon which investigators were far from agreeing. They had found that streptococcus agglutinins were produced slowly by experimental immunization and the quantity was quite variable; that these agglutinins were apparently non-specific in character and of no value in differentiating streptococci; that they were demonstrated in 12.5 per cent. of scarlet fever patients, but only in comparatively low dilution of serum; that there was no relation between agglutination and complement fixation antibodies or between agglutinins and opsonins. They agreed with those who claimed that streptococci found in scarlet fever patients, whether in the throat, suppurative lesions, or in the blood, could not be differentiated from the streptococci found normally in the throat or in septic conditions by morphological or cultural characteristics. If they were to claim a specific streptococcus for scarlet fever, a similar claim might be made for every other streptococcus infection; thus to claim a specific streptococcus for endocarditis and another for puerperal sepsis seemed to be out of the question. One fact was certain, namely, that all severe, septic and fatal cases of scarlet fever were not due to the streptococci. They were of the opinion that the streptococcus found in scarlet fever belonged to the general class of streptococci and was modified in some way during the course of the infection so as to give it a somewhat specific antibody and occasionally temporary cultural characteristics. This was also true of the streptococci causing septicemia and simple sore throat. With regard to streptococcus immunization, while the reports of the Russian physicians were on the whole convincing, the disease was so protean in character, was frequently disseminated in such an inexplicable and confusing manner, and they really understood so little concerning the infection that they should view these enthusiastic reports with healthy skepticism.

Dr. Richard M. Smith of Boston said that it had never been definitely settled that the streptococcus had any direct etiological connection with scarlet fever. Despite the large amount of work which had been done on the single point of specificity of the streptococcus found in scarlet fever, it was far from proven that the same type of streptococcus was always found in every case of scarlet fever or that the streptococcus found in scarlet fever was in reality different from that found in other diseases. Until this point was definitely proven they must remain skeptical in assigning the streptococcus as the cause of scarlet fever. The fact that streptococci were found in scarlet fever patients and that the blood of scarlet fever patients was changed in its reaction toward streptococci did not prove the streptococcus as the etiological factor of the disease. Scarlet fever lowered the resistance of the individual to any intercurrent infection. Tunnicliff had shown that the opsonic index in scarlet fever patients was not only low for the streptococcus, but also for the pneumococcus and the staphylococcus. Hence it was not at all surprising that this organism should gain a foothold and develop rapidly. The work of the Russian physicians in immunization was most interesting and important, but it must be borne in mind that the natural immunity to scarlet fever was very great. It was not at all uncommon to have a single member of a family contract the disease and none of the others be affected. It was not unusual for one child in a school to have scarlet fever and all the others escape although there was general exposure. It seemed that the number of persons actually protected by the vaccines in a Russian community must remain a matter of speculation. For a convincing demonstration of the value of vaccines the number of inoculated cases must be large, the control individuals many, and the observations extended over a long period of time. He had had but one opportunity to try this vaccination. An epidemic of scarlet fever occurred in a Boston institution last winter, but despite the fact that all of the children were vaccinated many of them three times, no influence was evident on the spread of the disease. The children contracting the disease had light cases, but he could not say whether or not the vaccination was responsible for this. Thus far it had not been proven that streptococcus vaccine could prevent scarlet fever. The value of vaccines, and perhaps serum, in influencing the complications of scarlet fever was quite another matter. The majority of the patients who died succumbed to the toxemia of a secondary infection due in the majority of cases to the streptococci. If by giving vaccines or serum early in the course of the disease they could prevent secondary infections they might moderate the severity of the disease and greatly reduce the mortality. If those already infected with the streptococcus were vaccinated their powers of resistance might be increased so that they could overcome the infection and thus the mortality would be lowered. It was in this direction that they were to hope for most benefit from vaccines and serum.

Dr. William C. Thro said that only those actually engaged in this work could understand how tedious and laborious it was. As strain after strain was added to the antigen, more and more positive results were obtained. An increase to eleven strains would give more positive results than when only two or three strains were used.

Dr. Homer Swift said that the work recently done demonstrated that the streptococci were not the etiological factors in scarlet fever. The work done with the experimental fever in animals which was similar to scarlet fever in man seemed to indicate that scarlet fever was caused by a filterable virus. During the past year they had produced a scarlet fever-like disease in monkeys after first having depressed their resistance by injections of saline solution. A German investigator injected monkeys with the coating of tongues from patients whose lymph nodes were free from streptococcus; they had used lymph nodes and, after an incubation period, fever-coated tongue, the typical strawberry tongue, and eruption followed by desquamation similar to that of scarlet fever occurred. He had also passed the extract of the glands through filters and obtained scarlet fever-like disease in monkeys. He had not obtained similar disease from the injection of streptococci.

Dr. Matthias Nicoll, jr., said that while the streptococcus as a causative factor in scarlet fever seemed to be losing ground, they had not yet discovered the true nature of the infectious principle in scarlet fever and unless the finding of this infectious agent should lead to the means of preventing the disease the streptococcus would still have to be largely reckoned with. It was the cause of death in the vast majority of the cases. After a considerable experience in the employment of the antistreptococcus serum, both by the subcutaneous and intravenous methods, he was unable to advocate its use in scarlet fever except in those cases which might be classed as general septicemia. On the other hand he was thoroughly convinced of its great value when applied freely and at short intervals to the mucous membrane of the pharynx and tonsils. He had demonstrated that in 18 cases of scarlet fever, ill from two to twenty-four days, enlarged but not suppurating lymph nodes, in four instances in the cervical region and in nineteen in the inguinal, together with an inguinal node removed postmortem from a septic case of the disease, in no instance showed the presence of streptococci or of other organisms. Here was a disease which involved the lymphatic system from the neck to the groin in forty-eight hours or less and apparently without the aid of any pyogenic organism. They might be justly suspicious of all reported cases of scarlet fever occurring in rabbits, such as Cantacuzene had recently announced. The rash of scarlet fever was frequently difficult of dagnosis in human beings and in an unshaved rabbit it was largely a matter of personal opinion. Furthermore, shaving rabbits did not better the situation, as this process, owing to the delicacy of their skin, produced a dermatitis which persisted for a number of days. The temperature curve in these animals was erratic and easily disturbed, and their throats and tongues were eminently unsuited to clinical observation.

Vaccine Inoculation, Prophylactic and Curative, of Typhoid Fever.—Dr. J. M. Phalen of the United States Army and Dr. J. G. Callison presented this paper. In speaking of the vaccine in this paper they had reference only to that used in the United States Army, which was prepared by Major Frederick F. Russell in the laboratory of the Surgeon General's Office in Washington. An old culture which had ceased to be pathogenic and which produced an abundant growth upon agar was inoculated upon agar in flasks constructed so as to give a known surface of media. At the end of eighteen hours the agar cultures were washed off with normal salt solution, put into flasks, and the culture killed by subjecting it to 55° or 56° C. over a water bath for one hour. During the process of sterilization, a count was made of the bacterial suspension for the purpose of standardizing, after which the culture was diluted with normal salt solution so that one c.c. contained one billion bacilli, and then one-quarter of one per cent. tricresol was added. It was then tested for both aerobic and anaerobic bacteria, and as a further measure of safety guinea pigs were inoculated with it. It was sealed in ampoules containing from one to twenty-five c.c. Every man enlisting in the Army was given the immunizing dose. The first injection was administered at the time of enlistment and consisted of one-half of a c.c. The second and third injections were given at intervals of ten days and consisted of one c.c. each. The inoculation was made into the deltoid muscles near its insertion by means of an ordinary hypodermic syringe. They painted the skin over the site of the inoculation with tincture of iodine and after the inoculation touched the needle wound with the same solution. The reaction following the inoculation showed itself locally by an area of hyperemia around the wound, and more deeply by a circumscribed area of induration; constitutionally there was some fever and malaise, and in the more severe cases there might be gastrointestinal and nervous disturbances. It was to the records of our Army, together with those of England and Germany, that they must look for evidences of the practical value of vaccination against typhoid fever. The latest figures available from the service of the British Army were those of Col. R. H. Firth, R.A.M.C., covering the Colonial Army in India during the period from 1906 to 1910, inclusive. In 1906, among a military population 66 per thousand of whom had been innoculated, the typhoid rate was 15.6, the death rate 3 19; in 1907, the inoculated population having been 143 per thousand, the typhoid rate was 13.1, and the death rate 2.77; in 1908, the inoculated population having been increased to 225 per thousand, the typhoid rate was 14.5, and the death rate 2.76; in 1909, when the inoculated population was 613 per thousand, the typhoid rate was 8.9, and the death rate 1.58; in 1910, the protected population being 823 per thousand, the typhoid rate was 4.6, and the death rate 0.63 per thousand. In 1910, in a strength of about 70,000 men, 306 cases of typhoid occurred; in about 60,000 inoculated men there were only 155 cases. At the same time there occurred 151 cases among 10.000 men who were not inoculated. In the German Army in Southwest Africa during the Hereros campaign, from 1904 to 1907, there were 16,496 men who participated, 287 of whom took the inoculations. Among this force there were 1277 cases of typhoid fever, the rates being 5.09 per cent. for those inoculated and 9.84 for the uninoculated. The death rates were still more striking; among the inoculated the rate was 6.47 per cent., while for the uninoculated it was 12.8 per cent. Nowhere did they get such convincing evidence in favor of the practice of typhoid immunization as from the records of our own Army. During the past three years 60,000 men had completed the three inoculations, but twelve cases of typhoid fever had developed during this time and no death had occurred. The record of the camp at San Antonio, Texas, during the past summer was most instructive. The division of 12,800 men stationed here had all been inoculated and but one case of typhoid fever developed; that was in a Hospital Corps man who had not completed the three injections necessary for protection against the disease. During the same time there were 49 cases of typhoid fever, with 19 deaths, in the city of San Antonio. During the same period between three and four thousand men were in camp at Galveston, Texas, and no case of typhoid occurred among them, while the city of Galveston furnished 192 cases of the disease during the existence of the camp. The city and the camp had the same water, milk, and food supply. About three thousand men were scattered along the Mexican border, in small camps, many of them in localities where typhoid fever was present, yet only one man contracted the disease, and he recovered. It was inconceivable that with such conditions the practical abolition of typhoid fever could have been effected without the use of the immunizing inoculations. In regard to the paratyphoids it seemed that neither the degree nor the constancy of the group reactions would warrant them in believing that typhoid inoculations would be protective against the paratyphoid bacilli. In the Tropics it was likely that a fair proportion of the continued fevers were paratyphoids, and in such localities, inoculation might prove comparatively disappointing. Where the proportion of paratyphoid infections was found to be high the use of a mixed typhoid and paratyphoid vaccine might be indicated. The duration of the immunity conferred by inoculations was an important matter not yet decided. Firth placed the period at thirty months after the first immunization. Leishman thought that reinoculation should be given after two years. This was a point

still to be cleared up as was also the question as to whether, like smallpox, a second injection would confer practically permanent immunity. The sum of the opinion of men who had treated typhoid fever by means of the vaccines was favorable. They agreed that it shortened the period of fever and the total duration of the disease; that it reduced complications and relapses; and that the mortality was lessened, being in the cases thus far reported 4.9 per cent. In the cases reported by Meakin and Foster of Montreal a distinct crisis was noted following the second inoculation in 50 per cent. of their cases. These men gave the largest doses of vaccine, from one to two billion bacilli. It had apparently been directly life-saving in a few all but hopeless cases. All were agreed that in cases where it caused no improvement it had done no harm. The dosage employed in the earlier cases usually ran from ten to one hundred million, but with increasing confidence the dosage had been increasing until at present it was usually from one hundred to five hundred million. It was probably that those who had been reporting negative or discouraging results had been using too small doses and that with increasing dosage even better reports than had thus far been received would be obtained.

The Therapeutic Use of Vaccines in Typhoid Fever.—Dr. James G. Callison said that he had treated in all 35 cases of typhoid fever with vaccines. Since the last report he had made he had treated 11 cases with one death and no relapses. In the 35 cases there had been four deaths and one relapse, with an unusual absence of complications. The causes of death were femoral phlebitis and its sequelae, double pneumonia, meningococcus septicemia, and a ruptured spleen. Charts of six cases were shown as illustrative of the changes in temperature which were to be interpreted in the light of what was known as to the time of the production of antibodies following the inoculation of the vaccines. The charts showed that there was a marked change in the temperature at a time corresponding to the beginning and rapid production of the opsonins and agglutinins in healthy individuals. The contraindications to the use of the vaccines had not been worked out but it seemed certain that severe clinical manifestations did not forbid its use. In his article in the Medical Record, June 24, 1911, Dr. Callison had collected 323 cases of typhoid fever treated with vaccines which showed a mortality of 5.2 per cent.: certainly this compared favorably with the 16 per cent. reported by Bellevue and the Allied Hospitals. Dr. Callison had been using an initial dosage of five hundred million, repeating the injections at four-day intervals, and increasing the dose one hundred million at each subsequent injection. Any method of treatment that could show so low a percentage of deaths and relapses was worthy of further trial.

The Dietetic and General Management of Typhoid Fever in Children.—Dr. Charles Gilmore Kerley read his paper. He stated that the ill child required food of a definite nutritional value in assimilable form. A variety of food was required and the food selected should be made agreeable to the patient. These points covered both the science and the art of feeding the sick child. There was no ready-made diet in any illness in a child any more than there was one ready-made scheme for artificial feeding of infants with digestive derangements. He found it necessary at the onset of every illness to discontinue milk and solid foods because the child's capacity for food was lessened. He gave a laxative sufficient to produce a few watery evacuations. As a temporary food the child was given flavored gruels and perhaps one of the dried milk foods until the nature of the illness was determined. In typhoid fever the diagnosis was rarely made under a week and by following out this plan, when the diagnosis was made, they had the intestine free from distension with gas and undigested milk, and consequently a lower temperature and less toxemia. With the diagnosis of typhoid fever positive the diet schedule might include gruels, two ounces of cereal to a pint of water. To make these gruels palatable, broth, milk sugar, or sherry wine might be added. He allowed well-cooked rice, farina and cream of wheat, served with butter and cane or malt sugar, or with maple syrup. Milk foods were rarely given oftener than once a day and included matzoon, kumyss, *citeciss milch* of Finkelstein, and skimmed milk. The latter was always given mixed with a gruel. The whites of two, three, or four eggs were given daily with orange juice. Lemonade and weak tea with the addition of cane sugar was given between the regular feedings. Early in the convalescence scraped rare steak, custard, soft boiled eggs and junket were allowed. It was entirely wrong to assume that the diet they began with must be continued throughout the attack. Feedings were never given oftener than at three-hour intervals. Fat in considerable quantities was poorly digested by young typhoid fever patients; it might, however, be given in small quantities mixed with other foods. Proteids should not be given in considerable amount until they know something of the course of the disease. Dr. Kerley thought that the milk diet had been used too much in typhoid because it was easier for the physician, easier for the nurse and the family, easier for everyone but the patient. Mixed feeding had been neglected because physicians failed to realize that other foods might be taken care of more easily than milk and because of the fear that they would be criticised for departing from the established practice. It had been his observation that in the milk-fed cases the disease had been more severe and the illness had lasted longer, emaciation was greater and convalescence, consequently, more protracted. On the milk diet tympanites was the rule, while on a mixed diet it was the exception. Drugs had been of no service in Dr. Kerley's experience with typhoid except to produce an evacuation when there were not two in twenty-four hours and to control the evacuation when there were more than four in twenty-four hours. Most children could be kept comfortable with a temperature of 104° or a little more and under such conditions no attempt should be made to reduce it. If the temperature went higher than this he used the cool pack. The thorax and abdomen were wrapped in a towel at 95° F. and the towel was cooled by sprinkling with colder water. A cold pack applied to the head would usually relieve the restlessness, irritability, and sleeplessness. The advantages claimed for this method of management were a milder course, shorter duration, more prompt convalescence, and usually, absence of complications.

Dr. Charles Fife of Philadelphia said he had not given up entirely the use of milk in feeding children with typhoid fever, although he believed it could be used with damage if carried to a certain extent. One should study with care the digestive power of the patient. Milk was an important food element, and when skimmed it had a place in the treatment of these cases and should be used more than once a day.

Dr. Warren Coleman said that during the past few seasons he had been using a diet the main object of which was to supply the patient with an amount of food necessary to cover the amount of energy lost. During the years 1908, 1909, and 1910 there had been 875 cases and 137 deaths in Bellevue and the Allied Hospitals. During this same period there had been 102 cases on a high caloric diet, with 11 deaths, or 10.8 per cent. If these high caloric diet cases were subtracted from the total there would be left 773 cases with 126 deaths, or 16.3 per cent. One of the interesting points that Dr. Coleman brought out was that on the use of the high caloric diet there was a

subsidence of the diarrhea with which the patients entered the hospital; in those cases in which hemorrhage occurred, the loss of blood was very little; again, the convalescence was much shorter. He believed that high caloric feeding for typhoid fever patients was followed by the best results.

Dr. August Seibert said he had been connected with St. Francis Hospital for twenty-two years and he had not used milk in the treatment of typhoid fever during that period. Diarrhea, intestinal disturbances, toxemia, etc., were all increased when milk was given. The intestinal tract should be thoroughly cleansed every day.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-seventh Annual Meeting, Held at Nashville, October 17, 18, and 19, 1911.

The President, Dr. Robert H. Babcock of Chicago, in the Chair.

(Concluded from page 1151.)

The Importance of Early Diagnosis of Chronic Kidney Inflammation.—Dr. D. M. Hall of Memphis stated that the only way to diagnose these cases early was to examine the urine of every patient who had any of the usual beginning symptoms, such as persistent headache, indigestion, asthmatic attacks, etc., which did not yield promptly to treatment. He insisted on repeated examinations both qualitative and quantitative. It was astonishing how often the physician satisfied himself with one qualitative examination and how seldom a quantitative examination was thought of. A great many cases of chronic nephritis might be diagnosed months and perhaps years earlier if a thorough examination were made. He had no new treatment to propose. He believed the weapons ordinarily used, such as dieting, elimination, and resting the kidney, could be wielded with curative results in the early stages of some of these cases. One of the essential things was to remove the cause. In most cases we could not discover a definite cause. In these cases the best we could do was to remove all of those things which might be causes. As a causative factor in the production of chronic nephritis he thought that autointoxication of intestinal origin was not given sufficient prominence by most authors. Therefore, attention to the alimentary canal in these cases was one of the most necessary things. These people should diet themselves rigidly, never overeating or eating anything indigestible, and always keeping the intestinal canal free of indigestible matter by means of frequent purgatives. These purgatives, especially salines, not only cleaned out the bowel, but eliminated the toxic materials as well. Alcohol in all forms must be avoided. People should also be very careful to avoid exposure to cold and damp, and should lead regular lives and take moderate daily exercise. If cases were seen early and this treatment was followed rigidly for years, he thought that a large percentage of cases would live and enjoy health years longer, and some of these would ultimately be cured. The kidney lesion ceasing to be progressive, the healthy portion of the kidney was able to do all the work, and the diseased part simply remained as a scar.

Protracted Intervals Between the Births of Twins.—Dr. W. W. Vinnedge of La Fayette, Ind., reported two cases. In one case there was an interval of seven weeks between the births of the children. After a natural labor of about six hours the first child was born, a male, weighing three pounds. Seven weeks later the woman was delivered of a second living child, a female, weighing nine pounds, much more vigorous than her mate. In the second case, after a natural labor of a few hours, a living male child was delivered, eighteen inches in length, and weighing seven pounds. Two days later labor pains returned, and forty-nine and one-half hours after the first birth the second took place. The second child, a female, was alive, and measured nineteen inches in length, and weighed seven and a half pounds.

Cerebritis with Effusion.—Dr. Albert E. Sterne of Indianapolis expressed the opinion that cerebritis exudativa was a real pathological entity caused by toxemia; that it occurred in diffuse non-suppurative forms, and that it presented the typical clinical syndrome characterized by extreme physical debility, with peculiarly irregular heart action and rapid breathing, practically without fever, associated with profound psychic inertia and confusion, dissociation of the cortical centers, disorientation and with marked effect upon memory and memory images, but that under careful, proper management the prognosis was very much better than the general aspect of the case often warranted one in believing.

Enteroptosis.—Dr. Alexander C. Wiener of Chicago stated that the therapy of enteroptosis was based upon its etiology. Therapy was composed of three factors: 1. Biological treatment of the underlying causes of the deformities of the thorax and spine. This was done by injections of tuberculin. The other routine hygienic measures adopted and proved by the medical profession were religiously carried out. 2. Mechanical treatment. All deformities of the spine were corrected. The narrow upper aperture of the thorax which found its clinical expression in deep hollows above and below the clavicle was widened out with rubber elastics fastened to the body by means of adhesive plaster. A large percentage of enteroptotic women suffered from chronic uterine catarrh, with tenacious leucorrhea. He had noticed that a veritable flood of a watery discharge occurred in the wake of an injection of tuberculin, and that in time the leucorrhea ceased without any local treatment. Resection of the cartilaginous part of the first and second ribs, as suggested by Freund, to make room for the expansion of the apex of the lung to do away with this favorite nesting place of the tubercle bacilli was not indicated in individuals under fifty-five years of age, for the reason that rubber extension did the same work with much more safety and permanency. The deformities of the thorax leading to enteroptosis concerned the family physician. Enteroptotic patients represented a biological and mechanical unit. Specialistic treatment of the various symptoms must therefore be a failure, even though there was not one branch which was not represented in the pathology of enteroptosis. Permanent success could only be had by a skillful combination of biological and mechanical and hygienic treatment.

The Treatment of Movable Kidney.—Dr. William Billington of Birmingham, England, said that nephroptosis and the problems associated with it had engaged his close attention for upward of six years, and during that time many hundreds of patients had passed under his observation. Upon 345 of these he had operated for mobility of one or both kidneys, and had performed more than 500 fixation operations. In many instances he had tried the effect of mechanical support prior to nephropexy. Amelioration of symptoms, when the kidney was efficiently supported, was a strong argument in favor of nephropexy, should the belt fail to give complete relief or be too irksome for permanent employment. Congenital cases of general visceroptosis were unsuitable for operation. Open operation alone insured permanent and complete cure of renal mobility. Nephropexy could now be carried out with safety, precision, and permanent success, and there were no surgical reasons why it should not be done in suitable cases. The operation was analogous in all respects to the radical cure of hernia, the same general rules applying to each procedure. Given a patient whose symptoms demanded treatment for mobile kidney, the choice between belts and trusses or operation would be determined by the type of displacement, the nature of the symptoms, and the age, occupation, and general condition of the patient. The

greater difficulty experienced in controlling a movable kidney than a hernia by external means (mechanical) made the argument in favor of operation stronger in the former case than in the latter, if considered purely on surgical grounds. The kidney could be accurately replaced in its normal position through the lumbar incision. With regard to his surgical results he had to report three deaths from among 345 patients, a mortality of less than 1 per cent. In 166 of the 345 patients one kidney only was operated upon, while in 179 both kidneys were fixed at the same sitting. The total number of nephropexies was 524. Of the single operation, 130 were upon the right kidney, and 36 upon the left. Thirty-three of the patients were males and 312 females. Of the latter 148 were married and 164 single. His youngest patient was a boy of 14 and his oldest a lady of seventy who suffered from agonizing pains in the right side on the least exertion, the cause of the pain being torsion of the right renal pedicle. Most of his patients were between thirty-five and forty-five, but his experience had been that no period of life was altogether immune from the more serious troubles associated with nephroptosis. He emphasized the fact that the surgical treatment of nephroptosis was now attended with no special difficulties or dangers and could be carried out as safely and successfully as the cure of hernia.

Nephroptosis: Its Effect upon the Nervous System, with Special Reference to Insanity.—Dr. C. W. Suckling of Birmingham, England, said that his paper was based upon twenty years' work on the subject and upon the observation of over four hundred nephropexies performed upon 303 of his private patients. He was astounded at the frequency with which he found dropped kidney, about 40 per cent. among the women suffering with it. He could not help associating the dropped condition of the kidneys with the nervous trouble of which the people complained. He tried various kidney belts, but found they did not keep the kidneys up. He had now had at least 300 cases operated upon. He had seen the kidneys and had observed the changes that took place with age. He had seen the normal kidney, the suprarenal capsules occasionally, but very rarely, descending with the kidney, the colon dragged out with the movable kidney, also the duodenum. He had also seen ptosis of the spleen with nephroptosis. He had visited these patients after nephropexy and had observed the wonderful change in their appearance after a few days. Forty-three of his cases of insanity treated by nephropexy were cured, and five were failures, and two were so owing to bad nephropexy. The technique of the operation was described in detail.

The Etiology of Visceroptosis with Special Reference to the Pregnancy Factor.—Dr. Carey Culbertson of Chicago said that in his paper he emphasized the importance of pregnancy as the factor underlying the visceral prolapsus where the abdominal wall had been permanently insufficient as a supporting structure. The structure of this wall from a physiological point of view was explained, and the changes occurring in it subsequent to the distention of gestation were detailed. Stress was laid on the post-partum changes analogous to involution in the uterus. Throughout it was shown that the muscular and fascial layers were the important elements and that these were more or less permanently relaxed and separated in multiparæ, especially where such women passed through pregnancy and labor at too frequent intervals. The question of intraabdominal pressure was barely touched upon. The pelvic floor was almost equally to blame, as relaxations here were the rule in multiparæ. Herniation here relieved pressure against the abdominal wall, but permitted both abdominal and pelvic organs to sag. Oppositely, relaxation of the anterior wall would permit even an impaired floor to sustain its pelvic organs in position, although the abdominal ones sagged as before. The crucial time for either support was when the woman got up after childbed, the visceral mass being then suddenly projected downward until it found support. Then began the pull on the peritoneal attachments and ligamentary structures which stretched just as far as supporting structures would sag away. It was next shown that the degree of relaxation was increased by repeated pregnancy and in gestation associated with other predisposing factors. Hard labor during pregnancy aggravated the distention already existing as did improper dress, although the latter was seen at its worst at the time the patient again assumed the upright position in the puerperium. The influence of adiposity and gastrointestinal complications, particularly constipation, was emphasized, as was that of coincidental abdominopelvic tumors and ascites. The respiratory disturbances, due to chronic bronchitis and asthma and tuberculosis, where coughing was present, formed an unfortunate complication. In the emaciation and general weakness characterizing the wasting diseases pregnancy found an association that brought the abdominal wall to the limit of its capacity as a supporting structure. Here child-bearing was merely an ultimate factor in a series of conditions, normal and abnormal, any one of which might be etiologically sufficient.

The Mechanical, Nonsurgical, and Medicinal Treatment of Splanchnoptosis.—Dr. A. Ernest Gallant of New York stated that in Glenard's disease there was a synchronous descent of all the viscera, abdominal and thoracic, as well as pelvic, although oftentimes not to a palpable, measurable, or demonstrable degree. In reiterating the principles of treatment laid down in 1901 he advocated, first, replacement and relief by the recumbent, and inclined postures, and manipulation. Second, retention and support by a special corset put on in the semiopisthotonous posture. Third, reparation by local and surgical measures applied to the pelvic organs, the eyes, nose, and throat, etc. Fourth, recuperation by rest cure, massage, exercise, and drugs. Fifth, prevention by use of this corset from the first at puberty, during pregnancy, the puerperium, after celiotomy and ventral hernia. Of the 510 cases under review there were prolapse of the kidney only in 216 cases; kidney and dilated stomach, 130 cases; kidney and stomach ptosis, 55 cases; dilated stomach only, 99 cases. The ages ranged from 18 to 68 years. There were 199 nulliparæ and 311 multiparæ. Of the notable conditions relieved there were 16 kidney relapses after nephropexy; three ventral hernias; 3 separation of the recti; 3 painful ventral fixations; 27 movable kidney jaundice; 4 movable liver; 21 traumatic movable kidneys; 1 fracture of the symphysis pubis during pregnancy; 19 postpartum; and several after wearing belts, binders, plasters, pads, etc.

Principles Underlying the Treatment of Visceroptosis.—Dr. William MacI. Thompson of Chicago pointed out that the principles of pelvic repair were (1) restoration of function; (2) avoidance of scar tissue; (3) accurate approximation of muscles and ligaments; (4) the end results should restore the uterus to its normal position with the intestines on its posterior surface. The rectum should be replaced, and one should separate the too high attachment of vagina and rectum. After the menopause a wider operative field was possible. The satisfactory end results of an operation depended upon a successful initial study of the causation of the individual ptosis and its relation to the neurasthenic. Neither the anatomical standard nor the *x*-ray picture was to serve as a criterion for the operation. There was a similarity between a joint and the muscles moving the joint and the skin over it to the muscles of the trunk and the viscera. If the sympathetic nerves were but visceral ends of the spinal cord, then the muscles and fascia of the abdomen were affected in disease of its contents as were the muscles and ligaments of the joints.

Ovarian and Uterine Tumors Complicating Pregnancy.—Dr. Channing W. Barrett of Chicago presented the following conclusions, which were based on sixty-two cases collected from the literature, four of which were operated on by himself: 1. That, while fibroids and ovarian tumors produced a certain percentage of sterility, pregnancy frequently took place. 2. That with the onset of pregnancy we had two patients to contend with, with a pathological condition, rather than one patient with two pathological conditions, each with claims upon their constitutional rights to life, liberty, and the pursuit of happiness. 3. That the growth of the ovum produced such changes in position and structure of ovarian tumors as to make it a menace to the child and mother in many instances, that extra hazards occurred during labor, and to the mother during the puerperium. 4. That induced abortion, with its 100 per cent. of child mortality, was unjustifiable in that it offered no corresponding improvement in the condition of the mother. 5. The early removal of the tumor as soon as possible, when discovered, gave rise to a high percentage of good results in both mother and child, and removed the hazards during labor and the puerperium. 6. That tapping or puncture of a tumor showed too large a mortality to make it a justifiable treatment except as a preliminary expedient in rare cases. 7. A patient in labor with a complicating tumor should be placed in the most favorable surroundings possible, and labor allowed to terminate, if unobstructed. This should be facilitated by the use of forceps, if labor was at all difficult, and the tumor located well above the pelvis. 8. Tumors interfering with labor pains, or located so as to obstruct, or in a condition of torsion, hemorrhage, or suppuration, so as to offer immediate abdominal complications, might be operated on immediately, with cesarean section, or if the outlet was inadequate, as shown by previous easy labors or by liberal measurements and the soft parts well dilated, the labor might be allowed to continue. 9. Vaginal cesarean section might be performed in some instances of inertia. 10. Vaginal punctures of the obstructing tumor might rarely be permissible, but should be followed by vaginal or abdominal removal before or after labor, as punctures, with nonremoval, showed a high mortality. 11. Surgical dealing with fibroids during pregnancy showed such a percentage of recoveries from myomectomy as to warrant its use in cases presenting symptoms. 12. Cases of fibroid tumors, complicating pregnancy, but presenting no untoward symptoms, should be treated expectantly as a myomectomy, might end in a hysterectomy, or result in abortion. 13. Hysterectomy or abortion, with its necessary 100 per cent. mortality to the child, was unwarranted in cases without symptoms. 14. In all operative procedures, during pregnancy, great care should be taken in manipulating the uterus.

Treatment of General Peritonitis, Based Upon Personal Experience.—Dr. Daniel N. Eisendrath of Chicago reported thirty-two cases in seven years with three deaths; twenty-two in the past three years, with two deaths. The causes of death were acute dilatation of the stomach, general sepsis and uremia in one case, phlegmon of abdominal wall in another, and initial general sepsis in the third. One additional case that died of pneumonia one month after operation had been well and up for nearly two weeks. There were ten cases operated on the first day, with no deaths; twelve on the second day, with one death; seven on the third day, with one death. In the majority of cases there were no previous attacks due to the organ involved. The most valuable symptoms were increase in pulse rate, spreading rigidity and tenderness, persistent nausea and vomiting; uncertain signs of the presence of fluid and absence of liver dullness. The distention came on too late, as a rule, to be of much value. Fever also was not reliable. The white blood count was increased in all cases, except the most severe ones. Urinary findings were of importance in regard to prognosis. The peritoneal changes were typical in all cases. In twenty appendicitis cases there was a visible perforation. In eight there was none. The latter class of cases were just beginning to be recognized. Peritonitis was general so far as he could see. After describing the technique of the operation, Dr. Eisendrath drew the following conclusions: 1. We could greatly reduce the mortality of peritonitis if we were able to get the cases early before the septic intoxication was too far advanced. 2. Our first consideration must be to seal up the source of infection and thus check the further inflow of infectious material into the peritoneal cavity. 3. A minimum amount of interference and rapid operating, followed by proper drainage, were the keynotes to success. 4. The natural resistance powers of the peritoneum could be relied upon for much aid if we did not burden them with too much to be taken care of. 5. The drainage could be best secured through a suprapubic incision made after closing up the source of infection. 6. Constant vigilance after the operation was necessary to steer through the rough waters of possible postoperative complications. The principal ones were dilatation of the stomach, abscesses between the coils, nephritis, and ileus. 7. It was unnecessary to get rid of all pus during the operation. By drainage at the proper point, elevation of the head of the bed, we reestablished normal pressure relations and favored drainage.

The following papers were also read: "Comparative Teaching Value of Photographs and Drawings in the Technique of Hernia," by Dr. Charles T. Souther, Cincinnati; "Treatment of Hemorrhage in Pulmonary Tuberculosis," by Dr. Charles L. Minor, Asheville, N. C.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Louis Frank, Louisville, Ky.; *First Vice-President*, Dr. Albert E. Sterne, Indianapolis, Ind.; *Second Vice-President*, Dr. William Werner, Joliet, Ill.; *Secretary*, Dr. Henry E. Tuley, Louisville, Ky.; *Treasurer*, Dr. Samuel C. Stanton, Chicago. Chicago, Ill., was selected as the place for holding the next annual meeting in October, 1912.

Simultaneous Bilateral Tubal Pregnancies.—Vautrin thinks that conception with the ovum in the tube instead of the uterus is quite a common occurrence, and that in most cases the ovum passes on into the uterus; when it does not do so it is either absorbed after death due to lack of proper circulation and nutrition, or causes a tubal abortion, which before three months is characterized by a few abdominal pains and a moderate intermenstrual flow. The ovum remains permanently fixed in the tube by an unusual combination of circumstances. The cause we do not know, since inflammation and alterations of the tubal walls do not seem to play an important part in causation. Pregnancy may develop in both tubes at about the same time, and here we are not justified in sterilizing the patient because she is so unfortunate as to have a first abnormal conception. After four months the tubal pregnancy exposes to greater dangers, to hematocele, which may become infected. A non-infected hematocele may be allowed to remain, in hope of absorption. An infected one demands posterior colpotomy and drainage. Infection of the tube may cause salpingo-oophoritis, displacements and sclerosis. After the removal of the ovum by tubal abortion the envelopes may become encysted in the tube by closure of its extremities and become a hard tumor. When the ovum is retained laparotomy may be necessary and then hysterectomy is justifiable. But when there is a double infected hematocele one need not necessarily do a laparotomy, but should give the patient the benefit of a colpotomy, with a possible later normal pregnancy.—*La Gynécologie.*

Medicolegal Notes.

Injunction Against Unlicensed Asylums.—Where a statute prohibiting the establishment of asylums or retreats for the care of the insane or persons of unsound mind for compensation and hire, without first obtaining a license from the State Board of Charities, is continuously violated by receiving, keeping, maintaining, and caring for persons of the classes named in an unlicensed asylum or retreat, thereby causing fear, consternation, and disturbance of the peace in the community, an injunction may properly be granted to restrain such unlawful acts, and the court is not restricted to a prohibition of disturbance of the peace. State v. Lindsay, Kansas Supreme Court, 116 Pac. 207.

In a proceeding for contempt in violating such an injunction, the evidence of a witness that screams from the cottages which she described made her nervous and disturbed her was admissible, a party being competent to testify to his own mental condition.—State v. Lindsay, 116 Pac. 209.

Corporation Not Liable for Its Surgeon's Malpractice.—A passenger who had sustained injuries in alighting from a street railway car and who had been treated by the company's surgeon sued the company for damages, averring that the surgeon's diagnosis was improper and his advice and treatment incorrect, resulting in his being made a cripple. In affirming a judgment for the defendant it was held that a contract to perform medical or surgical services by a corporation organized for the purpose of constructing, owning, and operating a street railway is not only ultra vires, but is in direct conflict with the laws of the State of Ohio regulating the practice of medicine and surgery, and is, therefore, void. Such a corporation cannot be directly liable for damages for malpractice of medicine or surgery. It may make a valid contract to furnish or pay for medical aid and attention to one injured upon its cars or tracks. A petition averring the making of such a contract, the employment by the company of a surgeon in pursuance of the contract, and malpractice on the part of such surgeon resulting in damages to the plaintiff, but which does not aver that the person so employed was not regularly admitted to practice medicine and surgery in the State, or that he was incompetent and the company knew, or had means of knowing, of his incompetency, or that it was otherwise guilty of negligence or carelessness in selecting him to perform such service, does not state a cause of action.—Youngstown Park and Falls St. Ry. Co. v. Kessler, Ohio Supreme Court, 95 N. E. 509.

Charging Fees from Patients Does Not Change Public Character of Municipality's Hospital.—A petition in a suit for personal damages alleged that the plaintiff was injured in consequence of being struck by an ambulance which was negligently driven against him while he was in the exercise of due care, and that the ambulance belonged to and was being operated for a public hospital of a municipal corporation which was under the control of the municipality through its board of officers. It averred that in the maintenance of the hospital the municipality "charged fees for patients entering therein." It was held that this last averment was not tantamount to an allegation that the municipality maintained and operated the hospital for pecuniary gain and private profit, and the petition was demurrable. For the hospital to charge fees from some of its patients would not be inconsistent with its character as a public institution and one operated by the municipal corporation in the performance of its governmental duties.—Watson v. City of Atlanta, Georgia Supreme Court, 71 S. E. 664.

Waiver of Physician's Privilege Not to Testify.—In an action for personal injuries the plaintiff's counsel criticized a physician who was a witness for the defendant and had performed operations on the plaintiff before the injury for failing to avail himself of his privilege and for testifying over the plaintiff's objection as to the effect of these operations. The court charged that the physician had done nothing for which he should be criticized, and that there were many extenuating circumstances why the physician had stated the condition of things which he had discovered, so that it was well to use charity in viewing the acts of all the parties connected with the case. The defendant's counsel excepted to these remarks on the ground that, as the witness had the absolute right to give the fact and truth and the defendant had the absolute right to elicit these, the witness needed no charity, and his testimony was not open to criticism. It was held that the trial judge's remarks were not open to this exception in the Court of Appeals.—Cross v. City of Syracuse, New York Court of Appeals, 94 N. E. 184.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended December 2, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	354	158
Diphtheria	224	24
Measles	253	1
Scarlet Fever	163	4
Smallpox	1	1
Varicella	188	—
Typhoid Fever	81	13
Whooping Cough	36	3
Cerebrospinal Meningitis	1	1
Malarial Fever	—	—
Totals	1,301	205

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended December 1, 1911:

CHOLERA

Places.	Date	Cases.	Deaths.
India: Calcutta	Oct. 1-7	..	14
Madras	Oct. 15-21	15	10
Indo-China: Saigon	Oct. 2-8	2	1
Italy	Oct. 22-28	..	*..
Provinces—Catania	Oct. 22-28	5	2
Genoa	Oct. 22-28	3	2
Naples	Oct. 22-28	4	2
Palermo	Oct. 22-28	5	1
Palermo	Oct. 22-28	5	..
Rome	Oct. 22-28	6	..
15 other provinces	Oct. 22-28	168	81
Italy		..	†.
Provinces—Catania	Oct. 29-Nov. 4	16	13
Genoa	Oct. 29-Nov. 4	2	1
Naples	Oct. 29-Nov. 4	1	..
Palermo	Oct. 29-Nov. 4	1	..
Palermo	Oct. 29-Nov. 4	3	.
Rome	Oct. 29-Nov. 4	3	..
11 other provinces	Oct. 29-Nov. 4	127	77
Java: Batavia	Oct. 8-14	11	4
Russia: Astrachan, government	Oct. 1-14	11	‡4
Bessarabia, government	Oct. 1-14	3	.
Don, territory	Oct. 1-14	2	1
Novoryssisk	Oct. 1-14	2	1
Odessa	Oct. 1-14	1	..
Rostov on Don	Oct. 1-14	3	.
Saratov, government	Oct. 1-14	13	7
Straits Settlements: Penang	Oct. 8-21	2	1
Singapore	Oct. 1-7	30	23
Tunis Regency	Sept. 27-Oct. 13	..	**
Bizerta	Sept. 27-Oct. 13	83	47
Tunis	Sept. 27-Oct. 13	6	3
Turkey in Asia: Beirut	Oct. 18	.	2
Haifa	Oct. 23-29	4	4
Trebizond	Oct. 28-Nov. 6	4	1

*Cases, 196; deaths, 88.
†Total Oct. 29-Nov. 4: Cases, 153; deaths, 91.
‡Total Oct. 1-14: Cases, 35; deaths, 13.
**Total: Cases, 1,207; deaths, 847.

YELLOW FEVER

Ecuador: Bucay	Oct. 16-31	2	
Chobo	Oct. 16-31	1	
Guayaquil	Oct. 16-31	8	4
Milagro	Oct. 16-31	3	.
Mexico: Merida	Nov. 5-11	2	.

PLAGUE

Chile: Iquique	Oct. 8-14	1	.
Ecuador: Guayaquil	Oct. 16-31	51	18
Great Britain: Suffolk	Oct. 10	1	*
India: Bombay	Oct. 8-28	16	16
Calcutta	Oct. 1-7	..	4
Karachi	Oct. 15-21	2	2
Indo-China: Saigon	Oct. 2-8	1	..
Java: Pasoeroean Residency	Oct 8-14	19	7
Paraguay: Asuncion	Aug. 1-Sept. 2	23	†14
Straits Settlements: Singapore	Oct. 1-7	..	1

SMALLPOX

*In Admiralty Barracks, parish of Shotley, Samford rural district.
†Including cases previously reported.

Arabia: Aden	Oct. 3-9	1	..
Australia: Sydney	Sept. 1-25	1	*1
Canada: Ottawa	Nov. 5-11	4	..
Ceylon: Colombo	Oct. 1-7	4	.
China: Hongkong	Oct. 8-14	3	2
Chile: Iquique	Oct. 1-15	1	1
France: Paris	Oct. 23-29	5	1
Gibraltar	Oct. 30-Nov. 5	1	
India: Bombay	Oct. 2-28	17	3
Madras	Oct. 15-21	9	6
Italy: Naples	Oct. 29-Nov. 4	9	6
Palermo	Oct. 22-28	276	96
Java: Batavia	Oct. 8-14	3	1
Malta	Oct. 29-Nov. 4	21	†15
Mexico: Chihuahua	Oct. 19-Nov. 17	6	2
Juarez	Nov. 12-18	2	..
San Luis Potosi	Oct. 15-28	2	3
Russia: St. Petersburg	Oct. 15-21	2	2
Warsaw	Aug. 27-Sept. 30	138	61
Spain: Madrid	Oct. 1-31	..	3

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Original Articles.

THE PUBLIC AND THE MEDICAL PROFESSION.*

BY JAMES EWING, A.M., M.D.,

NEW YORK.

PROFESSOR OF PATHOLOGY, CORNELL UNIVERSITY MEDICAL COLLEGE.

TO-NIGHT the New York Academy of Medicine enters formally upon the sixty-fourth year of its activities. It was in 1847 that one hundred and thirty-two New York doctors, led by John Stearns, A. H. Stevens, Valentine Mott, and Isaac Wood, resolved to incorporate the higher interests of the medical profession in the New York Academy of Medicine. The objects in mind at that time were mainly three: (1) The unification of the regular practitioners of medicine, (2) The elevation of the standard of medical education, and (3) The promotion of the interests of medical science.

The strong ideals of those early days far outshone the modesty of their organization, for, as Dr. William Detmold recalled many years later, the early meetings of the Academy were held in a dingy room over a coal yard in Wooster street; the social ambitions of the new institution were most meager; not even a beginning of a library was attempted; and the idea of a permanent building, which was sorely needed for the various uses of the institution, seemed and proved to be a far distant dream.

The foundations of a permanent building fund were laid in 1853 when the surplus contributions of the doctors for the entertainment of the American Medical Association were set apart for that purpose. Yet it was only after an interval of twenty-two years and through oft-repeated efforts that in 1875 the Academy was able to purchase a home at 12 West Thirty-first street. A notable ceremony marked the occupation of this first permanent building of the Academy, and the addresses on that occasion revealed what strenuous efforts and almost religious enthusiasm had been called forth in the endeavor to provide a great community with a home for its Academy of Medicine. The fervent pioneer spirit of the founders of the Academy is well displayed in the words of John Stearns, who in an early address declared that if he could be assured of its uninterrupted and enduring prosperity in disseminating health and happiness and the sustaining principle of life he would die in peace with effusions of gratitude and praise to Almighty God for his permanent blessings upon their labors.

It does not appear that the founders of the Academy received or looked for any material support from the public. Both the fruitless and the successful appeals that in 1875 had accumulated $14,000 had been made exclusively by the three hundred members of the Academy itself. Likewise in the further material growth which led to the purchase of the present site and has brought us to-day to the necessity of extensive enlargements of the Academy building, the appeal has been, with a few noteworthy exceptions, to the medical profession itself. A glance at our sister communities shows that the history of the New York Academy of Medicine is being or has been reproduced in many other American cities. Everywhere the demands of the higher ideals of medicine lead to the creation of such institutions, and everywhere the appeal is met chiefly or wholly by the medical profession.

Throughout the long period of our material growth the intellectual activities of this Academy have more than maintained an equal pace.

The 132 original members have been succeeded by the present membership of 1,280. While it is becoming less and less a mark of distinction to be a Fellow of the Academy, it is more and more a notable delinquency for an eligible physician not to become a member. The single section of the early days has expanded into a score of special bodies, each pursuing effectively its special field in regular conferences. The general meetings of the Academy draw the most distinguished representatives in America of every branch of medical art. The interests of every branch of medical science are warmly supported by the authorities of the Academy, and here have centered the activities of several independent medical organizations, some of which, as the New York Pathological Society and the County Medical Society, are more venerable than the Academy itself, and our hospitality is sought by several bodies representing allied sciences and arts. Scores of distinguished visitors from abroad remember and many have recorded their welcome here. The records of the Academy show that from the earliest days the best work and the best thought of the leaders in New York medicine have been presented at its meetings, and those who are familiar with the submerged history of the Academy know that its life has always depended upon the unfaltering devotion of a long list of famous physicians who have planned and worked for its interests.

Yet the scope of the Academy is not confined to the current activities of its various sections and allied societies. The library of the Academy has been the special pride of many of the foresighted guardians of the past, and is to-day the second most complete collection of medical literature in America. It is freely accessible not only to the entire medical profession but to the general public as well, and it is probably the most actively used collection of books in the world. It would be difficult to estimate the significance of the influence thus exerted, through the dissemination of knowledge, not only in all branches of the medical profession, but also in veterinary science, dentistry, biology and chemistry, and in the steadily enlarging scope of the

*Anniversary address of the New York Academy of Medicine, delivered November 16, 1911.

layman's acquaintance with medicine. May we not pause and compare with pride the relative significance of this priceless collection of books stored in dark corners with that of our magnificent and aristocratic neighbor the New York Public Library?

The public services of the Academy extend, also, to the consideration and support of the interests of hygiene and sanitation and many peculiar problems of sociology and public morals, which can be solved only through intimate acquaintance with their medical aspects.

Truly Medicine is still the Mother of the Sciences, and the Academy of Medicine in New York has established itself as the home and guiding hand of all the influences which, according to worthy tradition and critical experience, further the realization of the ideals of the medical profession. It would be a worthy task, in which one might engage with enthusiasm, to fully sketch the history and present position of the New York Academy of Medicine, for this we believe is a fair reflection of the best type of medical enterprise. The profession is proud of the Academy and asks that the leading motives of medicine be judged by the standards established here.

But I have only hinted at some of the conspicuous achievements of the Academy in order to introduce the subject of this discourse, which is, not what estimate we place upon ourselves, but what conception the public holds of modern medicine.

Our distinguished President, in honoring me with the task of preparing this anniversary address, has doubtless acted in accordance with the growing tendency to dispense with an orator and an oration and to call on these occasions for a specific treatment of some of the many problems that confront us. Being thus relieved of the necessity of attempting a literary contribution I have ventured to think that the present somewhat delicate topic might well engage the attention of this audience. For there is no denying the fact that the public holds quite a different conception of medicine from that of the physician, that there is a growing distrust of medical practice and an increasing dissatisfaction with its results, that disclosures of grave defects in the standards of medical education, which we freely admit, have mystified the public and raised a serious suspicion regarding the general competency of practitioners, that increasing specialization and the increasing cost of medical services are misinterpreted, and, above all, that the striking achievements of the mechanical arts, the increase in wealth and luxurious living, have rendered more conspicuous than ever before the uncertain tenure of human life and the incompetency of modern medicine to control the great majority of diseases. In the presence of these obvious conditions, which every order of intelligence can appreciate, there is perhaps little wonder that the public passes with perfunctory notice the brilliant conquests of preventive medicine, ignores the rapid advances in the general knowledge of biology, physiology, and pathology, and permits an event like the discovery of *Spirochæta pallida*, an agent that has had a very profound influence on human history, to pass without even the faintest sign of public attention.

It is not intended to suggest that all educated laymen are unfamiliar with the true progress and achievements of modern medicine, but it is nevertheless true that prevailing public sentiment is out of touch and out of sympathy with us. This is seen in the crude and halting manner in which medical topics are handled by distinguished writers, clergymen, lawyers, statesmen, and public officials. It appears in the garbled references with which the most inspired of the Press condescend to honor us and misinform their readers. It shows in the liberal public support of all manner of medical cults, in the wide extension of the Christian Science movement, and in the wavering front of legislature which no longer stands as a firm defense of the public health against the depredations of irregular and incompetent practitioners of medicine. Even the trustees of a great university yield to the allurements of a questionable interest, backed by a paltry sum, which seeks to encroach upon a most delicate and difficult medical specialty. Quite significant it appears also that the stage lends itself to our disapproval, by burlesquing the discovery of a most notable and beneficent addition to modern therapeutics, and garnishing the entertainment with catchy reference to the dilemma which every doctor faces when he charges a fee for saving human life. Truly the wide extent of this public distrust must be acknowledged, the grounds for it should be carefully analyzed, and we must soberly ask the question, Is the medical profession doing its full duty to the public? James Russell Wallace once said, in effect, that an institution once established may come to be the chief obstacle in the way of the satisfaction of the need for which it was established. Wallace made this criticism of the Church. Does it apply to medicine? Have we stood too confidently on the record of progress of the last sixty years, for modern medicine is only about sixty years old, and failed to realize that even greater achievements were within our reach; have we pursued science too much for science' sake and too little for its influence on human life; has the old, almost sacramental and heroic, character of medical service fallen before the advance of commercialism; is the Hippocratic oath still the standard of medical ethics; is medical science, as the chief influence which makes for the subordination of physical evil, acquitting itself well in this day and generation, or are other sciences and professions outstripping us and do we deserve the disaffection and diffidence with which, on the whole, public sentiment regards us?

I can only offer some general considerations that bear upon these broad topics, and in doing so it is frankly acknowledged that I appear as an advocate in defense of medicine, and even with specific charges to prefer against the public, and I think this course may be justified on the ground that good may come from a frank statement of what the public owes to the medical profession.

In the last analysis the public disaffection with medicine rests upon an inherent defect of the human mind which opposes correct thinking along medical lines. When one reflects that even the leaders of medical thought for more than a thousand years passively bore the yoke of Galen's crude conceptions, of the pneuma, and the four cardinal principles of the body, blood, mucus, yellow and black bile, conceptions that correspond to nothing of importance in physiology, and that these conceptions held sway at the height of the development of Greek and Roman literature, law, and philosophy, it would seem that the human mind is constitutionally unfitted for the grasp of biological principles. In this quality the public intelligence of to-day has advanced but little over the standard

of the ancients. Whether it be from mental deficiency, or from a deeply rooted remnant of superstition so rife in all common people, or from a possible narrowing influence of a portion of the Church, or be it the educational system of the last centuries with its schooling in rigid mathematics and speculations in philosophy, whatever the cause, the modern mind is unfitted to grasp the idea of the marvelous delicacy and infinite variations of biological processes, and, therefore, it does not understand medicine.

Consequently, throughout its entire history, medical science has occupied an isolated position apart from the better understood and more cordially approved pursuits of mankind. It was not alone in punishment for his fatal results that the medieval surgeon had to leave town after each operation and lead the life of a nomad. It was a truthful expression of the public doubt of the honesty of the calling of the surgeon and a superstitious fear that the successful physician worked by supernatural methods. Naturally the protection of the Church was a ready resort of the physician, and medicine and ecclesiasticism long worked in a certain harmony, medicine always shielded by the cloak of the priest. This unnatural union, enforced by public sentiment, led to the centuries of reliance upon the healing power of the saints and their relics, a situation distinctly fitting the public taste, but it led to the suppression of rational thinking and experiment, things which did not suit the public taste. Accordingly Friedrich Muller says that "The darkest periods of decay in German medicine were those in which philosophical speculation and theological mysticism obtained a preponderating influence over medical problems." (Royal Com. on Univ. Education, June 30, 1911.) As degenerative phases of this movement we have the long history of sorcery, necromancy, astrology, and alchemy, all of which flourished in response to the demand of an uninformed public sentiment. The Church has been held responsible for much of the suppression of medieval medicine, but from this point of view it might appear that the public and not the Church was essentially at fault. The dissection of the human body, needless to say, was distasteful to public sentiment and the foundations of human anatomy had to be laid while the public were protesting. The antivivisection movement throughout its long history falls in the same category of public movements founded on misconceptions of medicine. The conflict between science and religion was another expression of the same tendency. I believe that careful historical research would reveal many familiar facts of history which could be cited and interpreted to show that the public has never understood its contemporary medicine.

Would it not, therefore, be good policy if the more enlightened public of to-day should analyze the grounds of its disaffection and make sure that history is not repeating itself and that persistent traces of the old prejudice do not lie at the bottom of the current distrust of medical institutions? Only a few months ago thousands of excited people gathered around the relics of a departed saint in the eager hope of receiving some of their supposed healing virtue. There are many sides to the significance of the Christian Science movement, as William James has shown, but so far as it is an intelligible doctrine, and not mysticism, it rests chiefly on ignorance and distrust of medical science. We must confess that the public patronage of the numerous medical cults is logically due to the failure of medicine to deal successfully with a host of minor ailments. Physicians can well afford to yield to osteopaths and hypnotists the immediate concern with a long list of self-limiting functional disorders, but the public cannot afford thus to intrust to any but physicians the early stages of serious disease. Here the public makes the further blunder of ranking with serious interests of medicine that host of abnormal sensations, some of them painful, which fall to the lot of the overfed and the indolent.

The most familiar sign of the public misconception of medicine is displayed in the efforts of the daily press to furnish information on medical topics. With rare exceptions these efforts consist of sensationalism, personalities, wonder-tales, absurdities, and a general display of the haste and incompetence of the writer. Every medical article written for the public press should first be submitted to a competent medical expert for revision. More pernicious still is the influence of a score of semi-medical journals which cater to the taste for misinformation and absorb a large portion of the $50,000,000 paid annually in this country in the advertisement of quack medicines.

The public has heard that medicine is highly specialized, but has not yet learned that specialization does not immediately transform the average general practitioner into a highly competent expert in a narrower field. The clever lawyer still takes pride in demonstrating that the experienced manager of an insane asylum may not be an expert in psychiatry. The courts accept practically any holder of a medical degree as a trustworthy authority in any department of medicine with which he chooses to claim acquaintance. It is very rare to find even an educated layman who understands that the medical sciences stand somewhat apart from practice and that they comprise a numerous group of highly specialized branches, each requiring peculiar training and attainments. For the educated public the opinion of Robert Koch is only in a vague way a little better than that of their family doctor, while the uneducated public does not concern itself with the opinions of scientists. Here is the great dilemma. Medicine is like the iceberg, seven-eighths of which is submerged, but the public must of necessity form its estimate from the visible one-eighth.

Not having understood medicine, public sentiment has never given it adequate material support. That support has come from enlightened governments and from men of large means and discerning minds. The numerous private endowments of medical philanthropy and research in this and other countries stand as a conspicuous ornament in modern life. Yet these gifts have come from isolated sources, they are usually impelled by the occurrence of some tragedy in the family of the donor, only in a few notable instances have they arisen from a clear conception of the needs and deserts of medicine, and they do not constitute uniform and adequate public support. Even in this, which is the best expression of the public conscience, too often the institutions have been isolated, diminutive, and ineffective, and it must be feared that occasionally they have served chiefly to exploit the donor and the donor's physician. It is clear that the type of almsgiving counseled in the Sermon on the Mount does not meet the exigencies of modern life. Medicine cannot afford to rely too much on the generosity of public-spirited citizens.

It is, therefore, a significant sign and an honor to the intelligence of our Western States that their Legislatures have adopted the policy of caring for medical education and research. A considerable volume of public opinion is back of this policy and the Western people are proud especially of the assured future of their universities. To what extent medicine will flourish under these auspices remains to be seen, but at present the West as well as the East has a wholly inadequate idea of the scope and cost of medical education and research.

Perhaps the surest expression of public sentiment is found in the character of its legislation. I think it must be said that the laws of the land protect the medical profession better than the public. There has been a notable disinclination to restrict the rights and privileges of the regular school of medicine, but there has been, on the other hand, an ill-considered expansion of the privileges of irregular practitioners and semimedical cults. In this liberality the public sees only adherence to our traditional ideas of freedom, but it does not see at what cost of life it has legalized the treatment of all sorts of disease and the signing of death certificates by uninstructed persons.

In the adoption of the measures which medical science has demonstrated as necessary for the protection of public health most American communities are delinquent. There is not a single active school of sanitary science in the country, not because the universities have not tried to establish them, but because there is no demand for them and there are no students. Therefore, the sanitary laws of small communities are enforced by persons who are often interested in their infraction. In many cities typhoid fever has been epidemic for years, although these communities were fully able to build water filters. Medical science has pointed the way almost to the complete suppression of tuberculosis, but tons of tuberculous beef are marketed in New York daily, and the average dairyman thinks his opinion of the tuberculin test in cattle is quite as good as that of the German Government. It is said that the inhabitants of Southern States generally resent the gift of a million dollars to build sanitary waterclosets and help rid them of the hook-worm. Indeed, it is the usual experience for the public to resist the introduction of sanitary measures, so that it has been necessary for medicine not only to perfect these beneficent measures but also to bind the beneficiaries hand and foot in order to administer the remedy.

It is not alone the pressure of politics or the eccentricities of the Law which delay the formation of at least one institute of legal medicine in this country. It is the general failure to appreciate that a high development of this branch of medicine is essential in a well ordered community. The National Government has at last awakened to the necessity of a National Bureau of Health, such as has long existed in other civilized countries. Yet instead of going ahead with it we have the astonishing spectacle of the President of the United States holding a public hearing to debate the question. Finally public sentiment still permits the Health Commissioner of the State of New York to be replaced every few years according to the rules of political patronage, and with Asiatic cholera at our doors we have just witnessed the distinguished Health Officer of the Port of New York subjected to an investigation by a medically uninformed jurist to whose mathematical mind the control of an epidemic must be "either efficient or inefficient."

Such is a partial catalog of the delinquencies which modern medicine charges up against the modern public. In enumerating them I fully realize that they relate chiefly to deep currents of opinion, thought, and custom, which move with great momentum and are beyond the control of pure authority. Yet they do not concern isolated eddies in the current of opinion, but fairly reflect the general tendency and color of public feeling. Certainly there is here enough undigested food for thought to fully occupy the attention of the layman and to call for a concerted effort to render public sentiment more considerate of its plain responsibilities. To quote again from Wallace, "the nineteenth century added to the sum of human knowledge more than the previous ten, but did less than any other to make its knowledge available for human needs." Medicine has done its duty to the public, but the genius of medicine is not understood and the problems which medical science has laid at the door of the modern world have not been adequately acknowledged.

There are other duties besides those which we are obliged and enabled to perform because of the general progress of knowledge. The modern spirit of service demands that medicine shall not overemphasize the achievements of the past, but should adequately prepare for the future. The objects for which this Academy was founded are just as urgent to-day as in 1847. The unification and morale of the regular profession rightly engage our constant attention, and, while we acknowledge the justice of outside criticism of the streaks of commercialism and veins of mutual distrust which may afflict us, strong internal forces are at work, to combat these tendencies. No commercial physician escapes detection and the right estimate by his fellows, and medical opinion places a far higher value upon just valuation than upon clever criticism of the work and attainments of one's colleagues.

Medical education is the most earnestly considered problem before the profession to-day. The astonishing changes that have occurred here during the last two decades in America have been approached in no other field of human endeavor and stand as a monument to the honesty and intellectual vitality of the American medical profession. As a feature in this progress the fourth Report of the Carnegie Foundation, which was delivered without fear, has clearly stated the situation and hastened many desirable changes. Incidentally this Report carries a message of great significance to the public, since it shows that the so-called regular profession is the only body seriously engaged in medical education and research, all the medical cults which the public loves to patronize standing before that bar of judgment empty-handed or worse.

The third object of this Academy and the duty of the entire profession which it represents is to further the interests of medical science, and it remains as the last part of the plan of this discourse to inquire whether we have done our duty to the ideals of medical science. In making this inquiry we pass far from the ground of common-sense judgments to the field of ethical ideals, but a large part of medicine lies in this latter territory. In these days when the word research is on every man's tongue, when journals teem with titles purporting to relate to new facts in medical science, when the attention of men of means is successfully directed to the re-

sults attainable in this field of philanthropy, it might seem to be a difficult and useless task to argue that the medical profession does not adequately support medical science. Yet this is just the judgment which, with much caution and reserve, I would venture to maintain this evening. I hasten to acknowledge the brilliant record of American men of science in medicine, the long list of notable discoveries and fundamental contributions that represent the best product of American brains. As a pathologist I take pride in belonging to that branch of the profession that produced Ricketts and a score of European martyrs to science. It is true also that a somewhat extensive machinery has been set in motion in this country with the idea of enlarging the scope and raising the standard of our scientific work. There is much to the credit side of the account. Yet a clear conception of the meaning of medical research, the physical conditions under which it can thrive, the organization of institutions that can supply the training and the men, a true estimate of the value of scientific attainments and tendencies in the medical practitioner, in fact a systematic attention to the demands and ideals of medical science are not highly developed in this country, and in this respect medicine, having discharged its duty to the public, is delinquent in its duty to itself.

Having, in a sense, closed the doors to our public critics, I beg leave to briefly state some of the grounds on which this feeling is based.

The misconceptions of the nature of medical research take very numerous forms. One of the most curious was embodied in a recent public document recommending the introduction of the methods of the department store into scientific laboratories, as though, as one commentator retorts, the discoveries of a Newton could be called for at a certain day and hour, or that the scientist's mind should run chiefly in the line of the card catalog of trivial events. Quite rife is the idea that research consists in extracting the European mail, repeating the experiments one finds there, and publishing the results without full acknowledgment of their inspiration, or, what is little better, with a few additional facts which are chiefly dependent on accidental conditions. Many think it necessary to point out minor faults in fundamental contributions, but I very much doubt if such activities are ever worth while. To set oneself the specific task of demolishing the conclusions reached by careful observations of one's colleagues is seldom a necessary step in progress. Agassiz advised "Study Nature, not books." Some investigators announce as many as twenty or even thirty titles of original studies in one year, but Theobald Smith said "the real progress of medicine is covered over with a froth of research through which only a few great minds are capable of penetrating." Opinions differ as to what methods of announcing the progress of research are consistent with sound judgment and a sterling devotion to the best ideals, but there are those who deplore the strife for priority, who distrust the preliminary communication, and who believe that a man is an unsafe man in so far as he is looking for prompt recognition of his contributions to medical science. I mention these somewhat distasteful matters because the opportunity to study carefully the mysteries of disease and to publish the essentially new results at the proper time and in a dignified manner is not so common as some of us may believe. Few would care to offer a definition of genuine medical research, but I think I see examples of the true spirit in men who are very sensitive to the unknown in the medical conditions they meet, who feel a certain moral responsibility toward the solution of problems, and who are willing to spend some or all of their time in the solution of these problems. This type of research is open to every member of the profession.

The discovery of *Spirochæta pallida* was a sensational event, coming apparently out of a clear sky. Yet even here there were several preliminary steps which made this discovery possible. A series of fundamental contributions, usually from many sources, almost always precedes a great discovery, so that the final step is a perfectly logical result of antecedent factors. Are we not inclined to underestimate the value of fundamental contributions in the haste to create medical heroes on the basis of supposed single-handed discoveries? Some find it their function to plant the root of knowledge and cherish the growing tree over many barren years, while others delight to pluck the fruit when it is about ready to drop. It is significant that the credit for great steps in the progress of knowledge can seldom be narrowly placed.

The physical conditions that surround the interests of medical science in this country are comparatively unpropitious. When the financial rewards of most other lines in medicine are distinctly alluring only a vein of eccentricity or idealism can induce a young man of ability to enter a career which assures a comfortable living for but a few fortunate leaders. The president of a great university recently openly announced that it was necessary to fill the ranks of the medical sciences with such eccentric persons who could get along without a decent living, and this is the tacit policy of all American medical schools. As a necessary result, the quality of brains that enters the medical sciences in America is of the nonconformist type and in certain respects is inferior to that which enters practical medicine, but I hasten to add my belief that the superior intellectual life and scientific methods of the laboratory may enable the inferior man eventually to outstrip his more gifted colleague.

In America we boast of our material resources for medical science, but in reality they are far inferior to those available in Germany and France. The Germans paid Waldeyer 140,000 marks a year at Strasburg, besides student fees, but there are very few positions in America which permit a scientist to live in a city house and raise a family. Money rewards do not attract the genuine investigator, but until the endowments of research are on a wholly different scale from the present the true possibilities of American medical science will not be realized.

The organization of our medical institutions could hardly be worse for the progress of science. The three main activities, the care of the sick, the education of physicians, and the search for new facts, have grown up in isolation, although every one recognizes that each is dwarfed without the others. The complex factors which stand in the way of successful reorganization have been clearly stated by recent writers and the public conscience is slowly awakening. The medical schools are beginning to see that they are quite as much responsible to medical science as to medical education, and at least one school is being founded with this responsibility chiefly in view. It becomes increasingly difficult for the busy practitioner to meet the demands of a great department in a university, but

he can perform an honorable service by surrounding himself with young men who have been trained in the sciences upon which his specialty depends for progress. The time has come when those who aspire to a university career or distinction of any kind in the clinical branches must serve an apprenticeship in the medical sciences instead of in the personal service of the influential doctor.

The interests of medical education are in the hands of several very able bodies and its innumerable and very complex problems have been discussed with much care and discernment. Yet I believe that the trend of this discussion indicates that the American profession underestimates the claims of medical science as an ideal in education. Everything is being swept aside in the effort to provide the student with premature clinical experience. We shall doubtless turn out the most adept practitioners in the world, as we do dentists, but dentistry is almost sterile as a science and relies on medicine for its chief progress. It is to be feared that the new curricula discriminate too boldly against that broad acquaintance with the medical sciences which alone can maintain the standards of the profession. We discriminate against knowledge more than Germany undervalves practical ability. We are not yet willing to pay the price of mature and effective clinical instruction, for that price is a fifth year in the medical curriculum.

In the years 1800-1810, or longer, a leading hospital in New York devoted funds to the purchase of expensive medical books and maintained a library for the use of its staff. The trustees seemed to feel a responsibility to medical science. That library has been dissipated and the hospital is now run on strictly business principles. Yet there is venerable precedent for the support of medical science by our great hospital endowments, and it has been made clear to the slumbering conscience of the hospital trustee that he has long been gravely delinquent in an important duty. It will be a notable event in the history of American medicine when that conscience is fully roused to action and when, overcoming every obstacle, there is effective cooperation between the immense resources of our hospitals and those of the universities.

That there are contrary opinions regarding the value of scientific training to the practitioner merely shows how vague is the general conception of laboratory science. It seems to me that this is the most discouraging side of the present outlook for medicine. It is chiefly responsible for the gulf which separates medical science from medical practice, and it accounts for a vast number of the occasions when the right thing is not done at the right time at the bedside. It substitutes empiricism for carefully tested opinion. Not being familiar with the methods and limitations of laboratory technique, the practitioner readily acquires a confidence in the infallibility of diagnostic tests, of which the dead far outnumber the living. Or he affects complete distrust of the whole field of microscopical and chemical diagnosis. It remains the great function of the clinical observer to discern many of the problems of medicine and to suggest to the laboratory those that may be solvable, but this function can be performed only by one who is acquainted with the methods and capacities of laboratory science. Scientific training adds class to the quality of a medical practitioner, and whether we like it or not it is a fact that the well trained man is the productive man in his field and is steadily replacing the untrained. Competition in clinical preferment has not yet reached with us the stage when a record of productive work is essential, but that day is not far distant, and I venture to predict that it will come suddenly and to the sore discomfiture of many of the confident detractors of the value of laboratory training to the practitioner.

Thus several of the most vital interests of medical science suffer from very conspicuous defects in the present support and even in the future plans of the profession. It is not too much to say that medical science flourishes with us in the face of unnatural hindrances, many of which it is within the power of the profession to mitigate or relieve. Some of the conditions would not be tolerated for a moment in the industrial world, and others, such as the obstacles to the scientific development of our hospitals, are incompatible with a plain sense of honor. In certain aspects, as Wallace suspected of the Church, the inertia of our medical institutions and traditions stands in the way of the satisfaction of medical needs. I venture to say that the settled policy of this Academy should involve a systematic campaign in support of the larger interests of medical science. Twenty years ago Max Nordau predicted that in a quarter of a century American medicine would outstrip the world. I fear he is disappointed. We began too late and there are only five years left. Yet five years of the right kind of effort would make a vast difference in the complexion of medical institutions in America.

And finally, may we not anticipate some of the rewards of faithful devotion to the ideals of medical science? We love to dwell on the past conquests of medicine, in the control of epidemics, in the rendering habitable of the uttermost parts of the Earth and the slums of great cities, in the triumphs of surgery on which we drill the public, in the immense advances in chemistry, physiology, and pathology, and in the creation of many new branches of medical science, all of which have combined to add 20 to 25 years to the average tenure of human life, but one may listen to this rehearsal without a particle of emotion when one considers the greater problems that still confront us. The fruits of the germ theory have enabled us to prevent infectious diseases, but our capacity to cure them is extremely limited. In the knowledge of diseases of nutrition and metabolism hardly a beginning has been made. Of the ultimate nature of the physical and chemical processes upon which life and animal functions depend we possess only vague surmises. Before the long list of natural diseases of the animal kingdom we stand as helpless catalogers of superficial phenomena. Medicine is still in its infancy. Comparative medicine is a pigmy opposed to a Colossus of unmeasured proportions. Considering the vast scope of its problems, the activities of our anti-cruelty societies, which are the pride of many, appear as idle splashings on the water's edge of the ocean of animal suffering, while the real depths of that ocean are being sounded by the workers in comparative pathology. One can review only with horror the brutal forms of parasitism and the merciless laws of natural slaughter and death that prevail among the lower animals. It was an observation in natural history when Isaiah said "They shall look unto the earth and find darkness, dimness of anguish." For we are charged with the whole task of mitigating physical evil throughout the entire animal kingdom, and our human interests, as we are beginning to

see, are inextricably bound up with those of the lower animals. We must accept the hope that Nature herself shall some day be redeemed. Medicine is clearly marked as the chief instrument in that redemption and only in the light of this destiny can her true dignity be realized. How then can we rest, even for a moment, on the achievements of the past?

Every period in the progress of medicine is marked by opportunities which render it more significant than its predecessors. At the present time, while no new era in medicine seems imminent, the opportunity for the successful application of known principles to practical questions is unprecedented. No medical heroes rule with unquestioned authority to limit the freedom of thought and action of the host of competent workers in every land. The original germ theory has served its purpose well and descriptive bacteriology is being succeeded by the study of the contributing causes of bacterial diseases and of the factors which control the incidence and distribution of microorganisms. The doctrine of anaphylaxis, or increased and specific susceptibility to the action of chemical agents, promises to carry us far more deeply into the mysteries of disease than any previous contribution to pathology. The application of known medical principles to problems in sociology and in the prevention of chronic and hereditary diseases offers an immense field for the future activities of medicine. The great significance of the organs of internal secretion is being more clearly recognized and the revolutionary influence which this department of physiology seems likely to have upon the medicine of the future is in no sense belittled by the imperfections of our present knowledge. The science of nutrition seems to have entered upon an era of permanent progress, based upon the carefully attested data of the physiological chemist. The last decade has seen the science of eugenics take definite form, that science of the future which looks toward the day when every child born can be assured of a sound mind in a sound body. Experimental morphology and the studies of heredity warrant great hopes in this untrodden territory.

No one would prophesy which fields may prove most quickly productive, for all our problems are eventually solvable and time is of minor consequence before the steady advance of experimental science, that instrument to the power of which Pasteur saw no limitations. History justifies the fullest scope to the scientific imagination, for the miracles of yesterday are the commonplaces of today. It is a grave duty and a high privilege for every physician to see that his influence, in whatever capacity, tells for the realization of the ideals of medical science. For we look for the day when the cry of the innocent victim of disease, be he man or beast, shall be answered, and when the maladjustments of a vicious Nature shall be coerced and corrected by human intelligence.

The Blood Pressure in Diphtheria.—J. D. Rolleston found that 35.1 per cent. of 170 cases of diphtheria had a subnormal blood-pressure. He believes, however, that sphygmomanometry in diphtheria, as in other acute diseases, though of considerable theoretical interest, has little practical significance. Adrenalin therapy in diphtheria may favorably influence the other symptoms of suprarenal insufficiency without affecting the blood-pressure.—*British Journal of Children's Diseases.*

THE PRESERVATION OF HEALTH IN SCHOOL CHILDREN.*

By ROWLAND GODFREY FREEMAN, M.D.,

NEW YORK.

The infant under one year of age has received a great deal of careful study as to feeding and general hygiene, but the child over one year of age has been equally neglected; while the child at school usually receives attention only when he is sick, having few of the protective measures applied to him that are used to protect younger children.

Children of all ages acquire the contagious diseases to which they are exposed, until they have obtained an immunity. The children under one year of age are usually exposed only to colds and generally acquire these whenever thoroughly exposed. So-called colds, with their complications, comprise practically the only illness of well-cared-for infants, and from these they might have a complete immunity could the quarantine applied to other diseases be applied to the common cold.

Children living under good conditions do not usually suffer from any of the contagious diseases, which all children now have, until they enter school, after which measles, whooping cough, mumps, and chickenpox are acquired, and there seems to be no chance of ridding ourselves of these diseases unless some radical change may be made in the school management. Schools have been developed by educators largely from an educational standpoint, and physicians, although knowing their shortcomings and defects, have previously had little influence in modifying their methods.

On account of the neglect of children over one year of age, a fairly complete physical examination of every child beginning school life should be undertaken. When such examinations are regularly made surprising defects are found, often in the children of distinguished physicians, which have never before been suspected, especially defective vision and defective hearing. Neglected adenoids are almost never found in our good private schools. Such examinations, of course, involve a medical supervisor for every school, and this supervisor should have some authority and the cooperation of the school authorities.

The school day, while much better than formerly, is still usually poorly adapted to the younger children. A child of five should not have more than an hour a day at school, and this hour should be divided by periods of rest and exercise every ten minutes, for a child of this age has power of concentration for only the shortest period, and endurance for exercise for short periods only. They can run hard for a moment in play, but to walk a mile is fatiguing and injurious to them.

The duration of the school day may be gradually lengthened, as well as the periods of study, but at ten years of age the child should not be in school for more than four hours a day, and should have no home study, and this four hours should be interrupted by frequent recesses, every twenty minutes or half hour. These recesses should be taken out of doors, and every school in our large cities should be equipped with a roof playground for use during recess. Some of our most recent and expensive school buildings in New York have been built without roof gardens.

While our school day should be short in private

*Read at the twenty-third annual meeting of the American Pediatric Society, held at Lake Mohonk, June 2, 1911.

schools where facilities at home for the care of the children during the remainder of the day are good, I believe that our public schools should exercise supervision over the children as many hours of the day as possible, supervising their play as well as their study. In our large cities the influences about the public school children after school hours are demoralizing. The increased expense of this supervision should not be considered, as such expense would be amply compensated for by a later diminution in expense in the control of crime.

It is as true of children as it is of adults that it is not work but worry that breaks down the nervous system. We see in our clinics every spring conscientious school children, usually girls, who stand at the head of their classes and are studying day and night to keep up, and as a consequence developing anemia and chorea.

It is, therefore, very desirable that classes should be small so that the teacher may consider each child in her effort to obtain good results, and not push too hard the ambitious student or the stupid one who has difficulty in keeping up with the others.

The result of overwork was well demonstrated in two school girls who were brought to me for advice; the one, a good, conscientious student, who was editor of the school paper, stood high in her classes and was in many ways given extra work. She was pale, anemic, and poorly developed, while the next girl shown me, who had red cheeks, was fat and well developed, was brought on account of the utter discouragement of the school authorities, and was finally dropped from the school because she did not keep up with her classes. The gymnasium teacher said she could not coordinate properly. While perhaps stupid and awkward, she impressed me as being much better prepared for the duties of motherhood than the other girl.

A good teacher will get from a child the maximum amount of work consistent with good health, and all teachers should be instructed and should possess discretion and judgment on these points.

A simple method of determining accurately fatigue in school children is needed. After the work on the ergograph done under the supervision of Dr. Christopher on the Chicago school children it appeared that such a test was available which was accurate and satisfactory, but a very complete trial of this method by the author* convinced him that it was absolutely untrustworthy and did not indicate fatigue.

In an effort to eliminate the conveyance of contagious diseases in school, the separation of the children and the ventilation of the school room naturally play an important part. The effect of open, flowing out-of-door air on the health of all children is now well established, so that confinement of children in closed schoolrooms should, so far as possible, be eliminated.

The best schoolroom is the open air schoolroom now being used for some tuberculous children, but it is perhaps too much to hope that such schoolrooms may become common for healthy children at present. We should insist, however, on good ventilation in schoolrooms, and it has seemed to me that no system of forced ventilation has ever furnished such good air as open windows, and as the open windows interfere with systems of forced-air ventilation, most modern buildings are not well ventilated. While a free open window is suitable for most seasons of the year, during three or four winter months the intake of air may be modified by the use of cheesecloth screens. The idea that schoolrooms must be kept at a temperature of seventy or more must give way, for the children would be far better off, if properly clothed, with a temperature of fifty or sixty, in a room that is well ventilated.

*"Fatigue in School Children as Tested by the Ergograph," Rowland G. Freeman, *American Journal of the Medical Sciences*, November, 1908.

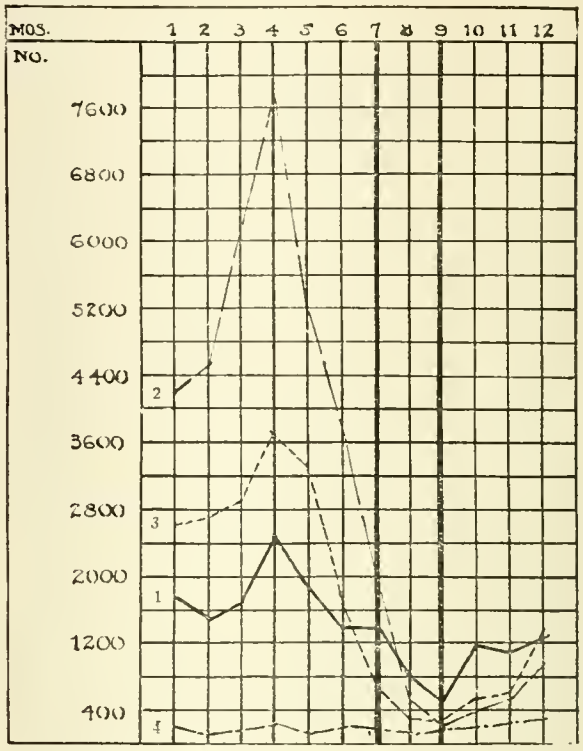

Chart I.—Monthly Morbidity in New York in 1910 from diphtheria 1, measles 2, scarlet fever 3, and whooping cough 4.

The important question of the feeding of school children I will only mention. It is a self-evident fact that no city that compels attendance at school should compel children to do this work who are insufficiently fed, and that our city authorities should supply one nourishing meal in any case where there is a question of the child's obtaining sufficient food at home.

In the private boarding schools the opposite tendency is to be counteracted, that of allowing children to eat too much and often a food that is difficult of digestion. This should be easily remedied by proper medical oversight.

The fact that the schools are the chief means of communicating contagious diseases to children is well demonstrated in certain charts which I have prepared.

Chart I shows the morbidity from diphtheria, scarlet fever, measles, and whooping cough in New York in 1910, and demonstrates well how these diseases begin to spread as soon as school opens in the autumn, continue to be more frequent during the school year, until the mild weather comes and the windows are thrown open; then there is a slight diminution, while so soon as the schools are closed there is a very slight incidence of these diseases. It is interesting to note on this chart that the incidence of whooping cough has little relation to the school year. Just why this is so it is difficult to say, although it is a fairly chronic long continued disease, probably badly reported, while the deaths from it are usually due to some complication and

are probably reported under the name of the complication. Chart II, which shows the average monthly mortality for five successive years, shows the same school year incidence.

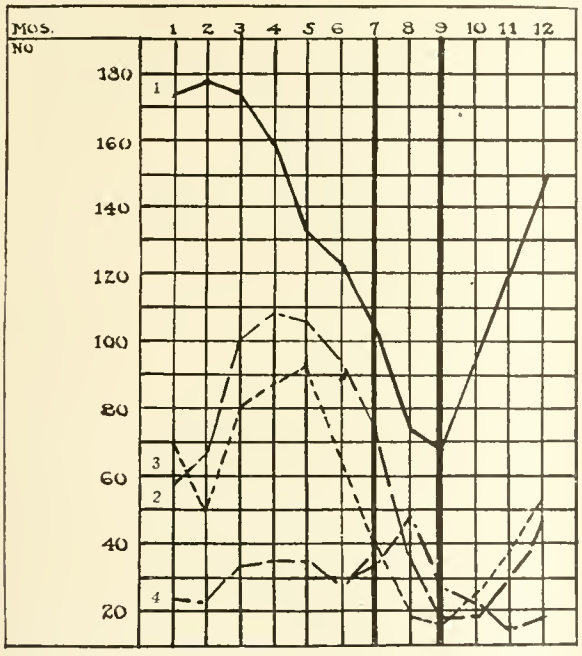

Chart II.—Average monthly morbidity in New York, 1903-1908, from diphtheria 1, measles 2, scarlet fever 3, and whooping cough 4.

I do not claim that this great morbidity and mortality of measles, scarlet fever, and diphtheria during the school year are due to the schools alone, but I do believe they are the greatest factor, and additional evidence in favor of this statement is obtained by studying the Chart III, of mortality for five years in London. The school year ends a month later than ours, August 1, and the term commences two weeks later. It is noticeable that the bottom of these curves occurs in this period. This English chart shows that diphtheria and scarlet fever remain much lower and do not increase so materially in the school year.

The elimination of this conveyance by schools of diseases can be very materially modified by the intelligent application of two very simple regulations.

The diseases which are most commonly conveyed at school and which interfere most of all with the attendance and well-being of the children include the nose and throat infections known as colds, measles, German measles, scarlet fever, whooping cough, and diphtheria. It is evident that all of these give the first tangible evidence of their presence to the laity by coughing, sneezing, nasal discharge, or the symptoms of a sore throat, all of which are commonly known as a cold. So that if every child with a cold is excluded from school, the likelihood of schools being the means of conveying any of these diseases is immediately minimized. The enforcement of this rule against colds is not difficult of application if the parents understand the existence and advisability of such a rule before their own children become afflicted. The neglect of the enforcement of this may have serious results, as was the case in a small kindergarten where the children of a physician were continually coughing and the teacher suspected whooping cough. The physician insisted that it was not whooping cough and the woman in charge of the class deferred to his greater authority, with the result that before the end of the school year all the children in the kindergarten had whooping cough, and this unfortunate woman was left without any class.

The enforcement of this rule against the presence

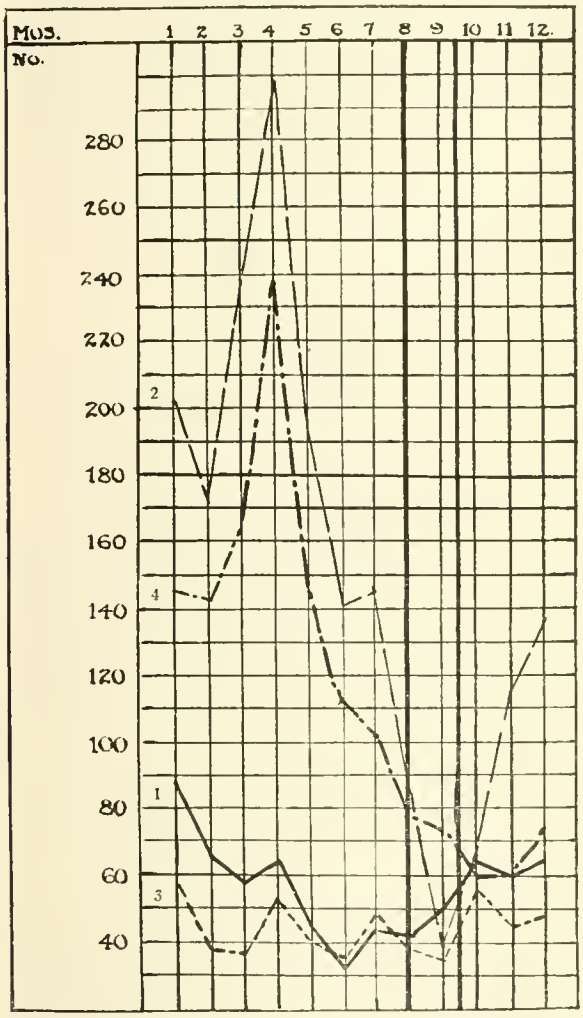

Chart III.—Average Monthly Morbidity in London, 1905-1910, from diphtheria 1, measles 2, scarlet fever 3, and whooping cough 4.

of any child in school with a cold seems to be most important in all schools in order to keep the children healthy.

The second rule to which I referred is the exclusion from school during the period when the disease is apt to develop of all children who have been exposed by children taken sick at school. This means usually the members of the child's class and generally involves an exclusion of from one to two weeks.

The efficiency of the enforcement of such rules is well shown in the incidence of contagious diseases in a private school in New York having 200 children. During the year 1908 to 1909 there were 9 cases of measles, 3 of mumps, 1 of whooping cough, and 1 of chickenpox, 14 cases altogether. In the year 1909 to 1910 there were 4 cases of chickenpox, 7 cases of measles, and one of whooping cough, and only 4 of these 12 cases were contracted at the school from a previous case; while during the past year 2 cases of chickenpox, 1 of measles, 5 of whooping cough, and 5 of scarlet fever occurred; 12 cases of contagious diseases, and I believe none of these were contracted at the school.

For the efficient application of this latter rule the cooperation of the parents must be obtained,

and the efficiency of such rules may be nullified by the absence of such cooperation. This was well shown recently in a case where one child was excluded from school on account of having been exposed to a contagious disease, and during the period of exclusion attended a party where most of the members of her school class were present, and this resulted in these other children also being excluded.

From the results reported above it is evident that school authorities should, as a rule, be held responsible for epidemics that are allowed to spread in their schools.

In conclusion I would summarize the following essentials for the preservation of good health in school children:

Short school hours.

Frequent recesses.

Open air or well ventilated and cool schoolrooms.

Roof playgrounds in cities.

Individual study of backward or feeble children.

For public school children a supervision of play as well as of study.

The proper feeding of school children.

A medical supervisor who shall have control of the preservation of health in the school children.

The exclusion from school of all children with colds, as well as those suffering from other contagious diseases.

The dismissal from school during the period of incubation of all children who have been exposed to contagious diseases.

211 West Fifty-seventh Street.

THE CARE OF THE CRIPPLED AND RACHITIC IN ITALY.*

By DOUGLAS C. McMURTRIE,

NEW YORK.

Even the most casual observer comes away from Italy with an impression that the problem of caring for cripples must there be of great importance. On all sides one sees cripples in abundance and most of them use their deformity to work on the sympathies of passers-by and promote their own success as mendicants. The universality of the profession of begging for cripples has rather complicated the problem, in that it renders the deformity a definite economic asset and thus largely vitiates the desire for cure. The provision and methods of care for cripples are thus rendered of particular interest. In early times there was nothing whatever done to improve their lot and they shared, in common with the cripples of other European countries, the scorn and scoffing of the community. Their only possible occupations were those of jester or beggar.

The first interest in ameliorating their condition was shown in 1839 with the opening of the Orthopedic Institute, which was founded at the instance of Professor Ferdinando Carbonai. In a general way it was modeled after the Pravaz Institution at Lyons, France, with a capacity for but thirty patients at the start. It was later considerably enlarged. The orthopedic treatment was rather primitive but thoroughly constructive in character, and much of the apparatus used was designed and made at the Institute. Corrective gymnastics and hydrotherapy were much in favor and the value of hygiene and exercise in the open air was appreciated. At first only pay patients, and those too of considerable wealth, were received, but later through the addition of an orthopedic clinic, which was donated by the Tuscan government, it became possible to extend treatment to cripples of the poorer classes. The patients were given elementary education to a limited extent so as not to tire them. One year after the death of Professor Carbonai, in 1888, the institution was closed.

In Turin there was a regulation excluding rachitic children from the public schools, and the result was that children so afflicted spent all their time on the streets, received no education, and so could hardly be trained for any trade. Realizing the situation, Count Riccardi di Netro, who was then supervisor of public instruction in the city of Turin, started a class for rachitic boys in 1872. This first class was for children between four and seven years of age, and there were selected as pupils children who had passed the period of softening of the bones, and whose frame had hardened. The children were given a reasonably good schooling and received medical and surgical treatment from Professor Gamba, who installed the equipment for this purpose.

The success of this experiment brought about the foundation of a philanthropic organization to stimulate the establishment of other schools of a similar type. In a short time this organization was able to open four new schools, located in the poorer districts of the city of Turin. From Professor Gamba's report to the Royal Medical Association in Turin we learn that during the first eleven years of the organization's existence 1,600 rachitic children were received. Of this number 850 were cured or so much improved that they were either admitted to the public schools or were able to take up a trade. By 1892, 3,286 rachitic children, in all, had been cared for. A large proportion had been rendered independent—so trained that they were able to earn their own living in the normal ways. The organization furnished special education to those who were still dependent, instructing them in the trade best adapted to their intelligence, physical ability, and inclination.

In 1886 there was founded the Institution for Rachitics in conjunction with the schools. To this were admitted those cripples who needed active surgical or medical treatment which they could not receive in the schools. From fifty to a hundred children could be received yearly, half of them without charge. A complete orthopedic equipment was installed. In the educational department of this institution there are three large schoolrooms, a gymnasium, a large recreation room, and a garden. During 1909 the school attendance was 169, of which 101 were boys and 68 girls.* The emphasis is placed on work with young children, as will be seen in the age distribution: 58 between three and four years, 56 between four and five, and 55 over five years of age. Practically all are under seven.

The children are brought to school every morning in two omnibuses, each with a capacity of fifty children. Stops are made to pick up the children at eight specific places in the city. The children stay in school from 8:30 A. M. to 4:30 P. M. in winter, and from 8 A. M. to 5 P. M. in summer. New pupils are received October 1 at the end of the September holidays. The children receive two meals consist-

*In the preparation of this article I wish gratefully to acknowledge the assistance of Miss Dorothy Jacoby. For a large amount of the material I am indebted to an article by Professor A. Codivilla, *Zeitschrift für Krüppelfürsorge*, I, pp. 294-209, 257-277.

*Report of Istituto pei Rachitici, Regina Maria Adelaide, Turin, 1910, p. 17.

ing of vegetables, meat, bread, milk, and wine. They are also given cod liver oil or some other tonic.

The children are required to take a weekly bath; a specially trained teacher instructs them and sees that the proper gymnastic exercises are performed under the direction of the physician. The physician visits the various sections of the school daily. Every three months he renders a report concerning the condition of each child: change of weight, height, and general health. There are two summer homes to which the children are sent during the long holiday so that they may get the full benefit of the fresh air. At the end of August it is decided which children are to return the following year and which, because of their age, improvement, cure, or impossibility of cure, are to be dismissed.

Children usually attend the school for three years. Special cases are transferred for necessary surgical care to the hospital, which is another department of the institution. In the hospital section children between the ages of three and fifteen years are received for orthopedic treatment. The poor of the city are admitted free; others pay from $4 to $16 a month. This department of the institution, which originally had but four beds, now accommodates 45 patients. The department for corrective gymnastics receives children between the ages of three and fifteen. There is also a dispensary or clinic in which 602 patients were treated during 1909.

Considered as a whole this institution at Turin has an excellent equipment, the various departments being all located within an enclosure. A lively interest in the work has been aroused among the citizens of Turin; two additions have already been made and a third is projected. The address is: Istituto pei Rachitici, Corso Firenze, N. 43.

The example set by the city of Turin was followed by other Italian cities. In Milan the School for Rachitics was opened in 1875. The school was founded along the same lines as the Turin institution largely through the instrumentality of Dr. G. Pini. According to Dr. Pini's report, the purpose of the institution was to "take charge of rachitic children for several hours of the day, to give them orthopedic treatment, and instruct them in such branches of learning as would be of use to them in after years."

The first financial support for the building of an orthopedic hospital was given by a bequest of Marquis Visconti, as early as 1850. One can, therefore, say that the idea of such an institution existed in Milan prior to this date. A dispensary was soon added to the modestly equipped school, and it was hoped that by fundamental measures of care the spread of rachitis might be checked. From 1875 to 1883, 3276 patients were treated. Some wards were added so as to allow the patients to stay at the institution a longer time instead of returning to unhygienic homes. Thus the "Istituto pei Rachitici" made up of school, dispensary, and hospital was formed. The purpose of this charitable undertaking is set forth in the constitution, an extract from which follows:

Art. I. The aim of the Institution for Rachitics, founded in 1874 in Milan by Dr. Gaetano Pini, is to prevent the development of rachitis and to give treatment to those children in Milan who have contracted it.

Art. II. The following means, prophylactic to the spread of rachitis, are to be used: (*a*) Giving mothers instruction in hygienic treatment. (*b*) Prophylactic supervision of sucklings and weaklings. (*c*) Giving mothers instruction regarding the better nourishment of children. (*d*) All other means of combating the causes of rachitis.

Art. III. Attempts are made to further the mental and bodily development of rachitic children: (*a*) Through the school. (*b*) Through corrective gymnastics. (*c*) Through all other methods of rational pedagogy.

Art. IV. The fulfilment of these aims as far as possible with the aid of schools and hospitals which are at the disposal of the institute and commensurate with its finances.

The school, dispensary, and general hospital are now located in the main building of the institution. Though the building was erected in 1881 it is modern in all of its equipment. The school accommodates 100 children and there are 36 beds in the hospital. There have been recently added an operating room, a gymnasium, and a department of hydrotherapy. There was also erected an isolation ward.

In the Milan institution there are admitted children who show no sign of consolidation of the bones. Patients eighteen months old, and some even younger, are therefore received. So in Milan not only the treatment but also the prevention of rachitic deformities was considered. The number of beds is now 70 and accommodation for 150 pupils was added at the school. At the school only the worst cases are admitted and children between the ages of two and five are given the preference. Particular attention is paid to the prophylaxis of rachitic deformity.

The Industrial Home for the Crippled and Maimed has lately become associated with the Institute for Rachitics.

Following the example of Turin and Milan, Genoa opened a school for rachitics in 1878. The school had small quarters until 1883, when it moved to a place occupied by an old convent, where there was sufficient room for a dispensary, hospital, and school. At the institution the patients had the benefit of sea baths in the summer. After 1899 the institution inaugurated climatic treatment, and a large number of the patients were sent to the mountains for a part of the year. In the school from 50 to 100 children, and in the hospital from 20 to 30 children, are admitted yearly. Recently the institution has been greatly improved. The school and dispensary have remained in the heart of the city while the hospital department was moved to the outskirts. It commands a magnificent view of the Bay of Genoa. This new branch embraces three buildings of the best modern type.

The next city to make provision for cripples was Mantua, where a School for Rachitics was established in 1879. Until 1899 the children received treatment either at the dispensary or in the schoolroom, but there was no hospital provision. The original plans, however, were completed in 1899 and facilities for surgical treatment were added. The institution now compares favorably with those in the larger Italian cities. During the past few years 200 children have been provided for in the wards and 250 children have attended the school.

In Cremona the Institution for Rachitics was opened in 1881. Later it was consolidated with the Children's Hospital, "Ospedale dei Bambini"; was rebuilt in 1902 and is now an excellent orthopedic institution.

In Bergamo the Institution for Rachitics was founded at the instigation of Dr. Rota, its present superintendent. In general construction and equipment it is patterned after the one at Milan. At first the dispensary, the ambulance service, and school were put in commission. Later, in 1887, the hospital department was added. In the first 22 years of its existence 1,445 rachitics were treated and given instruction, 1,597 operations were performed. The institution has recently undergone alteration and is now splendidly equipped. The location is unsurpassed, being on a hill-top.

In Brescia the establishment of an institution for rachitic patients was projected as early as 1882, but on account of financial disability it was not opened until 1894. It comprises the following departments: (*a*) The school children from 3 to 7 are admitted. They attend the school during the day and return to their homes in the evening. They take breakfast and a midday dinner at the school and receive, besides, general treatment, baths, douches, corrective gymnastics, massage, and electrotherapeutic treatment. (*b*) Wards: in which children are examined, braces, apparatus, etc., are fitted. (*c*) Dispensary: this contains 16 beds, operating rooms, etc. Children, whether or not from the schools are admitted for immediate treatment.

The institution effects splendid results, about one-third of the children being dismissed yearly as cured. They then enter the regular public schools. From 140 to 160 children are received yearly, 50 of whom are cared in the wards.

In Verona, Venice, Padua, and Modena there are schools or educational institutions for rachitics, having dispensaries but being without hospital facilities. On account of lack of funds, but a small number of patients are cared for. There is a seashore home for the rachitics of Padua and a mountain sanatorium for those of Modena.

For about four years, 1897-1901, a school for rachitics was connected with the Rizzoli Orthopedic Institute at Bologna. But after this period the school could not be continued on account of the necessity of using the funds devoted to it for the support of other lines of work. The success of the school during its period of operation renders its reopening highly desirable. Rachitic children under three years of age were not admitted to the institution. The dispensary was located in the city and the children were examined there before admission to the school, which was outside the city, splendidly located on an elevation. An omnibus called for the children in the mornings and returned them to their homes in the evenings. An attendant from the institute always accompanied the children. At the age of eight the children were dismissed, those who needed acute treatment being retained later. The majority, however, came afterwards to the outpatient department for treatment. Children with other deformities were in exceptional instances admitted to the school. The school was open for eleven months of the year. During the other month the children were sent to the seashore. The average daily attendance was about 60 per cent. of the total enrollment.

In the school building there were the following rooms: a dressing room, a school room for 80 to 90 children, a resting and play room, a massage room in which 5 children could be treated at a time and in which measurements were taken and examinations made, a bathroom with 5 baths, a large dining hall, washrooms for the employees and for the children. Adjoining these school quarters were a large gymnasium with Zander apparatus and other equipment, operating rooms, large protected and heated halls, and extensive gardens.

Up to the present there have been considered only those institutions for the education and care of rachitic children. Some of the institutions described would be better designated as orthopedic—particularly the one at Milan. They still retain the original appellations, however, as institutions for rachitics in order to make their origin clear. On the other hand, there were formed some institutions with the original purpose of treating all types of deformity.

The most important and widely known institution of this type in Italy is the "Istituto Ortopedico Rizzoli," at Bologna, reference to the educational work of which has already been made. It was named after the illustrious Bolognese surgeon, Francesco Rizzoli, who in 1880 bequeathed all his wealth for the foundation and support of this institution. According to the desire of the benefactor it was to be started in the Convent of the Olivetes, which had been purchased for the purpose by Professor Rizzoli. The institution was to be conducted with three purposes in view: the advancement of science, the good of humanity, and the "good and honor of the fatherland." Therefore, the benefactor selected this historic site for the fulfilment of his far-reaching plan, not only because of its adaptability to the purpose, but also because of esthetic considerations.

Nearly 15 years were spent and $280,000 were expended to restore, remodel, and equip the building. Owing to the natural advantages of the building, at the present time it is excellently suited for the work. Also the rooms are much more generous in size than would have been the case in a new building.

One hundred and fifty beds are provided. Much of the building is given over to large halls in which the patients are able to take all their exercise. One of the largest rooms in Italy, 170 yards long, is on the first floor, and from this one can get some conception of the scale of construction. On the ground floor is a large court enclosed with glass and heated in winter. In other parts of the building are washrooms, a gymnasium, rooms for various orthopedic treatments, laboratories, the library, and the museum.

The operating department is large and contains rooms for the use of orthopedic apparatus, as well as rooms in which patients are examined. The other rooms—the dining halls for patients of various kinds, living rooms, reading rooms, the library, the music room, the billiard room, and the skating rink—should also be mentioned.

The beautiful and healthful location of the institution has already been mentioned. Situated on a hill to the south of Bologna, it has a remarkable view over the city and the surrounding fertile country. There are beautiful shady gardens for the patients on the grounds.

The institution has a dispensary in the city, where examinations are made and treatments given, and surgical operations performed. It possesses excellent facilities for treatment of all kinds.

The poor people of the Province of Bologna are treated free of charge; one-third of the 150 patients are non-paying; two-thirds are paying patients. A large portion of the latter class pay only a part of

their expenses. The running expenses are paid partly by the interest from Professor Rizzoli's bequest, partly from the money received from the paying patients. The expenses, which in the first years of the institution (1897-1899) varied from $8,000 to $12,000, amounted last year to $34,000. During the eleven years since the institution was started 3,600 patients, mostly from the several Italian provinces (though some were foreigners), have been treated.

The prize donated by King Humbert I should be mentioned. It is an international prize of $700 and is awarded every five years for the greatest work on discovery toward the advance of orthopedics. In 1905 the prize was awarded to Professor Oskar Vulpius for his work in transplantation of tendons. The physicians of the Istituto Ortopedico Rizzoli are not allowed to compete for the prize. The members of the committee for awarding the prize are chosen from the Italian medical faculties.

The Orthopedic Institute in Naples was endowed by the Countess Ravaschieri in 1900. It consists of: (1) The dispensary. Here cripples from all provinces are examined. Swedish gymnastic exercises and massage treatment are given. Small operations are performed, plaster bandages are applied, etc. (2) The free wards, which consist of four large rooms, for men, women, boys and girls. (3) On the second floor—a second-class division for those patients who are able to pay a small sum. (4) A private division for those who are able to pay (first class).

Treatment is given in the following departments: (1) Surgical—Orthopedic Department. (2) The Kinesitherapeutic division—for 350 patients. It contains apparatus for active and passive movements. It also contains massage and dressing rooms. (3) The hydrotherapeutic division. This consists of two bath rooms, dressing rooms and showers of the different systems. (4) An electrotherapeutic division with all apparatus for electrotherapy, static, galvanic, and faradic electricity, hydroelectric and light baths. (5) Orthopedic work shop. (6) Scientific laboratories for clinical and microscopic analyses, for radiographic and photographic plates.

In July, 1906, a beautiful home at the sea was added to the Istituto Ortopedico of Naples—in Bagioli. It is a roomy and airy home by the sea. The building is surrounded by a garden. In this garden there is a chapel and a room for the mothers who visit the children. On the ground floor are the boys' dormitories, an examination room, dressing room for the children, etc. On the first floor are dormitories for girls, the school room, the Sisters' rooms, and a large parlor.

Children apply for admittance to the Orthopedic Institute at the dispensary. Emphasis is laid upon hygiene, healthy diet, sea, sand, sun, and air baths.

Sea and Mountain Homes.—A long time ago sea and mountain homes were started for the treatment of rachitis and other illness which cause deformities. Children suffering from rachitis, from noncontagious forms of tuberculosis, scrofula, anemia, or general debility were sent to the mountains or to the sea for several months in summer. These prophylactic measures are now part of the treatment for deformities. The existing colonies among the Alps have been modeled after those in Germany and Switzerland.

Seashore homes were originated in Italy and were later adopted by other countries. The first home at the seashore was founded at the instigation of Dr. Barellai, in 1853. At first only a small number of children were sent to the sea. No special provision was made for them. Later, however, a home with room for 100 children was built in Viareggio; after this other homes were built in the Riviera and on the Adriatic.

At present there are a great many homes of this kind, and each Province in Italy has its own institute for children suffering from rachitis, tuberculosis of the bones, etc. There is no question about the benefits derived from this treatment. It is greatly to be desired, however, that children suffering from the more serious cases should spend a longer time in the country.

All the seashore homes, or at least a part of them, should be turned into hospitals (sanatoriums) and kept open all the year. A few attempts in this direction have already been made. This arrangement has been made in the seashore home at Palermo, which was started through the efforts of Surgeon Enrico Albanese. At first, in 1874, the institute was a regular seashore home. Later, however, it developed into a hospital for diseases of children. Special departments for orthopedic surgery and cure by other methods were formed so that for three months of the year it was a seashore home and the remaining time it was a regular hospital. In 1880, in this new capacity, the hospital admitted 55 children. From that time on it was enlarged, and at present it is being greatly improved. The best possible results are being obtained for rachitics and cripples in this institution through its surgical, orthopedic, and kinesitherapeutic treatment and its sea, sand, and sun baths.

Schools and Industrial Homes for Cripples.—In the erection of schools for rachitics in Italy a great step was made toward warding off the physical and mental deterioration of cripples. The schools also provide them with independent means of support.

The excellent example set by Germany, Denmark, etc., in their successful professional schools for cripples has unfortunately not been followed by Italy. The need of such schools for professional training was appreciated from the start by the founders of the schools for rachitics, and this need was partly met in that the schools for rachitics prepared their pupils for the occupations which were most adapted to their tendencies, talent, and strength.

In 1877 the Congress of the Italian Medical Society and the Societies for the Improvement of the Condition of Rachitics made the following resolution: "The Congress demands that a professional school be erected for those rachitic children whose deformities are incurable. In these schools the children should be taught the arts and crafts which can be practised without injury to the bones, and especially to the spine." This demand, however, appealed little either to the people as a whole or to private individuals.

Italy, which had done so much for the treatment of cripples along this line and had acted as an example to other countries, was far behind when it came to bettering the social welfare of the cripple.

An urgent appeal was made by Professor Codivilla, on December 3, 1905, on the occasion when the prize of Humbert I was awarded. He asked for the foundation of institutes like those existing in Germany, Austria, Denmark, Sweden, and Russia. In these institutions instruction should be given to the cripples in proportion to their physical

strength and intelligence. "Just as orthopedic treatment improves the physical condition of children so their mental ability will be fully developed by wisely planned teaching, and the learning of a trade or occupation, which is adapted to the individual need."

At this time, too, Professor Galeazzi made out a report for the Fourth International Congress on Public and Private Institutions Which Care for the Sick, held at Milan (May 23-27, 1906). In this report Professor Galeazzi, pointing out the success of other countries in the social betterment of the deformed, appeals to the State, the people, the charitable institutions, and the insurance companies to lend their moral and material support to the erection of schools and industrial homes for cripples. This time the appeal was not in vain. The first industrial home for rachitics was endowed by the generosity of Mr. Carmine, President of the Institute for Rachitics, in Milan. This home will be opened in connection with the Institute for Rachitics. The idea of affiliating the school with the institute is a happy one, the pupils thus deriving double benefits.

The new school will be an industrial school only. Crippled, paralyzed, or maimed people will be admitted to the school only if their physical or mental strength will be improved by attendance. All pupils, excepting those who wish to become teachers, will be dismissed from the school upon completion of their training. Complete provision will have been made for cripples when the Institution "Ottolenghi Finzi," near Milan, for entirely incapacitated cripples, is finished. After leaving the school cripples of the following classes will be admitted to this institution: (*a*) Those neither able to find employment, or to return to their homes; (*b*) Those incapacitated through accident or illness. Here they will do such work as they are able to. Some of the cripples will be taught farming and agriculture; for others work rooms will be fitted out.

The women in the school connected with the Institute for Rachitics will learn washing, ironing, and sewing, tailoring, finishing of orthopedic braces, and leather work. The men will also work in the tailoring department and will help make orthopedic shoes and the miscellaneous parts of orthopedic apparatus.

The institute should show splendid results. It is to be hoped that all the other Italian cities will soon follow the example of Milan and that the State will also aid in the development of similar work.

It is evident that there has been taken in Italy considerable interest in the welfare of the cripple and there have been inaugurated and developed many methods of great suggestive value. It will be seen that the emphasis has almost always been on the aspect of physical or orthopedic care. In this connection, however, there is one point which should be very carefully observed; that is, that the treatment is given at a very early age before the time when the average child can attend school, and by taking the deformities in hand a large proportion of them can be cured and others prevented from becoming serious. The provision for the care of infantile deformities is extensive and adequate. An obvious weakness of the situation, however, is the extreme emphasis that has been placed on rachitic deformities which are known to constitute but a part of the orthopedic problem. For other classes of cripples the system is far less adequate.

In the plan of having day schools and dispensary treatment for crippled children Italy has developed a system which is also followed in England and the United States. In Great Britain there is a very extensive system of day schools and clinics for cripples, which are authorized by law and receive partial support from the National Education Fund. In the United States, New York City and Chicago have instituted special classes to which deformed pupils are transported each day, while they still continue living at home.

After all, however, perhaps the best lesson to be learned from the work done for cripples in Italy is that prevention as well as relief and cure should be, and must be considered as, an important factor in dealing with the problem of human deformity.

D'ARSONVALIZATION IN THE TREATMENT OF HYPERTENSION AND ARTERIOSCLEROSIS.

By WILLIAM BENHAM SNOW, M.D.,

NEW YORK.

The term d'Arsonvalization is applied to the employment of the arrangement for administration of the high-frequency current by the methods devised by Prof. d'Arsonval of Paris. Two arrangements comprise this method of administration, both consisting of solenoids or wire spirals connecting the outer coats of two condensers, the inner coats of which are connected to an electrical source of high potential or high voltage. In one case the current is administered by the *autocondensation* method, employing the d'Arsonval current as indicated in Fig. 1. By this arrangement the patient is seated upon a couch, upon which is placed a cushion of nonconducting material, approximately three inches in thickness, such as felt, or silk or cotton waste, having beneath it a strip of metal extending within two or three inches of either end of the cushion, and five or six inches narrower than the cushion. One end of the d'Arsonval solenoid is connected directly to the metal condenser beneath the cushion, and connected to the other end of the d'Arsonval

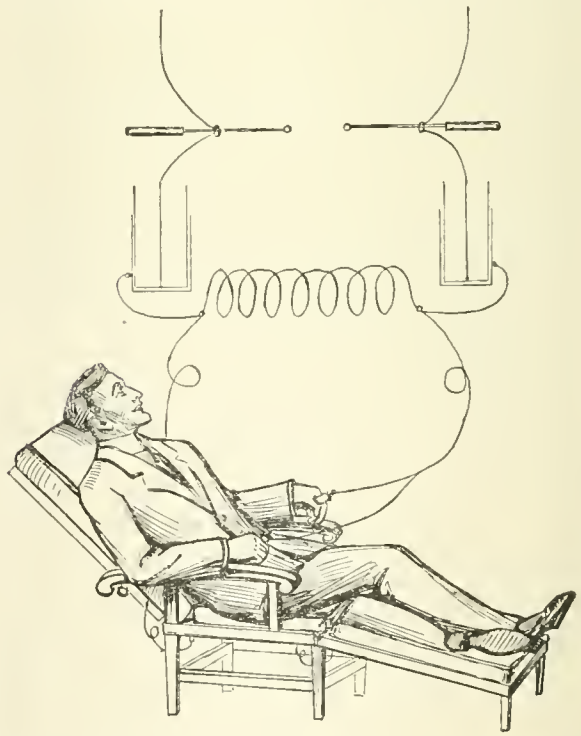

Fig. 1.—The Autocondensation Method.

solenoid is a bifurcated cord provided with two electrodes to be held in the hands of the patient, or this may be substituted by a single cord having at one end a longer metal handle upon which the two hands may be placed. The hands of the patient should either rest upon a cushion upon the lap, or upon the two arms of the autocondensation couch to prevent sparking through the clothing. By the other arrangement, known as *autoconduction,* a large solenoid is placed either horizontally or vertically, and is large enough to envelop the patient from either end. This large solenoid is connected to the outer coatings of the Leyden jars, as shown in Fig. 2.

For the administration of these currents, a large static machine, or Ruhmkorff coil, or other high-potential transformer, constitutes the source of electrical energy, in connection with a resonator consisting of two Leyden jars, a spark-gap, and solenoid connected in series. The spark discharging at

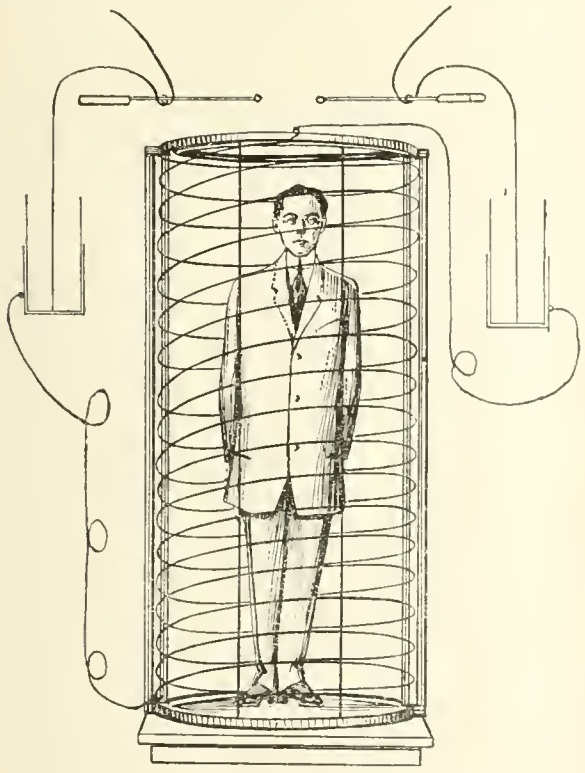

Fig. 2.—The Autoconduction Method.

the spark-gap induces synchronous discharges from the outer coatings which set up oscillations in the solenoid connecting the outer coating to the two Leyden jars. By connecting cords to the terminals of the solenoid, the oscillatory current thus induced is carried from the two terminals to the object or capacity placed in circuit, constituting the d'Arsonval current as previously described. A physician already provided with an *x*-ray coil, high-potential transformer, or large static machine is in a position by the addition to his outfit of a resonator, hot-wire meter, and autocondensation couch, or d'Arsonval solenoid, to employ d'Arsonvalization for therapeutic purposes.

D'Arsonval in his experiments nearly twenty years ago demonstrated the effect of this current upon the arterial tension, and for a considerable time physicians have employed it for that purpose with varying degrees of success, depending upon their knowledge of the technique. It is not however, until comparatively recent times, that the value and import of d'Arsonvalization in the treatment of hypertension and arteriosclerosis has begun to be recognized as a measure of importance in therapeutics. Current literature and discussion indicate that the profession at large is not as yet cognizant of the great value of the systematic employment of this method in the management of cardiovascular diseases. The writer has employed the method in a large number of cases during recent years; and is impressed with its value and importance. There are certain facts concerning the physiological effects of this current which indicate its employment in various conditions.

(1) When administered either by the autocondensation or autoconduction method, the blood pressure promptly falls from 10 to 70 mm. in all except the most advanced cases of arteriosclerosis. (2) That the action of this current is upon the musculature of the arteries and not due to depression of the cardia is demonstrated in the daily treatment of persons of advanced age, in whom the sclerosis is so extensive that it is not possible to affect the lumen of the vessels, and still the blood pressure does not fall as it certainly would if the heart was depressed. (3) The administration of the current to aged people in whom there is no fall of blood pressure, after daily treatment for periods of months, is followed by an improvement in general health, attributable to its effects upon general metabolism. (4) Undoubtedly in all cases in which this current is administered this same effect upon metabolism plays an important rôle in the therapeutics of d'Arsonvalization. (5) In cardiovascular conditions, in which the heart is laboring against other impediments, as mitral or aortic insufficiency or both, associated with hypertension, the lowering of blood pressure gives indicated relief to the overtaxed cardia. It is for these reasons that d'Arsonvalization fills a most valuable rôle in the therapeutics of hypertension and arteriosclerosis.

It has been stated by some recent writers that hypertension is as a rule compensatory. This ex experience teaches to be an error, except in cases of parenchymatous nephritis, cirrhosis of the liver, or whenever incidental resistance other than hypertension is present in the path of the circulation. It is a serious error to assume that hypertension is, as a rule, compensatory; because when it is possible to release the heart from the extra labor of a contracted arterial hypertension the arteries are at the same time released from a condition which otherwise seriously interferes with their metabolism and nutrition. It is probable, if not certain, that by so doing a process of degeneration is halted which would finally terminate in arteriosclerosis. It has been stated by some authors that rest is indicated in cases of hypertension. True, it may be, when the arterial blood pressure approximates 200 to 230 mm. when an extra exertion or excitement might occasion the rupture of sclerotic arteries. If, however, by feasible means it is possible, as it is by the autocondensation method, to reduce these high pressures to a point ranging from 140 to 160 mm., there is nothing that contributes more than exercise except a proper diet to the preservation of a standard pressure condition. The writer's experience with many cases having extremely high arterial tension has demonstrated that in patients in whom the blood pressure can be lowered readily to from 130 to 140 mm., and all animal food, including fish and fowl, is eliminated, together with a reduction of the quantity of food and systematic

exercise, it is possible to maintain a standard of low blood pressure by these means alone. This can be effected in all cases except cases of advanced arteriosclerosis.

Finding no classification for cases of arteriosclerosis and hypertension in works upon the subject, the writer, in a paper read in 1908,* adopted the following classification based upon the response to d'Arsonvalization and upon conditions associated with cardiovascular phenomena. In this classification are included seven types of cases or conditions:

Class I consists usually of aged and feeble persons in whom the blood pressure has undoubtedly been high, but owing to an advanced condition of arteriosclerosis, with lowered nutrition and weakened heart force, as commonly associated with valvular lesions, or with cases of dilatation without hypertrophy, the condition is one of failing compensation. When the sphygmomanometer in any of these cases indicates an arterial tension above normal, there is nothing that will give greater relief than d'Arsonvalization if the pressure falls following an administration, because the overworked and feeble heart is thus relieved of the extra labor necessary to overcome arterial resistance, together with an added beneficial effect of the current upon general metabolism, which otherwise improves the general health and nutrition of the patient.

Class II comprises cases of advanced general arteriosclerosis as occasionally found in the aged, in whom the arterial changes are such that the musculature does not respond as in other cases to d'Arsonvalization, and the pressure does not fall. In these cases it is probable that all the arteries which treatment relaxes in other cases are in a condition of arteriosclerosis. These cases, however, are benefited, as previously stated, by daily or otherwise frequent administration of d'Arsonvalization; and when kept at rest, on simple diet and with very moderate exercise, often live for several years in this condition without suffering either from apolexy or Bright's disease, though the tension may remain very high for years.

Class III comprises cases of arteriosclerosis in those of advanced age, and occasionally in ages as early as 50 to 60 years, which respond slowly to d'Arsonvalization without evidence of cardiac depression, but finally under persistent treatment are reduced and maintained at a safe degree of hypertension with corresponding improvement in general health. In these cases in which the reading at the outset may be 200 to 260 mm., as indicated by the sphygmomanometer, the tension may be scaled down in the course of a month or six weeks by daily or alternate day treatment to 140 or 160 mm., at which it may be maintained by strict regulation of diet, exercise, and occasional treatment. These are usually cases of advanced arteriosclerosis with cardiac hypertrophy, but clinical observations indicate that, when under treatment by d'Arsonvalization, a marked vasomotor relaxation takes place, probably of blood-vessels of uniform lumen, which are not sclerosed. The general improvement of these cases and the fact that after several years of treatment there are no signs of failing compensation, but on the contrary a general improvement in the health of the patient, indicate its uniform employment as a judicious measure. By such means the labors of the heart are lessened, and apoplexy and nephritis delayed. Likewise in cases of angina pectoris, with coronary sclerosis, when the nutrition of the heart is thus lessened, the lowering of blood pressure, with diminished labor of the heart, will to a remarkable degree relieve the painful symptoms of angina, thereby lengthening the life of the patient.

Class IV includes cases of advanced arteriosclerosis usually in mature adults, ranging from 35 to 70 years of age, in which the tension may have scaled from 150 to 200 mm. In these cases the administration of d'Arsonvalization by the autocondensation method will produce a marked fall in arterial tension, usually 15 or 20 mm. at each sitting, gradually falling within a week or ten days to the normal 120 mm., at which place it may be usually maintained by regulation of diet, together with systematic exercise and occasional treatment. These cases are a very favorable class of cases, and can be kept for years from danger of advancing arteriosclerosis.

Class V constitutes those cases in which hypertension is found in individuals early in life—25 to 45 years of age. These patients may show a hypertension ranging from 130 to 180 mm., but manifesting no indication of arterial change. The condition is usually discovered on application for life insurance, or when examined for some other condition, and indicates the importance of the employment of the sphygmomanometer at all ages, even in childhood, when hypertension may be the forerunner of serious conditions, associated with so-called rheumatic and choreic conditions, as has been found when examining these young persons. There is probably no condition in which the inroads are so insidious and lead so progressively to arteriosclerosis as these early cases of hypertension; and no class of cases in which the physician is of such service to humanity in saving the young who will take his advice from the dangers of arterial degeneration and its consequences. If these patients, under a systematic régime of diet with exercise, are caused to lead a life free from the dangers of autointoxication which would result in hypertension and its consequences, life will be lengthened and rendered free from intercurrent affections.

Class VI includes young adults who have been upon college athletic teams, particularly the rowing teams of the great universities, and have developed cardiac hypertrophy with hypertension. In these cases, before failure is discovered, it must be insisted that a regulated amount of exercise is imperative in order to prevent a consequent thinning of the ventricular wall, leaving the subsequent perilous conditions of dilatation without hypertrophy. There is no reason why this condition should ever confront the physician if the dangers of over-exercise were properly recognized. When the condition is discovered before atrophy of the ventricular wall takes place, there is but one rule for life, and that is to maintain the hypertrophy by exercise.

Class VII constitutes the cases in which hypertension is compensatory owing to the presence of pathological processes in the path of the circulation, as of parenchymatous nephritis, cirrhosis of the liver, or the demands of excessive exercise, when hypertension may be observed without the presence of arterial changes. In this class of cases, particularly in parenchymatous nephritis, d'Arsonvalization is contraindicated, as the tension is compensatory. If the channels of circulation were then

*"The Treatment of Arteriosclerosis and Hypertension," *Journal of Advanced Therapeutics*, June, 1909.

opened, the blood would not be forced through the kidneys.

From the above classification, with the conclusions drawn with reference to the efficiency of the current in relieving hypertension with the prevention of pending calamities, a large field of indication is suggested for d'Arsonvalization. There is probably no one therapeutic measure which fills a more useful or wider scope of indication than the employment of d'Arsonvalization in cardiovascular diseases. The following cases will illustrate the effects under varying conditions:

Case I.—Mrs. S., aged 75, tension first taken in September, 1907. Pressure at this time was 212 mm., with no response to treatment. Treatment, however, evidently gave patient relief, and was continued almost daily until June, the following year. Pressure taken occasionally during the year remained constantly at 212 mm. The same treatment has been continued, except during the summer months, until the present time. There has been absolutely no change in the arterial tension and the general health of the patient has remained about the same. Her intelligence is unimpaired and there is so far no evidence of nephritis. Though the patient is now 79 years of age, there has been very little change in her condition during the past years. This case represents one of Class II, of which eight have been under observation during recent years, though none of them have received the constant attention of the case reported. It is evident in this case that there has been great benefit from the treatment in the matter of improving metabolism, though the arterial tension is not affected, and it is also a positive demonstration that the treatment does not depress the heart.

Case II.—Mr. C., aged 71, a retired civil engineer, came first under observation on May 9, 1908, with an arterial tension of 210 mm. At the first treatment his tension was reduced 15 mm. At the end of one month his pressure was 173 mm. before treatment, which had been continued almost daily during the month. During the following month, in which treatment was continued generally daily and occasionally on alternate days, the tension had gradually fallen from 160 to 155 mm. before treatment. The treatments were then continued on alternate days until August 10, three months from the beginning of his treatment, when his tension was 145 mm. before treatment. During August of that year, fifteen treatments were given and at no time was the pressure above 155 mm. after treatment. During the month of September ten treatments were given, during which time the disposition of the tension was to be somewhat higher, when daily treatments during the month of October were again resumed, and the pressure fell gradually to 182 mm. before treatment, and 170 after. This patient has been constantly under observation since this time, with variations ranging from 185 to 190 mm., occasionally rising again to 200, and a little above, when treatments were then given more frequently. In the month of October, 1908, pressure had once reached 190 and was always 165 or less after treatment. During this month eleven treatments were given. Beginning with June, 1909, the pressure ranged lower than during the preceding year. In February of that year but seven treatments were given and at no time did the pressure register above 175 mm. before treatment. During April the maximum was 185 mm., with a control of pressure with the usual fall of twenty mm. at each treatment. During the months of June, July, August, and September, 1909, the average pressure before treatment was about 180 mm. and the average after treatment 165 mm. During the fall and winter of 1909 the average pressure was 190 mm. with an average fall after treatment to 175 mm. Treatments were taken more frequently than during the summer months, cold weather seeming to cause a tendency to high pressure. The treatments were continued about the same during the winter of 1909 to July, 1910, when, during the summer months of this year, the pressure under less frequent treatments showed a disposition to a slightly higher range, averaging 195 mm., with an average fall to 180 after treatments. The patient has become familiar with the condition which indicate a rise of pressure, and treatment is administered less often and the relative reading is comparatively high. Before leaving for the country this year, after an absence of ten days, his pressure was 185 mm. and fell to 165, and he returned after one month's absence with a pressure of 170 mm. This case belongs to Class III and the results indicate the effect of autocondensation treatment upon cases of advanced arteriosclerosis, demonstrating the possibility of maintaining a reduction of tension which may be controlled by occasional or more frequent treatments at between 165 and 190 mm., avoiding the extremes of high arterial tension, otherwise certain to prevail. These cases present the most unfavorable showing made in any class of cases that respond to treatment.

Case III.—Mr. B., aged 74. Came under observation with a pressure of 193 mm. By daily treatments for three weeks this tension was gradually scaled down to 140 mm. At the end of this time treatments were given on alternate days and maintained at between 140 and 150 mm., gradually falling to 130 mm. Treatments were given after the second month, twice weekly, when the pressure was maintained between 130 and 140 mm. The frequency was gradually diminished to weekly and then bi-monthly treatments, until the present time. His pressure is now kept between 120 and 130 mm. by treatment once in two weeks. This patient has been judicious in matters of diet and exercise, and his physical condition has improved with the improvement in his arterial tension. This case may be classified as one of Class IV and represents a large class of cases and average result.

Case IV.—Miss L. B. C. This patient first came under observation in April, 1907, when urinary examination showed the presence of a heavy deposit of albumin with granular and hyaline casts. She was put under treatment with light baths and the static wave current was applied over the region of the kidneys. On July 1 the albumin and casts had disappeared and the patient left for her vacation in a good physical condition. On October 17, 1907, she returned, and her blood tension was found to be 190 mm. of mercury. She was then given regular autocondensation treatments, under which her blood tension gradually fell. On January 21, 1908, it was 125 mm.—a fall of 65 mm. Treatment was continued at intervals of a week until June 30, during which time her tension had ranged before each treatment from 130 to 145 mm., always falling approximately 10 mm. after each treatment. On December 9 her tension was found to be 110 mm. Her tension was not again taken until November 27, 1909; the urine was then free from albumin and granular and hyaline casts, and the patient had been

in excellent health. This patient had been living upon a restricted diet, owing to her nephritis, for more than a year before she came under observation, and with the diet unchanged, under the static, light, and vibratory treatment, the symptoms of nephritis had disappeared, but the tension had remained persistently high until autocondensation was employed, when it promptly fell from 190 to 120 mm., and has remained at an average of approximately 140 mm. ever since. There has been no recurrence of either albumin or casts. This case demonstrates the persistence of high blood tension under diet, which, under the same régime, with the added employment of high frequency autocondensation, had fallen and has remained within a range of safety for four years.

Case V.—Mr. H., an advertising man, came under observation December 6, 1909, with a blood tension of 260 mm. With daily twelve-minute séances until December 10 he came to the office with a blood tension of 215, and for the first time his tension fell below 200 to 190 mm. of mercury. Following this, the tension rapidly fell under daily treatments from the 12th to the 16th, when he came in with a tension of 180 mm. and it fell to 170 mm. after treatment. After an absence then of eight days without treatment, his blood tension was but 185 mm. and fell to 165 mm. following treatment. From that day his calls have been less frequent, and on January 10, 1910, he came to the office with a blood tension of 135 mm., which fell to 130 mm. after treatment. Since then his treatments have not been more frequent than once or twice weekly and at no time has his tension been above 145 mm. This patient had suffered for three years with headaches twice daily—in the morning and in the evening. These disappeared when the tension had fallen below 200 mm. Upon the institution of treatment the patient was put upon a restricted diet, promptly eliminating all meats, including fish, and also put on the use of the Metchnikoff plan of lactated milk diet, which he takes with a relish. The patient's own expressions of gratitude for his changed condition and improvement of the general physical condition, with the disappearance of dyspnea on exertion, were the best evidence of relief with the exception of the readings of the sphygmomanometer. With occasional treatments, whenever tension is disposed to rise above 150 mm. and attention to diet, this patient is now in excellent physical condition.

Case VI.—Mr. G., teacher, first came under observation January 21, 1910, when his blood tension registered 230 mm. Following the first twelve months of autocondensation it fell to 220 mm. Under daily treatments until January 25, inclusive, his tension upon entering the office was 175 mm. and fell to 155 m., after which he called on alternate days until January 31, when his tension fell after treatment to 140 mm. Treatments on alternate days were continued to February 26, when his blood tension was found to be, on entering the office, 120 mm., and no treatment was given. From March 10 to March 22 but two treatments were administered. On March 22 his blood tension was 138 mm. after ten days without treatment—only 3 mm. higher than at the end of the previous treatment. This patient continues well and with but moderate hypertension.

Conclusions.—(1) D'Arsonvalization is undoubtedly the most practical and efficient means of relieving arterial hypertension. (2) D'Arsonvalization produces no depression upon the heart and is consequently contraindicated in no cases of cardiovascular disease, except in those cases in which the hypertension is compensatory. (3) Except in cases of high blood pressure arising from other obstructing conditions, the tension should be lowered in all cases within a limit of safety, and maintained there by the conjoint employment of d'Arsonvalization and a diet limited in quantity and relatively free from purin bodies. (4) Under systematic routine management hypertension is thus usually controlled, the advance in most cases of arteriosclerosis delayed, and the dangers arising from complicating conditions deferred.

329 West Fifty-seventh Street.

AN UNUSUAL CASE OF TYPHOID FEVER IN A YOUNG CHILD.*

By FREDERICK J. BARRETT, M.D.,

NEW YORK.

ASSISTANT PHYSICIAN, LINCOLN HOSPITAL, ASSISTANT IN CLINICAL MEDICINE, COLUMBIA UNIVERSITY.

Typhoid fever in young children is comparatively rare, and when it does occur often presents peculiar features differing essentially from the course of the disease in adults. Holt† states that he has never seen the disease in a child under two years old, and that it does not occur frequently until after the fifth year. Morse‡ in his report of 3,680 cases of typhoid fever from the records of the Boston City Hospital, found only 284 cases or 7.7 per cent. in children under fifteen years, and only 3 cases in children under five years. In this series there were no cases under two years. The disease in young subjects often presents such unusual features in onset, course, and individual symptoms, as compared to the adult type, that the difficulties in early diagnosis are very great. For these reasons the following case is of interest.

Edward X., 3½ years old, was admitted to the children's ward of Lincoln Hospital on February 28, 1911, at 5.30 A. M., with the following history: His father and mother are alive and well. He eats and sleeps well, but has been constipated from birth. He has never been ill until the present. For four days child has had loss of appetite, slight dry cough, feverishness, and increasing prostration, and has passed small, watery brown stools without blood. On the morning of the day before admission he complained of pain in his abdomen and twelve hours later had a hemorrhage from the bowels. It was not possible to ascertain the quantity.

On admission in the early morning, the temperature was 100°. The child was poorly nourished and markedly anemic. He was very restless and breathing rapidly, 48 per minute. The pulse was rapid, 132, small and weak. There was slight cyanosis of fingers and ears. The skin was dry and showed no eruption. The tongue was dry and heavily coated; the lips parched. The throat was normal except for slight hypertrophy of the tonsils. The superficial lymphnodes in the cervical region, axilla, and groin were palpable. The heart was normal in size and position, but the action was rapid and the sounds indistinct. The lungs showed scattered moist râles

*Presented before the Bronx Medical Society, March 23, 1911.

†Holt, L. Emmett: "The Diseases of Infancy and Childhood."

‡Morse, J. L.: "Typhoid Fever in Childhood, with an Analysis of 284 Cases," *Boston Medical and Surgical Journal*, February 27, 1896.

at the bases posteriorly. The abdomen was somewhat distended, tympanitic over all, and soft. Palpation caused some apparent discomfort, but no localized tenderness was discovered. The liver and spleen were not palpable. The anal region was smeared with blood. The knee jerks were active. The Kernig and Babinski signs were not present. There was no nystagmus. There was a marked internal strabismus of the left eye, but this had been present from birth. Pupils were equal and reacted normally. During the day of admission the patient became actively delirious. The temperature fell at 8 A. M. to 96.5°, pulse 116, respiration 32. At 12 noon the temperature was 98.5°, pulse 152, respiration, 46. At 8 P. M., temperature 100.3°, pulse 132, respiration 32. At 10 P. M. the patient passed by rectum about 1,000 c.c. of bright blood. The delirium was very active and the child had to be restrained. He waved his arms about wildly and called constantly for his parents.

On the day after admission (the 6th of the disease) uranalysis showed an acid urine of a specific gravity of 1.030. There was no albumin nor sugar, but there were a few hyaline casts and a slight deposit of amorphous urates. The leucocytes were 19,600, of which 91 per cent. were of the polynuclear variety. There was no more bleeding from the intestine. The pulse was still rapid, but of somewhat better quality, probably owing to saline solution given by rectum by the drop method. The respirations were not quite so rapid. The lungs showed numerous moist râles over all. The nervous symptoms were as marked as on the previous day. The delirium was active and simulated closely that of meningitis. There was none of the low muttering nor subsultus tendinum seen in typhoid of the adult, but active crying and movements of the extremities. This delirium continued for six days. During this time the pulse was variable, showing several rates during a brief examination. The respirations ranged between 24 and 36, but were irregular. The neck was slightly rigid, but there was no retraction. The knee jerks were active. The Kernig sign became suggestive but not positive. The Babinski sign was positive on the left side. There were no eye symptoms. The lungs showed many moist râles over all, but no consolidation. During this time the temperature was irregular but never higher than 102.° Abdominal distention was relieved on the third day after admission by irrigation and the spleen was found to be not palpable. The bowels were moved daily with an enema. There was no roseola noted at any time.

The diagnosis during this time lay between typhoid fever and a general tuberculosis with meningeal, pulmonary, and intestinal involvement, with hemorrhage from a tuberculous ulcer of the intestine. The absence of a roseola and palpable spleen, the meningeal symptoms, and the intestinal hemorrhage were thought to be rather against typhoid, because of its rarity in young children and of the early stage of the disease. The high leucocyte count was explained by the hemorrhage and by a small abscess on the scalp.

On the second day after admission, the 7th of the disease, a Von Pirquet test was made with negative result. Through a misunderstanding blood for a Widal test was not taken at the time. On the 11th day of the disease lumbar puncture was done both for diagnosis and in the hope of relieving the nervous symptoms. About 15 c.c. of clear fluid was obtained under slight pressure. It was normal. The puncture, however, did relieve the active nervous symptoms. The child became much quieter and the general condition improved. The lungs cleared. The temperature assumed a remittent type for a few days and then fell to normal on the eighteenth day. Blood for a Widal test was finally taken on the fourteenth day of the disease and showed a positive result. This was confirmed by a subsequent test made during convalescence.

In review and with the diagnosis definitely made, the case stands out more clearly than in the first week during which the child was under observation. The one unusual feature is the hemorrhage. In all other respects the case fits closely Holt's description of the disease in children and corresponds with Morse's statistics. The short course of the disease, seventeen days (the average is three weeks), the remittent type of fever during the second week, the absence of the roseola, the absence of splenic enlargement, the fact that the intestinal symptoms (with the exception of the first week) were not prominent, and the marked nervous symptoms are common phenomena in the juvenile type of the disease. Holt states that "the typhoid of early childhood may be characterized as a fever more often with nervous symptoms than with intestinal symptoms." All three of Morse's cases under five years showed marked nervous symptoms, and one of them closely simulated meningitis, as did this case.

The intestinal hemorrhage is most unusual. In Morse's series of 77 cases under ten years old there were no cases of intestinal hemorrhage, and in 946 collected cases mentioned by Holt it occurred "in about 3 per cent. and the majority of these were in children over ten years old." The most frequent time of its occurrence is toward the end of the second week. In this case it occurred on the fifth day of obvious symptoms of the disease, although it is, of course, possible that a few days of onset were overlooked by the parents.

A feature of the convalescence in this patient was aphasia coming on toward the end of the febrile movement and lasting about three weeks. The child's mother says that he was always quite talkative and he became more so before he left the hospital, but during the period mentioned he was not heard to speak. There were no other nervous symptoms at this time and no paralyses were discoverable. The intelligence was apparently maintained during this time. Morse believes this phenomenon is probably due to a local anemia or edema. In other respects the convalescence was normal. The child rapidly recovered its strength, flesh, and color, and left the hospital on April 28 in excellent condition.

119 West Eightieth Street.

SALIVARY CALCULUS OF WHARTON'S DUCT.

By E. HARRISON GRIFFIN, M.D.,

NEW YORK.

A well formed manly little boy, nine years old, was brought to my office with the following history: A large tumor about the size of a bantam's egg had formed at the angle of his jaw, on his right side. This tumor had occurred at various intervals. It was attended with little pain at the start, when later all the symptoms of an abscess occurred and a discharge of purulent fluid took place from under the tongue through Wharton's duct. After several attacks of this nature, the mother would

press upon the enlarged submaxillary gland and empty the contents through Wharton's duct. She had a prescription for syrup of hypophosphites which she believed caused the lump to disappear in a short time and hastened the purulent discharge through Wharton's duct. The tumor had lasted for three or four days when the case was first brought to my office. The gland was hard to the touch and had the feeling neither of an abscess nor of a sebaceous cyst. The opening of Wharton's duct was slightly enlarged, red, and congested, but lacking any of the edematous swelling found in vanula. Pressure of the finger in this locality failed to show any abnormal condition. The mouth was slightly painful during mastication, but no other local or general symptom was manifested, except the swelling of the gland which had increased in size and was sensitive to pressure with a diffuse puffiniess of the submaxillary area somewhat analogous to that of the parotid in mumps.

I administered potassium iodide in doses of twenty grains, ordered a brisk cathartic, and asked the patient to return in two days. Upon his second visit he showed me a large calculus one inch in length and about the thickness of a stick of nitrate of silver; it was slightly pointed at the end which was the first to leave the duct. The sides were rough and looked like necrosed bone. It was white in color and had an appearance as if it had been added to by additions instead of forming at once into one mass. It broke into two parts in passing through the duct; after it had been in the air it turned to a gray white. It was hard and rough and had the usual look of any common calculus. Its passage had caused considerable pain. A direct examination showed a slight redness in the midst of the ostium umbilicale, the mucous membrane at this point was slightly swollen, tense, and hot, and pricking was complained of. These calculi have at times as a center a foreign body, such as a fish bone, toothpick, or straw, which has found its way into the body through Wharton's duct.

The following case reported by Delery is very interesting. A patient ate trout for supper; he awakened in the night with intense pain; respiration was difficult; expectoration very painful; the right sublingual and submaxillary region were swollen and extremely sensitive to the touch. In a few hours the pain involved the entire head and was so intense that the patient thought that he would go crazy. This condition lasted for three days. After this violent attack a respite occurred for six months, during which time the pain continued, but was endurable. After six months a fresh attack occurred, as violent as the first. The tongue began to deflect to the right and its movements were difficult. He then remained ten months without another attack, the tumefaction of the right submaxillary and sublingual region continued and was accompanied by exquisite tenderness. This condition continued for three years, with alternations of attacks and intermissions; the physician sounded Wharton's duct and found a stone. The operation was delayed until the next day. Hardly had the physician left the house, when the patient was taken with severe pains. Upon pressing his tongue over the sublingual tumor, he felt a pricking sensation. He looked into a mirror, noticed a point projecting towards the tongue, and recognized the calculus. This he removed. It was four to five lines in length and one and one-half in circumference. The fish bone projected from the calculus.

55 West Forty-Seventh Street.

Rational Treatment of Diabetes in Hospital Practice.—Raolo Alessandrini says that since no medical treatment of diabetes has been successful in curing the disease we are obliged to depend on diet in its treatment. But in this respect we must not make any hard and fast rules to be applied to each case, since each case should be individualized, and the kind of diet must depend on the stage and cause of the disease, as well as the general condition of the patient. In the United Hospitals of Rome the ordinary hospital diet is given with the exception that sweets and farinaceous articles are excluded. It is well known that diabetics will not tolerate a diet consisting solely of meat. Carbohydrates cannot be entirely excluded from the food, and when they are removed it should be done gradually. After the carbohydrate tolerance has been established and sugar has disappeared the carbohydrates can only be returned to gradually. The three objects to be attained in treatment are to cause glycosuria to disappear, to prevent acidosis, and to avoid loss of weight. The last is not as important as the other two considerations. The diet should be such as to keep just below the limit of tolerance for carbohydrates. When the removal of carbohydrates does not stop the glycosuria we must lessen the amount of albuminoids, removing the meats and substituting vegetable albumins. An increase in weight is an indication of the good results of treatment. The amount of albuminoids given should never exceed 150 grams per day. As substitutes for sugar, inosite, mannite, and cellulose are all well tolerated. Alcohol is well tolerated and is of great value in diabetes. The daily dosage of sugar, the determination of the weight of the patient, the examination of the nitrogenous metabolism and the amount of ammonia in the urine are the guides in determining the number of calories to be given in the diet of diabetics.—*Rivista Ospidaliera.*

New Researches with Reference to Nongonococcic Ophthalmia, "Ophthalmia by Inclusions".—V. Morax has inoculated the eyes of monkeys with the discharge from the so-called ophthalmia by inclusions, which is not due to gonococcic germs, and has concluded from his examinations that there is a specific inflammation which causes this form of eye trouble in the newborn. The etiology is not known. This disease may be transmitted from an inflammation of the urethra or utero-vaginal membrane to the eye, and vice versa. It resembles trachoma in that there are granules, or epithelial inclusions, under the mucosa of the eyelids. The prognosis of this form of eye trouble is good, since it disappears spontaneously in a month or six weeks without ulceration or scar formation. No treatment seems to be of value in causing earlier disappearance of the trouble. Out of 119 cases of ophthalmia observed by Lindner, fifty-three were of this type.—*Annales de Gynécologie et d'Obstetrique.*

Salvarsan and Labyrinthine Troubles.—Eugene Felix cites many cases treated with 606 in which there have been ear troubles more or less severe. He advances the question whether these troubles have been due to the use of salvarsan, or have occurred in spite of its use as a result of the syphilitic virus. There are cases in which the auditory symptoms existed before the use of salvarsan and others in which the labyrinthine troubles followed the use of the injections. Ehrlich believes that these symptoms are only a recurrence of syphilitic manifestations and not due to the use of arseno-benzol. The author concludes that in order to avoid auditory troubles we should make a very careful examination of the acoustic organs of every patient who is to be injected with sarvarsan, and should exclude from treatment all cases that present auditory troubles, treating these cases with mercury.—*La Presse Médicale,* August 5, 1911.

MEDICAL RECORD.

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THE CANCER CELL.

IT may be said with little fear of contradiction that the most interesting subject to-day in the whole field of medical research is the cancer problem. The study of it is world wide; in nearly every country of the civilized world special institutes exist for cancer research, some of them richly endowed by legacies from men who have themselves died of the disease. For many years the quest of the cause of cancer and of a means for its cure has gone on unremittingly, some of the acutest minds of the profession being devoted to it, and to-day, with theories too numerous for bare enumeration, we truly *know* absolutely nothing. The three favorite theories of the nature and causation of malignant disease are what may briefly be designated as parasitism, defective metabolism, and embryonic rests. The theory of parasitism flourished for a time and still has many convinced partisans, but to the observer from the outside it has seemed of late to be losing ground. Cohnheim's theory of embryonic rests enjoyed a brief revival when Beard promulgated his trypsin cure, but it does not appeal with convincing force to most investigators. Perhaps common belief inclines now more to the metabolic theory. According to this theory, preached for many years by Bell in London, metabolism is at fault in consequence of autointoxication or of a deficiency or depravation of one or more of the internal secretions, especially the thyroid; and because of this defect restraint on certain cells is removed and they then run riot in their growth, neglecting the functions they were intended to perform and giving themselves up wholly to a debauch of reproduction—becoming a sort of Jukes family, as it were, among cells. In all of these theories there is much that is unexplained, and one and all of them fail to answer satisfactorily all or even the greater number of the objections that may be raised against them.

Apparently equally short of perfection, yet exceedingly interesting in its novelty, is a theory advanced by Sir Henry Butlin in two Hunterian lectures delivered in London on November 13 and 18 (the *Lancet* and the *British Medical Journal*, November 25 and December 2, 1911). His conception of the nature of cancer is in a way related to both the parasitic and the metabolic theories, yet is distinct from either. His theory in brief is that the cancer cell is a tissue cell transformed into an independent entity—a cell "endowed with that wondrous gift which no man has seen and which no man can understand—the gift of life;" it has become a new thing, a new creation. The cell into which has thus been breathed the breath of life now becomes a veritable Frankenstein creation, warring to the death against the tissues from which it sprang. But what is it? In seceding from the metazoan organism has it returned to the primordial protozoa, in one bound leaping backward over the evolutionary chasm of eons, or is it a being of a new order? Butlin would place the new creature among the protozoa, for its resemblance to one of the parasitic protozoa is, he holds, very strong. Like these, the cancer cells spread in the interstices of the tissues in which they first appear. They are conveyed in the blood and lymph, they are deposited in distant tissues and organs, and they show the same predilection for certain tissues and organs as do the protozoa. They are like many of the parasitic protozoa in the fact that they live almost entirely by osmosis. Like the protozoa, they sometimes live for long periods of time in the body of the host without any sign of their presence, and perhaps in a state of lethargy, until their vigor and activity are restored by some lowering of the resistance of the host, or by some change in the part in which they had been lying which renders it more suitable to their necessities. Like many of the parasitic protozoa, they do not appear to furnish toxins which are dangerous to the health of the host, so that their effects are produced by mechanical causes—destruction of the tissues in which they live and multiply, and the stoppage of the blood-vessels and lymphatics. But the biologists will recognize no such nondescript and, as Butlin laments, they will have none of it, so he perforce creates for it a new order and a new name, calling it *Unicellula cancri.*

The cancer cell is thus itself the parasite, the neoplasm is not a tumor developed in response to the stimulation of a parasite, protozoan or bacterial, but is itself an agglomeration or colony of parasites. The cell being derived from a specialized tissue cell can produce only its like, and thus we have the various forms of carcinoma and of sarcoma remaining distinct and forming metastases like themselves. We have said the theory is, like all the others, not perfect, for it does not explain all the mysteries of cancer; but Sir Henry Butlin claims that it explains more of the phenomenon of malignant disease than any other; and it fulfils, he says, the conditions laid down by Koch—to wit: "A specific microorganism must be constantly associated with a given disease; it must be isolable and studiable apart from the disease, and when introduced into a healthy animal it must be able to reproduce the disease in that animal; and in the animal in which the disease has thus been experimentally reproduced the organism must be found under the original conditions." The only one of these conditions, the fulfilment of which might be disputed, is that which demands that the cell is isolable and studiable apart from the disease, but this Butlin claims has already been demonstrated by Carrel and Burrows who have grown cancer

cells in artificial media. This is indeed true, but herein is the weak spot of Butlin's ingenious theory, for tissue cells as well as cancer cells have been grown in artificial media. Unless, therefore, Sir Henry can prove that the transfer of these from the living body to the culture media endows them with the life principle, his distinction between the tissue cells and the cancer cells falls to the ground. "Implant the normal cell," he says, "and you cannot make it live. Implant the cancer cell, and you cannot kill it"—but if the tissue cell does *not* perish when implanted or when transferred to culture media, as Carrel and Burrows have apparently demonstrated, we must assume that it is equally alive with its erring brother of the malignant neoplasm—as it is, for life surely resides not only in the organism as a whole, but in each of the individual cells of which it is formed.

NEW ORLEANS AND THE PANAMA CANAL.

Writing in the *New Orleans Medical and Surgical Journal*, November, 1911, Howard D. King of New Orleans sounds a note of warning. He refers to the menace of plague which will threaten the Southern States upon the opening of the Panama Canal. It has been predicted that the canal will convert New Orleans into the greatest export and import market of the New World. Material prosperity, however, invariably brings in its train evils of many descriptions. "Trade follows the flag" and "disease follows trade." Moreover, the ports of the Southern States and especially the port of New Orleans will be brought into close relationship with lands in which devastating epidemic diseases, particularly the plague, are rife. King notes that the plague situation in South America is already sufficiently alarming but will necessarily become even more so with the completion of the Panama Canal. This aspect of the matter seems to be ignored to a great extent as inconvenient and subversive of trade interests. The lay press disregards it as much as possible and in the laudatory articles on the Panama Canal no mention is made of the menace of disease. Plague, in fact, appears to be the skeleton at the feast.

According to King our main source of danger from introduction and dissemination of plague on American shores is not as so many believe from direct communication with the now infected ports of the Far East, but is to be found in South America. "It is the existing infection in South America which threatens our safety, and it behooves us to exercise the greatest caution in repelling the invasion of this traveling disease. The presence of plague in New Orleans or other Gulf ports would imperil the entire country. Thus, to-day, we stand facing a problem, the solution of which cannot be undertaken too early." It is well known that the entire western coast line of South America is now infected, while on the eastern coast the infection is distributed in spots and does not follow a continuous line. There are other facts of a sinister nature. Knowledge as to the exact conditions prevailing in South America is lacking. This in itself is unfortunate and may lead to disaster. Then it is only too well known that the conditions in most of the South American coast towns lend themselves most favorably to the dissemination of plague. To be sure sanitary measures are in force in South America, but, perhaps, as a rule, these methods are not in complete consonance with modern laws of sanitation as understood in most civilized countries. The Latin peoples of South America are jealous of European or other outside interference and are complacently satisfied that their own methods of sanitation are quite satisfactory. Indeed in some parts of that continent indifference prevails as to the existence of disease. All these facts combine to render the situation a menacing one. King advocates a uniform international system of maritime sanitation and fumigation, arguing that the ordinary measures used in combating the plague are inadequate and antiquated. Finally, he rightly insists that the United States at least should put its own house in order and so improve the sanitary conditions of New Orleans and other Southern ports that the risk of plague invasion by way of the Panama Canal will be minimized. Both in New Orleans and elsewhere there is scope for the display of unlimited energy in this direction. The promotion of trade deserves encouragement and material prosperity is doubtless a goal to be eagerly sought. But these will be dearly bought if at the same time plague is introduced. To be warned in time is to be forearmed, and it is to be hoped that such may be the result in this instance. Were the opening of the Panama Canal to be followed, or better preceded, by a thorough housecleaning, so to speak, in South America and in the Southern States it would be a cause for international rejoicing. At any rate this country should lead the way by the sanitary regeneration of such ports as New Orleans. It would ill become us to point the finger of scorn at other countries for neglect of modern methods of sanitation while we continued to disregard similar precautions in our own ports.

THE ARMY MEDICAL DEPARTMENT IN THE FIELD.

The prime function of the medical officer in time of peace or of war is the prevention of disease. In addition, during the progress of a campaign, he must provide for the prompt segregation and care of the sick and wounded. The army must be kept in proper condition as a dangerous fighting machine and every other consideration must be subordinated to this end. This is the keynote of an article by Lieut.-Col. Frank R. Keefer, in the *Journal of the Military Service Constitution*, November and December, 1911. As to the sanitary service in camp, one of the most important functions is the supervision of the water supply. If this is polluted then disease is certain to follow. Thus, the water supply must be carefully guarded, frequently inspected as to pollution, and purified by special means if necessary. Strict precautions must also be taken to destroy the fecal deposits. Neglect of such measures have been invariably followed by disastrous results, even in the most modern campaigns. In war time the care and removal of the sick is the

chief duty of the department, while a not uncommon additional duty is "the management of epidemics among the inhabitants of a country under military control, to prevent infection of new territory or of the army."

Lastly, the writer describes the functions of the Sanitary Service in combat and calls attention to the fact that the great changes in battle tactics, necessitated by increased range and rapidity of fire, have largely altered the conditions to be met by sanitary troops. It is shown that the medical officers and War Department of this country are fully alive to these changed conditions and are keeping abreast of the most recent innovations in this direction. The author concludes his admirable paper in the following words: "It is universally accepted that the most important factor in the efficiency of an army is its health. It therefore appears that the Medical Department, by its functions of the prevention of disease and the prompt removal of the disabled from the line of action, promotes military efficiency and aids greatly the winning of victories and the following up of advantages gained."

STEVENSON AT SARANAC LAKE.

At Saranac Lake is the Adirondack Cottage Sanatorium, the beneficent institution now world-famous as that begun some three decades ago by Dr. Edward L. Trudeau, himself once a sufferer, and the American pioneer in the modern treatment of tuberculosis. During those 30 years many men and women notable in literature and the arts have visited Saranac Lake—some as visitors only; probably a much larger proportion in efforts frequently successful to become again whole in body. Intellectuals, indeed, "hard students, divines, physicians, philosophers, deep lovers, zealots in religion," have ever paid dreadful tribute to the Captain of the Men of Death. But none among those many who have come to Saranac Lake have ever inspired so much interest as did Robert Louis Stevenson; nor does to-day the memory endure as it does of him, who, in the fall of 1887, accompanied by Lloyd Osborne, his stepson and co-litterateur, took for the winter the yellow Baker cottage. Later his mother joined him there. And ever since its occupancy by Stevenson has this cottage been an object of interest to visitors, temporary residents, and townsfolk. One hardly steps from the train when comes the question, "Don't you want to see the yellow cottage that Robert Louis Stevenson occupied?"

That Adirondack winter was trying for Stevenson; his health improved, but his exotic nature found it hard indeed to endure the ice and the snow and the bitter cold. His cottage had a large fireplace, where he had logs ever burning briskly. The bleak banks of snow without did not appeal to Stevenson, though as early as four in the afternoon the darkness came to hide them. The great novelist of the *outré* preferred to sit by the log fire, watch the fantastic flames, and talk. Windows were tightly shut and he smoked cigarettes incessantly, until the smoke mist rolled over the fireplace to the windows and made, in itself, a blanket that shut out the sight of the snow. Dr. Trudeau, who visited him frequently, has observed that Stevenson "used to rail in such forcible but beautiful and picturesque language at the cold, at the snow, at the cloudy days and the succession of them, and the lack of color and sunshine. His idealistic and artistic temperament clung to all that was beautiful in life as expressed in nature, in art, in form, light, and color, in thought, in poetry, and in imagination. He deliberately turned his back on the cold facts of science and life, ignored them as much as possible, and shunned the discussion of such subjects as poverty, disease, sorrow, and suffering, with which we were more or less surrounded."

On Saturday afternoons Stevenson made it a practice to be "at home" to those who wished to call. Any one might come; and many took advantage of the opportunity. But he seemed to get little pleasure out of these functions. Conversation quickly tired him. A persistent "fashionable lady" seemed especially a *bête noire*, and one day after she left, Stevenson observed, "It isn't the great unwashed which I dread, but the great washed." But from one visit Stevenson derived only unalloyed satisfaction and delight. This was when Richard Mansfield came to the Baker cottage. In the living room, while Stevenson sat by the log fire, which fitfully and uncertainly lit up the room, Mansfield on a table in a corner of the room gave his marvelous and gruesome impersonation of "Dr. Jekyll and Mr. Hyde."

It is odd how the quality of a genius, if he be a consumptive, is likely to be affected by that disease. The phenomenon occurs too frequently, in literature at least, to be explained solely on the basis of individual temperament; it must come about by reason of the effect upon the psychism of the toxins evolved by the specific bacteria. Robert Louis Stevenson is preeminently a case in point. Certainly there are no more fascinating contributions to literature than the works of this sick hero, who was ever an optimist despite the most dreadful reasons for being the reverse. Consider any number of passages and incidents such as the pretended death and burial in the "Master of Ballantrae"; the scaring nearly to death of the boy in the inn by the tramp of the blind pirate in "Treasure Island," and many others. Again, in the "Bottle Imp" the incident of the two men viewing the bottle of iridescent glass, within which was vaguely seen some strange thing moving about; how one of these men, his curiosity becoming too much for him, for an instant uncorked the bottle; how, then, upon a glance within, his face grew ashen-green, from which moment he was ever a sick and stricken man. "Dr. Jekyll and Mr. Hyde" is full of such morbid touches—especially the ghastly turning of the doctor's benign features into the hideous face of his devil nature in the upper story window that calm Sunday afternoon. In "St. Ives," the "Body Snatcher," and other stories by Stevenson is the like literary pathology manifested; and the reason may lie in those tuberculous toxins which were coursing in his blood.

Direct Contagion in Measles.

In the *Military Surgeon*, October, 1911, is a report of an epidemic of measles in Columbus Barracks, Ohio, with some remarks on the manner of transmission of disease by Captain Arthur C. Christie, Medical Corps, U. S. A. The special interest in this paper lies the remarks on the manner of transmission and in the writer's view that measles is a more serious disease by far than it is generally thought to be. As for the mode of transmission, Christie is a strong believer in the more recent views in this respect, that the organisms of disease die quickly after leaving the body of the patient, that is, of a patient who has either recovered or died. In the case of yellow fever and malaria the belief that the disease was conveyed chiefly by fomites has been exploded. Christie argues that when the difficulty of keeping alive and cultivating the known organisms of disease is considered and when it is known that most of them require the most favorable conditions of culture media, temperature, and moisture in order to remain living and virulent, it does not seem reasonable to believe that the causative organisms of measles, scarlet fever, etc., could remain alive and retain their virulence on dry clothing, a bare wall, or other such locality so unfavorable to their growth. He therefore is of the opinion that so far as measles is concerned it seems reasonable to believe that in most cases the disease is contracted from persons in the early catarrhal stage, before it is diagnosed and the person is isolated. Hence, the preventive measures to be applied when the disease is prevalent are to diagnose in the early stage and to isolate promptly. The epidemic in Columbus Barracks has been widespread and virulent in type and the complications of a severe kind and somewhat numerous, which goes to substantiate Christie's contention that measles is a serious disease.

A New Editor of the "New York Medical Journal."

Announcement is made of the appointment of Dr. Charles E. de M. Sajous of Philadelphia to be editor of the *New York Medical Journal*, succeeding the late Dr. Foster, who had held that office from the foundation of the journal to the time of his death. Dr. Sajous is well qualified by a long editorial experience for the work he has undertaken. He was born in 1852 and was graduated from the Jefferson Medical College in 1878. He began practice as a laryngologist but soon took up editorial work. He founded in 1888 the *Annual of the Universal Medical Sciences*, which he conducted with the collaboration of many physicans in America and Europe, until the publication was abandoned in 1893. This was followed in 1898 by the "Cyclopedia of Practical Medicine," the seventh edition of which is announced as in preparation. Dr. Sajous is best known, however, for his monumental work on the "Internal Secretions and the Principle of Medicine," published in two volumes in 1903 and 1907, which established his reputation as an original worker and clear thinker. Dr. Sajous, it is stated, will continue to reside in Philadelphia and will retain his hospital and consulting practice, but will give up his visiting practice in order to devote the time so gained to his editorial work for the *New York Medical Journal*. Our contemporary is to be congratulated on having secured as editor a physician of such high standing and authority.

News of the Week.

New York the Healthiest of Cities.—According to the statement of the Health Department officials there are no other large cities in this country with a minimum weekly and monthly record that can compare with that of New York and with only two weeks remaining in the year it seems a foregone conclusion that the year's record will be the best yet recorded. Last year Boston's death rate was 16.3 per 1,000 population; Chicago's, 15.38; Washington's, with its 3 per cent. colored population, 18.28; while New York's death rate was 15.96, leaving Chicago slightly in the lead. For the eleven months of 1911 New York's death rate has dropped to 15.19, with every prospect of sending the figure below 15 for the present month. The lowest monthly record was for October, when the rate was 12.99 per 1,000 population. This record is as low as that of any rural community in the country. A study of mortality tables shows that there has been a decrease in the prevalence of infectious and communicable diseases, those amenable to public sanitary control; while, on the other hand, the causes of death, such as cancer, heart and kidney troubles, and diseases of the liver, which are outside the influence of sanitary intervention, showed a considerable increase in mortality.

Low Death Rate for New Jersey.—The State Registrar of Vital Statistics reports that for the month of November the deaths numbered 300 less than the average for the past twelve months. Of the 2,914 deaths reported, 588 were infants under one year of age, 243 children from one to five years of age, and 936 persons over sixty years of age.

Vital Statistics for the District of Columbia.—Deaths for the year 1910-1911 number 6,511 as against 6,212 in 1909, including 3,199 during the first six months of 1911, which must be considered in order to round out the period covered by the report; while in 1910, for the same period, there were 3,397 deaths recorded. Infantile paralysis has stood out prominently. Although there is no law making this disease reportable, the Medical Association of the District of Columbia in its investigation found 506 cases. The births recorded during 1910 numbered 7,031, an increase of 5 per cent. over the preceding year. Thus far for the present year the births number 3,413.

New York City Has Less Typhoid Than Usual.—According to a statement issued by the Department of Health there has been less typhoid fever than usual in New York City during the past year. The average number of cases yearly for the past five years is 3,379. This year there have been 3,140 cases, as compared with 3,370 in the twelve months of 1910. Since December 1, 92 cases have been reported.

Hookworm Disease Prevalent in Texas.—Following the investigation of Dr. C. W. Stiles of the United States Marine-Hospital Service as to the prevalence of hookworm infection in the State of Texas, Dr. Stiner, Health Officer of the State, has issued a report stating that hookworm infection was found to be present in forty-five counties of the State, from 30 to 40 per cent. of the children in the rural schools being affected. Evidence of infection among the teachers was not entirely lacking. The report states that owing to the increasing number of shade trees and to the loose and sandy soil there is need of more careful attention to sanitary conditions than in many other localities.

Death from Pellagra in New Jersey.—The first death from pellagra recorded in New Jersey occurred in St. Michael's Hospital, Newark, on November 29.

Petition to Restore the U. S. Army Canteen.—Under the leadership of Dr. W. W. Keen of Philadelphia, a petition has been prepared for presentation to Congress and signed by 275 physicians from all over the United States urging the restoration of the canteen in the Army. After giving the history of the canteen in the Army the petition goes on to say that it is the practically unanimous testimony of all the general officers and post commanders that since the abolition of the canteen in 1901 intemperance has increased and that there has been a corresponding increase in infractions of discipline and desertions. The restoration of the canteen is urged on the ground that soldiers are driven to resorts outside of the posts, resorts of the lowest sort, where they not only drink strong liquors but contract venereal diseases, and that it is most unwise to increase the moral and physical risks of the military environment of these men by act of Congress. The bill points out that not only in the interest of the soldiers but for the welfare of their future wives and children Congress should reestablish the canteen in the Army by the passage of the Bartholdt bill.

Pennsylvania Bureau of Medical Educational Licensure.—Governor Tener has appointed the following to membership in the new State Board of Medical Educational Licensure, which with the beginning of the new year will succeed the old three-board Medical Council: Dr. Samuel G. Dixon, State Commissioner of Health, and Nathan C. Schaeffer, Superintendent of Public Instruction, ex-officio; Dr. Adolph Koenig of Pittsburgh, representing the Medical Society of the State of Pennsylvania, for three years; Dr. G. A. Mueller of Pittsburgh, representing the Homeopathic State Medical Society, and Dr. C. L. Johnstonbaugh, of West Bethlehem, representing the State Eclectic Society, each for two years; Dr. D. P. Maddux of Chester, representing the Homeopathic State Medical Society, and Dr. J. M. Baldy of Philadelphia representing the Medical Society of the State of Pennsylvania, each for one year.

Connecticut's Health Report for October.—This report shows that the death rate for the large towns was 14, for the small towns 14.3, and for the whole State 14.1 per 1,000. There were 36 more deaths than the average for October for the past five years. The report announces that the Legislature appropriated $8,000 for the free distribution of antitoxin, which will be made through the general drug trade. Only tetanus and diphtheria antitoxins will be furnished. The State Board of Health has adopted the following regulation: "It shall be unlawful on and after January 1, 1912, to provide a common drinking cup in, or upon, the premises of any public building, hotel, restaurant, theater, public hall, schoolhouse, or store, and in any public park, street, railroad, or steamboat."

Vaccination Against Typhoid in Buffalo.—It is announced that the City of Buffalo will adopt the method of vaccination against typhoid fever employed in the army. The Health Department is prepared to furnish the antityphoid vaccine to physicians and nurses for immunizing purposes.

The Prevention of Blindness was discussed at a public meeting held last Friday, December 8, at the Young Men's Christian Association in Paterson, N. J., under the auspices of the New Jersey Commission for the Blind. The meeting was addressed by Douglas C. McMurtrie, secretary of the American Association for the Conservation of Vision, who called attention to the extent of preventable blindness and described the Credé method of prophylaxis against ophthalmia neonatorum. He also urged legislation to compel the reporting of infantile conjunctivitis and the introduction of hygienic measures to check the spread of trachoma in certain sections, and spoke of the advances being made in the installation of safety devices for the prevention of injuries to the eye. Miss Lydia Y. Hayes, supervisor of work for the blind in New Jersey, described the educational and preventive activity in that State.

Railroads Must Furnish Individual Drinking Cups.—The Public Utility Commissioners of the State of New Jersey have issued an order ordering all railroads in the State to provide a drinking cup for each passenger after January 1, 1912. When the recent law prohibiting public drinking cups went into effect the railroads failed to comply with it, and as a result complaint was entered with the commission, which has decided that facilities for the use of drinking water by passengers are part of an adequate and proper service.

What "Practitioner" Means in Missouri.—The status of a medical practitioner in Missouri has been defined in a decision by the Supreme Court in the case of a man convicted of practising medicine without a license. Part of the decision is as follows: "The practice of medicine is not confined to the administration of drugs; nor is surgery limited to the knife. When a physician advises his patient to travel for his health he is practising medicine. Broadly speaking, one is practising medicine when he visits his patient, examines him, determines the nature of the disease, and prescribes the remedy he deems appropriate."

Must Report Emergency Cases.—In Portland, Ore., a city ordinance has been passed compelling all hospitals to keep a record of emergency cases and to report them immediately to the police department under penalty of $200 fine or imprisonment for thirty days. It is believed that this ordinance will be especially useful in bringing to justice those responsible for automobile accidents that result from speeding.

Too Many Medical Schools in the South.—President Alderman of the University of Virginia is reported as saying that there are entirely too many medical schools in the Southern States. He says that there are at present fifty-seven medical colleges where four would be sufficient. The South now contains one physician for every 760 people, while Prussia has but one for every 2,000 and considers herself overstocked. Last year there were 1,300 physicians graduated; 490 would have served all purposes, making due allowance for deaths and increase in population.

Chicago Health Board Asks for Larger Appropriation.—Commissioner George B. Young has asked for an appropriation of $300,000 to build an isolation hospital for contagious diseases and $50,000 for two new public bath houses and the enlargement of three others. The entire appropriation asked for is $1,186,030 or over $500,000 in excess of that of 1911.

A Fund for Nurses' Pensions.—The Superintendent of Mount Sinai Hospital announces that a

fund of $60,000 has been completed for the relief of nurses who, after graduation from the Mount Sinai Hospital Training School, have supported themselves, at least in part, by nursing the sick for a period of twenty years. In exceptional circumstances relief may be given to nurses who have become incapacitated before that time. The fund is to be administered by a committee of the Mount Sinai Alumni Association.

The Northwestern University of Chicago has purchased land on Dearborn street, adjoining the medical school, for approximately $150,000. This property is to meet the present and future needs of the medical school.

Tarrytown Hospital Opened.—The hospital at Tarrytown, N. Y., was opened on December 9. It is said to be the most completely equipped and best arranged small hospital in this country. It was built at a cost of about $80,000, a large amount of which was given by Mr. John D. Rockefeller, Mr. and Mrs. John D. Archbold, and Miss Helen Gould.

The Rockefeller Institute of Medical Research in New York City has secured the title to Sixty-fifth and Sixty-sixth streets, from Avenue A to Exterior street. The Institute owns all the property from Sixty-fourth to Sixty-seventh streets and from Avenue A to Exterior street, and now that there is no possibility that the city will cut streets through the plot extensive building operations which have been planned will be undertaken.

Kanopolis Offers Site for Hospital.—This town, which is situated near Ellsworth, Kan., has offered to provide a site for the State sanatorium for tuberculosis, for which funds were appropriated at the last Legislature.

The United States Marine Hospital on Remington avenue, Baltimore, is to have its present buildings remodeled and newly equipped and an addition built.

The Bellevue Hospital of San Francisco has filed a petition in voluntary bankruptcy. Its debts amount to $9,320 and its assets to $1,611.

Gifts to Charity.—The Saturday and Sunday collection for the relief of the sick poor of St. Louis has now reached $42,429, and it is believed that when all contributors are heard from the amount will equal or exceed that of last year, which was $44,535. Under the will of John J. Clancy of New York City $25,000 each is given to the Presbyterian, St. Vincent's, and Mount Sinai hospitals, and $10,000 to St. John's Guild. Mrs. Charles W. Dabney of Dedham, Mass., has given $5,000 to establish a free bed in the Middlesex Hospital at Middletown, Conn.

Dr. Arthur D. Bush of Wakefield, Mass., has been appointed instructor in physiology in the University of Vermont.

Dr. H. N. Kierulff of San Francisco has been appointed prison physician to the State Penitentiary at San Quentin, Cal.

Dr. Harry S. Lewis has been appointed Superintendent of the Emergency Hospital at Washington, D. C., to succeed Dr. E. P. Magruder, who recently resigned.

Dr. Edward J. Clark of Lowell, Mass., has been elected superintendent of the Lowell Hospital.

Dr. John P. Munn has been elected president of the New York University Athletic Association. He has made a gift to the association in the form of cups and medals to be competed for in the intramural sports.

Appointments to Medical Faculty of Leland Stanford University.—The Board of Trustees of this institution announce that Dr. H. E. Alderson will be Associate Clinical Professor of Medicine, his work beginning September 1, 1912, and will have charge of the dermatological clinic. Dr. L. Porter, now Professor of Pediatrics at Cooper Medical College, San Francisco, will affiliate with the university on January 1.

Removal.—Dr. Newton M. Shaffer has removed to 17 East Thirty-eighth street, New York.

The West Wisconsin District Medical Society, which met in Eau Claire on November 27, elected the following officers: *President,* Dr. J. V. R. Lyman; *Secretary-Treasurer,* Dr. E. E. Tupper.

The Fifth District Medical Association at its semi-annual meeting in San Antonio, Tex., on November 25, elected the following officers: *President,* Dr. W. T. Dawe of Gonzales; *Secretary,* Dr. H. H. Ogilvie of San Antonio; *Treasurer,* Dr. W. C. Williams of Staples.

Obituary Notes.—Dr. Sidney Buffington, a recent graduate of the Medico-Chirurgical College of Philadelphia, died in Philadelphia on December 5.

Dr. William C. Parry died of pneumonia at his home in Hainesport, N. J., on November 28. He was a graduate of Jefferson Medical College, Philadelphia, in 1872, and served in the State Senate for three years.

Dr. Walter Edwin Carll died at his home in Oregon City, Ore., November 29. He was born in 1858 and was graduated from Harvard Medical School in 1885.

Dr. James Martin Ruchton died at his home in Johnstown, S. C., on November 28 at the age of 42. He was a graduate of the Medical College of Georgia in 1899.

Dr. David Corwin Bice, a graduate of the University of Iowa State College of Medicine, Iowa City, in 1875, died in Denver November 25.

Dr. Albion S. Whitmore of Boston, Mass., a graduate of the College of Physicians and Surgeons, Columbia University, New York, 1894, died December 2. He was a member of the American Medical Association, the Massachusetts Medical Society, and the Boston Medical Library Association. He was 60 years old.

Dr. George L. Rice of North Adams, Mass., a graduate of George Washington University Department of Medicine in 1862, died in Salamanca, N. Y., November 27, at the age of 73 years.

Dr. John F. Young of Newburyport, Mass., a graduate of the College of Physicians and Surgeons, Columbia University, New York, in 1868, died December 4. He was 69 years old.

Dr. Charles J. Creighton of Redlands, Cal., a graduate of Rush Medical College, Chicago, Ill., in 1879, died November 25, aged 69 years.

Dr. Lucius Deyampert Webb of Greensboro, Ala., died at his home on December 1 after a long illness, at the age of 64 years.

Dr. Joseph E. MacNeill, formerly of Chicago, died in Waukesha, Wis., on December 3 at the age of 74 years.

Dr. Martin Schnabel, a graduate of the University of California in 1873, and formerly of Sacramento, died at his home in Newcastle, Cal., on November 22.

Dr. John F. Young, a graduate of the College of Physicians and Surgeons, New York, in 1868, died at his home in Newburyport, Mass., on December 3, after an illness of more than two years.

A PROFESSIONAL ENDORSEMENT OF DR. DOTY.

On Wednesday evening of this week some thirty-five physicians of this city, representing all branches of professional activity—general practitioners, specialists, laboratory workers, editors—met at the Academy of Medicine for the purpose of declaring publicly their confidence in the Health Officer of the Port of New York, Dr. Alvah H. Doty, and their approval of his efficient administration of quarantine. Among those present were Drs. Robert Abbe, Gorham Bacon, Hermann M. Biggs, George E. Brewer, John W. Brannan, Algernon T. Bristow, W. F. Chappell, Charles L. Dana, George A. Dixon, William K. Draper, Simon Flexner, Rowland G. Freeman, J. H. Girdner, L. Emmett Holt, A. Jacobi, Walter B. James, Theodore C. Janeway, Alexander Lambert, John A. McCorkle, Walter Sands Mills, William P. Northrup, William H. Park, Wendell C. Phillips, William M. Polk, T. Mitchell Prudden, Beverley Robinson, A. A. Smith, M. Allen Starr, T. L. Stedman, George M. Swift, J. S. Thacher, W. Gilman Thompson, R. J. Wilson, and Joseph Winters. Dr. Jacobi presided. After a general discussion of the quarantine situation and of the danger to which New York and the entire country would be exposed were an inexperienced man in charge of the service during the coming summer, with its threat of a cholera invasion, the following preambles and resolution, offered by Dr. Prudden, were unanimously adopted, signed by those present, and forwarded to Governor Dix.

The undersigned, physicians and citizens of the city of New York, at a conference held in the interests of the public health, on December 13, 1911, unanimously adopted the following preambles and resolution:

Whereas, The effective and conservative administration of the maritime quarantine service at the Port of New York is of the greatest importance to the health of the people of the city and State of New York, as well as to all citizens of the United States; and

Whereas, The successful performance of the duties of the Health Officer of a great port like this requires that the incumbent shall be a man of wide knowledge and experience in the detection and treatment especially of infectious diseases; that he shall be thoroughly grounded in the principles and trained in the practice of modern sanitation; that he be fully informed as to the sources of infection in other lands and in close touch with the measures in vogue at all ports of embarkation to reduce the risks from infected immigrants; that he be a man of such experience and achievements in maritime sanitation and the administration of quarantine that he will secure the cooperation of the Health Officers of other ports in this and other countries in the control and suppression of communicable diseases; that he be a man of demonstrated capacity to successfuly control the serious emergencies which frequently arise in maritime sanitation, especially at a great port; and, finally, that he be keenly and intelligently alive to the welfare of detained passengers and to the vast interests of commerce so often seriously affected by the necessities of quarantine; and

Whereas, Dr. Alvah H. Doty has conducted the quarantine service at this port for about sixteen years, skillfully and wisely, with admirable devotion to the public welfare and with remarkable success; he has kept the service at this port steadily abreast of the new knowledge which, year by year, scientific discovery has recorded. He has devised and perfected new methods in the detection and prevention of disease which have been widely followed. He has, little by little, as the State appropriations would permit, initiated and perfected far-reaching and important improvements in the quarantine plant and in the methods of administration, all of these contributing to the efficiency of the service and to the welfare of the persons and commercial interests involved. In this service Dr. Doty has secured wide recognition the world over for his successful contests with disease and for his important contributions to the principles and practice of maritime sanitation. He has won the cordial personal esteem of those devoted to the interests of the public health. He has achieved distinction for his State in his conduct of a trying and responsible office, the duties of which he has carried out with rare devotion to the high aims which preventive medicine cherishes. Dr. Doty's wide knowledge of practical sanitation in all its forms; his exceptional personal familiarity with the nature and control of communicable diseases in all parts of the world; his long experience in the quarantine service at this port; his successful control of serious emergencies when plague, cholera, smallpox, yellow fever, and other lesser maladies have been the subjects of great concern; the close touch and cordial relationships which he has maintained for many years with the Federal and other quarantine authorities—these qualities and achievements of Dr. Doty have year after year given steadfast assurance of safety to the personal and commercial interests which are sometimes subject to disquiet and damage in the face of threatened epidemics of contagious disease.

During the last twenty years, it was only in the late summer and the fall of 1892, before the present administration of quarantine, that the presence of cholera in this city caused general and local acute apprehension. At that time the eleven cases in the city reported by the Health Department caused grave national, State, and city fear concerning personal security and business enterprise. During the last season, however, 1911, the almost constant presence of cholera at Quarantine and the two outside instances due to cholera carriers caused no apparent fear in the public mind nor in the conduct of business affairs and certainly incited no apprehension in the medical profession, chiefly, as we believe, because of the unlimited confidence reposed in Dr. Doty by all those concerned in public welfare and security.

Whereas, Finally, while Dr. Doty has successfully controlled the threatened invasion of Asiatic cholera at this port under extremely onerous conditions during the past two years, it is probable that again in the coming season we shall face the dangers of infected immigrants of equally serious import; and since it is highly important for the common welfare in this State and throughout the country that none of the administrative safeguards against disease which have been so successfully and humanely maintained in the past shall be in any way or measure diminished; be it therefore

Resolved, That we earnestly and respectfully request that His Excellency John A. Dix, Governor of the State of New York, reappoint Dr. Alvah H. Doty as Health Officer of this Port, and that in the interests of the public health at large, in the interests of commerce, and for the welfare and comfort of those who travel by the sea, this appointment be made at an early day.

Correspondence.

IPECAC IN DYSENTERY AND TYPHOID FEVER.

To the Editor of the Medical Record:

Sir:—The letter from Dr. Albert H. Buck, in your issue of December 2, brings back also to me pleasant memories of my service in the New York Hospital with Dr. Buck, 1868 and 1869, when active therapeutics meant more than many seem to believe at the present day.

I want to confirm strongly what Dr. Buck says in regard to the successful use of ipecac in the many cases of dysentery which came from the South; these cases were mainly among sailors, who were entered as C.H.S., that is, Custom House Subject, meaning those sent by the government, with which the hospital had a contract, before the days of the Marine Hospital service. My father, the late Dr. Henry D. Bulkley, attending physician, also made use of this measure, and I remember well the large boluses of powdered ipecac which the patients took with such happy effect. It was also during my service that the late Dr. E. C. Seguin, house physician, whom I assisted, introduced the hypodermic use of quinine, which was often given in the terrible cases of malarial fever on arrival of the sufferer from Panama, often in the algid stage, saving life in many instances.

L. Duncan Bulkley, M.D.

New York.

MINERALIZATION IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

To the Editor of the Medical Record:

Sir:—In an article in the *Medical Herald,* June, 1908, I maintained that the cause of pulmonary tuberculosis is a lowered blood pressure which prepares the soil for the tubercle bacillus. By the administration of mineral salts the blood pressure is raised, the protective action of the bodily ferments is stimulated, and leucocytosis is produced. The salts are to be used in the following combination: Sodium chloride 34.4 grams, sodium carbonate 10.13 grams, sodium phosphate 1.1 grams, calcium phosphate 1.23 grams, magnesium phosphate 0.9 gram, potassium carbonate 2.6 grams, boiled water 120 c.c. The sodium chloride, sodium carbonate, and potassium carbonate are dissolved in boiling water, the solution is filtered, and the other ingredients are then added. Of this mixture there is administered to the patient 8 c.c. or a dessertspoonful in a tumblerful of water every three hours. The mixture is to be well shaken before being used. I have employed this treatment with good results in two cases. The first patient was a druggist 45 years old who was suffering from pulmonary tuberculosis. There were tubercle bacilli in his sputum. His pulse was 112, his temperature 101.4° F., and his blood pressure 90. The mineralization treatment was begun. Two days later his pulse was 90, his temperature was 99° F., and his blood pressure was 125. The following day his pulse was 85, his temperature 98.8°, and his blood pressure 135. On that day no tubercle bacilli were detected in his sputum. The other case was that of a laborer, aged 41 years, who was suffering from pulmonary tuberculosis, associated with diarrhea. Bacilli were found in the sputum. His pulse was 112 and his temperature was 102° F. The mineralization treatment was begun. The pulse and temperature on the succeeding days were as follows: 90 and 100°, 100 and 100°, 90 and 99.8°, 90 and 98.8°, 96 and 99.8°, 100 and 99.8°, 90 and 99.4°, 80 and 98.8°, 80 and 98.8°, and 80 and 98°. I regret that in this case I was unable to take the blood pressure.

Charles F. d'Artois Francis, M.D.

Brooklyn, N. Y.

OUR LONDON LETTER.

(From Our Regular Correspondent)

MEDICAL SOCIETY'S DEBATE ON DIAGNOSIS OF SYPHILIS OF THE NERVOUS SYSTEM—COL. FRENCH'S SECOND HUNTERIAN LECTURE—DANGER POINT OF ANESTHESIA—SLEEPING SICKNESS—INSURANCE BILL—HEALTH OF THE ARMY—G. M. C. ELECTION—OBITUARY.

London, November 24, 1911.

Great expectations were formed of the first debate of the session announced by the Medical Society of London. The subject was the diagnosis of syphilis and parasyphilis of the nervous system, and so many recognized authorities had promised to speak that it was obvious discussion must extend over more than one evening. The opening paper was read by Dr. F. W. Mott to an attentive audience, which fully appreciated it. As pathologist of the county asylums, he was able to collect cases of juvenile general paralysis and tabes dorsalis in which the exciting factors of neurasthenia were absent, but in which there was evidence of congenital syphilis.

These cases have to be differentiated from other diseases affecting the brain, spinal cord, and peripheral nerves, and the importance of this is as great as the difficulty of deciding whether the symptoms are purely functional or prodromal of grave organic disease. An examination of the cerebrospinal fluid will decide. The presence of lymphocytes points to a chronic inflammatory condition, and practically in every case of general paralysis, even in the earliest stages, lymphocytosis occurs.

The average time of onset of parasyphilitic affections after infection is ten years, very seldom under five, whereas the converse is the case with syphilis of the central nervous system, most occurring in the first few years, and diminishing with each succeeding year. The onset, course, and progress of the common disease are pretty well known and regular, though subject to remissions, but the parasyphilitic symptoms are insidious and slowly progressive, except in some cases of general paralysis. The pupil and squint phenomena are common, but the Argyll-Robertson pupil is extremely rare in syphilis. In parasyphilis pupil phenomena and strabismus are common, the Argyll-Robertson pupil is rarely absent, especially in tabes and taboparalysis. Dr. Mott insisted on the importance of the last affection, as tabetics are apt to suffer from mental depression, and may resort to alcohol, and to relieve pain acquire the morphine habit. Neither the Wassermann nor lymphocyte test helps, as both tabes and taboparalysis give the reaction, but in his experience Dr. Mott found abundant lymphocytosis, and marked, positive Wassermann pointed to widespread disease, and therefore to involvement of the brain. If, in addition, apoplectiform, migrainous, or epileptiform seizures without gross paralysis had occurred, especially if the knee jerk were absent on

one side and present on the other, he held taboparalysis to be indicated. The importance of the differential diagnosis of the two states cannot be overestimated as to prognosis and treatment, syphilis yielding often in a marvelous manner, but not parasyphilis. The most important subject of differential diagnosis was considered to be between (1) tabes, (2) pseudotabes, and (3) ataxic-toxic peripheral neuritis. Of these the chief points were summarized in tabular form by Dr. Mott, and thrown upon the screen.

Sir David Ferrier recognized as parasyphilis tabetic affections, whether spinal (locomotor ataxia), or cerebral (general paralysis), or cerebrospinal, and every day strengthened the evidence that, whatever else might cooperate, syphilis (hereditary or acquired) was the *sine qua non* in the causation. In the incipient stage diagnosis was sometimes so difficult that every help was welcome. If he specified one symptom as above all characteristic it would be the Argyll Robertson pupil, or reflex iridoplegia in one or both eyes. Practically that was pathognomonic, for exceptions were so rare as to be negligible. When reflex iridoplegia was doubtful other indications of tabes must be marked. Occasionally all symptoms might be so equivocal that they welcomed recent biochemical and cytological methods. He added a distinction he had taught for years in his clinic between general paralysis and cerebral syphilis: in the latter pain could always be elicited by deep pressure, though the patient had made no complaint of spontaneous headache. This was never the case with a general paralytic.

Dr. Savage confirmed the last-named point, and mentioned that long ago he had taught it, though Sir Batty Tuke had said he was wrong. In his large clinical experience he found a marked difference between tabes and tabetic insanity; one was rapidly fatal, the other lasted many years. He thought in general paralysis of the insane there was marked arterial degeneration, causing starvation of the higher centers and the neurons. But in other degenerations (chronic alcoholism and arterial fibrosis) the symptoms of tabes or general paralysis did not appear, so he felt there must be a specific infection. General paralytics slept very well except in the stage of maniacal excitement, but parasyphilitics and cerebral syphilitics almost always slept badly. Another point too little noticed was that general paralytics would retain memory, but alcoholics and parasyphilitics rapidly lost it for recent events. He related a case in which he made a differentiation on the complete loss of recent memory. It was the case of a doctor who had made his own diagnosis of general paralysis, and thanked Dr. Savage for coming, as he left the room. Returning immediately, the patient said: "When did I see you last? You have not been here for a long time." So he assured the patient he had not general paralysis.

The discussion was adjourned.

In his second Hunterian lecture Major French passed on to the treatment of syphilis. As to salvarsan, he had observed Dr. Levy-Bing's work in Paris, who admitted it did not ever abort the disease in the primary stage, but he said in some instances it had produced a negative Wassermann more quickly than mercury, and it rapidly became positive again. At Malta Colonel French had some hectine sent for trial, but the measures he had adopted previously had effectually stamped out the disease, and he had no primary case on which to try the hectine among the 7,000 troops under his care. Iodide of potassium was said by Dr. Hallopeau to exert a decided influence on the sore, but that had been observed many years ago. Like salvarsan, it is a good cicatrizing agent, and removes induration, but that is not cure. Nor have the claims put forward for arylarsenates been substantiated. Relapses were very unusual in Malta, where mercury was employed in the primary and early secondary stage, and later, for military convenience, injections of grey oil for out-patients. In forming an opinion on the relative value of drugs the lecturer held that each must be tried alone, and judged on its own merits.

Now the advocates of salvarsan have not been content to do this, as the literature shows; though proposed to take the place of mercury, it has later been recommended as an adjuvant. The same has happened to other proposed substitutes. A second rule laid down by Major French was that the early manifestations must be removed in four to six weeks, and glandular enlargements, when they exist, must be rapidly reduced in three months. Mercury can do this. Hunter wrote in 1786: "If there is such a thing as a specific, mercury is one for the venereal disease, . . . yet mankind are in pursuit of others, as if specifics were more common than disease." Amplifying this, the lecturer said we must consider before adopting substitutes that the effects of the disease are different with the intensity of infection, personal and racial susceptibility, intemperate habits, neglect of early treatment, and the injudicious use of mercury. There is no class of disease in which judicious early treatment is as beneficial. Major French pointed out the conditions in which the main remedy and the various adjuvants are of most value, and concluded with some remarks on prophylaxis.

Drs. Buckmaster and B. Gardner have read a paper at the Royal Society describing a series of experiments from which they conclude that the direct action of chloroform on the red corpuscles during anesthesia interferes with the oxygen-carrying power. They claimed that the usual initial effect of chloroform diminishes the average depth of respiration, while the rate is very much less affected. The cessation of respiration they regard as an initial danger point, and it is a direct effect of deep and rapid respiration prior to administering the drug, and the higher the percentage of this the greater the danger. But this can be rendered negligible by a low percentage. They hold that some trace of an initial danger is rarely absent.

Yesterday the Colonial Secretary received a deputation in reference to sleeping sickness in Nyassaland, and the relation of the tsetse fly and game to each other. He said, so far as taking every possible step for preventing extension of this disease, they were preaching to the converted. But two commissions were at work, and they were asking him to prejudge the results of these investigators. He would not hesitate to act when he got any definite proof of what was really necessary.

The committee stage of the insurance bill has been concluded under the guillotine. How this is being abused you will see in the fact that one-half of the first part, dealing with sickness, has not been discussed at all. Nineteen old clauses and nineteen new were forced through by the gag. Even government amendments were simply put from the chair and voted on without a word. And this is

called parliamentary government! A number of meetings of medical men have been held in different parts of the country, the majority being branches of the British Medical Association, and they as a rule maintain the six points urged by the executive.

The representatives held their great meeting yesterday, and after prolonged discussion arrived at the same decision.

The bill is provoking widespread and growing opposition by various classes who are affected by it, but the government seems determined only to give way in some directions referred to the report stage. A cabinet minister in a public speech actually remarked that if it did not work well it could be amended every two or three years, as experience might require!

The Army Medical Report for 1910 shows that the improvement in the health of the troops noted in 1909 continues, and it is satisfactory to find that the ratios at home and abroad are the lowest on record, with the single exception of "invalids finally discharged." The ratio for deaths was 3.44, lower by 0.66 per 1,000 than the previous year. The average sick time (9.15 days) to each soldier was last year 1.24 days less than in 1909. The admissions for alcoholism were 46 less last year.

Drs. H. W. L. Browne, T. J. Verrall, and H. A. Latimer are the three successful candidates in the election for representatives on the General Medical Council. So the British Medical Association officials have again monopolized the representation.

Dr. Wilfred Webb, who was formerly in the Indian Medical Service, where he attained the rank of major, died on the 18th inst., aged fifty-three. He qualified in 1878-80, took M.B., C.M., with highest honors, at Aberdeen in 1881, and proceeded to M.D. in 1894. He had been curator of the National History Museum at Netley. In India he had been superintendent of jails, dispensaries, etc. He wrote a "Manual of Vaccination in Hindu," 1886; "The Indian Medical Service: Guide for Candidates and Junior Officers," 1890, and other works, besides contributions to the *Indian Medical Gazette*, the *Lancet*, and the *Practitioner*.

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

THE FRENCH SURGICAL CONGRESS—DIAGNOSIS AND TREATMENT OF CHRONIC APPENDICITIS—TREATMENT OF ACUTE PERITONITIS—THE OPEN TREATMENT OF SIMPLE FRACTURES—OBITUARY.

PARIS, October 30, 1911.

THE annual meeting of the French Congress of Surgery opened October 2, 1911, with Prof. Segond as president, who in his inaugural discourse spoke of medico-surgical collaboration. The first question treated of was the diagnosis and treatment of chronic appendicitis, the readers of papers being Walther of Paris, and Silhol of Marseilles. In chronic appendicitis operation is not urgent; medical treatment may always be instituted and prolonged for a certain length of time. Medical treatment should above all consist of absolute rest, prevention of taking cold, and observance of a severe diet. Intestinal antiseptics should be made use of, but their use should not be too prolonged. Massage should be absolutely rejected in cases in which appendicitis is well established. The indications for surgical treatment differ with each case; in appendicitis with relapse and repeated crises appendectomy is necessary; after a single acute crisis the indication for operation is subordinate to conditions dependent on age, condition of life, and profession. With reference to operative technique it is absolutely necessary not to end the operation with removal of the diseased appendix, but always in all cases a wide exploration should be made methodically of all the organs in the neighborhood of the cecum, colon, and omentum. The operative results are excellent. Out of 1,463 cases treated Walther has had ten deaths. As to the therapeutic results it is only after observation for at least six months of the influence of a rigorous regime that a marked modification of the intestinal condition is to be observed.

The second question to occupy the attention of the congress was the treatment of acute peritonitis. The readers of papers were Hartmann of Paris, and Temoin of Bourges. According to Hartmann the results obtained in the treatment of acute peritonitis have been considerably improved in the last few years; but this improvement can only be obtained by an early operation following a precise diagnosis. In the treatment of acute peritonitis it is not sufficient to attempt a cleansing of all the peritoneal cavity, but especially to arouse the curative properties of the peritoneum itself, which possesses means of defense that are very real, and it is sufficient to disembarrass it of its infectious contents, provided that the greater part of these contents have been removed, and to prevent new inoculations by suppressing the cause. The operation should be performed rapidly and simply. It should be destined to destroy the initial focus with the least possible disorder. In most cases it is well to put in place a drainage tube in the depths of Douglas' cul-de-sac, and to keep the patient in a half-sitting position. According to Temoin there is no medical treatment for peritonitis. Only operation is useful and it should be above all early to prevent generalization, and rapid to limit to the minimum intraperitoneal maneuvers. It is necessary above all to destroy the first cause of the peritonitis and to leave out extensive washing and brushing of the intestine. The surgical treatment of peritonitis is one of the triumphs of modern surgery. It has rendered curable an affection which up to now may be said to have been murderous.

The third question of interest was the open treatment of closed fractures. Writers of papers were Alglave of Paris, and Bérard of Lyons. Alglave has studied the operative technique of the open treatment of recent closed fractures. To obtain reduction and maintenance in position of fractures several methods have been devised. The first consists in reduction through an opening and retention in position by double, direct and indirect means, by ligature of the bones, or circling the bones, or by suture of the bones properly considered, or by bolting them together, or by sheathing the fragments, or with clasps. Other simple and direct methods of retention of the fragments after reduction permit us to begin mobilization of the neighboring joints at an early date and prevention of the stiffness which may result. These are simple screwing of the bones, or screwing with metallic plates, or metallic prothesis; lastly, screwing with external splints. These last means of retention should be absolutely aseptic at the moment of their introduction and placed in an aseptic field. If these two conditions are not observed accidents of great importance may take place around the foreign bodies and necessitate their extraction. Another

method consists in reduction by opening the field of fracture, and retention simple and indirect by a plaster apparatus. Lastly, one method attempts to obtain reduction without opening the field of fracture by practising continuous, direct extension by spiking the bones and realizing the retention of the bones in place by means of the extension. In conclusion, Alglave is convinced that the method which assures a toilet openly, the perfect reduction and retention of the fragments in place, while respecting the free play of the articulations, is that which should merit all the votes of physicians in the treatment of fractures which allow a surgical intervention.

Bérard of Lyons has studied the results and indications for open treatment of closed recent fracture of the limbs. Lambotte of Anvers insists on the necessity of a perfect technique over which the fundamental rules of surgery have sway. Above all it is necessary to restore as far as possible the natural contour of the bones and then mobilize as rapidly as possible the articulations, utilizing a very rigorous asepsis. We must make use of good and well-tried materials. Under these conditions operations on fractures are benign, and accidents cannot be attributed to faults of technique.

Vincent Griffon, physician to the Paris Hospitals, physician in chief of the prison of La Santé, has just died, a victim of professonal duty, from an infectious lesion contracted from one of his patients. Griffon was hardly forty years of age. He was one of the youngest physicians of the Paris Hospitals. He was above all occupied by clinical work, pathological anatomy, and microbiology; he was in charge of the laboratory of microbiology of the Faculty of Medicine of Paris. His teaching, precise, simple, and essentially practical, assured him a true popularity with his pupils. In the course of his career he had the rare fortune to know only triumphs without bitterness and rancor. This is a striking contrast to see a life so favored by destiny brutally destroyed in a few hours by a slight professional accident.

Progress of Medical Science.

Boston Medical and Surgical Journal.

November 30, 1911.

Colon Bacillus Infections, with Report of Double Pneumonia and Purulent Bronchitis (Colon Infection), with Recovery. R. C. Kemp.
Experiences of a Beginner in the Use of Lane's Plates in Fractures. F. B. Lund.
The Relationship of Fibroids to Sterility. E. B. Young.
Operation for Extensive Prolapse of the Uterus. S. Rushmore.

Colon Bacillus Infections.—By R. C. Kemp. (See MEDICAL RECORD, December 2, 1911, page 1147.)

Operative Treatment of Fractures.—F. B. Lund believes that in the future when an *x*-ray examination shows that a recent fracture of a long bone is badly overlapped, or in poor position, or that the ends of the bone are presumably separated by soft parts, one will cut down upon them and reduce them by operative methods, provided the patients are in hospitals where the aseptic technique is good, and where the surgeon has taken the pains to master the details of the not inconsiderable operation of the application of plates and screws to these fractures. In case the ends will spring together to stay without plates and screws, the latter need not be used, but the use of plates and screws very much simplifies the putting on of the retentive apparatus. The author also believes that as a result of this treatment the ultimate results in fractures will be considerably improved. The danger of infection is not sufficient to deter one from attempting operation in fractures which are benefited by it. If the results in old, ununited fractures are fairly satisfactory, they will be much better in fresh fractures which could not be reduced satisfactorily.

Relationship of Fibroids to Sterility.—E. B. Young and J. T. Williams, from the study of their statistics and those found in the literature, draw the following conclusions: (1) The percentage of primary sterility among married women with fibroids (about 31 per cent.) is greater than the average for other women (about 10 per cent.). (2) Women with fibroid tumors of the uterus bear fewer children on the average than women with normal uteri. (3) Patients with myomata, on the average, cease childbearing earlier than others. (4) As a corollary to conclusions 2 and 3, it appears that there is a secondary sterility in certain instances, which results from the development of a fibroid in a patient who has previously borne children. (5) Although sterility is more common in women who have fibroids, these tumors do not always prevent conception or even repeated pregnancies. (6) The exact manner in which fibroids produce sterility remains undetermined. (7) Miscarriage occurs in 44.7 per cent. of the cases where conception does take place.

Prolapse of Uterus.—S. Rushmore has devised an operation for dealing with some of the more difficult cases of prolapse of the uterus. The operation presents no new features except the combination of procedures. It consists of three steps: interposition of the uterus, perineorrhaphy and ventrofixation of the uterine cervix.

New York Medical Journal.

December 2, 1911.

Preventive Medicine. D. H. Bergey.
Simple Serous Cyst of the Kidney. R. S. Fowler.
A Case of Sexual Inversion, Probably with Complete Sexual Anesthesia. A. Flint.
Joint Infections. C. Ogilvy.
Facts and Fallacies in the Treatment of Syphilis with Salvarsan. J. L. Boehm.
The Senile Climacteric. I. L. Nascher.
Carcinosis of the Bone, Secondary to a Growth in Some Epithelial Organ. R. H. Boggs.
The Treatment of Varicose Ulcers with Adhesive Straps. A. Gills.
Some Points of Personal Hygiene That Are Generally Neglected by the American People. I. W. Brewer.

Preventive Medicine.—Dr. H. Bergey states that in the future the ideal of preventive medicine will consist of the following phases of activity: (1) The limitation, or prevention, of the dissemination of the germs of disease by confining the infected persons in such a way as to prevent access to them, of those who are not immune to the disease, or as in malaria, yellow fever, and some other diseases, the prevention of access to the patient of the insect carriers of the specific organism. (2) The destruction of the specific organisms outside of the body, either with chemical substances or physical agents which are destructive to the germs of disease. (3) The use of immune sera to fortify the individual against infection by supplying the specific antibodies to assist the natural defensive powers in overcoming the invading organisms as fast as these gain access to the body. (4) The injection of vaccines, in the form of dead or living attenuated organisms, to bring about the development of specific antibodies in the individual. (5) The use of chemotherapeutic agents to aid the body in overcoming the infective organisms as fast as they gain access to it. (6) The employment of chemical substances, or physical and biological agencies, in the purification of water, milk, and sewage.

Serous Cyst of the Kidney.—R. S. Fowler reports a case of the condition in a woman aged fifty-three years, who had suffered from pain in the back, more marked in the left side, and when changing from one position to another. The diagnosis was made of movable left kidney with tumor. At operation examination of the specimen showed the following: A kidney two-thirds the normal size with anomalous blood vessels and with a cyst occupy-

ing part of the lower third and part of the middle third of the kidney and in relation to, but not communicating with, the renal pelvis. The cyst content was clear serous fluid with very few blood cells, a trace of albumin, but no trace of urea. The author reviews the cases reported in the literature.

Sexual Inversion.—A. Flint reports the case of a male aged twenty-one years in whom all the physical characters were distinctly masculine, and whose external genitals were well developed. The voice, however, was that of a woman. There was absolute sexual anesthesia.

Joint Infections.—C. Ogilvy states that the infection of joints is almost always secondary to a primary infection by an invading organism elsewhere in the body. The infectious organism may or may not be found in the joint. The toxins of the organism alone are frequently responsible for the inflammatory reaction in the joint. The most important factor in diagnosis is to determine the source of infection, and for this reason a previous history of infectious disease should be carefully inquired into. A tuberculous joint abscess is intrinsically a cold abscess. The first step in the treatment is to aspirate. If the process continues unchecked after repeated aspirations and in spite of mechanical treatment, and the abscess begins to point, one should open it, irrigate it thoroughly with a 1 in 4,000 bichloride solution, and sew up the incised wound with two layers of sutures. If more radical surgical measures are demanded one should do an erasion. Upon the foci of disease carbolic acid, followed by alcohol, should be applied. One should never excise the joint in childhood unless as a last resort to save the limb. In adults, on the other hand, an excision of the joint is the best operative procedure, especially in protracted cases of two or more years' duration.

Salvarsan.—J. L. Boehm states that the intravenous method of administering this drug is the only safe method. A single dose of salvarsan will not cure syphilis; it produces only a mild parasitotropic effect.

The Senile Climacteric.—I. L. Nascher states that the normal cycle of life falls naturally into three periods: Development, maturity, and decline, each of about thirty years' duration, and each broken by a crisis about the middle of the period. The period of maturity is broken about the middle of the period by the menopause in the female, and the critical period described by Seré in the male. Analogous to this is the crisis during the period of decline. In many cases there are profound changes in the organism during the early part or middle of the eighth decade; during this climacteric there is a readjustment in the relation between the functions and changes in the organs necessary to carry out the new functional relations. Usually there is mental depression, with some impairment of the faculties and lessened activity and degeneration of some organs and tissues, due to arteriosclerosis or primary degeneration, while other organs and tissues show little change.

Carcinoma of Bone.—R. H. Boggs concludes that carcinoma of bone is not as rare as is generally supposed, and it is of clinical interest in connection with lumbago, rheumatism, etc. It has even been stated that metastasis into the bone is frequently the first evidence of a prostatic tumor.

Treatment of Varicose Ulcers.—A. Gills presents the following method of treating these ulcers: The patient is kept in bed until the swelling has subsided; well directed massage is employed, and the bowels are kept open. At first one should stimulate the granulations with nitrate of silver, thirty grains to the ounce; about three applications are all that are necessary. The ulcer should be protected by sterile gauze and long adhesive straps should be applied to the dry skin on either side until the skin wrinkles well. Fluid will be seen oozing from the ulcer by this squeezing process for several days. It is preferable to have the foot elevated upon two pillows until it has returned to its normal size. Adhesive straps used in this fashion occasion some pain the first few days. They should be changed upon alternate days or oftener.

Personal Hygiene.—I. W. Brewer refers to the following points in personal hygiene that are generally neglected: Failure to wash the hands before meals; the careless cleansing of the teeth; the wearing of gloves and outer garments that are not washable, and an insufficient toilet of the anal region after defecation.

Journal of the American Medical Association.

December 2, 1911.

Newer Methods for Further Increasing the Safety of Surgical Operations. G. W. Crile.
The Pathogenesis of the Balantidium Coli. F. B. Bowman.
Medical Treatment of the Patient Before or After the Cataract Operation. D. W. Greene.
The Choice of the Anesthetic. A. D. Bevan.
The Care of Patients with Advanced Tuberculosis. W. C. White.
The BloodPressure in Pneumonia. A. Lambert.
The Treatment of Chronic Hypertension. L. G. Visscher.
Experimental Measles in the Monkey, with Special Reference to the Leukocytes. L. Hektoen and H. E. Eggers.
The Eosinophilia of Bronchial Asthma with Report of a Case Showing Extreme Blood Changes. W. W. Herrick.
Nephropexy Followed by Relief of Hematuria. J. B. Squier.

Safety of Surgical Operations.—By G. W. Crile. (See MEDICAL RECORD, July 1, 1911, page 51.)

Balantidium Coli.—F. B. Bowman states that it is not known whether a break or abrasion in the mucosa of the intestine is necessary for the entrance of the *Balantidium coli,* whether it can force its way through the lining membrane by purely mechanical means, or whether a cytolytic ferment is liberated. Once it has entered, its progress is limited only by the length of the colon. The *Balantidium coli* is a parasite which, though not so widespread as the ameba, in individual cases is equally serious in its effects. It does not live in the intestine in a state of harmless commensalism, but causes a dysentery which in its late stages is not amenable to medication and usually results in death.

Cataract Operations.—D. W. Greene emphasizes the importance of thorough preparation of the patient for the cataract operation. The patient should be free from bowel and bladder trouble, cough, dyspnea, dacryocystitis, chronic nasal disease, blepharitis, chalazia, and styes. He should be in a hospital from twent-four to forty-eight hours before the operation, or long enough to allow the attendant to make an estimate of the physical condition, to unload the bowels, to examine the urine, to test the intraocular pressure with the tonometer, to note the bloodpressure and the condition of the arteries, and if bloodpressure is high, e. g., above 220 mm., to reduce it if possible below 190.

Choice of Anesthetic.—A. D. Bevan states that for routine work, ether, by the open method, is the safest and most satisfactory anesthetic and, in the usual run of cases in a hospital service, the anesthetic of choice, in from 75 to 80 per cent. of the cases. Chloroform must be discarded as a routine anesthetic. It produces too many immediate and late deaths to warrant its general employment. It is only in the exceptional cases, as possibly in a laryngectomy in which one might feel that the direct introduction of chloroform vapor into the trachea might produce sufficiently less irritation to the tracheal mucosa with less risk of pneumonia than ether, that one would be warranted in emplying it. Nitrous oxide is the anesthetic of choice for short operations, manipulations, and examinations. It is also the anesthetic of choice in operations on patients with seriously impaired kidneys and often on patients in extremely bad condition, as in typhoid perforations, general peritonitis, etc. It should not be employed in patients with bad hearts. It is not as satisfactory an anesthetic as ether and should not be employed in preference to ether in patients who are good surgical risks.

Care of Advanced Tuberculosis.—W. C. White enumerates the following points in connection with this subject: (1) Provision must be made for all social and racial classes; (2) Provision must be made in general hospitals for a group of cases, mainly for its educational value on doctors, nurses, and the public. (3) Provision must be made for a second large group of cases in State, municipal, and charitable institutions. (4) Provision must be made in special institutions provided by the State, by the municipality, by charity, and by the private means for a third group. (5) Provision must be made for a final group by instruction and care in the homes by doctors and nurses. (6) Small institutional units are of more value than large institutions. (7) All cases must be registered in the health department of the State. The State should supervise and control the whole movement. It should do this through its local agencies and subdivisions (municipalities and counties) and should make certain demands from charitable and other agencies for uniformity of plan and apportionment of work.

Blood Pressure in Pneumonia.—By A. Lambert. (See Medical Record, July 8, 1911, page 93.)

Chronic Hypertension.—L. G. Visscher states that chronic hypertension is more prevalent in the cities than in the country and decidedly more frequent in the middle and well-to-do classes. It is especially the result of continuous brain work, together with overstimulation by coffee, nicotine, alcohol, and other indulgences. Among the toxins causing hypertension the purin bodies stand high. It is necessary to alter the diet list, to reduce the acidosis, and provide alkalies freely in various ways. Hand in hand with manometric examination should go the determination of urea, indican and the acid-titer of the urine, in order to determine the proteid tolerance. It is necessary that the intraabdominal pressure should be slightly positive, but when in excess the diaphragm is pushed upward, the venous inflow from the extremities is obstructed and a rise of blood-pressure in the arteries is caused by the compression if the heart is strong. There are slight dyspnea, moderate hypertension, aching limbs, torpid liver and catarrhal gastritis. The causes of high intraabdominal pressure give the indications for its treatment. The caloric value of the food must be kept up in the regulated diet, which should be adapted to the conditions of the individual stomach. If the patients are lean one may have to overfeed them and one may do harm in too active measures for the reduction of obesity. A reasonable amount of exercise, with warm bathing followed by cold sponging are among the measures recommended. People with a hypertension should eat light evening meals with ease thereafter for a few hours and with a moderate amount of physical exercise, a warm bath, perhaps a warm enema and sleep in a warm bed with the windows wide open.

Leucocytosis in Experimental Measles.—L. Hektoen and H. E. Eggers find that in the monkey the leucocytes behave much as they do in human measles. Preceded by a more or less distinct leucocytosis, there occurs a leucopenia of variable degree corresponding in a general way to the latter part of the preeruptive and the early part of the eruptive period. As to the question whether the leucopenia may not be the result of the injection of foreign blood and connected with the resulting processes of antibody formation and sensitization, the authors state that, while further observations are necessary to settle this point, it may be said that in monkeys injected with human blood for other purposes and in still larger quantities they have noticed either no leucopenia or a transient, very slight diminution in the count. Hence it is concluded that the leucopenia observed in two or three of the experiments represents a reaction to the measles virus.

Eosinophilia of Bronchial Asthma.—W. W. Herrick reports a case of bronchial asthma in which the eosinophile count was at one time as high as 77 per cent. He states that it is questionable if any practical conclusion can be drawn from the blood-picture of bronchial asthma aside from its real value in differential diagnosis. The type of the disease showing eosinophilia is that responding most often to potassium iodide. A thorough trial of this drug is apparently indicated in such cases.

Hematuria Relieved by Nephropexy.—J. B. Squier reports a case of this condition in a woman aged 38 years, who had constant pain over the right kidney, with bloody and excessively painful urination. After thorough urinary and bladder examination a tentative diagnosis of severe hemorrhagic cystitis was made and treatment was instituted, but without relief. Cystoscopy was performed and a small ulceration was found just below the left ureteral opening. The functional capacities of the kidneys was rather puzzling, the findings being largely negative as to disease. There was only a faint trace of albumin in the urine. Operation was thought advisable and the right kidney was exposed and found to be very freely movable, and was brought out of the incision without difficulty. An incision of the kidney was made, splitting it open from pole to pole, revealing no evidence of disease. The ureters were found to be normal. The kidney was sutured together, replaced and anchored by a few chromic gut sutures and the wound was closed except for a small drain at its lower angle. The prospect of relief was considered poor, but the results developed were unexpected. At the end of eight hours the patient passed urine without pain and with but a small amount of blood, and at the end of twenty-four hours the urinary function was practically normal. The convalescence was rapid and recovery seemed to be complete.

The Lancet.

November 25, 1911.

Unicellula Cancri: The Parasite of Cancer. Sir Henry Butlin.
The Medical Aspects of Some Social Questions. G. A. Gibson.
The Treatment of Cleft Palate. R. W. Murray.
The Evolution of Modern Gynecology. A. E. Giles.
Metastatic Suppurative Cyclitis Occurring in a Woman with Pyemia; Abscission; Recovery. Sir William Collins.
Ureteral Grafts. A. Chiasserini.
A Case of Tricuspid Regurgitation. R. O. Moon.
Bacterial Infection of the Stomach Wall Treated by Vaccine-Therapy. F. K. Cahill.

The Parasite of Cancer.—By Sir Henry Butlin. (See page 1229.)

Medical Aspects of Some Social Questions.—G. A. Gibson discusses the following subjects: the National Insurance Bill, immigration, eugenics, physical development, and the instillation of sound ideas into children.

Treatment of Cleft Palate.—R. W. Murray describes the evolution of the operative treatment of cleft palate. Langenbeck's operation is the one which he performs.

Evolution of Modern Gynecology.—A. E. Giles reviews this subject, particularly with reference to ovariotomy, extrauterine pregnancy, the surgery of inflammatory disease of the tubes and hysterectomy for fibroids.

Metastatic Suppurative Cyclitis.—Sir William Collins reports a case of this condition in a woman fifty-four years of age. The sequence of events appeared to be a pyemic condition arising from an abscess in the right side of the neck, not very acute in its character and containing watery pus, possibly of old tuberculous gland origin. Thence absorption appears to have taken place with metastatic cyclitis, which became the dominant feature of the illness, metastatic abscesses in the left arm, and a threatened synovitis of the left knee. The lungs, however, did not give any evidence of a breaking down lesion. A diagnosis of iridocyclitis having been made, the right eye was abscissed and eviscerated. The patient recovered.

Ureteral Grafts.—A. Chiasserini performed a series of experiments on the ureter of dogs with vascular grafts. He made use sometimes of pieces of vein (external jugu-

lar, femoral, and saphenous), and sometimes of the carotid artery. He reached the ureter by the extraperitoneal route and sutured the two ends of the ureter to the transplanted vessel by Carrel's method, having first cut away a piece of ureter somewhat shorter than the graft. In 12 cases the continuity between the two ureteral ends was re-established, but a stenosis or a complete occlusion corresponding to the vascular graft was the usual result. The conclusions that the author came to are as follows: There is a possibility of the vessel introduced between the two ureteral ends becoming firmly united to them. The piece transplanted, a few days after the operation becomes shortened so as to draw the two ureteral ends nearer together. The graft becomes thicker and hard, while the lumen is nearly obliterated. The stenosis causes a stoppage in the flow of the urine with consecutive dilatation of the canal of the ureter and hydronephrosis.

Tricuspid Regurgitation.—R. O. Moon reports a case of this condition occurring in a boy aged five years and revealed by autopsy. The mitral valve was normal. On the tricuspid valve there were recent translucent vegetations. The following interesting points are noted in connection with this case: The fact that the systolic murmur was plainly heard at the back is generally held to be against the purely tricuspid origin of it; an accentuated pulmonary second sound seemed to point to the mitral lesion, but in children one cannot attach much importance to these signs. On the other hand, there was no cough or dyspnea, and the comparative absence of edema from the lungs was in striking contrast to the general anasarca. A cantering sound in the tricuspid area which usually points to an abnormal blood pressure in the right ventricle ought, perhaps, to have given the clue to a correct diagnosis.

Bacterial Infection of the Stomach Wall.—F. K. Cahill reports a case in which this condition was diagnosed in a man aged 48 years. The sole complaint was a persistent four breath. The nose and teeth were normal. Streptococci and colon bacilli were discovered in the stomach contents. Autogenous vaccines prepared from these organisms were administered in four doses at intervals of one week, and effected a cure.

British Medical Journal.

November 18 and 25, 1911.

The Differential Diagnosis of Syphilis and Parasyphilis of the Nervous System. F. W. Mott.
Cholera at Palermo: Further Experience in the Treatment of Cholera by Injections of Hypertonic Salines and Permanganates Internally Among Europeans at Palermo. M. L. Rogers.
The Physiological Action of Amorphous Digitoxin (Digalen). W. L. Symes.
The Protein Requirements: or, "Do We Eat Too Much Meat?" W. Tibbles.
Rheumatoid Arthritis: A Personal Experience of the Disease. F. H. Parker.
A Series of Cases of Catarrhal Jaundice Occurring in Epidemic Form. W. J. H. Pinniger.
Vomiting in Graves' Disease and Its Treatment. J. A. Nixon.
Unicellula Cancri: The Parasite of Cancer. The Protozoa. Sir Henry Butlin.
Non-Valvular Heart Disease. H. L. McKisack.
A Case of Cardiac Failure Treated by Cane Sugar. A. H. Carter.
On the Enucleation of Tonsils with the Guillotine. S. S. Whillis and F. C. Pybus.
The Use of Hypertonic Salines Controlled by Estimations of the Specific Gravity of the Blood in Infantile Diarrhea. L. Rogers.
A Note on the Sphincteric Control of the Bladder after Prostatectomy. C. Wallace and C. M. Page.
A Danger in Elevating the Lower Third Molar. F. St. J. Steadman.
A Note on Sprengel's Deformity. A. Mitchell.

Syphilis and Parasyphilis of the Nervous System.—By F. W. Mott. (See page 1193.)

Cholera at Palermo.—L. Rogers spent three weeks at the Palermo Cholera Hospital, where he applied the methods that he had found so successful in the treatment of cholera in Calcutta, India. These methods included the use of intravenous injections of a hypertonic saline solution; and the administration of potassium permanganate by the mouth. By these methods the mortality was reduced to 20 per cent.

Physiological Action of Digalen.—W. L. Symes concludes from his experiments that this drug is an active preparation of digitalis producing characteristic digitalis effects on the circulation and on the secretion of urine.

The Protein Requirement.—W. Tibbles states that the physiological minimum of protein for an adult is 34 grams daily, but the maintenance of life, the prevention of tissue destruction, and the performance of a certain amount of muscular work are possible with an allowance of 50 to 57 grams of protein daily. This is Chittenden's standard. Voit established the rule that a man of average weight requires 119 grams of protein to meet the demands of the body when doing light work. The author believes that Voit's rule should be followed; that protein starvation is the cause of ill health, and that the available evidence of the average consumption in Great Britain of animal protein shows that the consumption of meat in Great Britain is not excessive.

Rheumatoid Arthritis.—F. H. Parker alludes to the intimate connection, at least in certain cases, of this disease with pathological conditions of the nasal mucous membrane, or with carious teeth. Vaccine treatment in addition to measures designed to remove local septic foci has met with a certain amount of success. Attention to the alimentary tract is important; the starches in the diet should be cut down and replaced by milk and fats. Long courses of water drinking are recommended.

Catarrhal Jaundice.—W. J. H. Pinniger reports an epidemic of eight cases of this condition occurring in a children's hospital.

Vomiting in Graves' Disease.—J. A. Nixon notes that this may be controlled by the following procedure: The patient is confined to bed and placed under strict supervision to insure that he does not move hand or foot to supply his own wants; at the same time a substantial and varied diet is administered by mouth.

The Parasite of Cancer.—By Sir Henry Butlin. (See page 1229.)

Nonvalvular Heart Disease.—H. L. McKisack states that the chief causes which damage the heart muscle are either inflammatory changes or degeneration of the muscle fibers. The inflammatory injury is commonly the result of the toxemia of fevers, the chief of which is rheumatism, but familiar examples are seen in pneumonia, measles, scarlet fever, typhoid fever, and other exanthemata. A cloudy swelling of the muscle fiber occurs in almost all pyrexial states, and more definite inflammatory infiltration is common under these circumstances. The degenerations are even more numerous and striking in their effects. Among the commonest is the fatty change caused by an imperfect blood supply to the muscle. This is found to occur in all cases of severe anemia—for example, pernicious anemia, chlorosis, hemorrhage, inanition from improper or insufficient food—and it is one of the factors in the heart muscle weakness of acute rheumatism and other fevers, in which the blood examination usually reveals a marked anemia. Mechanical interference with the proper blood supply to the heart walls is a not infrequent cause of fatty and fibrous degeneration, and occurs in atheroma, thrombosis, or embolism of the coronary arteries. Fibrous changes may occur in the heart muscle analogous to those occurring in the systemic arteries, and probably owing their presence to similar causes—namely, strain, toxemias, especially gout, high tension in the circulation generally, and especially as found in the contracted kidney. This condition of cardiosclerosis is also likely to result from long-continued efforts of a heart, damaged by valve defects, to maintain an efficient circulation, and is the usual form of degeneration which attacks a heart hypertrophied by this or similar causes, and hastens the dilatation and breaking down of compensation under unfavorable circumstances.

Cardiac Failure Treated by Cane Sugar.—A. H. Carter reports a case of heart-muscle degeneration and failure occurring in a lady aged 62 years treated by means of cane sugar administered in doses of 1 to 4 ounces daily. Her improvement began to be obvious after the middle of the second week of this treatment, and by the end of the fifth week it was remarkable. The pulse was steady and stronger, and normally 72 to 78; it was not abnormally altered by exertion, and quickly resumed its normal rate after rest. The first mitral sound was stronger, and altogether of better quality. She could walk nearly 3 miles without a rest or undue fatigue, and a very short rest completely restored her. Her mental vigor was quite reestablished and her feeling of well-being and "fitness" after months of weariness and lassitude was extraordinary.

Enucleation of Tonsils.—S. S. Whillis and F. C. Pybus describe the technique of removing the tonsils by means of the guillotine combined with finger pressure on the anterior pillar of the fauces.

Hypertonic Salines in Infantile Diarrhea.—L. Rogers states that the principle he has introduced in the treatment of cholera, of basing the frequency and amount of saline to be injected on the degree of loss of fluid from the blood as indicated by its specific gravity, has been adapted by him to the treatment of infantile diarrhea.

Control of Bladder after Prostatectomy.—C. Wallace and C. M. Page report a case which seems to indicate that a man can have perfect control of micturition with a patent or patulous internal vesical sphincter.

Elevation of Lower Molar.—F. St. J. Steadman reports a case of accidental displacement of a lower third molar tooth into the tissues of the neck during the operation of elevating this tooth from an abnormal position in the gum.

Sprengel's Deformity.—A. Mitchell reports a case of this rare condition, which is a congenital elevation of the scapula and is defined as "a congenital deformity consisting in an upward elevation of the scapula in its relation to the thorax and to the scapula of the other side."

Berliner klinische Wochenschrift.

November 20, 1911.

Painful Arm Paralysis of Children.—Durlach reports three cases of this injury in very young children. The etiology is sometimes palpable and sometimes obscure. As the three cases were seen within a single week the affection is evidently of common occurrence. The arm hangs limp at the side and readily simulates infantile spinal paralysis, and the latter affection is also at times painful. A fracture might be suggested to the observer, but may readily be excluded. The French style the lesion internal or interior derangement of the forearm, for supination is either avoided or performed imperfectly. While the affection is traumatic it is often very difficult to localize the precise seat of the injury, which is to be conceived of as a slight slipping of the cartilage, probably often spontaneously replaced by muscular tension. Of great significance is the belief of some surgeons that an injury has not taken place in fact, but only in imagination. The pain may be undoubtedly severe enough to cause inaction in the affected limb, and the association of pain with paralysis at least suggests psychogenous methods of treatment. However, with correction of any deformity and proper psychic management the subsequent histories of the case show considerable variation. One child had his condition disappear wholly after a few minutes of consultation. Whether the maneuver employed really reduces a dislocation when one is present seems to be a matter of doubt. In another case mechanical reposition seemed to have taken place, but the child could not move the arm at first and only did so after a stratagem. In the third case, in which there was no sign of displacement, the arm continued to hang limp despite all treatment.

Treatment of Gout with Radium Emanations.—Gudzent has treated a number of cases of gout and chronic arthritis with radium and appears to believe that the latter is a true curative treatment for the metabolic disturbances which constitute the disease. Uric acid in the tissues is rendered soluble and destroyed, an antiphlogistic action is exerted, tissue enzymes are activated, and even the uric acid disappears from the blood. Emanations are of value also in myalgias. The author and his colleagues find the use of radium by inhalation the best method and give 4 or 5 Mache units for every liter of air as the proper dosage. A technique for examination of blood for uric acid is naturally an essential feature of the management. The author mentions a paradoxic case in which the blood was cleansed from uric acid, but the patient nevertheless suffered from an attack of traumatic gout. The term gouty reaction is used to denote a paroxysm of disease in one subject to it who is at the time under treatment. This should be an indication to add colchicum to the treatment. Since a purin free diet cannot expel the uric acid from the blood, the author would not subject the patient to the hardships of one, but would simply order a common-sense regimen. A purin poor diet is of course rational.

The Emanation Action of Mesothorium.—Both Bickel and Emsmann have articles on this subject, radium and thorium being used for comparison. Modern physicists speak of the radium family and the thorium family, referring to the various intermediary products formed from each. While some members have a very short life only a few days or even hours, the so-called radium D is believed to live for many years, while radium F (polonium) remains active for some months. While thorium has a life of over 4 years, mesothorium I has one of nearly 8 years and radiothorium about 3 years. The action of thorium emanation closely resembles that of radium emanation. It is evident that no other radioactive substance can be compared to radium itself, which is believed to have a life of nearly 3000 years. Radium exerts its effects immediately, while from thorium many by-products are first produced. The status gradium substitutes as medicinal agencies has evidently not advanced much beyond the experimental stage.

Buccal, Pharyngeal, and Laryngeal Lesions of Heredosyphilis in the Tertiary Stage.—Gaucher presents a study of the various tertiary lesions, mucous and gummatous, of hereditary syphilis. The mucous syphilides may be superficial mucous patches or gummatous deposits and may be found about the mouth, anus, etc. They often rest on a papule and correspond to mucous tubercles. They are similar to those seen in acquired syphilis. Mucous patches belong especially to the secondary stage, but appear also as tertiary lesions. The oldest patient seen with these lesions by the author in the tertiary period was twelve years of age. Many cases are detailed. Gummata are seen on the lips, cheeks, tongue, pharynx, tonsils, pillars and palate. The gummata after a time soften and leave an ulceration with destruction of tissue. Lingual gummata do not differ from those of acquired syphilis. In the vault of the palate they always ulcerate through and make an opening between the nose and mouth. Such perforations are always due to syphilis. The palate appears swollen, but there is no pain present; it becomes immobile and the vowels cannot be pronounced. After perforation has occurred there is nasal voice. In the larynx we find cicatrices, fibrous retractions, and diminution of the calibre due to secondary lesions that have healed. Tertiary lesions of the larynx accompany those of the pharynx and nose. There are ulcerations of the epiglottis and involvement of the vocal cords. The symptoms are hoarse voice, dyspnea and attacks of suffocation.—*Le Progrès Médical.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

Diseases of the Genito-Urinary System—Degenerative changes in the kidneys are responsible for a mortality which is exceeded only by that due to pathological conditions of the blood vessels and heart, both of these classes of diseases having superseded tuberculosis, which at one time occupied first place in the list. It may be added that this reversal has been brought about less by the extermination of tuberculosis than by an increase in the death rate due to degenerative changes occasioned by the greater stress of modern business methods, by the extension of social pleasures into the late hours when physical and mental rest are so much needed and by the excessive eating and drinking which so often accompanies the accession of financial means.

It is highly important, then, for the examiner to cross question the applicant closely whenever there is a history of one or more of those conditions which, though not necessarily fatal in themselves, may provoke the permanent and dangerous changes to which the tissues of the kidneys are particularly susceptible on account of the present mode of living.

Diseases of the Kidneys—A history of the chronic affections of these organs will rarely be elicited from an applicant for life insurance. A previous occurrence of acute Bright's disease is, however, admitted at times and will lead to postponement until it is certain that a return of the trouble will not take place and all after effects have disappeared. A careful examination of the urine will be resorted to before final acceptance of the risk.

Albuminuria—When there is a history of albuminuria, even though there were no indications of involvement of the kidneys, the examiner will be expected to make an urinalysis of several specimens voided on different days and at different hours, preferably the morning, noon and evening urine of these days. It is advisable to have the applicant sign a statement that he has not been under treatment or on restricted diet for this disorder for at least six months. If these measures are not adopted, permanent or frequent recurring albuminuria cannot be excluded.

Movable Kidney—When there is a history of sickening or dragging pains in the abdomen, especially in women, the possibility of the presence of a floating kidney should be borne in mind. These cases are not acceptable unless the kidneys have been successfully fixed and time enough has elapsed to discover if the organs will remain in place.

Renal Colic—Give the number of attacks and the date of the last one, and ascertain if gravel or a stone passed from the urethra at the time. The term gravel should not be used to describe the precipitation of urates and uric acid sometimes occurring after the urine has become cool and which is of no importance even though it has often been the chief support for a diagnosis of "uric acid diathesis." The examiner will usually be requested to send a specimen of urine to the home office for microscopical examination, as the presence of red and white blood cells is occasionally demonstrated for a long time after an attack of renal colic, a possible indication that some damage to the tissues still exists or another stone is present.

The general opinion in regard to these cases is that they may be accepted when at least six months have elapsed since the last attack, provided there have not been too many recurrences and the microscopical examination of the urine is satisfactory. This view is apt to be modified, however, if the applicant is over forty years of age or an overweight, as in either event a longer period of postponement is advisable.

Hematuria—Give the dates, number of attacks and cause, and state whether there was accompanying pain, colic or passage of a renal calculus. It should be also made plain whether the blood appeared in the urine during an attack of malaria, as this condition is still common in some parts of the country.

Pelvis of the Kidney, Ureter, Bladder—Purulent inflammation of these parts is apt to travel up into the kidneys, and an inquiry should be instituted with this possibility in mind whenever there is a history of such a condition.

Prostate Gland—A good many death claims are paid where the kidneys have become involved through the disturbances set up by enlarged prostates. Hypertrophy of the prostate to a limited extent may exist for a long time without producing marked symptoms, and for this reason the condition rarely comes to the notice of the physician until it has reached a more or less advanced stage. The examiner may well bear this fact in mind when the applicant is over fifty years of age.

Stricture of the Urethra—Complete information should be furnished when there is a history of urethral stricture, especially as to whether there has been any indication of involvement of the kidneys. When sounds have been used, the date of cure should be mentioned as well as the size of the largest sound which the urethra would admit. In mentioning the size of the sound, state whether the French, American or English scale is referred to.

Always question the applicant as to whether he has had any frequent or difficult urination and, if there is any such history, endeavor to find out if it was caused by organic changes in the urethra, prostate, or kidneys.

Hydrocele—When there is a history of this condition it should be included in the report. Give dates of all tappings or operations and of any recurrence.

Association of Life Insurance Presidents.—The fifth annual meeting of this association was held at the Hotel Astor, New York City, on Wednesday and Thursday, December 13 and 14, 1911, under the chairmanship of John R. Hegeman, Esq.

Diabetes and Accidents.—Erfurth says that there are two forms of diabetes occurring after accident: one begins immediately or very soon after injury, the other develops gradually and slowly. The first form of diabetes can be brought in connection with the injury much easier than the second. Injuries of the head, inhalation of illuminating gas, concussion of the whole body, injuries of the digestive tract and digestive glands, injuries from frost or excessive heat, burns, etc., may all cause an immediate appearance of sugar in the urine. This form of diabetes is often of light character, the sugar either altogether disappearing from the urine or only appearing there at intervals. To make it probable that accident had much to do with the second type of diabetes, several of the following conditions should be fulfilled: (1) The accident must be of such nature as is capable of resulting in this disease. (2) In the interval between trauma and the full manifestation of disease there should have occurred

symptoms or signs of developing diabetes. (3) Some disease of the brain or spinal cord or some nervous functional disorder, caused by the accident, should precede diabetes. (4) The interval between trauma and the appearance of diabetes should not be over two years, and during this interval nothing should have occurred favoring the development of the disease.

This late form of traumatic diabetes usually ends fatally within a short time, ranging from three months to five years. Alimentary glycosuria may be its early symptom. If it can be proved that diabetes existed before the occurrence of injury, it may be claimed that the accident has had an untoward effect upon the disease. To support such a claim it must be shown that the amount of sugar excreted has increased; that the type of the disease has become more severe; that acetone and diacetic acid have appeared in the urine; that wounds due to the injury have run a very unfavorable course because of the existing diabetes. The author communicates the details of two illustrative cases.—*Monatsschrift für Unfallheilkunde*, No. 1, 1911.

Lumbago and Accident Insurance.—E. Patry says that in claims for indemnity for accident lumbago leads to greatest differences of opinion between the claimant and the insurance company. From the medical standpoint, there occur unquestionable cases of traumatic lumbago, just as many cases can be traced to a preexisting rheumatism. Quite a number, however, are indeterminable, so far as cause is concerned, and it were better for physicians to state this fact in any such case than take one or the other side of the controversy on insufficient grounds. Patry has collected over 1,500 cases of lumbago among indemnity claims and gives the following differential diagnostic points: Constancy of pain, so far as site is concerned, speaks for trauma rather than rheumatism. Traumatic lumbago usually makes the patient incapable of continuing work immediately after the injury has occurred; if the applicant has continued work for from two hours to several days after injury, then rheumatism or muscular fatigue are the probable etiology. The burden lifted during the onset of lumbago and the manner of lifting it may likewise point to the importance of injury rather than of disease. It must be remembered that lumbago is most easily simulated. The effect of the salicylates gives some points in differential diagnosis, but, of course, therapeutic results cannot be used as deciding arguments; nontraumatic lumbago is frequently not affected by remedies. The duration of lumbago is of importance: an anatomic lesion, such as probably occurs in all cases of traumatic lumbago, can hardly be expected to heal sufficiently to allow resumption of work in a few days. Patry, therefore, does not believe in the traumatic nature of a lumbago if work is resumed within one week of the injury. Unilateral pain is, of course, of some significance. The applicant's age is important; rheumatic lumbago is rare before the age of twenty years, and if indemnity is asked for by an applicant of this age, traumatic lumbago is most probable. In conclusion, Patry repeats that the neutral ground is often the only one to take for a physician who wants to be honest both to the applicant and to the insurance company.—*Korrespondenzblatt für Schweizer Arzte*, No. 22, 1911.

Insurance of Applicants Over Fifty Years of Age.—Van der Heide says that a definite judgment in regard to this question cannot as yet be pronounced. The material on hand shows, however, that while the results of insuring persons over fifty years of age are, of course, not as favorable as with younger applicants, yet the difference is not so great as to make it advisable to refuse such applicants altogether. In order to establish the expectation of life in such persons careful examination of the esophagus, of the rectum, and of the urethra is necessary. Difficulties in swallowing, in micturition, and in defecation, vertigo, and dyspnea must be carefully inquired into. The anamnesis should include a full history of longevity of the applicant's antecedents. The general elements entering into the question of preservation of the resisting power of the individual must be judged. A history of cancer and of apoplexy in the family must be especially inquired into.—*Third International Congress of Insurance Physicians.*

Notes on Life Insurance Examination.—I. Lytle Moore of Toledo, Ohio, points out that medical literature is sadly deficient in material on life insurance examination and that the average man thinks that it requires very little skill in diagnosis to be an efficient examiner. The question of life insurance examination is considered from the standpoint of the physician and the methods to be employed are briefly sketched. Special care is needed to examine those coming from other localities, for bad risks are prone to seek a physician who does not know them. Age, of course, is an important consideration, and the matter must be entered into thoroughly. Occupation is perhaps the most essential point and must be carefully dealt with. Nationality should also be paid due attention. Weight and height and chest and abdominal measurements all have a potent bearing on the question in hand. In the big bellied flabby individuals, who are given to heavy eating and indolent ways, we look for signs of nephritic and arterial degeneration. Thin people are often long-lived; but we must be on the lookout for evidences of tuberculosis. The physician should make certain that the applicant has been vaccinated. Lastly, the physician should be especially scrupulous in ascertaining whether an applicant is addicted to alcohol or any drug habit. Family history as to these points should be also inquired into and every effort made to clear up most features in this connection. Both the alcoholic and the drug taker are given to evasion and in the case of the drug taker the physician is thrown upon his own ingenuity.—*American Medical Compend*, October, 1911.

Influence of Occupation Upon Susceptibility to Diseases Resulting from "Catching Cold."—J. Zamaral as the result of extensive statistical studies reaches the following conclusions: Occupations in which an individual is exposed to continued cold do not cause any tendency to catching cold and its sequences; while occupations that are followed in confined places are associated with a greater morbidity in this respect. Work that is carried on under conditions of alternating intense heat and cold does not favor this morbidity, which shows that the human being has the power of adapting himself without injury to extensive losses of heat. The limit beyond which the action of a low temperature disturbs the normal functions of the body is outside the boundaries of any clinically operative cold-producing factors. If the temperature falls below the former limit, then refrigeration occurs but not "catching cold."—*Casopis lékaru ceskych*, 1911, Nos. 10-17.

Average Length of Life of the German People.—From the death rates which give the number of deaths per 1,000 births at the end of the first, second, third, etc., year of life, the length of life, that is, the whole number of years that these 1,000 persons have lived, is obtained; this sum divided by 1,000 gives the average length of life for the individual. This number is called the average length of life. From the three published mortality tables for the entire German people, the following average life duration can be calculated: From 1871 to 1880, for men, 35.58 years; for women, 38.45; from 1881 to 1890, for men, 37.17; for women, 40.25; from 1891 to 1900, for men, 40.56; for women, 43.97. The average for men has risen 5 years in the last 20 years, that for women 5½ years. Still Germany is behind many other European countries. In Sweden the average length of life is about 10 years higher than in Germany, in Belgium and the Netherlands about 5 years, and in France and England about 4 years. The chief reason for this difference lies in the considerable infant mortality of Germany.—*Journal American Medical Association.*

Book Reviews.

A Textbook of Pathology. With a final section on post-mortem examinations and the methods of preserving and examining diseased tissues. By Francis Delafield, M.D., LL.D., Emeritus Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. Mitchell Prudden, M.D., LL.D., Emeritus Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York. Ninth Edition. With thirteen full-page plates and six hundred and eighty-seven illustrations in the text, in black and colors. Price $5.50. New York: William Wood and Company, 1911.

The well-known textbook of Delafield and Prudden has become in its ninth edition a stately volume of over 1100 pages, with a wealth of illustrative photographs, line drawings, diagrams, colored plates, etc. The authors, or rather the author—for Dr. Delafield no longer participates in revising the book—have kept to the classic consideration of pathology, beginning with the simplest type of inflammation as an introduction to the general processes exhibited by the animal organisms in disease. These processes are treated as much as possible as the reaction of the organism to injury, a phenomenon of adaptation to changed conditions of life, comparable to other manifestations of energy of the living organisms. The student accordingly learns to look upon pathology as the study of living, though diseased, tissues and not merely of dead autopsy material.

A study of infections follows, the bacterial and protozoan excitants of disease, their biological characteristics, and the reaction their invasion of the body calls forth being tersely but freely described. Extremely suggestive chapters on the general problems of immunity precede this section. Tumors and the diseases of blood and blood-forming organs are next considered, Dr. Francis Carter Wood being credited with revision of these sections. A very conservative statement of the results of tumor research, which is "raging" everywhere nowadays, is included. The second half of the book is given up to special pathology, all the newer additions to our knowledge in this field being duly noted. Photographic illustrations are especially fine in this section of the book. The final chapters give the necessary directions for conducting post-mortem examinations and for preparing material for gross and microscopical study.

The revisions and additions of the new edition keep the book among the foremost textbooks on pathology in the English language. It should be a constant companion of the student in his study of medical and surgical affections, for it correlates the clinic and the autopsy room. To the practising physician it should act as a substitute for pathological and laboratory material, the immediate study of which he may be denied by the exigencies of a busy life.

The Physician's Visiting List for 1912. Price, for 25 patients per week, $1.25. Philadelphia: P. Blakiston's Son & Co.

This well known physician's diary, first issued sixty-one years ago as "Lindsay Blakiston's Visiting List," appears promptly in the form familiar to several generations of users. In addition to blank leaves for record of visits, memoranda, addresses of patients, obstetric and vaccination engagements, etc., it contains printed matter on incompatibilities, antidotes, treatment of asphyxia, and a dose table. The book is of good paper, well bound in soft leather, with tuck and pocket.

Der Gynäkologische Operationskursus an der Leiche (Gynecological Operations on the Cadaver). In sixteen lectures. By Dr. Wilhelm Liepmann, Privat Docent for Obstetrics and Gynecology in the Friedrich Wilhelm's University of Berlin. With 387 illustrations, mostly in color. Price 22 Marks. Berlin: Aug. Hirschwald, 1911.

This interesting book was written by the author of a similar work on obstetrical technique recently published, and is of the same general character. The material is presented in the form of clinical lectures illustrated by a series of excellent drawings and photographs of the immediate specimens under discussion. The author divides his subject matter into two parts, the first dealing with operations through the abdominal route, the second through the vaginal. Preliminary to this is an excellent chapter on the subject of lumbar puncture which he discusses in great detail, including experimental procedures on the cadaver, the anatomy of the area involved, and also the technique. It is to be regretted that no recognition has been given to the American workers in the field of spinal anesthesia. A brief review of the contents of the book will probably afford the most satisfactory idea of its scope.

The first few lectures are devoted to the subject of the abdominal corrective operations. The Alexander-Adams procedure is discussed in very minute detail and not only are the various steps carefully presented but a discussion is appended regarding the pathology of the operation. The text at this point is considerably burdened with technical details which might better be considered in a general chapter and, considering the loss of favor which this operation has undergone, it would appear that really too much attention is extended to the same, as the author finally admits that the round ligaments are unimportant in the normal suspension of the uterus. In a succeeding lecture the general subject of laparotomy is considered, after which the operation of ventral fixation of the uterus is taken up in its various modifications, preference being given to the procedure advocated by Bumm. Operations on the tube are next considered, including the subject of extrauterine pregnancy and tubal sterilization. The ovaries and uterus are then considered, followed by a chapter on the bladder, ureter, and kidney. Intestinal operations, including hernia and appendectomy, are also taken up. The second part of the book is devoted to the vaginal operations, which are very fully and satisfactorily discussed and illustrated. The final portion of the book is devoted to a description of a variety of obstetrical operations on the cadaver, including pubiotomy, cesarean section, the operations on pelvic veins, etc. Just why these should have been introduced in a gynecological manual is not apparent except as a means of referring to the author's previous book on the subject of operative obstetrics. Special attention is given by the author to bacteriology and pathology in their bearing on surgical technique and the possible sources of error in operative procedures are also fully recognized.

A final word of comment on the make-up of the book must not be omitted, as in both printing and illustration it represents the highest development of the printer's and illustrator's art. The plates are largely original works by Margaret Wendland, who has most satisfactorily combined her artistic execution with a definite knowledge of anatomy.

A Textbook of Materia Medica for Nurses, Including Therapeutics and Toxicology. By George P. Paul, M.D., Town Health Officer, Round Lake, N. Y.; Sometime Visiting Physician to the Samaritan Hospital at Troy, N. Y. Second Edition, thoroughly revised. Price $1.50. Philadelphia and London: W. B. Saunders Company, 1911.

In this revision the author has done well in not making any addition to the already rather liberal list of drugs and preparations. The new part, which only increases the size of the book by forty pages, contains sections on bacterial vaccines, vaccine therapy, tuberculin in diagnosis, therapeutics in childhood and infancy, massage, electrotherapeutics, and a table of doses. The book is a useful one and should prove popular with nurses. We would suggest that in a subsequent edition the author make his terminology and some of his doses a little more in accordance with those given in the U. S. P. For example, he gives the salts of the alkaloids as hydrobromate, hydrochlorate, instead of hydrobromide, and hydrochloride; and his dose of the tincture of aconite is 1 to 3 minims, as against the 10 minims of the pharmacopœia. These are small matters, but are of more importance in a book for nurses than they would be in a work intended for physicians, as the latter may be presumed to have some knowledge of the subject.

The Coming of Evolution. The Story of a Great Revolution in Science. By John W. Judd, C.B., LL.D., F.R.S., Formerly Professor of Geology and Dean of the Royal College of Science. Price 40 cents. New York: G. P. Putnam's Sons, 1911.

This is the first volume of the Cambridge Manuals of Science and Literature, which consist of a series of small volumes dealing with various aspects of thought, and with the results of recent discoveries, in a form acceptable to educated readers. It is quite fitting that the first volume should have been devoted to the subject of evolution, and should have been written by one who enjoyed the friendship of Huxley, Hooker, Scrope, Wallace, Lyell, and Darwin. This book is a most interesting narrative of the intellectual movement that dominated scientific thought during the second half of the nineteenth century.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held November 21, 1911.

Dr. W. L. Niles, Chairman pro tem.

The evening was devoted to contributions from the medical service of Montefiore Home.

An Unusual Case of Cirrhosis of the Liver.—Dr. Richard Weil presented this patient. There was nothing of interest in the family history. There was no history of any diathesis. The man was perfectly well until about twelve years before his admission to the hospital. At about the age of thirty-four years he developed ascites which was very considerable. He was tapped at Bellevue Hospital, but in a short time the fluid reaccumulated. The fluid removed was a clear serous one. The patient had had syphilis. The tendency toward ascites gradually disappeared and coincident with this there was developed an accessory surface circulation. There were then no further symptoms until five years ago when he had an attack of bleeding from the stomach lasting several days. He had not bled since. Aside from this there were no symptoms at all of any cirrhosis of the liver. There was no bleeding from the rectum. The man came to Montefiore Home for an entirely different condition, with cough, expectoration, loss of weight, and strength, showing a possible pulmonary condition of a low grade. Tubercle bacilli were never found in his sputum. The present status of the patient showed a liver that reached from the normal level above down to a hand's breadth below the free border of the ribs. Its surface was hard and nodular. The spleen was enlarged. There was no fluid demonstrable in the peritoneal cavity. Over the surface of his body there were marked venous plexuses; the accessory circulation was extremely well marked. There were no evidences of any internal anastomoses. The gastric contents, the stools, and the blood count were normal. With regard to the diagnosis of this case, Dr. Weil said that it did not appear to be anything except a portal obstruction. The case was of particular interest because it showed a cure of the cirrhosis of the liver. It had once been said that cirrhosis of the liver could never be cured. Here was the evidence to the contrary.

A Discussion of the Pathogenesis of Hypertrophic Pulmonary Osteoarthropathy, with a Report of Four Cases.—Dr. Harlow Brooks read this paper. He said said that search of the text books and "Systems of Medicine" showed that in by far the larger number this condition was not mentioned and one might be led to the conclusion that either the condition was unimportant or that it was exceedingly rare. This last statement was disproven by the fact that Theodore Janeway had reported a series of 93 cases collected during the year 1903. Hypertrophic pulmonary osteoarthropathy had frequently been confused with acromegalia. Some doubt still existed as to the precise lesions present in pulmonary osteoarthropathy. The enlargement of the hands and feet must be distinguished from the mere clubbing of the fingers and toes such as was seen in simple congestive states as, for example, in congenital or long standing cardiac lesions, for actual enlargement of the hands and feet was an essential feature of the disease. Post-mortem or radiographic examination of the distal ends of the long bones showed an ossifying periostitis. Most of the studies recently published with radiographic observations put stress on this as the essential lesion, but stated that thickening or exostoses of the ends of the bones of the leg and arm were not present. Some of the observers described changes in the face and skull. Facial changes were present in all of the four cases that came under his observation, and Dr. Brooks was of the opinion that they were an essential finding. After relating the history of his four cases, describing the pathological findings in three of them, and comparing these with the cases reported in the literature, Dr. Brooks concluded that the chief lesion characteristic of the disease under discussion was an ossifying periostitis with, in many instances, actual bone growth limited almost exclusively to the distal diaphyses of the long bones of the legs, arms, hands, and feet. Lesions in the carpal and tarsal bones were not, as a rule, marked, neither did they find the formation of osteophytes present on the terminal phalanges as was supposed to be the case before the routine employment of the *x*-ray. The facial changes consisted of a thickening over the malar prominences and a subcutaneous fibrosis which gave to the nose a globular appearance strongly suggestive of the facial changes in acromegalia. This lesion was entirely in keeping with those of the extremities and it was a fairly constant finding in this disease. In a review of the cases reported, one could not help being impressed with the unanimity with which other lesions of a definite primary type were reported. In the 93 instances collected by Janeway, pulmonary lesions were present in 65 cases and but 5 were given in which no apparent primary cause could be ascribed. Marie believed that the condition was a sequel of an inflammatory affection of the lungs or pleura, and that the cause was to be ascribed to the taking up of toxic products from the diseased thoracic foci and a transmission of them to the extremities of the body. The process was, therefore, an infectious, toxic, hypertrophic inflammation. After reviewing the theories that had been advanced to account for the changes characteristic of hypertrophic pulmonary osteoarthropathy, Dr. Brooks had been led to the conclusion that two factors were necessary, comparative youth, and the presence of lesions of the lung, pleura, or heart, most commonly of the lung, as a result of which there was an obstruction to the venous return or deficient pulmonary oxidation. That the changes were not purely the result of septic intoxication was clearly shown by the fact that they did not appear in liver or splenic abscess, in osteomyelitis, chronic dysentery, or those numerous other conditions characterized by prolonged septic absorption, and it seemed probable that infectious processes played rather a minor rôle, although they were present in most reported cases and doubtless where toxins were circulating in the blood venous stasis and fibrous hyperplasia were favored. The three post-mortems reported, as well as the living case in all probability, united all the above mentioned factors as did most published cases.

Dr. George Mannheimer reported the case of a man, fifty-five years old, who came to him complaining of pains in his hands and feet which he attributed to exposure. On careful examination, however, Dr. Mannheimer found the typical picture of hypertrophic pulmonary osteoarthropathy. Not only were the fingers clubbed, but also the phalanges were enlarged, the interphalangeal joints, the wrists, and ankles. The condition reminded one somewhat of acromegaly. But the nails were incurved, the hands were long and thick, and there were no acromegalic changes of the skull. The patient besides presented the characteristic features of cachexia, *e. g.*, emaciation, adynamia, and an unhealthy color of the skin. The examination of the chest revealed a latent pulmonary tuberculosis. There was no fever and no tachycardia, no cough, no sputum. No one would have said from the physical signs alone that there was an active process present in the chest. But the cachexia and the osteoarthropathy were taken to be the manifestations of an insidious intoxication, namely, a slowly progressive form of pulmonary tuberculosis. Three months later the man died from acute phthisis and tuberculosis of the intestines and peritoneum. The case illustrated that pul-

monary osteoartropathy was not dependent on stagnation and putrefaction of pulmonary secretions.

The Orthodiascope in Diagnosis.—Dr. C. Gotlieb said that the object of the orthodiascope was to get a true outline of a viscus, the heart for instance, and this was done by parallel projection. The radiographic plate showed the heart by central projection with its accompanying enlargement and distortion. The enlargement was inversely proportional to the distance between the tube and the patient. The further the tube was from the patient the more accurate would be the outline. Orthodiascopy was a valuable method since neither percussion nor fluoroscopy could give true values. Orthodiagrams could be made in the upright or the prone position. The *x*-ray passed through a small diaphragm, through the patient, and then through the center of a small fluoroscopic screen. The diaphragm, the center spot of the screen, and a marker were all on the same straight line, and with this straight line a viscus was encircled. By pressing an air bulb, the marker was caused to make an imprint on a sheet of paper mounted in the rear of the tube. After the orthodiagram was made accurate measurements must be taken and compared with standards as given by Geödel and others. Due allowances were made for age, height, and weight. As a rapid and accurate diagnostic office method, the instrument was invaluable.

The Phenolsulphonephthalein Test for Renal Function.—Dr. Louis Kristeller presented this paper, in which he stated that the statistics of the New York Board of Health showed that the mortality from Bright's disease had been constantly increasing during the past thirty years. As a cause of death it now ranked next to pneumonia and tuberculosis. The mortality might still be higher as the disease was frequently overlooked, because clinical symptoms and urinary examination were often not sufficient to demonstrate its presence. The older tests for kidney function were cumbersome and inexact and therefore rarely used. The phenolsulphonepthalein test was recommended on the ground of its mathematical exactness and the extreme simplicity of its application. One centimeter of red alkaline solution containing six milligrams of phenolsulphonepthalein was injected into the muscle of the arm or lumbar region. The entire contents of the bladder were collected at the end of one hour and again at the end of the second hour. The quantity of the drug in the two specimens was then determined by colorimetric methods in the laboratory. This drug kept in solution and could be put up in ampules, each containing a sufficient amount for one test. The injection was small, painless, and unaccompanied by irritation. The results were quick and could be frequently repeated without harm to the patient. Dr. Kristeller said that he and Dr. Goodman had published the results of the test on 40 persons, some healthy and others having various nephritic lesions, about one year ago. Since that time they had performed about 50 more tests. Their observations, like those of Geraghty and Rowntree, showed that healthy kidneys eliminated 40 to 60 per cent. of the injected drug in the first hour and from 15 to 25 per cent. in the second hour. When the physiological function of the kidneys was impaired the excreted amounts were diminished. The amount of excretion of the drug had varied during the first hour all the way down to 3 per cent., to traces, and even to entire absence, thus they obtained a mathematical picture of the degree of the derangement. The values were lowest in chronic interstitial and in chronic diffuse nephritis; chronic parenchymatous nephritis gave on several occasions normal amounts, in other cases diminution, probably indicating interstitial involvement. Kidney insufficiency could exist without albumin and casts. These two facts had been substantiated by the tests. Comparative tests in cases where only one kidney was diseased seemed to show that the excretion of phenolsulphonephthalein ran parallel with the capacity of the kidneys to excrete the normal waste products of metabolism. The test was valuable for prognosis. The lower the excretion of the drug the greater was the retention of nitrogenous and probably also of other waste products. They had also made tests that showed the advantages of restricting protein food. This test had been an important help in surgical kidney conditions. It remained to be proven whether it would be of value in eclampsia, syphilis, gout, arteriosclerosis, and perhaps in some skin and nervous diseases.

Dr. Charles Goodman stated that he had used phenolsulphonephthalein for estimating the functional efficiency of the kidneys for a year and a half. His experience in over 100 cases, medical as well as surgical, led him to believe the elimination of phenolsulphonepthalein went hand in hand with the excretion of normal products of metabolism. He also believed the test promised to be the best of those heretofore devised. Dr. Goodman mentioned some of the cases in which the test proved to be more valuable than the clinical data in establishing a diagnosis. A solution of phenolsulphonepthalein possessed the following advantages: (1) The drug did not readily decompose and could be boiled; (2) the dose, 0.1 c.c. of the solution, contained 0.006 gram of the dye; (3) the injection was painless and was not followed by any irritation; (4) the drug was entirely excreted by the kidneys; (5) the drug could be demonstrated in the urine in from 3 to 10 minutes, and from 50 to 70 per cent. was recovered during the first two hours; (6) the drug lent itself to accurate calorimetric measurement.

Massive Tuberculosis of the Liver.—Dr. E. Felberbaum made this report and demonstrated the specimen. The case demonstrated the difficulties of diagnosis; it was first considered to be a case of malignant disease of the stomach and liver; tuberculosis was not even thought of. The microscopical examination revealed the true nature of the condition. The patient was a Russian, fifty-two years of age. His present illness dated back nearly a year when he was suddenly seized with severe abdominal pain which was most severe over the left iliac region. The next day he began to hiccough and this continued for a week. He rapidly lost weight, became very weak, and had to remain in bed. Cramp-like epigastric pains appeared, but lasted only a short time. His chief complaint was pain in the epigastrium and weakness. His present status showed emaciation, a dry skin, a diffused pigmentation, general palpable lymphnodes, abdominal protuberance, a liver much enlarged, and a slight rise of temperature. Some lymphnodes enlarged and suppurated, requiring incision and drainage. Early in December, 1910, he developed a severe cough, a moderate temperature, a cachetic appearance, and abdominal pains, and there was dullness over the right lung posteriorly with râles especially marked at the apex. The examination of the sputum was negative. The heart sounds became very feeble, the respirations quickened, and the abdominal distention greatly increased. Edema followed and the patient finally succumbed. Many retroperitoneal lymphnodes were found to be enlarged. The stomach was found to be normal. The liver was very much enlarged, irregular, and studded throughout with innumerable nodular masses. These were white in color. The right lung was filled with miliary growths. Both lungs and liver contained the tubercle bacilli. There was much caseation. The specimen presented showed a massive tuberculosis of the liver.

Pyloric Obstruction Diagnosed by the Newer Methods and Verified by Operation.—Dr. I. O. Palefoski reported this case. The patient was a woman, twenty-seven years old. Two years ago she was suddenly seized with a severe burning and stabbing abdominal pain, felt very faint, was nauseated, but did not vomit. After five weeks

she felt much improved, but then had a relapse which was followed by emaciation and weakness; she lost about 22 pounds. Occasionally blood was found in the stools which she attributed to hemorrhoids. The patient was observed at two reputable hospitals where her condition was regarded as one of neurasthenia. She was admitted to the Montefiore Home six months ago. She was much emaciated, had tenderness over the right iliac region, and had a moderate leucocytosis; her case was diagnosed as chronic appendicitis, dilated stomach, gastroptosis, and particularly neurasthenia and splanchnic neurosis. In spite of what was done for her she did not improve. It occurred to the doctor that the symptoms she presented might well be explained by a subacute or chronic pyloric or duodenal ulcer. After a careful study of the symptoms he concluded that he had to deal with a case of partial pyloric obstruction. Laparotomy was performed by Dr. Charles Goodman and adhesions were found surrounding the pylorus and anterior wall of the stomach. A gastroenterostomy was performed and the patient was now doing well. He regarded these adhesions as due to a perforation of an old pyloric ulcer. The following points were emphasized: (1) The case amply illustrated the justification of suspecting a diagnosis of "neurasthenia" or "functional disease." (2) Without the aid of the duodenal tube and *x*-ray the recognition of partial pyloric obstruction was next to impossible. (3) To estimate the degree of obstruction both Gross's and Einhorn's duodenal tubes should be used in conjunction. (4) The pain experienced during the passage of the duodenal tube in pyloric obstruction roughly estimated the degree of such an obstruction and the pain might well be termed "labor-like" in character, comparing the capsule of the duodenal tube to the presenting part, the peristalsis of the stomach to the uterine contraction and the pylorus to the pelvis. (5) The duodenal tube in the future would become as useful in recognizing affections of the upper alimentary tract as the stethoscope in cardiac lesions was at present.

Dr. Charles Goodman said that the obstruction of the pylorus was relieved by division of the extreme and dense adhesions about the pylorus. A gastroenterostomy was performed to assure the patient permanent relief, as he feared the adhesions might recur. The patient's symptoms were relieved by the operation.

Treatment of Arthritis Deformans (with Illustrative Improved Cases).—Dr. S. Boorstein said that about eight months ago they had started careful systematic treatment of their arthritic cases and the results were very encouraging. The treatment was divided into (1) that of the general condition and (2) that of the joints. Since infection played an important part in bringing on the disease and aggravating the condition, they first looked for the source of infection: the mouth was examined for carious teeth, pyorrhea alveolaris, diseased tonsils, etc. The digestive tract was carefully attended to and the urine was frequently examined. As a routine measure, each patient received two or three enemata a week and this seemed to greatly relieve the joint pains. The patients ate whatever agreed with them; it was an object to increase the nutrition of the joints and to improve the condition of the atrophied muscles. Milk, cheese, and buttermilk were given in large quantities since it was claimed that the calcium contained therein had a markedly beneficial effect. The patients were kept out of doors as much as possible. Patients were given steam baths three times a week; they were kept in a sitting posture for 10 minutes at a temperature of 200 to 225; the head was covered with a towel wrung out of ice water. This was followed by a spinal douche at a temperature of 90 with a force of 20 pounds. Baking was found to be very useful, producing an immediate and powerful stimulation of the vital body functions and bringing an increase of blood to the part; this was followed by massage. Light baths were used and the benefit was due to promotion of extensive elimination of the products of poor metabolism. Active and passive hyperemia were very useful. Massage, together with exercise, was a very useful part of the treatment. The massage was given only three times a week. This increased the nutrition of the joints and diminished the possibility of ankylosis, muscular atrophy, and contractures. Exercise was found to be the most effective part of the treatment. As yet they had had no occasion to use operative treatment in these cases, although some had advised it. So far as drugs were concerned, they used only occasionally aspirin or tincture of gelsemium to control pain. Special training was given to nurses in order to stimulate their personal interest in this work.

A Case of Arthritis Deformans.—Dr. S. Boorstein presented a man, a teacher by occupation, twenty-seven years old, who had been bedridden for about two years prior to his admission to the hospital. His knees were swollen and contracted to an angle of 45 degrees and there was a great deal of pain in all of his joints. He was unable to dress, undress, or feed himself. After eight months' treatment he was able to walk, although with a brace, and had no pain. He dressed himself, undressed, and shaved now; he could write without discomfort and at present did the clerical work of the department at the Montefiore Home.

Dr. Harlow Brooks said he was sure that one could carry out such a treatment as described by Dr. Boorstein, without even the electrical aid, especially when treating an intelligent patient, and achieve just such results. It seemed to him that it was almost impossible that the man presented, who when first seen seemed crippled for life, should improve so and become a useful member of society.

A Case of Brain Syphilis.—Dr. Albert Polon reported this case. The patient was a female, forty-three years old. She was twice married and her present husband was distinctly syphilitic; she had lived with him eighteen years without conceiving. Eighteen months ago she had projectile vomiting and mental deterioration. She was treated for several months for gastrointestinal trouble. Finally a neurologist saw her when she presented a picture closely resembling that of tumor of the pituitary body. She was operated upon for tumor of the hypophysis cerebri. She was discharged soon after in an improved condition. A few weeks later she developed a complete right ophthalmoplegia and later a complete left hemiplegia. She here presented the rare type of paralysis known as paralysis alternans superior (ophthalmoplegia on one side and hemiplegia on the other). Syphilis of the brain ranked in frequency with tumor of the brain and multiple sclerosis. Among 5,500 cases of nervous affections Nonne diagnosed 85 as lues of the cord and brain; and among 72,000 patients in the general service of Eppendorfer Krankenhaus, 280 were found to be afflicted with lues of the cerebrospinal system. Among 500 cases at the general service of the Montefiore Home, 20 were diagnosed as lues of the central nervous system. The history of syphilis, the clinical picture presented, and the Wassermann findings justified an active antisyphilitic treatment with the result that, within a few days, the ophthalmoplegia completely disappeared, motion returned in the paralyzed leg, and a consensual light reaction could be obtained on the blind eye. The instructive features of the case were as follows: (1) The importance of unearthing the fact of syphilitic infection in any clinical condition, but especially in a neurological affection. (2) No matter how typical a brain condition might appear, the possibility of its being luetic should be borne in mind. (3) Not too much reliance should be placed on the Wassermann reaction. (4) The effectiveness of Ehrlich's "606" in syphilis.

A Case of Complete Heart Block.—Dr. Samuel G. Ehrenreich reported this case. The patient was seventy-one years of age and was admitted to the Home in May, 1908. He was an excessive smoker until a few years ago. There was no history of venereal disease. His wife had borne six normal children and had had no miscarriages. When admitted he complained of dyspnea, moderate cough, slight expectoration and frequent inconstant pains in both axillæ; there was neither hemoptysis nor fever and there were no night sweats. There was a gradually increasing general weakness. An examination revealed a generalized emphysema and an adhesive pleurisy over the right base. A slight blowing murmur was audible at the apex, transmitted to the left. While at the Home nothing was observed that was unusual until six months after admission; then there was noted an irregularity in the heart's action; the pulse rate was 64 per minute during one of his acute pleuritic attacks; the day following the pulse came down to 46 per minute. The heart action was very irregular, the extra-systoles being quite frequent. There was then noticed a pleuritic rub audible over the left base. The bradycardia had persisted up to date, the pulse rate being between 38 and 46 per minute, with occasional exceptions when it rose. The blood pressure had always been between 180 and 220 mm. of mercury. When the bradycardia first appeared, polygraphic tracings were taken by Dr. Felberbaum who immediately diagnosed the condition as one of complete heart block. It was only when the pulse rate increased to 78 or more that a partial heart block was present. The Wassermann reaction was positive and a gumma in the auriculo-ventricular bundle was suspected. The administration of antisyphilitic treatment gave negative effects. The auricles contracted at least twice as often as the ventricles, and there was a complete disassociation of the contractions in the two.

Radiography in Medical Diagnosis, with a Report of Original Observations on the Diaphragm.—Dr. S. Wachsman made this report and demonstration. His object in presenting his plates was to urge coöperation, as much as was possible, between the internist and the radiographer, and also to call especial attention to the diaphragmatic line which offered very interesting features.

Chronic Polyarticular Arthritis: X-Ray Studies, Together with Some Observations Concerning Etiology.—Dr. George R. Elliott read this paper and gave a lantern slide demonstration. He said that not many years ago the arthritic manifestations of so-called acute rheumatism were looked upon as due to a single poison, and one organism after another was singled out only to be set aside. The skill of the diagnostician was still taxed to definitely fix upon the particular organism acting. With chronic polyarticular arthritis they were passing through a similar experience. They were dealing with a composite manifestation. There had been established one fact which had done much to put them on the right track for the solution of the problem, *i. e.*, in all the chronic arthritides they were dealing with a secondary and not a primary process. Quite a number of chronic articular processes had been diagnosticated and in them the first cause was known. They were all more or less familiar with the arthritic manifestations of the gonococcus. To fix upon a definite organism was not always possible. They saw arthritic manifestations complicating, for instance, scarlet fever, typhoid fever, syphilis, etc., where the microorganism could not be found in the joint; yet they knew that the arthritis in some way was due directly to the systemic disease. There was another set of cases which had been clearly differentiated and set aside under the term neuropathic or neurogenetic. Syringomyelia and locomotor ataxia supplied many examples of secondary chronic arthritis of this peculiar type, the arthopathies. Again, there was another class of cases, the arthritis urica type, where between the first deposit of crystals in the cartilage and the extensive resorption and apposition of bone there were found many and varied anatomical joint findings. Few gave trauma its full value as a causative factor in chronic arthritis. Men like Sutton, Lane, Baumler, and Garrod had stamped trauma with much emphasis as a causative factor in these cases. There remained a very large class in which belonged most of the arthritic patients they had under treatment at the Montefiore Home, the chronic progressive rheumatism of the French, or the rheumatoid arthritis of the English, and much had been written seeking to prove a central nerve origin of these cases. Trophic, metabolic, and atrophic were words that were much used, but they still were looking for the first cause. In some of the patients at the Home the primary cause had ceased to exist and the patients were suffering from the end products. The disease had become quiescent, or they were suffering from the vicious circle established, plus the result of intestinal toxic irritation. The majority of the cases, according to the teachings of the French, had no connection with common infections or toxic dyscrasias, but humidity was looked upon as the true etiological factor. They pointed to the great frequency of the disease among the soldiers who were compelled to sleep upon the ground in 1870. Those who did not accept the dampness as a first cause believed that it activated hereditary tendencies. It was shown that among those at the Montefiore Home 40 per cent. either lived in damp rooms, or were exposed to prolonged damp cold and, therefore, they felt safe in concluding that they were dealing with a contributory etiological factor. With regard to the anterior infections in their cases, they sought for possible sources less differentiated and more localized. Particular attention was then given to the tonsils, ears, and gums as foci of origin. They had searched for cardiac lesions, glandular enlargements, suppurative abdominal processes, puerperal sepsis, chronic inflammations of the uterus and adnexa, furunculosis, acne, history of pus anywhere in the body, etc. In spite of the difficulties encountered in getting statements from these patients they were surprised that they had been able to fix upon a relatively large number that gave as the probably first cause an initial infective focus of origin in 52 per cent. Three followed immediately an attack of influenza; 1 began immediately after parturition; 1 two weeks after labor; 1 soon after puerperal sepsis; 1 immediately after the removal of a uterine tumor; 1 after the removal of a tumor of the neck; 1, a patient of seven years, after a prolonged suppurative process; 1 after repeated serious attacks of hemorrhages from hemorrhoids; several after a so-called "cold." With their present knowledge of the subject, and with the causative factor established in a certain number of the cases, Dr. Elliott believed that they were justified in believing that in quite a large number of cases they had located the primary focus of origin. He showed that the *x*-ray enabled them to differentiate a number of external arthritic types. Owing to the composite nature of the arthritic process where complex etiological factors had been active he did not feel that they were yet justified in concluding that the *x*-ray gave them many distinct disease entities.

College of Physicians of Philadelphia.

At a stated meeting, held November 1, Dr. Arthur V. Meigs and Mr. H. L. Marsh presented a communication entitled "The Quantitative Analysis of Human Milk." The work represented observations covering a period of two years, the clinical aspect of the subject being presented by Dr. Meigs and the results of the chemical studies detailed by Mr. Marsh. The findings confirmed, in a general way, those of Dr. Meigs made twenty-nine years ago. They showed that the proteids of cows' milk are about three times as large in amount as those of human

milk. The lactose could never be obtained free, being always in combination with some indeterminate substance. An effort was made to isolate each of the component substances as such. It was pointed that mothers' milk undergoes little qualitative change during the entire period of lactation, and probably it is not necessary to change the strength of milk mixtures for children from one period to another, but rather the amount given at feedings. The discussion of the paper was opened by Dr. John Marshall, who considered the chemical aspects of the subject, and it was continued by Dr. J. P. Crozer Griffith and Dr. Edwin E. Graham, who considered the clinical features.

At this point the president, Dr. George E. de Schweinitz, announced that the college would take a recess for the purpose of permitting the treasurer, Dr. Richard H. Harte, to present a statue of Aesculapius. Dr. Harte gave a brief account of the life and times of the God of Medicine, the son of Apollo, and uncovered the heroic statue, which is a replica of one at the Vatican. The statue was accepted on behalf of the college by Dr. S. Weir Mitchell, who expressed the thanks of the college not alone for this magnificent gift, but also for active and long-continued service as treasurer and in other capacities.

On resumption of the regular scientific business Dr. Joseph Sailer presented a communication entitled "The Cecum Mobile." He pointed out that this condition does not necessarily connote a morbid state, as the mesentery of the cecum exhibits considerable variability in length and mobility. On the other hand, the disorder may give rise to pain in the right iliac ossas, with symptoms of indigestion, and it may be readily mistaken for appendicitis. In fact, in three of the four cases reported by Dr. Sailer operation had been performed for the relief of appendicitis, but the original symptoms persisted after removal of the appendix. Constipation is frequently associated with the affection. The recognition is to be made by palpation, by inflation and by *x*-ray examination after ingestion of emulsion of bismuth. The disorder is relatively common, and may be readily overlooked. Dr. Wm. S. Wadsworth read a paper entitled "The New Relations Between Chemistry and Anatomy." He pointed out the importance of comprehending the chemical composition of the structures of the body, as well as the changes that take place in connection with the various physiological processes.

Philadelphia Neurological Society.

At a stated meeting held October 27 Dr. Tom A. Williams reported cases as follows: (1) "Variable Migrainous Recurrent Paralysis, Followed by Permanent Lateral Homonymous Hemianopsia"; (2) "Recurrent Vertigo from Hypadrenalism Cured by Opotherapy"; (3) "A Case of Hysterical Hyperesthesia Incapacitating Locomotion Cured in One Week by Psychomotor Discipline"; (4) "Barking and Roaring Tic Removed in One Day." Dr. Alfred Gordon demonstrated "A Case Presenting Simultaneously Tic, Facial Spasm, and Choreiform Movements." The patient was a neurotic man who presented habitual, purposive movements of the lips, nose, eyelids, brows, forehead, and hands. Dr. Charles W. Burr reported "A Case of Angioneurotic Edema Cured After the Administration of Salvarsan." The patient was a man, with a definite history of syphilitic infection, in whom swelling of the tongue, at times apparently threatening suffocation, developed from time to time, following the employment therapeutically of mercurials, arsenic, and other medicinal agents. At other times swellings appeared also in other parts of the body. An intravenous injection of arsenobenzol was given for the syphilitic infection, and thereafter there was no further occurrence of the angioneurotic edema. Dr. James Hendrie Lloyd and Dr. L. J. Hammond reported "A Case of Brain-Tumor Successfully Located by Means of the *x*-ray." The patient was a young man, 19 years old, who presented a gait suggestive of cerebellar disease, with weakness on the left side of the body, loss of stereognostic sense in the left hand and exaggeration of the left knee jerk, but without distinctive changes in the eyegrounds or fields of vision. *X*-ray examination showed distinctly a shadow in the right parietal region. Accordingly, a segment of bone was removed from the exceedingly thin calvarium over the site of the supposed new-growth and a considerable amount of fluid was evacuated on puncture. A number of hard tumor-masses were appreciable, but their removal was deferred for a secondary operation. The patient recovered speedily, and he returned to his home. It was not for a number of weeks that he returned on account of intensification of the symptoms. As much as possible of the neoplastic tissue was now removed, but the patient failed to do well, and death resulted in the course of a week. Examination of the tissue removed showed it to have a calcareous consistency and histological examination disclosed the structure of a psammoma. No doubt it was by reason of the peculiar composition of the growth that its presence was demonstrable by the *x*-ray.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Texas State Board of Medical Examiners.

Austin, June 27-29, 1911.

ANATOMY.

1. Describe the clavicle.
2. Describe the elbow joint.
3. Give origin and insertion of the following muscles: Posterior tibial, flexor carpi radialis.
4. Describe the internal iliac artery; give relations of anterior tibial artery.
5. Describe the vagus nerve.
6. Name and locate the ductless glands.
7. Give relations and nerve supply of kidney.
8. Describe the lower lobe of the left lung.
9. Name the ligaments of the uterus.
10. Briefly describe the common bile duct.

HISTOLOGY.

1. Give the relation of the various constituents of the blood to each other.
2. Give the diagram of a cross-section of the shaft of the humerus. Describe the Haversian system and show the relation of the parts to each other.
3. Give the constituents of bone relative to the organic and inorganic parts.
4. Define cartilage. Define the following cartilages and tell where found: (*a*) Hyaline; (*b*) White; (*c*) Interarticular; (*d*) Connecting; (*e*) Circumferential; (*f*) Stratiform; (*g*) Reticular.
5. Describe striped and unstriped muscle, and name organs in which unstriped is found.
6. Where is the (*a*) Axiscylinder Purkinje? (*b*) White substance of Schwann? (*c*) Neurilemma?
7. What is the relative difference between the sympathetic and cerebrospinal fibers?
8. Name the layers of the skin from within outward.
9. Name the coats of the arteries and give structural difference.

PHYSIOLOGY.

1. Name and classify the principal nerve upon which the function of voice depends.
2. In what three important organs of the body is the existence of vasomotor nerves still an uncertainty?
3. Give function of the gall-bladder; state whether or not the flow of bile into the duodenum, in the normal subject, is continuous and uniform.
4. Give the principal factors controlling the flow of lymph; in what respect does its circulation differ from that of the blood?
5. Give the four principal ways in which heat is regularly lost from the body and the percentage of each.
6. Give definition of a carbohydrate; give four functions of carbohydrate foods.
7. Give specific gravity, chemical reaction, average daily quantity, and constituents of normal urine.

8. Give chief source, average daily quantity excreted, and where formed of urea.
9. As it applies to caisson work and in the therapeutic use of oxygen, give the effect of breathing (*a*) condensed (*b*) rarefied air; give symptoms of increased and decreased percentages of oxygen.
10. Give specific gravity and chemical reaction of gastric juice; name its principal enzymes and give action of each in the process of digestion.

CHEMISTRY.

1. When is an element in what is called the "nascent" state?
2. Define catalysis.
3. Give a brief summary of the "ion" theory.
4. Describe a reliable test for free hydrochloric acid in the stomach contents.
5. Describe "Gmelin's" test for bile in the urine.
6. Describe a practical test for each of the following: (*a*) albumin, (*b*) sugar, (*c*) indican, in suspected urine.
7. Give (*a*) symptoms of poisoning from, (*b*) treatment of same, (*c*) quantity sufficient to cause death, and (*d*) a test of iodine.
8. State (*a*) fatal dose, (*b*) symptoms of poisoning from, and (*c*) a test for cyanide of potassium.
9. Salicylic acid is sometimes used as a preservative. Say how you could detect it in a food or beverage.
10. Give (*a*) symptoms, (*b*) treatment, and (*c*) a test for acetanilid poisoning.

BACTERIOLOGY.

1. Name the organism that causes gonorrhea.
2. What important disease is caused by the Klebs Loeffler bacilli?
3. What is antitoxin? How is diphtheritic antitoxin prepared?
4. Describe the process of staining tubercle bacilli in sputum.
5. Name the most important pus-producing bacteria.
6. What important disease is produced by the *Amœba coli?*
7. What microorganism causes tetanus, and why is it so necessary to open up punctured wounds immediately after the reception of injury?
8. What microorganism is considered the cause of erysipelas?
9. What temperature is required for the growth and cultivation of all disease-producing bacteria?
10. What microorganism causes influenza?

PHYSICAL DIAGNOSIS.

1. Name and describe the physical signs in the three stages of croupous pneumonia.
2. Physical signs of chronic interstitial pneumonia.
3. Physical sign of pneumonokoniosis.
4. Physical signs of cardiac hypertrophy.
5. Physical signs of cardiac dilatation.
6. Physical signs of serofibrinous pleurisy.
7. Physical signs of aortic regurgitation.
8. Physical signs of plastic pericarditis.
9. Give differential diagnosis, from physical signs, of acute dilatation of the heart and pericarditis with effusion.
10. Define and describe amphoric respiration, and state of what condition this breathing is pathognomonic.

PATHOLOGY.

1. Name some of the varieties of degeneration.
2. Name some of the results of endocarditis.
3. Define endarteritis. What are the dangers to the tissues in endarteritis obliterans?
4. Name the blood and glandular changes in lukemia.
5. How would you distinguish between fatty degeneration and fatty infiltration?
6. What two pathological conditions result from altered secretion of the thyroid gland?
7. What do you understand by the union of a wound by first intention?
8. Name the common malignant tumors of the breast.
9. Define the difference between a thrombus and an embolus.
10. What is the pathology of typhoid fever?

OBSTETRICS.

1. Give signs and symptoms of pregnancy.
2. Give symptoms and signs of approaching labor.
3. Name the diseases from which a mother should be carefully protected before and after labor. (*b*) Explain protective measures.
4. Give, in detail, management of a normal labor.
5. Give types of placenta prævia and their treatment.
6. What would you do if the waters were drained off and a hand and foot were found presenting together?
7. (*a*) In case of twins, if the first came feet first, what special care should you take in delivering the head? (*b*) Why?
8. Define puerperal eclampsia. (*b*) Give treatment before, during, and after labor.
9. State how you would manage an infant after its birth. (*b*) What attention should the babe's eyes receive?
10. Give explicitly the treatment of abdominal pregnancy from conception to termination of pregnancy.

GYNECOLOGY.

1. Define ectopic gestation and mention three of the most important diagnostic symptoms of tubal pregnancy.
2. If a tubal pregnancy is diagnosed before rupture, what treatment would you advise? Describe technique of operation for tubal pregnancy.
3. (*a*) Mention three pathological types of endometritis. (*b*) In what class of patients would you suspect that an exciting endometritis was tuberculous, and what steps would you take to confirm the diagnosis?
4. What diagnostic significance would you attach to postmenopause hemorrhage from the uterus?
5. Mention three of the earliest symptoms of cancer of the cervix uteri, and mention three other conditions of the cervix with which it might be confused.
6. Give three clinical symptoms of retroversion of the uterus and indicate treatment.
7. Mention five distinctly diagnostic symptoms of carcinoma of the breast.
8. When should lacerated perinea be repaired, and why? Give a brief reason for your answer to this question.
9. (*a*) What are the clinical symptoms of dysmenorrhea? (*b*) Mention four types of dysmenorrhea.
10. Briefly describe a typical case of chronic pyosalpynx and differentiate it from appendiceal abscess and tubal pregnancy.

SURGERY.

1. How would you manage a fracture of the lower and middle third of the shaft of the femur?
2. Give differential diagnosis of luxation of the hip and fracture of the surgical neck of the femur? Give methods of managements of each.
3. Give indications for gastroenterostomy. Give operative technique.
4. When and why would you advise the drainage of the gall-bladder? Give indications for extirpation of gall-bladder and give operative technique of the extirpation of the gall-bladder.
5. Give differential diagnosis of concussion and compression of the brain. Give indications for trephine. Give operative technique.
6. Give indications for ligation of middle meningeal artery. Give location and operative technique.
7. Give operative technique for acute, non-suppurative appendicitis; acute suppurative appendicitis; acute perforative or gangrenous appendicitis without abscess; acute perforative or gangrenous appendicitis with abscess.
8. Give clinical symptoms of floating or movable kidney and operative technique for nephrorrhaphy.
9. With no union for three months after compound-comminuted fracture below knee, where there were necrosis and suppuration, would you or would you not advise amputation? Why? Give operative technique.
10. Give clinical symptoms of empyema. Give operative technique.

HYGIENE.

1. Explain the difference between contagious and infectious diseases and give examples.
2. What infectious or contagious diseases are communicated through the medium of the air? What through foods? What by insects? What method can you suggest for combating the latter?
3. Explain the presence of hookworm in the body. What do you recommend to lessen the prevalence of the disease?
4. Name five diseases commonly regarded as requiring regulation by quarantine and state the time necessary to maintain same in each case.
5. What methods would you employ to determine the cause of an epidemic of typhoid fever in your community?
6. Given a case of diphtheria to attend, outline in detail what measures you should adopt to protect the community against an epidemic.
7. How would you determine whether drinking water and milk suspected of being unfit for domestic use was safely pure or not? What precautions should be advised pending such decision?

8. Name three reliable fumigation agents and give detail for procedure for the use of one of them following a contagious case.
9. What hygienic measure should be observed in the management of pulmonary tuberculosis?
10. What precautions should be taken to secure and maintain a pure supply of cistern water?

MEDICAL JURISPRUDENCE.

1. Define insanity and give the best classification for legal purposes.
2. What do you understand by "superfetation" and how distinguished from twin pregnancies?
3. Define and give differences between impotence and sterility.
4. What are the elements of responsibility in criminal malpractice, and the relief from such responsibility?
5. How should blood stains be studied? And how would you distinguish the human blood globule from that of other sources?
6. In order to convict for infanticide, give four positive elements of criminality that the law requires.
7. What are the post-mortem signs found in the newborn after asphyxia? After strangulation? After starvation and exposure?
8. Describe death from electricity and give post-mortem appearances. Where does the medicolegal interest come in?
9. Describe in very minute detail an autopsy.
10. Define rape and tell what three conditions are necessary to be produced by medical testimony to prove rape.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

TEXAS STATE BOARD OF MEDICAL EXAMINERS.

Austin, June 27-29, 1911.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 181; or Gray's "Anatomy" (1910), page 169.
2. See Cunningham's "Anatomy" (1909), page 279; or Gray's "Anatomy" (1910), page 306.
3. POSTERIOR TIBIAL. *Origin:* Posterior surface of interosseous membrane, outer portion of posterior surface of shaft of tibia, and upper part of internal surface of fibula. *Insertion:* Tubercle of scaphoid, three cuneiforms, cuboid, and second, third, and fourth metatarsal.
FLEXOR CARPI RADIALIS. *Origin:* Inner condyle of humerus, inner margin of oleeranon process of ulna, and upper part of posterior border of ulna. *Insertion:* Pisiform, unciform, and fifth metacarpal.
4. *For internal iliac artery.* See Cunningham's "Anatomy" (1909), page 848; or Gray's "Anatomy" (1910), page 671.
RELATIONS OF ANTERIOR TIBIAL ARTERY. *In front:* Skin, fascia, tibialis anticus, extensor proprius pollicis, extensor longus digitorum, anterior annular ligament, anterior tibial nerve. *Behind:* Interosseous membrane, tibia, and anterior tibiotarsal ligament. *Externally:* Extensor proprius pollicis, extensor longus digitorum, and anterior tibial nerve. *Internally:* Tibialis anticus, and tendon of extensor proprius pollicis.
5. See Cunningham's "Anatomy" (1909), page 600; or Gray's "Anatomy" (1910), page 1006.
6. See Cunningham's "Anatomy" (1910), page 1210; or Gray's "Anatomy" (1910), page 1437.
7. See Cunningham's "Anatomy" (1909), pages 1130, 1133, 1135, and 1140; or Gray's "Anatomy" (1910), pages 1345 and 1356.
8. See Cunningham's "Anatomy" (1909), page 988; or Gray's "Anatomy" (1910), page 1194.
9. *The ligaments of the uterus* are: Two round ligaments, two broad ligaments, anterior or vesicouterine ligament, posterior or rectouterine ligament, two sacrouterine ligaments.
10. See Cunningham's "Anatomy" (1909), page 1120; or Gray's "Anatomy" (1910), page 1334

HISTOLOGY.

1. (1) Red corpuscles, about 5,000,000 to the cubic millimeter. (2) White corpuscles, about 7,000 to 10,000 per cubic millimeter; (of these there are: small mononuclears, about 20 per cent.; large mononuclears, about 8 per cent.; polynuclears, about 70 per cent.; and eosinophiles, about 2 per cent.). (3) Platelets, about 400,000 to the cubic millimeter.
2. See Cunningham's "Anatomy" (1909), page 72; or Gray's "Anatomy" (1910), pages 37 and 39.
3. *Composition of bone* is thus given by Cunningham:

Organic matter (Fat, Collagen)		31.04
Mineral matter:		
Calcic phosphate	58.23	68.97
Calcic carbonate	7.32	
Calcic fluoride	1.41	
Magnesic phosphate	1.32	
Sodic chloride	.69	
		100.00

4. *Cartilage* is a material which is a transition stage of connective tissue into bone. When boiled it yields chondrin. It is not vascular, and is found in adult life chiefly in the joints, in the parietes of the thorax, and in various tubes which are to be kept permanently open.
Hyaline cartilage is composed of round or oval cells and intercellular substance. It is found in embryos in regions where bone is to be formed, also in the nose, larynx, trachea, bronchi, and in symphyses, epiphyses and synchondroses; costal cartilage and epiphyseal cartilage are composed of it.
White cartilage, also called *fibro-cartilage*, is composed of white fibrous tissue and cartilage in varying proportions. It is found at the insertion of the ligamentum teres into the head of the femur, in the intervertebral discs, in the symphysis pubis, and interarticular cartilages.
Interarticular cartilage is found in the temporo-mandibular sterno-clavicular, acromio-clavicular, wrist and knee joints.
Connecting cartilages are found between the bodies of the vertebræ and between the pubic bones.
Circumferential cartilage surrounds the margin of some articular cavities, as cotyloid and glenoid cavities.
Stratiform cartilage forms a thin coating to bony grooves through which muscle tendons glide; also found in tendon of Peroneus longus and of Tibialis posticus.
Reticular cartilage is probably elastic cartilage, found in the epiglottis, external ear, Eustachian tube, and cartilages of larynx.—(From Gray's *Anatomy.*)
5. *Voluntary* muscle is striated, has long narrow fibers with cross striations and many nuclei beneath the sarcolemma. *Involuntary* muscle is non-striated, has spindle-shaped fibers, one nucleus centrally located, and no sarcolemma. The great exception is cardiac muscle, which is involuntary and also striated. *Voluntary muscle* is found in all the skeletal muscles, pharynx, diaphragm, larynx, external ear, and eye. *Involuntary muscle* is found in the alimentary tract from the middle third of the esophagus to the anus, in the ducts of glands, in the trachea and bronchial tubes, within the eyeball, the internal urinary and genital systems, circulatory (except the heart) and lymphatic systems, and the capsules of some organs.
6. *Purkinjè's cells* are found in the cortex of the cerebellum. *White substance of Schwann* is found surrounding the axis cylinder of medullated nerve fibers. *Neurilemma surrounds* the medullary sheath of cerebrospinal nerves and the axis cylinder of sympathetic nerves.
7. *Cerebrospinal nerve fibers* are medullated; and consist of an axis cylinder, a medullary sheath, and a neurilemma. *Sympathetic nerve fibers* are mostly non-medullated; and consist of an axis cylinder and a neurilemma, but have no medullary sheath.
8. See Cunningham's "Anatomy" (1909), page 773; or Gray's "Anatomy" (1910), page 1155.
9. See Cunningham's "Anatomy" (1909), page 781; or Gray's "Anatomy" (1910), page 576.

PHYSIOLOGY.

1. The principal nerve upon which voice depends is the tenth cranial nerve or pneumogastric; it is a mixed nerve.
2. "There are three important organs of the body—namely, the heart, the lungs, and the brain—in which the existence of a vasomotor supply is still a matter of uncertainty."—(Howell.)
3. *The function of the gall-bladder* is: (1) To store up the bile between the time of its secretion and its passage into the duodenum; (2) to eject the bile into the duodenum. Although the bile is formed more or less continuously, it enters the duodenum periodically during the process of digestion.
4. *The principal factors controlling the flow of lymph* are: (1) Intracapillary pressure, which tends to filter the plasma through the endothelial cells composing the walls of the capillaries; (2) the force of diffusion, depending upon the inequality in chemical composition of the blood plasma and the liquid outside the capillaries, or, on the other side, between this liquid and the contents of the tissue elements; (3) the force of osmotic pressure; (4) variation in the permeability of the capillary wall.—(Howell.)

The lymphatic circulation differs from the circulation of the blood in that it (the lymphatic circulation) is only in one direction, namely, toward the heart.

5. *Four principal ways in which heat is lost from the body:*

(1) By urine and feces, 1.8 per cent.
(2) By expired air, 8.7 per cent.
(3) By evaporation from skin, 14.5 per cent.
(4) By radiation and conduction from skin, 73.0 per cent.

6. A *carbohydrate* is an organic substance, formerly of unknown constitution and containing in its molecule 6, or some multiple of 6, atoms of carbon, and hydrogen and oxygen in the proportions to form water.

Four functions of carbohydrate foods: (1) As a source of energy; (2) source of heat; (3) to save tissue waste; (4) to spare or aid the proteids.

7. NORMAL URINE. *Specific gravity:* About 1015 to 1025. *Chemical reaction:* Acid. *Average daily quantity:* About 40 to 50 ounces. *Constituents:* Water; urea, uric acid, hippuric acid, xanthin, hypoxanthin, creatin, creatinin; sulphates, chlorides, and phosphates (of sodium, potassium, etc.), and pigments.

8. The *chief source* of urea is the nitrogenous intake (proteids) of the food; *average daily quantity excreted* is about 500 grains; it is *chiefly formed* in the liver.

9. *Effect of breathing condensed air:* Muscular and articular pains, paralysis, dyspnea, and congestion.

Effect of breathing rarefied air: Headache, vertigo, nausea, weakness.

Symptoms of increased percentage of oxygen: Inflammation of lungs, convulsions, and death.

Symptoms of decreased percentage of oxygen: Dyspnea, convulsions, and anoxemia.

10. GASTRIC JUICE. *Specific gravity*, about 1002 or 1003. *Chemical reaction*, acid. *Principal enzymes:* (1) Pepsin, which converts proteids into proteoses and peptones; and (2) Rennet, or Chymosin, which curdles milk.

CHEMISTRY.

1. An element is said to be in the *nascent state* at the moment that it is set free from one of its compounds.

2. "*Catalysis* is chemical decomposition induced by the presence of a body which either takes no part in the reaction or is restored to its original state at the end of the process."—(Stedman.)

3. The name *"ion"* was first applied by Faraday to the primary products of electrolysis; those which separate at the positive electrode, or anode, are called *anions,* while those which separate at the negative electrode, or cathode, are called *cations.* Thus potassium sulphate yields the cation K and the anion SO_4. Hydrogens, the metals, and basic radicals are cations; hydroxyl and the acid residues are anions. *Ionization*, or dissociation into ions, occurs when an electrolyte is dissolved. A solution of potassium chloride contains not only the molecule KCl but also the cation K and the anion Cl, and the action of the current is to separate these (already liberated) ions at the respective electrodes.—(Witthaus' *Essentials.*)

4. *Test for free hydrochloric acid in gastric contents:* Gunzburg's reagent (phloroglucin 2 grams; vanillin, 1 gram; dissolved in 100 c.c. of alcohol), freshly prepared, and a few drops of filtered gastric contents (equal parts of each) are mixed in a porcelain dish, and then evaporated in a water bath; in the presence of free mineral acids a bright scarlet is produced, beginning at the upper border.

5. *Gmelin's test for bile pigment:* Put 3 c.c. HNO_3 in a test tube, add a piece of wood, and heat until the acid is yellow; cool. When cold, float some of the urine to be tested upon the surface of the acid. A green band is formed at the junction of the liquids, which gradually rises, and is succeeded from below by blue, reddish-violet, and yellow.

6. *Test for albumin:* "The urine must be perfectly clear. If not so, it is to be filtered, and, if this does not render it transparent, it is to be treated with a few drops of magnesia mixture and again filtered.

"The reaction is then observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral or alkaline it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of nitric acid."

Test for sugar: First remove any albumin that may be present, then "render the liquid strongly alkaline by addition of sodium carbonate. Divide about 6 c.c. of the alkaline liquid in two test-tubes. To one test-tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color."

Test for indican in the urine: The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3:1,000 of ferric chloride, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess.—(From Witthaus' *Essentials of Chemistry.*)

7. POISONING BY IODINE. *Symptoms:* Pain in esophagus and stomach, vomiting, diarrhea, severe abdominal pain, mouth pale and dry, odor of iodine on breath, quickened respiration, weak and rapid pulse. *Treatment:* Wash out the stomach with water containing albumin and starch paste or sodium thiosulphate in solution. *Death* has followed ingestion of one dram by an adult and of 20 grains by a child of four years. *Test:* The urine of the patient if agitated with carbon disulphide becomes colored violet by iodine (but not by the iodides).

8. CYANIDE OF POTASSIUM. *Fatal dose:* Death has followed the ingestion of 2 or 3 grains, and persons have recovered after swallowing 30 or 40 grains. *Symptoms of poisoning:* Lips and mouth corroded, burning pain in throat and stomach, vertigo and insensibility, face pale and bloated, convulsions of a tetanic character, quick pulse, slow and stertorous respirations, loss of consciousness. *Test:* Moisten a filter paper with freshly prepared tincture of guaiac, dip this paper into very dilute solution of copper sulphate, and after drying moisten it with a solution containing the suspected substance; a deep blue color results if a cyanide is present.

9. *To detect the presence of salicylic acid:* "It is best detected in solution, and solids and semi-solids should be macerated in water and then strained through a white cotton cloth. Two or three ounces of the fluid to be tested is used, adding to it a few drops of sulphuric acid. Shake thoroughly and filter. To the clear liquid add three or four tablespoonfuls of chloroform, mix by a rotary motion, but do not shake, or an emulsion will be formed which is difficult to break up. Allow the chloroform to settle and remove as much as possible by means of a pipette. This is placed in a test tube with an equal amount of water and a small piece (a little larger than a pin's head) of iron alum. Shake well and allow to settle, and if salicylic acid is present the upper layer will have a purple color."—(Friedenwald and Ruhrah.)

10. *Symptoms of acetanilid poisoning:* Chilliness, cold sweat; nausea; pulse is soft, slow, and feeble; respirations slow and shallow. *Treatment:* Lavage, diffusible stimulants, application of heat, coffee or strychnine, inhalation of oxygen, or saline infusion. *Test:* "The most convenient method is to test for the presence of the drug in the urine. For this purpose the urine is concentrated and boiled for three minutes with about one-tenth of its volume of hydrochloric acid. After cooling it is shaken up with an equal volume of ether, the ether separated and evaporated, the residue dissolved in water, and a few drops of a 5 per cent. solution of phenol added. Some solution of chlorinated lime is now added, and if para-amido-phenol (acetanilid) is present the solution becomes red, and on adding ammonium hydroxide it is changed to blue."—(Riley.)

BACTERIOLOGY.

1. The organism that causes gonorrhea is the gonococcus of Neisser.

2. Diphtheria is caused by the Klebs-Loeffler bacillus.

3. *Antitoxin* is a substance formed in the body, of a protective character, and capable of rendering inert the poisonous products of bacteria.

Diphtheria antitoxin is obtained from the horse, the animal having been rendered artificially immune by repeated injections extending over a period of several months of gradually increasing quantities of the strongest diphtheria toxin. As the bacilli themselves are not injected, the horse does not become infected with diphtheria, but he gradually acquires a tolerance for the toxins of the disease and develops in his blood a substance (antitoxin) which has the power to neutralize those toxins. At the proper time, when it is thought that his blood has acquired the requisite degree of potency, the animal is bled, and the serum—the part of the blood containing the antitoxin—is

carefully separated from the clot, filtered, and standardized. The last procedure is accomplished by determining the quantity of antitoxin serum required to offset the effects of the minimum quantity of toxin necessary to kill a guinea-pig in a definite time. The strength of the antitoxin is measured in units, a unit containing the amount of antitoxin required to save the life of a guinea-pig which has been injected with 100 fatal doses of toxin."—(Stevens' *Materia Medica.*)

4. To demonstrate the existence of *tubercle bacilli* in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbolfuchsin, and let it steam over a small flame for about two minutes, care being taken thtat it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue.

5. *The most important pus producing bacteria* are: *Staphylococcus pyogenes aureus, Staphylococcus pyogenes albus, Staphylococcus pyogenes citrcus, Streptococcus pyogenes;* also sometimes the pneumococcus, gonococcus, *B. coli communis, B. pyocyaneus, B. typhosus,* and *B. epidermidis albus.*

6. Amebic dysentery is caused by the *Amœba coli.*

7. Tetanus is caused by the *Bacillus tetani.*

It is necessary to open up punctured wounds immediately after the injury, on account of the possible presence of the *Bacillus tetani.* This is anerobic, and comes from the soil, and cannot develop in the presence of oxygen.

8. The *Streptococcus erysipelatis* is considered to be the cause of erysipelas.

9. For the growth and cultivation of the disease-producing bacteria there is required a temperature approximating that of the human body.

10. Influenza is supposed to be caused by the *Bacillus influenzæ.*

PHYSICAL DIAGNOSIS.

1. See French's "Practice of Medicine" (1910), page 158; or Osler's "Practice of Medicine" (1909), page 175.

2. See French's "Practice of Medicine" (1910), page 693; or Osler's "Practice of Medicine" (1909), page 630.

3. See French's "Practice of Medicine" (1910), page 694; or Osler's "Practice of Medicine" (1909), page 633.

4. CARDIAC HYPERTROPHY: "*Inspection* reveals fullness or prominence of the precordium with a distinct impulse. *Palpation* detects the impulse one or two intercostal spaces lower down and to the left. It is stronger and more or less diffused—the heaving impulse. *Percussion* determines an increase in the area of cardiac dullness vertically and transversely on the left side of the sternum, unless the right ventricle is also hypertrophied, when the cardiac dullness is increased to the right of the sternum. *Auscultation* in simple hypertrophy without any valvular changes detects a loud first sound of a somewhat metallic quality, the second sound being strongly accentuated. In the presence of valvular disease the characteristic murmurs are heard in addition."—(Hughes' *Practice of Medicine.*)

5. CARDIAC DILATATION: "*Inspection* detects enlargement and distention of the superficial veins and an indistinct, often wavy and diffused, cardiac impulse. If tricuspid regurgitation is present jugular pulsation will be observed. *Palpation* confirms inspection; the impulse is feeble, irregular, and heaving. *Percussion* serves to determine extension of the area of cardiac dullness transversely and especially toward the right side. *Auscultation* in the presence of valvular lesions reveals characteristic murmurs. If there are no valvular lesions the cardiac sounds are weaker than normal and the first sound is sharper in quality than usual."—(Hughes' *Practice of Medicine.*)

6. See French's "Practice of Medicine" (1910), page 708; or Osler's "Practice of Medicine" (1909), page 646.

7. See French's "Practice of Medicine" (1910), page 600; or Osler's "Practice of Medicine" (1909), page 800.

8. See French's "Practice of Medicine" (1910), page 570; or Osler's "Practice of Medicine" (1909), page 777.

9. See French's "Practice of Medicine" (1910), pages 618, 617, and 570.

10. "*Amphoric respiration* is a blowing respiration having a musical or metallic quality. It is a variety of bronchial respiration produced in a large cavity with firm walls, permitting the reflection of the sound. An imitation of this sound, though only an imperfect one, is produced by blowing over the mouth of an empty bottle. The amphoric character is present with both the acts of inspiration and expiration. Amphoric or metallic respiration is indicative of a large cavity, not common in phthisis, but more often heard at the upper part of a lung compressed by fluid air, as in pneumo-hydrothorax."—(Hughes' *Practice of Medicine.*)

PATHOLOGY.

1. *Degenerations* are: Parenchymatous, fatty, amyloid, hyaline, colloid, mucoid.

2. See French's "Practice of Medicine" (1910), pages 578 and 581; or Osler's "Practice of Medicine" (1909), page 787.

3. *Endarteritis* is inflammation of the inner coat of an artery.

The danger to the tissues in endarteritis obliterans is in the interference with the nutrition and subsequent degenerative changes.

4. See French's "Practice of Medicine" (1910), pages 526, 529, and 530; or Osler's "Practice of Medicine" (1909), pages 732 and 735.

5. In *fatty degeneration* the cell protoplasm is converted into fat; in *fatty infiltration* there is a deposit of fat within the cell, or in the intercellular tissues.

6. Two pathological conditions resulting from altered secretion of the thyroid gland: Myxedema, and exophthalmic goiter.

7. See Rose and Carless' "Surgery" (1908), page 252; or Da Costa's "Surgery" (1908), page 110.

8. *Common malignant tumors of the breast:* Carcinoma, sarcoma, and epithelioma.

9. A *thrombus* is a clot in the blood-vessels during life. An *embolus* is an intravascular obstruction from the lodgment of a foreign body.

10. See French's "Practice of Medicine" (1910), page 70; or Osler's "Practice of Medicine" (1909), page 65.

OBSTETRICS.

1. *Positive signs of pregnancy:* (1) Hearing the fetal heart sound; (2) active movement of the fetus; (3) ballottement; (4) outlining the fetus in whole or part by palpation; and (5) the umbilical or funic souffle.

Doubtful signs of pregnancy: (1) Progressive enlargement of the uterus; (2) Hegar's sign; (3) Braxton Hick's sign; (4) uterine murmur; (5) cessation of menstruation; (6) changes in the breasts; (7) discoloration of the vagina and cervix; (8) pigmentation and striæ; (9) morning sickness.

Subjective signs of pregnancy, in the order of their appearance, are: Cessation of menstruation, morning sickness, increased frequency of urination, active fetal movements.

Objective signs of pregnancy, in the order of their appearance, are: Softening of the cervix, changes in the mammary glands, discoloration of the vulva and vagina, pulsation in the vaginal vault, Hegar's sign, active fetal movements, ballottement, palpation of the fetus, intermittent uterine contractions, hearing the fetal heartbeat, rate of growth of the uterine tumor.

2. *Signs of approaching labor:* Dilatation of the os, characteristic recurrent pains, and the escape of blood-stained mucus from the cervix ("the show").

3. See Williams' "Obstetrics" (1909), pages 480, etc.; or Hirst's "Obstetrics" (1909), pages 215, etc.

4. See Williams' "Obstetrics" (1909), pages 225, 254, and 296; or Hirst's "Obstetrics" (1909), pages 312, etc.

5. See Williams' "Obstetrics" (1909), pages 809 and 815; or Hirst's "Obstetrics" (1909), pages 574 and 577.

6. See Williams' "Obstetrics" (1909), page 802; or Hirst's "Obstetrics" (1909), pages 563 and 564.

7. See Williams' "Obstetrics" (1909), page 369; or Hirst's "Obstetrics" (1909), page 567.

8. *Puerperal eclampsia* is an acute morbid condition, occurring during pregnancy, labor, or the puerperal state, and is characterized by tonic and clonic convulsions, which affect first the voluntary and then the involuntary muscles; there is total loss of consciousness, which tends either to coma or to sleep, and the condition may terminate in recovery or death.

And see Williams' "Obstetrics" (1909), page 541; or Hirst's "Obstetrics" (1909), page 635.

9. See Williams' "Obstetrics" (1909), pages 346 and 349; or Hirst's "Obstetrics" (1909), pages 928, etc., and 948.

10. See Williams' "Obstetrics" (1909), pages 643 and 649; or Hirst's "Obstetrics" (1909), pages 292, 295, 304, and 306.

GYNECOLOGY.

1. *Ectopic gestation* is gestation occurring elsewhere than in the cavity of the uterus.

See Williams' "Obstetrics" (1909), page 647; or Hirst's "Obstetrics" (1909), page 303.

2. See Williams' "Obstetrics" (1909), page 649; or Hirst's "Obstetrics" (1909), page 306.

3. *Three types of endometritis:* Simple, gonorrheal, and septic.

Tuberculous endometritis might be suspected in patients who had a tuberculous lesion elsewhere. The diagnosis might be confirmed by finding the tubercle bacilli in the endometrium.

4. *Uterine hemorrhage after the menopause* is of grave import; it may denote malignant tumor of the uterus (or cervix), or inflammation of the uterus or appendages.

5. *Three of the earliest symptoms of cancer of the cervix uteri:* Bleeding, offensive vaginal discharge, and pain.

Three conditions with which it might be confused: Cervical fibroid, adenoma of the cervix, and hypertrophy of the cervix.

6. *Three clinical symptoms of retroversion of the uterus:* Pain (dysmenorrhea), metrorrhagia, and leucorrhea. Treatment consists in replacing the uterus and then retaining it in position. The cause must be removed; pessaries, the sound, and tampons may be employed; adhesions must be broken up; lacerated perineum must be repaired; hysteropexy or shortening of the round ligaments may be considered.

7. *Five diagnostic symptoms of carcinoma of the breast:* Lymphatic involvement, edema of the arm, slow growth, cachexia, and ulcer with foul discharge.

8. All tears of the perineum should be repaired as soon as possible (unless there are contraindications). A primary operation is best because the edges are fresh and can be approximated; little (if any more) anesthetic is wanted; the woman has to lie in bed, and therefore only one absence from household work is requisite; infection is less likely. In any case, operation may prevent rectocele, cystocele, prolapse of uterus, and general weakness, malaise, and disability.

9. Dysmenorrhea. *Symptoms:* Pain during or in the neighborhood of the menstrual period, varying from malaise to agony; it is chiefly noticed just before or at the beginning of the period. There may also be evidences of tumor, inflammation, obstruction, malposition, or malformation of the uterus. *Four types:* Obstructive, ovarian, membranous, and congestive.

10. See Rose and Carless' "Surgery" (1908), page 1288.

In *pyosalpinx* there is generally some fever; the mass is elastic, and may fluctuate and is sensitive to pressure; there are often adhesions, and there is a history of infection. In *tubal pregnancy* the mass is apt to be firm and not sensitive to pressure; there are not adhesions; and there is a history of pregnancy with corresponding symptoms and signs. In the *appendiceal abscess* the infection is more often due to colon or tubercle bacillus than to gonococcus; tenderness is in region of McBurney's point; the mass is not generally felt by vaginal touch.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), pages 546 and 547; or Da Costa's "Surgery" (1908), pages 525 and 531.

2. See Rose and Carless' "Surgery" (1908), pages 539, 540, 629, and 630; or Da Costa's "Surgery" (1908), pages 515, 517, and 601.

3. See Rose and Carless' "Surgery" (1908), pages 1005 and 1006; or Da Costa's "Surgery" (1908), pages 928 and 931.

4. See Rose and Carless' "Surgery" (1908), pages 1061 and 1063; or Da Costa's "Surgery" (1908), pages 965 and 967.

5.

CONCUSSION OF THE BRAIN.	COMPRESSION OF THE BRAIN.
Unconsciousness is incomplete; patient can be made to answer, though it may be briefly, and in simple words.	Complete unconsciousness; may scream into patient's ear at the top of the voice, but will receive no answer.
Special senses, though greatly blunted, are not abolished.	Special senses entirely suspended.
Power of movement not destroyed; if the position of a limb be changed the patient will resist or bring it immediately into the original position.	Complete or partial paralysis; in most cases hemiplegia.
Respiration is quiet and feeble.	Respiration full and noisy.
Pulse feeble, frequent, and intermittent.	Pulse full and slow, and sometimes laboring.
The stomach sickens and rejects its contents.	The stomach is insensible to any impression; no nausea or vomiting.
The feces may be discharged incontinently, as may also the urine, though not usually.	Bowels are torpid, and the bladder incapable of emptying itself, though the urine may escape by overflow.
Deglutition little impaired.	Deglutition difficult or impossible.
Pupils variable, though generally contracted; the eyelids somewhat open.	Pupils variable, though generally much dilated, and the eyelids closed.
Temperature of the body less than natural.	Temperature almost natural, a little below the normal standard.

—(From Treves' *Manual of Surgery.*)

Indications for trephining: Intracranial hemorrhage, abscess of brain, fracture of skull, epilepsy, tumors of brain, drainage of frontal sinus or mastoid cells, thrombosis of venous sinuses.

See Rose and Carless' "Surgery" (1908), page 758; or Da Costa's "Surgery" (1908), page 734.

6. Intracranial hemorrhage is the indication for ligature of the middle meningeal artery. See Rose and Carless' "Surgery" (1908), page 773; or Da Costa's "Surgery" (1908), page 704.

7. See Rose and Carless' "Surgery" (1908), pages 1046 to 1050; or Da Costa's "Surgery" (1908), pages 861 to 865.

8. See Rose and Carless' "Surgery" (1908), pages 1160 and 1161; or Da Costa's "Surgery" (1908), pages 1103 and 120.

9. With no further information than is given in the question, I would advise amputation, because so long as there is suppuration the bones cannot unite, and the gangrene is often an indication for amputation. This amputation should be performed well above the knee, where the arteries are sound. See Rose and Carless' "Surgery" (1908), pages 1315 and 1301; or Da Costa's "Surgery" (1908), page 1221.

10. See Rose and Carless' "Surgery" (1908), pages 926 and 929; or Da Costa's "Surgery" (1908), pages 773 and 774.

HYGIENE.

1. An *infectious* disease is one that is caused by a known microorganism; as typhoid fever, tuberculosis.

A *contagious* disease was formerly understood as one that was communicated by direct personal contact, as by touch, or exhalations from breath or skin; as measles, smallpox.

2. *Infectious diseases which may be conveyed through the medium of the air:* Tuberculosis, pneumonia, diphtheria, measles, scarlet fever, whooping cough, erysipelas, influenza.

Through the medium of food: Tuberculosis, diphtheria, typhoid fever, scarlet fever, cholera, beri-beri.

Through the medium of insects: Malaria, yellow fever, filariasis, typhoid fever, bubonic plague, tick fever, sleeping sickness.

To combat the insects, see these diseases in index of French's or Osler's "Practice of Medicine."

3. See French's "Practice of Medicine" (1910), page 505; or Osler's "Practice of Medicine" (1909), page 44.

4. *Five quarantinable diseases:* Cholera, yellow fever, smallpox, plague, typhus. For *length of time*, see these diseases in index of French's or Osler's "Practice."

5. "To trace an epidemic to its source is not so much a study for the doctor as for the statistician, the detective, the bacteriologist, the chemist, and the engineer." Find out who have the disease, where they live, and when and where they were taken sick; investigate the use and source of water, milk, and food among the sick. If food or milk can be traced to one dealer, or food to the same source, much is accomplished; inspection of farms and dairies may be necessary. Oysters and "carriers" must be remembered.—(From Whipple's *Typhoid Fever.*) And see French's "Practice of Medicine" (1910), page 107; or Osler's "Practice of Medicine" (1909), page 96.

6. See French's "Practice of Medicine" (1910), page 194; or Osler's "Practice of Medicine" (1909), page 207.

7. "An examination of the quality and purity of water for drinking purposes is a very complicated procedure requiring not only expert sanitary knowledge, but also a thorough training in chemical and bacterial analysis, and

a capacity for weighing and comparing all data gained in order to base judgment on them." (Price's *Hygiene and Public Health.*) Such being the case, I should send samples of the water and of the milk to the proper authorities, and should advise that pending their decision such water and milk should not be used, or that the water should be boiled and filtered before using.

8. *Three reliable fumigation agents:* Sulphur dioxide, chlorine, and formaldehyde.

To *fumigate by sulphur dioxide:* For each 1,000 cubic feet of space, three pounds of sulphur are burned, care being taken to prevent accidents. In all cases all apertures and crevices of the room should be closed, all closets, drawers, or other receptacles opened; and after the fumigation the room should be well ventilated and thoroughly cleansed with a solution of corrosive sublimate.

9. Hygienic precautions to be taken in treating a case of tuberculosis: "The patient's quarters should be free from dust and admit of spending many hours daily in the open air in all weathers, properly sheltered, and, if very ill, lying wrapped in a hammock or reclining chair. His bedroom should be well aired at night, draughts being avoided. The room should be uncarpeted and free from hangings. It should be often cleaned and periodically disinfected. All sputum should be collected in paper spit-cups, which should be burned daily. Smoking should be forbidden. Harm is done by any exercise which results in fatigue, and while fever exists it should not be attempted at all. Patients should be taught the necessity of practising lung gymnastics and breathing only through the nose, which should be kept clear and free from occlusion by secretions, or an hypertrophied catarrhal mucosa. * * * The clothing should be woolen, but not too heavy, or sweating is increased; and a flannel night-gown and loosely knit leggings should be worn at night in cool weather. The skin should be cleansed by daily sponge-baths of lukewarm alcohol and water."—(Thompson's *Practical Medicine.*)

10. *To secure and maintain a pure supply of cistern water:* The cistern should be properly built of the best materials; if any water is collected from roofs the first of such water should be allowed to run to waste so as to avoid contamination by anything that may have collected on the roof; the cistern should admit of easy inspection and cleansing, and it should be inspected and cleansed; the cistern should be covered, so as to exclude dirt, dust, animals, insects, etc.; light should also be excluded; the overflow pipe should discharge into the open air and should have its exit covered with wire netting to prevent the entrance of animals or foreign matter.

MEDICAL JURISPRUDENCE.

1. *Insanity* is "that state of disordered mind in which a person loses the power of regulating his actions or conduct according to the ordinary rules of society." (Taylor.).

"*The best classification for legal purposes*": (1) Idiocy; (2) imbecility; (3) mania; (4) melancholia; (5) monomania; (6) general paralysis of the insane; (7) dementia; (8) certain forms of mania without distinct etiological relations. (Dwight's *Medical Jurisprudence.*)

2. "*By superfetation* is meant that a second conception may occur during pregnancy, both children being carried through the double pregnancy, each being born at the full term; the interval of births is necessarily the same as that between the two conceptions.

"*Distinction from twin pregnancies:* These cases show an interval of only a number of hours or perhaps days between the births of the two children. The possibility of such an occurrence must be accepted, although they are extremely rare. Such cases, as far as is known, have never been brought into court. If they should be, one must recognize the possibility, and the questions must be decided by the development of the child and the recognized periods of duration of gestation." (Dwight's *Medical Jurisprudence.*)

3. *Impotence* is defined as the permanent incapacity for sexual intercourse; and *sterility* as inability to procreate, or a want of appetite in the female for impregnation.

4. *Elements of responsibility in criminal malpractice, and of relief from responsibility:* "A practitioner of medicine or surgery will be guilty of criminal malpractice: (1) When serious results follow on account of his gross ignorance or neglect. (2) When he uses medical or surgical methods which are prohibited by law. (3) When he makes use of unusual methods which are apt to endanger the life or health of his patient. (4) When he neglects to use such means as may be necessary for the safety of his patient. (5) He is liable for any bad result which may depend upon a want of knowledge or lack of care on his part. (6) He is required to exercise the amount of skill which may be reasonably expected from one under his conditions. (7) Gratuitous treatment does not relieve him from responsibility for the result. (8) He cannot be compelled to assume the care of any case without he so wishes, but, having accepted it, he cannot withdraw without giving suitable notice of his intention. (9) An action for malpractice cannot be brought after he has recovered in court for his services. (10) He is relieved from responsibility when the patient fails to follow his advice. (11) He is responsible for negligence or ignorance on the part of his assistants, but not for criminal acts on their part. (12) He is not responsible for errors in judgment in uncertain or difficult cases." (Dwight's *Medical Jurisprudence.*)

5. In the study of blood-stains the following questions have to be settled: (1) Are the stains caused by blood? (2) Was the blood of human origin? (3) If not of human origin, from what source did it come? (4) If of human origin, was it arterial or venous? (5) If of human origin, what can be learned as to the age, sex, etc., of the individual furnishing it? (6) Did it come from the living or dead?

The stains should be studied chemically by spectroscope, and by microscope.

To distinguish the human blood globule from that of other sources, a careful study is required of the shape and size, and presence or absence of nuclei. In case the question is between human blood and that from an animal whose blood closely simulates human blood, it may be very difficult or even impossible to determine between them.

6. In order to convict for infanticide, the law requires that it should be proved: (1) That sufficient uterine age and development have been reached to allow of a separate existence on the part of the child. (2) That the child was born alive. (3) Proof of the manner of death. (Dwight.)

7. *Post-mortem signs in the newborn after asphyxia:* These are not conclusive; but the lungs show lack of distention and aeration, and the circulation is in the fetal condition, the brain may be congested, and there may or may not be marks of external violence.

After strangulation: Marks of external violence are present, ecchymoses may be found, brain is congested, heart (especially the right side) is engorged with blood, ecchymoses are present on pleura and pericardium.

"The *post-mortem signs presented by exposure to cold* in the newborn are very meager; the congestion of the brain, a more or less rosy tint of the blood, is perhaps the most important. A very moderate degree of exposure is sufficient to cause death in the newborn, and in such instances signs presented in death are comparatively few. The *indications of starvation* are, at autopsy, even more difficult to present as a definite conclusion. *Elements of evidence:* A suspicion will be aroused when the body of a child is studied in which the respiration and circulation have been thoroughly established, the meconium absent from the intestine, and in which no milk or other food is found in any portion of the digestive apparatus. When death occurs from starvation it is usually combined with exposure in one form or another." (Dwight's *Medical Jurisprudence.*)

8. Death may follow lightning so instantaneously as not to modify the position which the body held at the time of the shock; or it may follow later as the result of burns and lacerations; it may be due to the shock to the brain and nervous system.

Post-mortem appearances: "In those cases of sudden death by lightning in which the body is left in the position occupied at the time of the shock post-mortem rigidity comes on at once. In other cases it may be slower in its onset, but usually is rapid as compared with death from ordinary causes. The conditions found after death from electricity are not consistent; neither are they such as in unknown cases would establish the cause of death. Many observers have reported the rapid following of decomposition, but there seems in fact to be little evidence that such is the fact. The heart may be filled with blood, which may be liquid or clotted. The blood is usually dark, but a case has been reported in which it was of a "rosy, vermillion" color. There is usually a passive congestion of the various organs, including the brain, and small hemorrhages into its substance have been found. Small superficial hemorrhages are usually found scattered over the surface of the lungs and heart." (Dwight's *Medical Jurisprudence.*)

The *medicolegal* interest is due to the fact that the victim of electricity presents certain conditions which simulate very closely the effects of homicidal violence.

9. See some good textbook on Pathology.

10. *Rape* has been defined as being the carnal knowledge of a woman against her will. But the element of will may or may not enter into the case; consent if it be obtained by fraud or from one mentally deficient, or under age, does not relieve the criminal from the charge of rape. Rape may also be perpetrated when the victim is unconscious or in such other condition as to interfere with the action of the will.

"Medical testimony in these cases has usually to do with three conditions: (1) The presence or absence of bruises, lacerations, or other signs of injury upon or about the genital organs. With regard to the evidence of lacerations of the hymen, it must be remembered that a certain number of hymens are so elastic as to permit of intercourse without laceration. (2) The presence or absence of spermatic or blood-stains upon the person or clothing of those concerned, and the presence or absence of spermatozoa in the vagina. (3) The presence of venereal disease in one or both." (Dwight's *Medical Jurisprudence.*)

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery	Montgomery	Jan. 9
Arizona*	Ancil Martin, Phoenix	Phoenix	Jan. 2
Arkansas	F. T. Murphy, Brinkley	Little Rock	May 14
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco	April 2
Colorado	David A. Strickler, Empire Building, Denver	Denver	Jan. 2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Mar. 12
Delaware	J. H. Wilson, Dover	Dover	June 18
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	Jan. 9
Florida*	I. D. Fernandez, Jacksonville	Jacksonville	May 7
Georgia	C. T. Nolan, Marietta	Atlanta	
Idaho*	O. J. Allen, Bellevue	Boise	April 2
Illinois	J. A. Egan, Springfield	Chicago	
Indiana	W. T. Gott, Crawfordsville	Indianapolis	Jan. 9
Iowa	G. H. Sumner, Des Moines	Des Moines	Feb. 6
Kansas	H. A. Dykes, Lebanon	Topeka	Feb. 13
Kentucky	J. N. McCormack, Bowling Green	Louisville	Dec 19
Louisiana	A. B. Brown, Cusach's Bldg. New Orleans	New Orleans	May 30
Maine	F. W. Searle, Portland	Portland	Mar. 12
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 18
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Mar. 12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 11
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	Jan. 2
Mississippi	S. H. McLean, Jackson	Jackson	May 14
Missouri	Frank B. Hiller, Jefferson City	Kansas City	
Montana*	Wm. C. Riddell, Helena	Helena	April 2
Nebraska	E. A. Carr, Lincoln	Lincoln	Feb. 14
Nevada	S. L. Lee, Carson City	Carson City	May 6
N. Hampsbire	Henry C. Morrison, State Library, Concord	Concord	Jan. 9
New Jersey	H. G. Norton, Trenton	Trenton	June 18
New Mexico	J. A. Massie, Santa Fe	Santa Fe	Jan. 8
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	Jan. 30
N. Carolina	B. K. Hays, Oxford	Hendersonville	June 11
N. Dakota	G. M. Williamson, Grand Forks	Grand Forks	Jan. 2
Ohio	Geo. H. Matson, Columbus	Columbus	June 11
Oklahoma*	J. W. Duke, Guthrie	Oklahoma City	Jan. 9
Oregon	B.E. Miller, Portland	Portland	
Pennsylvania*	A. R. Aleen, Carlisle	Philadelphia, Pittsburgh	
Rhode Island	G. T. Swarts, Providence	Providence	Jan. 4
S. Carolina	H. E. Boozer, Columbia	Columbia	June 11
S. Dakota	F. W. Freyberg, Mitchell	Huron	Jan. 10
Tennessee	C. A. Abernathy, Pulaski	Memphis, Nashville, Knoxville	
Texas	J. D. Mitchell, Fort Worth	Austin	June 27
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	Jan. 7
Vermont	W. Scott Nay, Underhill	Montpelier	Jan. 9
Virginia	R.S. Martin, Stuart	Lynchburg	Dec. 21
Washington*	F. P. Witter, Spokane	Tacoma	Jan. 2
W. Virginia	H. A. Barbee, Point Pleasant	Clarksburg	
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	Jan. 9
Wyoming	A.B. Tonkin, Riverton	Riverton	Jan. 9

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Alcoholism and Pregnancy.—Gentili and M. Cambazzu made an experimental study of the effects of alcohol on pregnancy. They injected animals with alcohol intravenously and subcutaneously, and found that this drug caused prostration in the mothers and feebleness and lack of resistance in the offspring, which soon died. There were functional and organic changes in the chief internal organs of the poisoned animals. Pregnancy generally went on to full term, but sterility was caused by the continued injections in cases not yet fecundated. Pregnant animals were more seriously affected than the non-pregnant. Abortion was not caused by alcohol, but in some cases the fetus was killed. Probably in the human race a degree of immunity to alcohol has been conferred by generations of alcoholic indulgence.—*Annali di Ostetricia e Ginecologia.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended December 9, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	384	171
Diphtheria	304	15
Measles	317	6
Scarlet Fever	192	8
Smallpox	5	—
Varicella	233	—
Typhoid Fever	103	8
Whooping Cough	36	7
Cerebrospinal Meningitis	3	1
Malarial Fever	—	—
Totals	1,577	216

Experiments on the Pharmacological Effects of Salvarsan.—Ferrannini states that we know much about the therapeutic effects of salvarsan but little about its pharmacology. He has therefore instituted a series of experiments to ascertain its effects on the skin, mucous membranes, subcutaneous and submucous tissues, and endothelium of the vessels. His conclusions are that in the solutions generally used therapeutically it has no effect on the skin, mucosa, and endothelium of the vessels. It manifestly irritates the subcutaneous tissues, which explains the inflammatory process which is intense but generally ends in resolution. In subcutaneous injections the substance remains a long time in contact with the subcutaneous tissues, while when rubbed on the skin, instilled into the eye, or injected into a vein it remains for but a short time in contact with the tissues.—*La Riforma Medica.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended December 8, 1911:

Places	Date	Cases	Deaths
CHOLERA			
India: Calcutta	Oct. 8–14	..	15
Madras	Oct. 22–28	90	64
Indo-China: Saigon	Oct. 22–28	1	1
Java: Batavia	Oct. 15–21	8	2
Persia: Mohammerah	Sept. 10–Oct. 1	25	13
Straits Settlements: Singapore	Oct. 8–14	46	32
YELLOW FEVER			
Brazil: Manaos	Oct. 22–Nov. 4	..	3
Senegal: Dakar	Dec. 4	..	Present
Rufisque	Dec. 4	..	Present
Venezuela: Caracas	Oct. 21–Nov. 4	7	..
PLAGUE			
China: Hongkong	Oct. 22–28	1	..
Manchuria—Dalny	Oct. 25	2	1
India: Bombay	Oct. 29–Nov. 4	6	4
Calcutta	Oct. 8–14	..	7
Kurachi	Oct. 22–28	2	2
Indo-China: Saigon	Oct. 9–22	5	..
Java: Pasoeroean Residency, Malang district	Oct. 15–21	12	5
Russia in Asia: Siberia	Oct. 23	..	*5
Tunis Regency		..	†..
Tunis	Oct. 14–22	15	20

*In vicinity of Sharasung on the Transbaikal Railway.

†Total, Oct. 14–22: Cases, 785; deaths, 526.

Places	Date	Cases	Deaths
SMALLPOX			
Algeria: Algiers	Oct. 1–31	..	1
Argentina: Buenos Aires	Sept. 1–30	..	11
Canada: Quebec	Nov. 19–25	15	..
Chile: Valparaiso	Oct. 29–Nov. 4	45	..
China: Canton	Oct. 22–28	10	2
Hongkong	Oct. 15–21	1	..
Egypt: Cairo	Oct. 22–28	6	..
India: Madras	Oct. 22–28	9	..
Indo-China: Saigon	Oct. 9–22	3	..
Italy: Genoa	Nov. 1–15	1	..
Leghorn	Nov. 5–11	1	..
Naples	Nov. 5–11	18	2
Palermo	Oct. 29–Nov. 4	341	97
Java: Batavia	Oct. 15–21	4	1
Mexico: Juarez	Nov. 19–25	2	..
Mexico	Oct. 1–21	8	8
Porfirio Diaz	Nov. 12–25	6	4
Portugal: Lisbon	Nov. 5–11	3	..
Roumania		..	*..
Russia: Batum	Oct. 1–31	1	..
Moscow	Oct. 22–Nov. 4	4	2
Riga	Oct. 29–Nov. 11	6	..
St. Petersburg	Oct. 22–28	3	..
Warsaw	Oct. 1–14	90	34
Spain: Valencia	Nov. 5–11	5	..
Straits Settlements: Singapore	Oct. 8–14	3	..
Teneriffe: Santa Cruz	Nov. 5–11	..	1
Turkey in Europe: Constantinople	Nov. 6–12	..	2

*Total, Mar. 1–Apr. 30, 1911: Cases 18,319, deaths 774.

Medical Record

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Original Articles.

A SUGGESTED READJUSTMENT OF OUR VIEWS ON HEART EXAMINATIONS FOR LIFE INSURANCE.

BY CHAS. F. MARTIN, M.D.,

MONTREAL, CAN.

MEDICAL DIRECTOR OF THE STANDARD LIFE INSURANCE COMPANY, OF MONTREAL, CANADA.

A VERY limited experience in the medical aspects of life insurance, and the difficulty in obtaining from the literature an adequate conception of the subject are perhaps the best apology for venturing to appear before this distinguished body to offer any suggestions as to methods of insurance examination. It is especially with reference to a consideration of a more lenient appreciation of life values than that entertained to-day by many insurance companies that the present paper deals. If perchance in these remarks anything may be found which will promote a healthy discussion as to the means of gathering statistics in cardiovascular conditions for insurance purposes, and remodeling our present over-conscientious proscription, the time may not be altogether wasted.

That the views of all insurance companies regarding medical examinations have undergone some radical changes in recent years need not be mentioned here; that much, however, of old-fashioned dogma still exists and prohibits the acceptance of all sorts of reasonable risks will, I think, be obvious to most of the members of this organization. Up to a few years ago, for example, the presence of a few casts or a trace of albumin in the urine of an applicant was sufficient reason for declination even when over fifty years of age; to-day the incidence of these symptoms is not usually regarded in so serious a light, although many companies still decline to be lenient with such cases, even in the absence of any of the collateral signs of serious disease. As everybody knows, these signs may exist for thirty to forty years and more, without resulting fatally, and if only a proper appreciation of the underlying conditions existed the insurance companies would receive the greater benefit by their acceptance. Even to a greater degree does this hold for examinations of the cardiovascular system, and the revolutionary alteration of our views within the last decade or two has been, I think, rather disregarded by the medical referees of at least some insurance companies. As Dr. Porter has recently stated in his most interesting and valuable suggestions to life insurance examiners, more errors occur in connection with diseases of the heart than in any other part of an insurance examiner's work.

In examinations of the heart, for example, I know well it is the practice of many examiners to be satisfied with the auscultatory phenomena alone, and in the absence of any adventitious sounds to declare that portion of the applicant's anatomy as healthy. (I leave out of discussion those physicians who neither strip their applicant's chest, nor even bother about the more careful method of inquiry and analysis, as being worthy of professional ostracism, and yet I am familiar with those who scout the idea of troubling their applicants or themselves with any such labor.)

Now while in the past most stress has been laid on the use of the stethoscope and the palpation of the pulse, I think one may safely say that the modern view inclines much more to the idea that the detection of a murmur is probably only a minor feature upon which to base a prognosis. For years it has been my custom to teach students that the use of the stethoscope is the last and perhaps the least important portion of a cardiovascular examination, being at all events quite subordinate to the history, the subjective symptoms, and complaints, for these are, after all, the chief evidences of the true efficiency of the heart and vessels. Following upon a careful analysis of the symptoms for evidence of cardiovascular disturbances, comes the consideration of the causes of these symptoms, whether (*e. g.* dyspnea) due to disease of the heart itself or to some functional disturbance elsewhere. These observations aid in estimating the condition of the heart wall, which for practical importance gives the best clue as to the possibilities of the heart's power, and then, but only then, should we consider whether a valve is affected, and, if so, which special one is involved, for the mere detection of a valvular defect affords but little criterion as to the prognosis.

Let me make it clear that I have no wish to minimize the value of auscultation; far from it, but merely to insist that from the prognostic point of view this method takes a very subordinate position. Take for example the individual with marked signs, on auscultation, of mitral stenosis, with no rheumatic attacks or chorea for years, and whose compensation is well maintained, and there can be no logical basis from the auscultatory phenomena alone to determine whether his years will be few or many, for it is all too well known that in the absence of ordinary signs of heart failure life may be prolonged in practically good health for thirty or forty years, and longer. This question of murmurs arises naturally out of what has just been said, and one cannot but feel that practically all insurance companies tend to overestimate the gravity of such existing conditions. Murmurs, *per se*, have a widely varied significance. Even the organic murmurs are merely evidences of disturbed function, through varying degrees of anatomical changes in the valves, often, indeed, without any valve disease, and in themselves do not necessarily imply a shortening of life, though of course presenting a certain de-

gree of impairment which is only manifested under special conditions, as excessive strain, or severe acute disease or injury. To regard the mere existence of, say, a mitral murmur, even with a previous rheumatic history, as *per se* a grave omen, or a cause of rejection for life insurance, seems to blind oneself to the more accurate knowledge acquired from recent investigations. Dr. Heron, who some years ago was a leading authority on life insurance in England, considered any applicant with mitral regurgitation as positively unworthy of acceptance, chiefly for the reason that it is impossible to control the mode of life and habits of our applicants, and that at any time a sudden supreme effort, such as running to catch a train, would precipitate heart failure. It was for this reason that the same physician was so severe with all suburban applicants. Such a generalization would seem to leave out of consideration several important factors, each of which is of the utmost use in determining the value of the heart's efficiency. For, to obtain accurate knowledge of this point, we must above all things learn to appreciate the predominating influence of the heart muscle, the use of the valves, the significance of mitral regurgitation, and other valve defects in relation to the patient's general condition and any associated lesions.

In passing I would like further to insist on the relative unimportance of the site of the apex beat, *i. e.* of the cardiac impulse, which is remarkably variable within normal lines depending on posture, on amplitude, and on force. In this way variations of one inch may be found in normal individuals, and the impulse may alter with abdominal distention, with a high dilated stomach, and with respiration. A convincing demonstration of this last variation is easily found by radioscopy, and the marked alterations downward and to the right with full inspiration readily visible. The size of the heart, too, is normally a most variable quantity; there is, indeed, no fixed size of the organ. The important function of tonicity of cardiac muscle allows amply for such a variation, and takes care of altering magnitude as it ordinarily occurs with the respiratory movements, and under conditions of effort—in fact, wherever temporary dilatation of the heart occurs in response to temporary increased need of space within the chambers. This, too, is a normal process, a mere physical dilatation, also demonstrable by means of the fluoroscopic screen. The importance of the heart muscle will be referred to in connection with the consideration of abnormal rhythm, and the question of valvular lesions will be discussed first. Now by mitral regurgitation, I presume, is meant a leakage through these valves, or, to be more explicit, a murmur heard at or near the apex and transmitted more or less toward the axilla. Even the inexperienced physician knows that such murmurs may occur in healthy individuals after exertion, a fact which has led to the rather suggestive idea that the valves, instead of being meant solely to prevent leakage, are something more, and in a certain sense safety valves. No less an authority than James MacKenzie has expressed this view, and that one of the important functions of the heart valves is to leak under strain; so that mere leakage is not to be regarded as an unfailing evidence of cardiac disease.

It is customary to speak of murmurs not due to organic disease as accidental or functional murmurs, and one of the common sources of error in life insurance examinations arises, I think, from a faulty appreciation of the frequency of these accidental sounds at any orifice and with any period of the cardiac cycle. In a general way accidental murmurs are supposed in the majority of cases to be basal and systolic, while any systolic murmur heard at the apex and transmitted to the axilla is regarded by many as an almost certain sign of valvular disease, or, at all events, of organic cardiac defect. Any such conception is, as you all know, an absurdity, for all too frequently do we find harmless and transitory murmurs which are not basal, or hemic, or cardiorespiratory in origin, but, on the contrary, simulate in site and rhythm the organic murmurs, and still in no sense whatsoever do they impair the efficiency of the cardiovascular system.

I should like to insist upon this point, on the fact that many accidental murmurs occur with systole at the mitral area, or all over the precordium at any orifice—that some, too, are diastolic and yet transitory; that with anemia they may be heard at the pulmonary, or mitral, or tricuspid areas, and very often give rise to temporary tricuspid regurgitation, without ever inducing heart failure. Furthermore, many murmurs occur as a result of acute infections at any orifice, and are the result of a temporary involvement of the muscular ring or papillary muscles, and as such are often easily and rapidly repaired without affecting in any way the permanent normal efficiency of the organ. Clinical and pathological studies in typhoid and other infections have proved this without a doubt—nor is this a recently acquired fact. Sir Andrew Clarke drew attention to this in his interesting studies of chronic valvular conditions. Not only were a large proportion of these 684 patients quite unaware of the existence of any cardiac disturbance, but consulted him for complaints referable to other organs and tissues. He dilates on the coexistence of murmurs with longevity, and he, too, lays stress on what has just been mentioned concerning the temporary character of many of these murmurs, that organic valvular lesions very often heal so completely as to cause the disappearance of murmurs which may have followed some infection, *e. g.* rheumatism, chorea, etc., for several years. Indeed, Clarke goes so far as to say that the great majority of murmurs occurring with chorea eventually disappear and adds that he can remember but a few instances in which the mitral bruit of chorea has continued to be clearly heard ten years after its appearance. Organic structures, then, can be so completely repaired as to leave behind no clinical evidence of their former existence.

Tricuspid regurgitation, up till recently looked upon as a final stage of heart disease, is now recognized as a common and often transitory condition in all sorts of general debility from one cause or another. Indeed, John Hunter many years ago doubted the competency of this valve in normal hearts, owing to the small size of its cusps, while Gairdner and Gibson produced the condition artificially with ease, while others have proved its fugitive and harmless nature. In fact, tricuspid regurgitation is sometimes physiological and associated with the normal function of tonicity.

It would seem, then, quite wrong to subdivide our cases of cardiac disease where murmurs exist into two great stages: First, that with good compensation, and second, that in which compensation is broken, under the impression that the second state inevitably succeeds the first. As MacKenzie has shown, this is undoubtedly wrong, for in the

majority of patients, even with organic murmurs, heart failure is not necessarily a sequence, even in late life. Sir Andrew Clarke's statistics show this clearly, and James MacKenzie in recent publications has dwelt on the comparative infrequency of heart failure in cases of valvular disease. Thayer in a recent study of the heart murmurs, examined thirty robust schoolboys to find eighteen with murmurs, thirteen of which could be heard all over the precordium, in the recumbent or left lateral posture. Apropos of the frequency of functional cardiac murmurs he is led to remark on "the number of men who are refused by insurance organizations, whose career is cut short in the army and navy, because of lack of appreciation by overconscientious examiners of just these points, and this is really large." Out of fourteen young men examined by him because of some supposed cardiac defect, and consequent rejection or postponement on the part of a well-known company, practically all were perfectly eligible.

The records of the Royal Victoria Hospital, Montreal, illustrate well the frequency of murmurs. Out of 5,000 medical cases admitted to the Royal Victoria Hospital Dr. J. C. Meakins and R. M. Hardisty found that

1,826 cases had murmurs or irregularity, 36 per cent.
1,736 cases had murmurs (irrespective of irregularity).
336 cases had irregularity (irrespective of murmurs).
1,490 cases had murmurs (without irregularity).
92 cases had irregularity (without murmurs).
244 cases had murmurs and irregularity.

Organic diseases with murmurs:

762 cases had organic murmurs.
210 cases had organic murmurs (with irregularity).
552 cases had organic murmurs (without irregularity).

Functional conditions with murmurs:

972 cases had functional murmurs (at one or more orifices).
34 cases had functional murmurs (with irregularity).
938 cases had functional murmurs (without irregularity).

Organic diseases with irregularity:

248 cases had organic irregularity.
210 cases had organic irregularity with murmurs.
38 cases had organic irregularity without murmurs.

Functional conditions with irregularity:

88 cases had functional irregularity.
34 cases had functional irregularity with murmurs.
54 cases had functional irregularity without murmurs.

It is interesting to note the state of compensation in these cases:

Good, 342; fair, 213; failing, 99; broken, 146. As regards etiological factors in the organic cases it is likewise important to note that out of the 800 cases of organic disease (out of 5,000) there were 224 in which no cause could be assigned. An analysis of sixty autopsies was likewise made with a view of establishing the relations between clinical signs and anatomical appearances, and, while time did not permit a further investigation up to the present, one interesting fact is revealed, viz., that in five cases where there were clinically no signs of disease the heart is described at autopsy as fatty.

Some plan, then, would be of use by which examiners might report with more satisfaction a reasonable estimate of the prognosis, for where doubt exists as to the significance and origin of a murmur and its effects on longevity the mere report on the auscultatory phenomena is far from sufficient. To illustrate by one example, the considerations which in a general way should guide the examiner, particularly with reference to mitral murmurs, are as follows: The murmur having been detected, the extent of the valve lesion should be estimated, if possible, in part by the size of the heart and character of the murmur, and still more by the symptoms of regurgitation. Such symptoms, manifested as they may be by signs of an embarrassed heart (*e. g.* dyspnea), afford the most satisfactory clue to the limitations of effort, and careful inquiries will alone make such a decision possible. In the same manner we ascertain to what extent the muscle is damaged and thereby the efficiency of the heart. If there be no failure of cardiac response and the size of the heart be normal, such cases should be acceptable (with perhaps certain small limitations) for insurance. If, on the other hand, there be signs of muscular impairment, we need not exclude such a risk without first ascertaining the degree of progress of the malady, for if there be no progressive increase of inefficiency after some years, the risk is still a possible one. The source and origin, too, are important considerations, for if it be of infectious nature the date of its onset would be important. Thus a lesion that is progressive within two or three years is much more grave than in those cases dating back ten or fifteen years, even though the heart be enlarged and some failure of cardiac response be evident. A modified prognosis is certainly due to such cases and a short term policy reasonable. This is especially the case with endocarditis of rheumatic or choreic origin, though not with cardiac lesions of the degenerative variety, *i. e.* associated with sclerotic changes, where the prognosis is always more grave.

The age, too, should modify the consideration of the risk, for in youth the prognosis is entirely different from that in later years. So, too, in the same way the duration of lesions has its important bearing on prognosis, and those which date back for years without obvious changes are to be regarded as much more favorable. One need not add that the occupation and habits have likewise an important bearing on the prognostic values. It is thus obvious that where murmurs exist many factors require consideration before a final rejection, and that many instances occur in which a policy may be accepted without detriment to the company.

Arrhythmias.—Far more significant of the revolution in the interpretation of cardiovascular phenomena is the change which medical investigation has produced in our views on the cardiac irregularities. And yet, with all the literature issued on this important subject, I venture to say that but few of our field examiners are cognizant of more than the most superficial facts. Indeed, until a few years ago, even our textbooks contained but little that was satisfying, and the knowledge concerning the clinical significance of these phenomena is as yet not very widespread. Ask our examiners, for example, the varieties of extrasystoles, the meaning of the refractory period and the compen-

satory pause, and how few will supply an intelligent answer. Even the fact that the form of irregularity is of far more importance than is its intensity is probably not usually recognized even yet.

The types and causes of the arrhythmias are multiple. Indeed some are purely physiological. More than one authority has drawn attention to the frequency of respiratory arrhythmia, for example, so common in youths from seven to fifteen years of age, as well as in neurasthenics of any age. As everyone knows, the heart-beats vary in rate with respiration, being more rapid with inspiration, and the pulse may under these conditions be so accelerated as to be almost imperceptible. This is not pathological, but associated merely with a varying irritability of the vagus center. Holding the breath usually stops the irregularity, as does also the injection of minute doses of atropine. The orthostatic type is another physiological arrhythmia, depending on posture, and in no sense pathological. No doubt in the majority of irregularities the heart muscle is of greater significance than is any other factor, and yet but few are inclined to respect its predominating influence, or even care to think of its two well differentiated muscular systems. How few of our examiners have learned to recognize the influence of the smaller system of cardiac fibers (the primitive bundle of His) upon the larger system, comprising the great bulk of heart muscle, and which is dominated and controlled in its activity by it. How hard to realize that the vast bulk of cardiac muscle may be normal throughout and yet a minute lesion of that other microscopical bundle may disturb the rhythm to a very marked degree. With the bulk of muscle unimpaired the power of the organ remains unaffected, even though its rhythm be altered, just in the same manner as in disseminated sclerosis the coordination of our voluntary muscles is disturbed without otherwise altering their efficiency. Vice versa, the larger muscular system may be diffusely disturbed by fibroid or fatty change, and heart failure may be imminent, and yet the rhythm will remain normal so long as the lesser system (of His) is preserved and its power of conduction and stimulation unaffected. The degree of arrhythmia, then, is no criterion of the heart's power, nor the intensity of the lesion, but the character of the irregularity determines the location of disease and, as such, gives a valuable clue to the prognostic significance.

The pathological types are not difficult to classify, and the extrasystoles here, too, form the largest class, including as they do many varieties hitherto kept apart, *e.g.* pulsus bigeminus and pulsus trigeminus, some varieties of paroxysmal tachycardia, abortive heart beats, etc. It is noteworthy that more than half of all cardiac arrhythmias are due to extrasystoles, and yet a very large proportion of these has no grave prognostic omen. According to the type of the arrhythmia, to the length of the compensatory pause or its complete absence after an extrasystole, the source of irregularity may be localized with a considerable degree of accuracy, for extrasystoles of the sinus or auricle are not usually followed by a characteristic compensatory pause, which is the reverse of what happens with the ventricular type of this form of arrhythmia. Certainly there is no difficulty attending the detection of an extrasystole, *i.e.* the premature beat felt at the radial pulse and followed by a long pause. Sometimes, it is true, the finger fails to detect the second pulsation because of its small volume, and then auscultation at the heart will reveal the true nature of the defect. A comparison in this way of pulse and heart beats is sufficient, for an intermittency of the heart is a rare and grave phenomenon. The subjective complaints often describe the condition with accuracy, for the sensation of fluttering or the compensatory shock are often obvious to the patient.

The extrasystoles with their manifold causes must be classified if we would use any system for life insurance work, for the prognosis varies entirely with the cause. For example, auricular extrasystoles, occurring as they often do only with a serious disease in the auricle, will sometimes show elsewhere enough evidence of cardiac injury to enable one to appreciate their gravity. But sometimes, too, they are found with harmless conditions and the distinction is not easily made. The ventricular or auriculoventricular extrasystoles vary in gravity according to a number of causes. In general one may say that three classes of patients with extrasystoles must be regarded as unsatisfactory risks: (1) those with previous cardiac disease, (2) those with advanced arteriosclerosis, (3) those with arterial hypertension; because in all three some myocardial degeneration is obvious. Where, on the other hand, no lesion is otherwise evident the prognosis depends on the age, being good in the young and healthy (according to Mackenzie a specially good sign of health), while in those over fifty it is often the first cry of distress from the bundle of His, and, therefore, a sign of myocardial disease. Even then, however, it does not necessarily imply the onset of cardiac failure. In other cases toxic causes exist, and the abstention from tea, coffee, or tobacco will produce cessation of the arrhythmia. In yet another class digestive disorders from excessive or too fast feeding, gaseous distention, etc., bring about the extrasystoles, while in others, a very large proportion, these arise from nervousness or else no known cause can be assigned, and in these valerian or belladonna may cure the phenomenon and demonstrate the obviously good risk for a life insurance proposition.

Paroxysmal tachycardia comes under the same heading, being made up according to some writers of a succession of extrasystoles, while according to others it is more obscure and accompanied by a ventricular form of the venous pulse. Here, too, one should distinguish carefully between two forms, the one homogenetic of the physiological type, the other heterogenetic or true paroxysmal tachycardia. In the true condition the onset and offset of the tachycardia come and go suddenly, while in the homogenetic variety the paroxysms of tachycardia are of a simple nature, due to exercise, excitement, or convalescence, the change of rate being gradual during several minutes, and the rhythm normally maintained. Not so in the true variety, where one or two cycles suffice to induce the altered rhythm. A guarded prognosis must always be given along the lines above suggested for varieties of extrasystole, but at best the condition is admittedly obscure. Certainly people with this manifestation are to be regarded more seriously than those with ordinary extrasystoles. Bradycardia often is but a mistaken extrasystole which is missed at the pulse, thus producing a false bradycardia where the heart beats occur but do not reach the wrist. In the true bradycardia of long duration a lesion of the bundle of His may be at least suspected and those of ex-

perience will hold severely to a guarded prognosis. Perpetual arrhythmias form yet another type, with likewise two varieties: in the one with serious and grave prognostic omen, in the course of asystole, in the other not necessarily of immediate danger, but requiring at all times a guarded prognosis, because even when occuring in the midst of good health it suggests that the heart is menaced by serious changes. This whole subject with its varieties of auricular fibrillation may be dismissed with the one caution that no wise examiner will ever grant acceptance to an applicant thus affected, so difficult is it to determine what the outcome will be.

Merely a word may be mentioned concerning another variety, and that a very serious one, the pulsus alternans (really heart alternans) occurring as it almost always does when there is imminent danger of asystole, and a grave prognosis must be given. Indeed, it is the only form of irregularity which *per se*, and apart from any other sign, is of grave prognostic significance. This arrhythmia is really a change in volume of the pulse, not one of rate, its feature being the alteration of a strong pulse and a weak one, the heart's contraction corresponding to the weaker.

The incidence of irregularities as occurring in the Royal Victoria Hospital among 5,000 patients, with all forms of disease admitted to the medical service, may give some clue as to the frequency and importance of this phenomenon (*vide supra*). It is thus evident that irregularities of the heart from the insurance examiner's standpoint have considerable significance, for the majority of individuals who apply for policies and who present this phenomenon expecting acceptance will be as eligible as any other healthy risk. The important feature is that field examiners should be taught some system by which these examinations should be made, and thus render the perusal of reports more satisfactory.

Blood pressure forms yet another subject of doubt and disturbance to the majority of examiners to-day, for who is there, after all, who is qualified to speak with authority of its prognostic features? Perhaps none of the newer methods for cardiovascular examination has been so much in vogue with the average practitioner of medicine as is the estimation of the blood pressure. The systolic pressure is taken and, if found normal in the absence of physical abnormalities of the heart, it is apt to be taken for granted that this augurs well for the patient; and vice versa with a high blood pressure, in spite of anything in the chest, the prognosis is considered grave and such an individual is liable to rejection by an insurance examiner. And while, of course, both of these ideas are quite fallacious after all, our knowledge as to the significance of blood pressure is extremely limited, and stands in need of further assistance. A high blood pressure is often a most salutary incident in a man's life, and is protective. The older we grow the less pervious do our finer arteries become, and the greater is the need of a high pressure to nourish the tissues. Hypertension then should not be regarded as a disease, but often as a distinct benefit. Often on finding such hypertension we do all in our power to lessen it, when, as a matter of fact, our efforts should be directed toward maintaining it. The causes of increased pressure, while recognizable in certain diseased states, such as chronic arteriosclerotic nephritis and allied conditions, is yet quite inexplicable in others. Interesting, indeed, are those comparatively rare conditions in which an extreme grade of hypertension occurs without any appreciable cause, neither arterial sclerosis in any form, nor any old nephritis, and yet these patients will die sometimes from cerebral hemorrhage, sometimes from some other local arterial change, and always in the absence of any general discernible cause.

There are those who do not believe that hypertension *per se* has any grave significance, and that only when associated with definite visceral lesions does it assume any prognostic importance. The great fallacy seems to be this, we take the systolic blood pressure and learn that it is high, say 180, and regard this observation as symptomatic of a shortened life and give a serious prognosis. Many individuals may live for years with a high tension pulse, and the mere registration of a single numerical sign does not signify equally for every individual. The relation between the state of the circulatory power and the demands of the whole life capacity is an individual affair, and cannot be treated as a broad generalization. Each man has his own pressure index, and one can only form a rational idea of his life value by an attention to all the collateral symptoms and signs. In this matter, indeed, the physician's good instinct and intuition are of quite as much importance as is the functional diagnosis.

Great varieties in the technique of blood pressure estimation, the ever-increasing types of new appliance, and the neverending discussions as to its significance demonstrate how far from complete is the present status of our knowledge of this subject. Inaccuracy of greater or less degree seems possible in a remarkable variety of ways. The temporary influence of psychic and of vasomotor conditions upon blood pressure is too well known to call for more than a passing comment. The slighter inaccuracies associated with the nature of the vessel, its position, and the character and amount of the surrounding tissues are all-important factors in passing judgment on this method. One estimation is in itself subject to error, and repetition of tests is alone reliable. The proper standardization of certain forms of appliance now in vogue is all too necessary to ensure correct results, while any instrument depending to such an extent as most of these do upon the personal equation are certain to give rise to results that are far from scientifically accurate. Where this is however eliminated by the use of an indicating dial the possibility of error becomes minimal. (Pachon, Hill and Barnard, Singer.) More recent observations, too, have shown that the mere taking of the systolic pressure alone gives no clue to prognosis, that one must add to this the diastolic pressure and judge from the difference between the two as to the cardiac power. Nor is this all; where the pressure is high and the difference between the maximum and minimum is small, the prognosis and treatment are very different from those cases where a low pressure is recorded even with an analogous difference between the two.

Martinet's recent work in this connection is suggestive, as is that of many others who have endeavored to show the importance of correlating the two pressures. For the maximum blood pressure is but the expression of the intraventricular force, while the minimum indicates the degree of peripheral resistance, including not only the condition

of the arterioles, but also the viscosity of the blood, the friction incurred, etc. And the difference between the two alone gives an idea of the cardiac power. Of chief importance remains the great fact that blood pressure is merely a subordinate phenomenon, while the subjective symptoms are of far greater importance for prognosis. "Has the individual dyspnea on exertion?" is, thereofre, a more important question than "What is his blood pressure?"

Suggestions and Conclusions: Each individual must be judged entirely on his own merits and not subjected to any generalizations regarding presence of murmurs, irregularity, blood pressure, or other signs indicative of cardiac disturbance. Good general health, with fair habits, and no general symptoms of trouble with the cardiovascular system are all most important indications even apart from the findings on physical examination. The significant test of the individual applicant is in estimating what the French well designate as the *valeur globale de l'organe, i. e.* the combination of history, general examination, visceral reactions, and functional symptoms. The age, the history, and the mode of life, as regards occupation, amusements, work, food, anxiety, insomnia, and various affections of the body, all these are even more important than the physical findings. In other words, one must test the field of cardiac response to effort and exposure, as regards dyspnea, palpitation, pain, exhaustion, sense of compression or suffocation, all these symptoms being mere indications of the cardiac power and not at all signs of heart failure in its developed form. Irregularities should be carefully studied as to their cause and site of origin, and not be considered as synonymous with rejection. Moderately high blood pressure should not be recognized as sufficient to reject *per se* without due consideration as to the state of cardiovascular equilibrium. A normal blood pressure may exist with extreme fatty heart, and mislead even more than would a hypertension, if one lays too much stress on the virtue of normal pressure, for many a patient with fatty heart shows no alteration of physical signs, though marked failure to respond to exertion. In many cases of angina pectoris the signs and symptoms are so few that a careful history alone will reveal the diagnosis. "In functional heart disease the signs are more important than the symptoms, in organic trouble the symptoms are more important than the signs." In all forms of disease with murmurs, irregularities, etc., there is always the chance of accidents, embolism, malignant endocarditis, sudden death, strain with acute dilatation; but there is danger, too, of the healthy resident of your fair city being run over by an automobile and killed.

In conclusion let me suggest that the greater appreciation of cardiovascular risks will best come when proper forms are issued to every examiner with special reference to these questions, and the chief medical officer will have on paper a rational, accurate, and intelligent interpretation of the risk upon which he is asked to pass judgment.

Water Content of Fat Tissue.—O. Rozeurad notes that the fat of well-nourished individuals contains one-half as much water as that of lean and cachectic individuals. The increased water-content of the various organs is also noted in the latter, which fact is probably to be explained on the basis of some protective rôle in metabolism.—*Deutsches Archiv für klinische Medizin.*

CHRISTIAN SCIENCE IN OPERATION.

By HENRY DWIGHT CHAPIN, M.D.,

NEW YORK.

A few months ago I wrote an article entitled "Christian Science and the Child" (*The Independent,* June 29, 1911) in which I showed that the fallacies and not infrequent cruelties inherent in the practise and belief of Christian Science were best exemplified in the case of children. My object in writing this article was to try and aid in producing a public sentiment that would keep helpless children out of the hands of Christian Science practitioners. A reply was written by Mrs. Augusta E. Stetson under the title of "Christian Science and the Medical Profession" (*The Independent,* August 17, 1911). This consisted of the usual extravagant claims combined with vague and high sounding sentiments, enforced by many capital letters, that pass for argument with this cult.

It hardly seemed necessary to treat this article seriously, but the recent death in this city of a five-year-old child suffering from diphtheria may serve to emphasize a few points I then tried to bring out as well as two features in the reply which are typical of the thought and action of these people.

Experience shows that a certain class in every community is impressed by the pronouncements of the various cults claiming psychic or supernormal powers. The trained mind, accustomed to weigh and analyze evidence, can easily detect the fallacies and partial truths that are covered by the vague generalities of many of these cults. The unthinking may not find it so easy. The medical profession, as the guardian of the public health, should take more pains to enlighten the people as to the dangers underlying many of these systems.

In one of its aspects Christian Science may seem to present a comparatively harmless side, in another it appears ludicrous and absurd, but in a final estimate it is always liable to show a cruel or tragic side and the helpless child is here liable to be the chief sufferer. These facts are perfectly understood by educated physicians, but it may be wise to emphasize one or two points for the benefit of the laity.

Each one of these systems usually claims that it alone is successful in treating disease and warding off trouble. In this familiar vein Mrs. Stetson states that any lack of success is due to a defective application of Christian Science principles. One can not help noticing that there are many different cults at present aiming to influence bodily function by the exercise of mind or will power. Everyone knows that all these sects have more or less influence in selected and special cases. The mental composure that some nervous and imaginative people derive from these faiths is given as a sort of explanation as well as palliation of their existence. A similar composure as well as a partial success in certain kinds of healing is attained by East Indian fakirs in the same manner as by any so-called Christian sect, both aiming to produce in the brain an abnormal state of either quiet or excitation.

The root principle of all these systems, no matter how diverse their apparent action may be, is always the same—suggestion. There is probably no principle so widely applied in every-day life, consciously and unconsciously in various ways. It undoubtedly has a place as an aid in the treatment of disease, especially of the nervous variety. Every successful physician sometimes employs suggestion in connection with other treatment in certain ail-

ments so far as he can hope for beneficial results from its use. This is very different from its exclusive employment by those who are ignorant of the structure and functions of the human body and of the natural history of disease. It is proper to add that permanent benefits from treatment by suggestion in real disease are comparatively limited and untold harm often results from the efforts to use it to the exclusion of rational treatment.

When we see a neurotic individual relieved of forebodings by the various methods of mental impression, whether called faith cure, new thought, mental healing, or Christian Science, the sympathetic friends shake their heads and say "there must be something in it." There is something in it—always the same "it"—one of the diverse forms of mental suggestion. A careful observer may likewise see that many of the extreme forms of suggestion end in an atmosphere of delusion in which the facts and realities of life have small place. Trouble and sorrow seem to fade away in a blunting of the senses by a sort of autosuggestion. A state of mind is now reached in which one dodges the actual problems, diseases, and tragedies of life by denying their existence.

What an easy way to rid oneself of the difficult labor of dealing with hard facts! One does not know which to consider greatest, the laziness or the effrontery of this method.

I have no means of knowing who consider themselves true Christian Scientists, but we all know that all kinds are equally dangerous in the treatment of such severe and communicable diseases as scarlet fever and diphtheria. Mrs. Stetson claims that she has treated "hundreds of cases of measles, typhoid, scarlet, and slow fevers," and she thinks with success. Assuming that part of these illnesses were properly diagnosed, the final results must be unknown.

How can people who confessedly have not made a scientific study of the pathology and natural history of disease give reliable reports as to the results of any treatment or no treatment? Many of them deny the real existence of the very diseases they pretend to cope with successfully. Every thinking layman must realize that reports and statistics of ordinary or miraculous cures from such a source cannot stand any real investigation for a moment. Yet such statements sometimes influence people who are not accustomed to verify claims when positively made. When these assertions are coupled with generalities that sound elevated and pious, such as "spiritual thought will neutralize and cast out the qualities of the carnal mind," the unthinking may be impressed.

With these lofty utterances Mrs. Stetson and other healers have treated cases of scarlet fever. Those who have scientifically studied this malady are constantly looking for some of its insidious, severe, and permanent complications. Some cases, however, as we all know, are very mild in type and need no special medical treatment except careful watching for complications and an avoidance of the spread of infection to others. The only way to detect these complications is by careful examination of the vital organs liable to be affected by the poison of the disease. Christian Science healers are not competent or able to do this, so that the eventual result in their cases are unknown

One of Mrs. Stetson's cases having a "claim of diphtheria" . . . "passed on." How many other cases of infectious diseases thus treated finally "passed on" or are now passing through life with crippling and avoidable complications from lack of proper management, neither she nor anyone else will ever know. Neither will it ever come to light how many cases of scarlet fever and similar dangerous infections have been spread to others by this sort of treatment. Here lies the most serious social aspect of this question.

A teacher in an uptown public school recently told me of the sad death from scarlet fever of one of her most promising pupils. Investigation showed no possibility of infection in the home and apparently no cases in the class at school. The mystery was soon after solved by a Christian Science mother telling the teacher that her child, in the same class, recently had a "false claim" of scarlet fever which she had controlled in a few days so that the child was sent back to school. Comment is unnecessary. Careful, conscientious teachers are very much afraid of this cult after seeing such things happen.

I know of a recent case in which another Christian Science mother sent for a physician owing to the peculiar appearance of her boy's skin. It proved to be a mild but distinct form of measles. The rash naturally began to fade in a few days, when the mother telephoned the doctor that the child had not had measles and she was sending him back to school. The whole class was thus exposed, as the case was still infective, since the mother did not believe in measles. Many irregular systems of medicine get great credit from their handling of the milder types of the exanthemata. We all know, however, that the milder forms are the most dangerous in respect to the spread of infection and that a light case may produce a malignant and fatal attack in another.

Two cases of tuberculous peritonitis have come to my attention in connection with Christian Science. One I personally saw in consultation in a neighboring town. The only chance for life lay in an operation. It happened that in this vicinity the Christian Science cult was active and some of the mother's friends were of this belief. They assured her that if the case were put in their hands a cure would result and that the uncontrolled fears of the mother herself were largely responsible for the suffering of the child. Saner advice being finally accepted, an operation was performed, the tubercles located, and the child made a slow but perfect recovery. The boy would surely have died without this scientific interference as the disease was alike demonstrated and relieved by the operation. Here a precious life was nearly sacrificed to this delusion.

Another case of turberculous peritonitis did not turn out so happily. A mother with an only child was visiting friends in a distant city. These people were ardent Christian Scientists and when the little boy began to fail with obscure symptoms they sent for one of their cult to take charge of the case. The healer proved to be a young woman with a placid personality and sympathetic smile who assured the anxious mother that the "error" would soon be corrected. After weeks of suffering in which the child steadily grew worse, a physician was called in who found the case to be in the last stages of tuberculous peritonitis and too late for operation. The child died in a few hours after the smiling healer had taken her departure.

What about the religious side? Many members of the medical profession, although they are not always talking about it, both know and try to apply

the teachings and spirit of true religion, and nearly all recognize the spiritual side of human nature. This does not lead them to try and detach the spiritual from the material as both are exemplified in actual life.

It must be remembered that to some, Christian Science, apart from its sordid and commercial side, represents a reaction against much of the gross materialism of the day. We as physicians must take account of this bald materialism and be careful not to yield too much to it. The great majority of the human race will never face the brutal logic of pure materialism. The true leaders of religion and medicine must guide the popular thought in these matters and not allow the field to remain in possession of moral quacks.

Under the guise of religion, Christian Scientists practically claim an immunity to practise medicine. Magistrate Freschi in the Cole case wisely stated that while the Christian Scientist has the right to believe that he can heal by prayer, he was of the opinion that if he carries and puts that belief into practise for hire and solicits patients by advertisement he exceeds his right as an individual and comes within the province of the law. He further stated that the individual must subordinate his beliefs to the rights of the community when a free exercise of such belief either impairs or endangers the health of the people or tends to place their health in jeopardy. In a few words this well disposes of the religious side of the question.

Physicians must be more careful to stimulate hope and expectation of recovery in addition to employing the proper scientific treatment of disease. An atmosphere of cheer and encouragement is a very great help even in the treatment of grave organic disease and may be all that is required in many simple ailments.

In imaginary, functional, or quickly limited diseases that cannot affect others, I do not believe that most physicians will quarrel with suggestive healing of any kind, with or without an invocation to the Deity, so long as it confines its shadowy ministrations to neurotic men and women who wish it and can be affected by it. When it comes to infectious diseases and helpless children it is time to call a halt.

51 West Fifty-first Street.

THE ADEQUATE TREATMENT OF GONORRHEA.*

By THOMAS WRIGHT JACKSON, M.D.,

Fort Hunt, Virginia,

Medical Reserve Corps, U. S. Army.

In the great increase in popular interest concerning the control and prevention of venereal diseases, as indicated by the actions of medical, religious, and secular bodies everywhere and by expressions in the religious and medical press, as well as in the popular magazines and secular prints, we take great hope for the betterment of social conditions in this country. The dangers to health and happiness, to youth and posterity, from existent conditions can hardly be exaggerated and all measures, direct or indirect, which tend to lessen and remove these dangers demand our warm support. In the army and navy the problem is just now receiving the most serious and practical attention with, as we believe, most favorable promise.

*Permission to publish granted by the Surgeon General, U. S. Army.

In the study and consideration of army statistics, however, it should be remembered that the constantly non-effective rate for venereal diseases (at least for gonorrhea) is not identical with the rate of venereal incidence, by any means, and that in fact there is no true index of the rate of incidence deducible from the reports of sick and wounded alone, as the names of men capable of performing duty need not appear upon these reports, even though daily treatments at the dispensary or hospital are being accorded to them. For example, the constantly non-effective rate of 7.72 per thousand men* should not convey an impression as to the total number of cases occurring in the Department of the East during 1910. The report of the Chief Surgeon, Department of the East, for 1910, states that the "plan of antivenereal campaign consisted in instruction, inspection, and prevention." As a subheading under "prevention" I would mention "adequate treatment of gonorrhea," and it is with reference to this topic only, its difficulty and its necessity, without casting disparagement upon any scheme, movement, device, or measure now under way to lessen venereal disease, that I wish to speak, "lest we forget," in our zeal as publicists, something of our duty as practitioners of the healing art.

No medical officer of the army or navy can fail to secure a wide and extended experience in the treatment of gonorrhea in the public service. Until such time as he attains rank giving him administrative duty only (and frequently long after promotion to such rank) he is sure to have the personal treatment or supervision of a large number of cases of this disease, and I know of few professional positions which afford the experience in venereal and genitourethral diseases which the military and naval service brings to its surgeons. At home or abroad, on land and sea, in barracks or under canvas or nipa thatch in distant frontier provinces of the Orient, there is always abundant venereal practice for the surgeon and unlike his professional brother in civil life he may not decline to treat this particular class of cases because, perchance, he finds the work uninteresting or esthetically distasteful. In the large general hospitals of the service, at recruit depots, or on transports his cases of gonorrhea may constantly number from twenty-five to fifty.

My experience in the service, which is by no means peculiar or unusual, has literally called me to the treatment of hundreds of cases of gonorrhea, in and out of hospitals, in the United States and abroad. Two years ago, in association with a fellow medical officer, I ministered unto the venereal ailments of a regiment of colored soldiers for seventy-five days aboard a transport en route from Manila to New York via the Suez Canal. Perhaps forty or fifty cases were treated daily at sea and in port and the ethnological origin of many of these cases was sufficiently varied to delight the most cosmopolitan practitioner. Malay, Negro, Caucasian, and Mongolian gonorrhea, with all possible blendings of the strains of Neisser's organism from the seaports of the Philippine archipelago, the Malay peninsula, Ceylon, Arabia, Egypt, and the Mediterranean, went to make up our clinical material.

At this time the excellent prophylactic system now in general use in both army and navy was not compulsory, nor indeed was it actually practised upon this voyage, but restriction of shore liberty

*Report of the Chief Surgeon, Department of the East, for 1910, to Surgeon-General, U. S. A.

for those infected and under treatment, with systematic weekly physical inspections of the entire command and compulsory treatment of the infected brought us into New York harbor with a fairly creditable record as to symptomatic cures. The method of treatment employed was that of irrigations with potassium permanganate solutions of varying strength, and considering the difficulties attendant upon the daily treatment of this large number of men in somewhat cramped quarters between decks, much of the time in a rough sea, the record of our floating venereal clinic must be considered good. It was impossible, however, to use the method of microscopic search for the gonococcus in determining the fact of cure in every case and I doubt not that subsequent relapses occurred among the cases reported as cured.

These remarks are intended to call attention to the fact that the combined experience of all surgeons of the army and navy called upon to treat gonorrhea would afford much valuable information if recorded and analyzed. Personally I am forced by observation to the conclusion that we still lack a generally applicable, reasonably dependable method of treatment which does not require months for the cure of gonorrhea.

I desire to submit a report of fifteen cases of gonorrhea observed, treated, and apparently cured at this station during the past eighteen months, together with a brief analysis of the treatment methods, and values. This number includes all the cases of gonorrhea observed here during this period with the exception of two recent cases, still under treatment, and a few symptomatically cured cases whose records as to the presence and disappearance of the Neisser organism and as to details of treatment are, for various reasons, incomplete. The subjective and purely symptomatic observations in these few cases are not deemed of equal and similar value with the recorded microclinical observations and hence are excluded, although every patient is believed to be cured of his infection.

The tabulated record herewith is obtained from three sources, viz., a record of venereal diseases, a record of laboratory observations made, and the official sick and wounded report of the post. All observations in this series were personally made by the reporter. No very startling or impressive responses to treatment are to be noted in this series. To me the most gratifying phases of the matter have been (1) the ultimate cure of every case (apparently), (2) the comparatively small number of complicated cases (arthritis, prostatitis and abscess, epididymoorchitis and urethral stricture being infrequent or absent). Urethral stricture was recognized in but one case, and while posterior urethritis doubtless occurred in a few cases the percentage rate of occurrence was certainly not greater than normal. Keyes gives this rate as 10 per cent. or less for office cases treated by repressive measures (subjective symptoms only considered) and a varying percentage up to and exceeding 50 per cent. for other classes of cases, the presence of pus in the second flow of urine being taken as a criterion.

Duration.—In the cases here reported all individuals were considered as suffering from the disease so long as the Neisser organism was demonstrable either in the discharged urethral secretion or in the exudate or secretion obtained by gently drawing a sterile platinum loop over the exposed urethral mucosa within half an inch of the external meatus. Applying this test for cure, the average duration in this series appears at first sight to be abnormally high, but when we consider that this test is not usually applied in pronouncing cures and when we consider also the fact that a number of the cases here recorded were symptomatically cured long before gonococci disappeared and before treatment was discontinued, the average duration of the disease in these cases need not be considered excessively long.

It must be well known to all medical practitioners that the term "cured gonorrhea" is most improperly and incorrectly applied in a very large percentage of all cases of gonorrheal infection of the urethra. Granting the propriety of the microscopic test of cure, this proposition is too obvious to require argument. It is well recognized by all genitourinary authorities, who frequently call attention to the persistence of gonococci in the urethra and glands of the male patient as well as in the female sufferer, although the persistence is usually considered less intractable in the male patient. While in the female the relationship of suppurative diseases of the utrine adnexa to antecedent vaginal or cervical gonorrhea is generally understood, the fact that suppurative diseases of the bladder, ureters, and kidneys in the male—as well as of the testes, prostate, and epididymis—are frequently the result of ascending infections which were primarily at least plain urethral gonorrheas is less generally appreciated.

While the presence of the gonococcus in unmixed culture in the lesions of suppurative diseases of the kidneys and ureters is not demonstrable in a high percentage of cases, these statistics should not mislead us. There are probably few surgeons of extended experience who cannot recall among their cases of suppurative kidney disease some with definite histories of gonorrhea during years past. And often it will happen that the surgeon has personal knowledge of the preceding urethral infection, having treated the patient therefor in months and years gone by and having observed the upward progress of the disease. Under such circumstances the failure to identify the gonococcus in the lesions of a suppurating kidney or other organ will not be convincing evidence to the surgeon that the infection is an idiopathic one, or one due to infection from pyogenic organisms circulating in the blood stream. Moreover, the autopsy and dissecting tables too often disclose the melancholy story of ascending disease of the genitourinary path arising from an initial gonorrhea.

All injections were made with glass syringes of 10 c.c. capacity except in the case of argyrol. Solutions of this drug were instilled into the urethra with medicine droppers, the injections averaging 2 c.c. All injected solutions were retained in the urethra for five minutes. Irrigations were made with an apparatus consisting of a glass funnel and rubber delivery tube fitted with an urethral tip. All irrigating solutions were used warm. Formula for astringent "a"—Phenol, 0.325 gram; zinc sulphate, 2 grams; bismuth subnitrate, 4 grams; distilled water, 120 c.c. Formula for astringent "b"—Alum, 10 grams; phenol, 2 grams; distilled water, 500 c.c. The total number of cases receiving argyrol was 9; iodine, 8; silver nitrate, 3; astringents, 7, and boric acid, 1. The shortest case treated with argyrol only was fourteen days. The next shortest case (2) treated with iodine only was twenty-eight days. The next shortest case (3) treated with iodine only

Name.	Duration.	Complications.	Relapses.	Where Treated.	Result.	Clinical Type.	Treatment.
1. M.	84 days	None	None	As out-patient and in hospital 11 days	Cure	Moderate Severity	Argyrol, 20 per cent. injection t.i.d. for 30 days Astringent injection "a" for 54 days. (See formula for "a")
2. A.	93 days	None	None	Out-patient	Cure	Moderate Severity	Argyrol, 20 per cent. injection t.i.d. for 47 days Astringent injection "b" for 46 days. (See formula for "b")
3. R.	64 days	None	None	Out-patient	Cure	Moderote Severity	Argyrol, 20 per cent. injection t.i.d. for 7 days Astringent injection "a" t.i.d. for 3 days Argyrol, 10 per cent. t.i.d. for 54 days
4. E.	154 days	None	2	Hospital 51 days and out-patient	Cure	Severe	$AgNO_3$ injection, 1 per cent. t.i.d. for 21 days Astringent injection "a" t.i.d for 38 days Irrigation of urethra, with iodine solution, 1:500, for 95 days
5. S.	46 days	None	None	Out-patient	Cure	Moderate Severity	Irrigation with 1:1000 $AgNO_3$ solution t.i.d. for 32 32 days Astringent injection "a" for 14 days
6. McC.	119 days	None	None	Out-patient	Cure	Moderate Severity	Argyrol, 10 per cent. injection, t.i.d. for 30 days Astringent injection "a" for 89 days
7. S.	68 days	None	None	Out-patient	Cure	Moderate Severity	$AgNO_3$, 2 per cent. solution, injected t.i.d. for 68 days
8. W.	110 days	Epididymo-orchitis	1	Out-patient and in hospital for 6 days	Cure	Severe	Astringent injection "b" for 28 days, t.i.d. Iodine irrigations, 1:500, t.i.d. for 44 days. Argyrol 20 per cent. for 6 days and 10 per cent. for 10 days, t.i.d., by injection
9 M.	60 days	None	None	Out-patiert	Cure	Moderately Severe	Iodine irrigations—1:500, t.i.d. for 30 days. Saturated solution boric acid by injection t.i.d., for 30 days
10. C.	28 days	None	None	Out-patient	Cure	Moderately Severe	Iodine irrigations, 1:500, t.i.d. for 28 days
11. S.	147 days of treatment, covering period of 205 days	Stricture	3	Out-patient	Cure	Severe	Argyrol, 10 per cent. for 20 days,t.i.d. Iodine irrigations, 1:500, for 20 days and 1:250 for 9 days, t.i.d. Argyrol, 20 per cent. t.i.d. for 98 days
12 K.	145 days	None	Hospital for 13 days, then out-patient	No relapses	Cure	Moderately Severe	Iodine irrigations, 1.1000, t.i.d. for 60 days. Argyrol, 20 per cent. t.i.d. for 68 days. Daily alternations of iodine 1:500, and argyrol, 20 per cent. for 17 days
13. D.	34 days	None	None	Out-patient	Cure	Moderately Severe	Iodine irrigations, 1:500, t.i.d. for 34 days
14 E.	14 days	None	None	Out-patient	Cure	Mild	Argyrol, 20 per cent. t.i.d. for 14 days
15 M.	74 days	Epididymo orchitis	None	Out patient and in hospital for 29 days	Cure	Severe	Iodine irrigations 1:500, for 15 days, t.i.d. Argyrol, 20 per cent. t.i.d. for 48 days

was thirty-four days. The average duration of fifteen cases was 82.6 days. The average duration of twelve uncomplicated cases was 75.75 days.

It is recognized that fifteen cases constitute a small number from which to draw conclusions of any kind. However, an analysis of fifteen observed cases, absolutely controlled during treatment and carefully checked thereafter, may mean more than a much larger number where the control, through unfavoring circumstances, has not been absolute and where the criterion of cure is not the one here employed, viz., microscopic search for the gonococci. All the patients in this series were restricted to the post limits during treatment and were effectually cut off from alcoholic or sexual indulgence. Whenever in the surgeon's judgment the violence of symptoms so indicated, these men were excused from all duties or from such activities as drill, fatigue duty, and athletics. Admission to the hospital was accorded to patients whose symptoms or general condition seemed in any way to demand or suggest the need therefor. In addition to local treatment in these cases, hospital patients had the benefits of rest in bed and dietary supervision and they received hexamethylenetetramine (urotropin) in 0.6 gram doses three times a day. However, it will be observed upon reference to the tabulations that the recovery of these men was not markedly hastened by hospital treatment; but it should be borne in mind that all treatments of out-patients were made at the hospital and under surveillance of the hospital corps, absence or attendance being reported to the surgeon. It is obvious that in civil life the surgeon cannot exercise this control over his patients and, generally speaking, it is therefore unlikely that the details of treatment, exclusive of hospital and office treatments, are as carefully observed in civil practice. The obstacles to the attainment of a proper state of the patient's mind—which includes an appreciation of the gravity of gonorrhea and the difficulties of successful treatment, nicely balanced by a cheerful, confident hopefulness and a willingness to cooperate patiently—are very great, both in civil and military practice. But in military practice this state of mind, however desirable, is less essential on account of the element of control which the surgeon may exercise. It would appear from the analysis of

the above fifteen cases that the most prompt cures resulted where a single remedy was used, but as a matter of experience I am by no means convinced of this, having frequently observed immediate improvement in obstinate cases upon a change in treatment, either by substitution or combination.

Concerning the treatment of systemic gonorrhea, namely, the blood and lymph stream distribution of gonococci to organs and tissues more or less remote from the genitals, this paper has nothing to do. My experience and observation in the treatment of gonorrheal inflammations of the joints and of chronic prostatic gonorrheas by means of vaccines was not clinically convincing, although striking effects in chronic arthritis, observed principally in the service of others in Manila, were certainly noted in more than a few obstinate cases when autogenous vaccines were employed, opsonic readings being used as indices. In genital gonorrhea I have seldom seen results from vaccine administration which even the most enthusiastic opsonists and vaccinists could point to with confidence. In actual practice, as well as in rational forecasting, the vaccines are most successful in systemic gonorrhea.

The statement that gonococci usually disappear from the urethra in six months and that they exceptionally persist in the male urethra for eighteen months is made by Keyes,* but he admits that the infectiousness of gonorrhea may be indefinite. He further states that it may be a matter of great delicacy to determine persistent infectiousness of a given case, but that as a matter of fact almost all are cured in a few months. I fear that the brief series here reported, as well as my experience with a far greater number of cases than these, does not support this optimistic view.

Schwartz and McNeil,† from total tests of 324 human sera in New York, advocate the complement fixation test in the diagnosis of gonococcic infections. After presenting their tables they state that "it would seem from the foregoing results that the complement fixation test (using a polyvalent antigen) for gonorrheal antibodies will have a definite place in the field of clinical pathology as an aid in differential diagnosis between the various conditions arising from gonorrheal infection and similar conditions due to other causes. In acute gonorrheal urethritis we do not get the phenomenon of fixation. This is probably due to an insufficient absorption of toxins to stimulate the production of antibodies." In chronic urethral infections, according to these observers, the case is different and the reaction is present and dependable. They further state that "the facts at hand, however, seem to us to prove almost conclusively that a positive reaction is an evidence of living gonococci somewhere in the body and if found in men or women supposedly cured of gonorrheal infection of the genitourinary tract should be construed to mean that they are still capable of infecting others through sexual intercourse."

Conclusions.

From observation and experience during the last ten years, far more than from the fifteen cases here reported, I believe the following conclusions are fairly deducible:

1. We unfortunately do not command any drug or system of treatment with which we can reasonably hope to cure gonorrhea of the genitourinary tract in any measure of time less than "months." The occurrence of a few exceptional cases, promptly curable, is admitted.

2. A certain small percentage of cases is practically incurable; *i.e.* certain cases resist treatment to such a degree as to warrant the use of the term "incurable."* My present series, fortunately, does not contain any case of this class, but I have seen a few such infections.

3. A much larger percentage of cases remain indefinitely cured, not because they are incurable but because the patients do not and will not submit themselves to long extended treatment and restrictions.

4. The total number of "indefinitely infectious" cases from these two classes is much larger than is generally supposed. These persons as well as the uncured female sufferers from gonorrhea play a large part in spreading and pepetuating the disease.

5. Admitting its difficulties of application, there is no proper test of cure except the test of microscopic search for the gonococcus. It is not insisted that the method employed in the present series is the only proper one or that it is free from theoretical objections, but practically it is as easily applied and as reliable as any known to the reporter. If microscopic diagnosis is logically necessary a microscopic test of cure is also necessary.

6. From experiments conducted by them, Schwartz and McNeil claim that the results are "highly significant and show that the complement fixation test detects a certain percentage of cases of uncured gonorrhea which escape careful clinical and bacteriological examination." If true this is certainly important and will materially assist us in promoting the adequate treatment of gonorrhea. Whatever its value may be, however, the complement fixation test is not likely to supersede or displace at once bacteriological search for the Neisser organism in genitourethral infections and we should be constant in our efforts to universalize the employment of this test of cure.

7. In my opinion the most cardinal and necessary factor in adequate treatment is persistence in whatever method or variety of local treatment is chosen, until both clinical and microscopic evidences of disease permanently disappear. It is assumed that supervisory control of the patient's dietary, personal habits and liberties is exercised by the surgeon.

Fort Hunt, Va., June 9, 1911.

*"Diseases of the Genitourinary Organs," page 95.

†*American Journal of the Medical Sciences*, May, 1911.

CLINICAL NOTES ON CHRONIC PUTREFACTION TOXEMIA OF INTESTINAL ORIGIN.†

By EDWARD E. CORNWALL, M.D.,

BROOKLYN, N. Y.

ATTENDING PHYSICIAN TO THE WILLIAMSBURGH AND NORWEGIAN HOSPITALS; CONSULTING PHYSICIAN TO THE BETHANY HOPITAL.

The following cases, which seem to illustrate the subject of chronic putrefaction toxemia of intestinal origin, are selected for report from a considerable number of similar cases with which the writer has had experience during the last few years.

Case I.—A man aged 47 years, a merchant, was constipated for the past twenty-five years or more, and during that time he had what he called

*The percentage reported by the committee of the American Medical Association is 3 per cent. See *Journal of American Public Health Association*, page 69, March, 1911.

†Read before the Kings County Medical Society, October 17, 1911.

bilious headaches, which occurred at first every five or six weeks, but gradually increased in frequency until, in October, 1910, they became continuous. At that time he also suffered much from dizziness, weakness, and a constant and distressing cough which the usual remedies did not relieve; and his weight, which was usually 154 pounds, fell off twenty pounds. Examination of his urine was negative; his blood pressure was 150 mm. He was given a laxative tablet to take daily until he no longer needed it, which was after about two months, and was put on a diet which consisted exclusively of milk, cream cheese or pot cheese, butter, bread, cereals, potatoes, green vegetables and fruits, with occasional variation to the extent of a simple rice or bread pudding or a plate of ice cream. He was strictly prohibited from eating any animal tissue or broths or soups made from the flesh of animals, or cane sugar, except the small amount in the occasional pudding and ice cream, or dried peas and beans, cooked cabbage and turnips, vinegar or spices. The diet was arranged to supply an average of about 65 grams of protein daily, and to possess a fuel value of between 2000 and 2500 calories. He has kept up this diet to the present time, varying the proportions of some of the articles, particularly the pot cheese, which during the past three months he has taken in increased quantity, and adding a small daily ration (about one ounce) of fat bacon. During a period of forty-nine consecutive days, from August 5 to September 23, 1911, he accurately measured everything which he ate, and during that period the average amount of protein which he took daily was 65.76 grams, of which not more than 3 grams, on the average, was derived from animal tissue, and the fuel value of his diet averaged 2019.78 calories daily. Two days after he began this diet the headache, dizziness and cough entirely disappeared, recovery of strength rapidly followed, and the constipation greatly improved. He ascribes the improvement in his constipation largely to raw cabbage, which he took in the form of coldslaw twice daily. He gradually regained his lost flesh and is now within seven pounds of his normal weight. His appearance is good, and he says that his muscular endurance is better than it has been for several years, though he does not feel as energetic as formerly.

In connection with this case the following interesting facts are noted. Although the bowel movements have become normal in frequency, the stools undergo changes in appearance during every five or six day period: they gradually get lighter, until on the fifth or sixth day they become a light yellow, and at that time the patient experiences dizziness and a slight palpitation of the heart. When he first notices these symptoms he takes one teaspoonful of magnesium sulphate in a half tumblerful of hot water on going to bed, and the stools become normal and the dizziness and palpitation disappear, until the cyclic disturbance again manifests itself. If he does not take this small dose of salts every fifth or sixth day the stools become slightly loose, with hard lumps in them, and the dizziness is replaced by a headache. If the salts are taken in the morning the dose required is larger and it is less strikingly effective. An examination of the urine made at the time when the dizziness and palpitation suggested a cyclic accumulation of toxins in the blood was as follows: specific gravity, 1026; no albumin; no sugar; no acetone; indican normal. This is interesting in view of the importance so generally ascribed to the degree of indicanura as an index of putrefaction toxemia. Equally interesting and more helpful in making the diagnosis is what happens when the patient eats a small piece of meat, which he has done only three times in the past year: he has a prompt recurrence of the cough and dizziness.

Case II.—A man of 59, a floorwalker, had occasional headaches since he was sixteen, and during the past five years he had a continuous headache. He says he got up with it in the morning, went around with it all day, and went to bed with it, and when he was asleep dreamt that he had it; and often when walking across a room suffered so intensely from it that he feared that he would collapse. He had what was diagnosed as meningitis twenty-five years ago, but recovered from it entirely. He had always been what he considered a moderate eater of meat, but had been an excessive eater of sweets. Physical examination: Appearance healthy, weight 160 pounds, heart slightly enlarged, faint systolic murmur heard over aortic area, aortic second sound impure; examination of urine negative, blood pressure 150 mm. I prescribed for him an exclusive diet, consisting of specified quantities of milk, cereals, bread and butter, milk soups, cream cheese, olive oil, fat bacon, and fresh fruits and vegetables with certain exceptions. I allowed relaxation of this diet to the extent of a small portion of meat twice a week. All animal tissue, with the exception of the relaxation mentioned, and cane sugar were rigidly prohibited, as well as vinegar, spices, and dried peas and beans. This diet was arranged so as to supply a daily average of 65 grams of protein, of which less than six per cent. should be derived from animal tissue, and to possess a fuel value of about 2000 calories. After four days of this diet there was a marked diminution in the intensity of the headaches, and at the end of a week they were entirely gone; and at the end of three weeks the patient reported that in that period he had been entirely free from them with the exception of one slight recurrence which was of slight duration.

Case III.—A woman aged 30 years, a school teacher, suffered for a number of years from occasional severe headaches, which during the last year occurred as often as several times a week; they were sometimes frontal, but the pain usually shifted to different parts of the head; and when they were present her face looked drawn and pale; her mind was dulled, and she found it difficult to attend to her work, and she often felt drowsy during the day. She was habitually constipated and suffered from gastric dyspepsia. She had always been a hearty eater, especially of meat and soups. She had noticed that a saline purge made her feel better. She had been treated for anemia and malaria without success, and her eyes had been tested and found normal. There was nothing in her case to suggest any gynecological disorder. Her weight was 137 pounds; her blood pressure was 118 mm; examination of her urine was negative. I prescribed for her an exclusive diet consisting of milk, in any form, preferably lactacidized, cereals, bread and butter, honey, milk soups, and vegetables and fruits with certain exceptions, allowing relaxation twice a week to the extent of a small portion of flesh food. This diet was arranged to supply about 60 grams of protein daily, of which not more than five per cent, on the average, was to be derived from animal tissue, and to possess a fuel value of 1800 to

2000 calories. After a few weeks of this diet her headaches entirely disappeared, and her mental and physical condition became apparently normal. Further relaxation of the diet was made to the extent of allowing a small portion of animal tissue or eggs four times a week and an occasional simple pudding. Three months later the patient reported continued good health, and ten months later she again reported continued good health.

Case IV.—A woman of thirty, well nourished but sallow, suffered for a year or more from general debility and frequent and distressing headaches. Her eyes were examined and found normal. Examination of her urine was negative. I put her on an exclusive diet of milk, cereals, bread and butter, milk soups, olive oil, and fruits and vegetables with certain exceptions, arranged to supply 60 grams of protein daily and to possess a fuel value of 2000 calories. After three weeks of this diet she reported that the headaches were entirely gone, and that she "felt like a young girl."

Case V.—A woman of thirty-five, weighing 206 pounds, suffered during the last two years from severe palpitation of the heart from slight emotional causes, shortness of breath on moderate physical exertion, and insomnia. She was also irritable and easily disturbed by little things, which is not according to her natural disposition. She had always been a hearty eater, especially of meats and sweets. Her blood pressure was 165 mm, and examination of her urine showed a slight trace of albumin.

I prescribed for her an exclusive diet of milk in any form, preferably lactacidized, cereals, bread and butter, selected fruits and green vegetables, milk soups, honey, occasionally fat bacon, and once a week a small portion of flesh food. This diet was arranged so as to supply 65 grams of protein, of which not more than three per cent. should be derived from animal tissue, and possess a fuel value of 2500 calories. Two weeks later she reported that the heart symptoms had disappeared, that she was feeling much better in every way, and that her husband had noticed a great improvement in her disposition.

Case VI.—A man aged 35 years, well nourished, of healthy appearance, who had always felt well, was rejected by an insurance company because sugar was found in his urine. I also found a trace of sugar in his urine, which had a specific gravity of 1033. His blood pressure was 155 mm. There was nothing in his previous history to suggest disease except that he had always been a hearty eater, especially of meat. I put him on a diet of milk, cereals, bread and butter, selected fruits and green vegetables, olice oil, bacon, milk soups—in fact, an antiputrefactive diet—with relaxation to the extent of a small portion of flesh food twice a week, the diet being arranged to supply a daily average of 70 grams of protein, of which not more than five per cent. was to be derived from animal tissue, and to possess a fuel value of 2500 calories. After he had taken this diet for two weeks I examined his urine, and found that he passed 41 ounces in twenty-four hours, of a specific gravity of 1019, and containing no sugar. His blood pressure at the same time was 118 mm. Six weeks later, while he was still continuing the same diet, his urine and blood pressure were again examined, with similar results.

Case VII.—A boy aged four years, who had been constipated and colicky from his birth, suffered during the past two years from frequent attacks of fever, accompanied usually by gastrointestinal disturbance. A dose of castor oil always seemed to hasten his recovery from these attacks. He was moderately well nourished, but pale and flabby in appearance. I put him on an exclusive diet of milk, cereals, carefully selected fruits and vegetables, old bread and butter, and fat bacon. For six months after beginning this diet he was free from the attacks of irregular fever and gastrointestinal disturbance; then a piece of Thanksgiving turkey brought on a relapse. Shortly after this relapse he had an attack of grip with otitis media. He recovered, kept strictly to the diet, and up to the present time, ten months later, has been free from the attacks and better than he has ever been before in his short life.

Case VIII.—A commercial traveler, aged 49 years, had just recovered from an attack of acute gout in the great toe joint, which was his first attack of that disease. His urine showed a small amount of albumin and a low specific gravity. His blood pressure was 150 mm. His complexion was muddy. For more than a year before he had suffered from occasional insomnia, a tired feeling in the morning, headaches, cardiac unrest and palpitation, especially when smoking, and some general debility. He had been for years a moderate smoker and drinker, and a hearty eater, especially of meat. I absolutely prohibited him from using alcohol and tobacco, and put him on an exclusive diet of milk in any form, preferably lactacidized, cereals, bread and butter, milk soups, olive oil, honey, fat bacon, selected fruits and vegetables, weak tea and coffee, and once a week a small portion of flesh food. The diet was arranged to supply an average daily ration of about 65 grams of protein, of which not more than five per cent. was to be derived from animal tissue, and to possess a fuel value of about 2200 calories. He has followed this diet to the present time, even when traveling, and feels very well.

Case IX.—A man of 45, a clergyman, suffered during the past ten years occasionally from severe headaches, which he had noticed were worse in February. During the past year the headaches were severer than before and more frequent, and occurred with particular regularity and severity every Monday, and his energy and capacity for work progressively diminished. He was constipated, and frequently suffered from gastric and intestinal flatulence. He had always been a hearty eater, particularly of meat and soups. Physical examination showed him to be of large frame, well nourished, somewhat pale; the left ventricle of his heart was slightly enlarged and his aortic second sound was accentuated; his blood pressure was 220 mm; and his urine was of low specific gravity and showed a trace of albumin. I put him on an exclusive diet of milk in any form, cereals, bread and butter, selected fruits and vegetables, honey, fat bacon, cream cheese, milk soups, and once a week a small portion of flesh food, the diet being arranged to supply an average daily ration of about 85 grams of protein, of which not more than three per cent. was to be derived from animal tissue, and to possess a fuel value of 2500 to 3000 calories. On this diet he rapidly improved, and since beginning it has had only one headache, which, it is significant to note, was made worse by a small dose of nitroglycerine. His blood pressure steadily became lower, and after two months was 165 mm, near which point it has remained to the present time, eight months after the beginning of the diet. His urine, examined re-

cently, appeared normal. The patient since taking this diet has experienced not only relief from the headaches, but increased mental vigor, and says that he can do more work with his mind now in one hour than he could before in two; and he also feels stronger physically, especially in the matter of muscular endurance. He says he can walk long distances without fatigue. But he thinks he is less bold and physically enterprising than formerly.

Case X.—A woman aged 24 years, a primipara, showed in the seventh month of her pregnancy a moderate amount of albumin in her urine, with diminished excretion of urea, and a slight edema of the hands, feet, and face. I put her at first on an exclusive diet of milk and cereal gruels for a week, and then on a strict diet of milk in any form, cereals, bread and butter, olive oil, honey, and selected fruits and vegetables, the diet being arranged to supply an average daily ration of about 65 grams of protein and to possess a fuel value of about 2000 calories. The edema soon disappeared and the output of urea improved, though the albuminuria persisted until four months after the child was born. This diet was kept up for one month after the disappearance of the albumin. The infant was nursed by the mother and was remarkably healthy, gaining regularly in weight. The antiputrefactive diet which was given for toxemia of pregnancy proved most suitable for this nursing mother.

Case XI.—A woman aged 45 years, a saleswoman, suffered from universal eczema for about one month. Her entire skin was dark red, rough and infiltrated, and there was considerable bloating of the upper and lower extremities and face. Her urine was diminished in quantity and contained a large amount of albumin. She had pains all over her body. I put her on a rigid antiputrefactive diet, which consisted at first of lactacidized milk, boiled rice and strained orange juice, to which later other cereals and carefully selected fruits and vegetables were cautiously added. Her body was kept anointed with olive oil throughout the course of the disease. Colonic irrigations were given once daily for the first two weeks and then discontinued. For the first eight weeks she was given a dram of phosphate of soda in a glass of water twice a day and a dram of rhubarb and soda mixture three times a day; after that no medication was given. During the first five weeks she ran a slight irregular fever which never exceeded 101° F. At the end of eleven weeks the condition of her skin began to improve, and at the end of thirteen weeks she was apparently well.

Case XII.—A woman aged 75 years was troubled for many years with intestinal indigestion; she also suffered from arthritis deformans which affected the joints of the fingers, all of which were deformed and some of which were immobile. The arthritis deformans was chronic from the start, but exacerbations had occurred. She suffered from frequent and distressing headaches with flushing of the face. There were signs of arteriosclerosis and her blood pressure was 180 mm. Examination of her urine was negative. I put this patient on an exclusive diet of lactacidized milk, cereals, bread and butter, selected fruits and vegetables, with relaxation to the extent of a small portion of flesh food once or twice a week. She kept up this diet steadily for fifteen months, and then, because of symptoms of over-colonization of the intestines with lactic acid bacilli, the sour milk was discontinued for a few months, and resumed later for short periods; otherwise her diet was not much changed, sweet milk and cereals being substituted for the sour milk. The diet was arranged to supply a daily average of about 50 grams of protein, of which not more than five per cent should be derived from animal tissue, and to possess a fuel value of about 1600 calories, but it is probable that she took less rather than more than the prescribed quantity of food. From the time she began this diet her intestinal symptoms improved, and the headaches became less severe and frequent, and long periods, sometimes as long as two or three months, elapsed without their occurrence. When she first took the lactacidized milk she said "it went right to the spot." Along with the improvement in the intestinal indigestion and the headaches, but unnoticed at first, was an extraordinary improvement in the condition of the affected joints. The enlarged joints diminished in size so that the present enlargement is not more than two-thirds or one-half of what it was, except in regard to the nodes of Heberden, which are unchanged, and the remaining masses to a considerable extent have become soft and pulpy, and motion has been restored to the joints in which it had been lost.

The dozen cases which I have here reported showed the following conditions: Severe and frequent or continuous headaches, mental and physical debility, neurasthenia, functional disorders of the heart, irritative cough, glycosuria, severe chronic universal eczema, toxemia of pregnancy, arthritis deformans, irregular fever, cardiovascular disease, and nephritis. In all these cases the administration of a diet which diminished the production in the intestines of the poisons due to the action of the saprophytic bacteria on animal protein, and at the same time relieved the liver and kidneys from unnecessary work, was followed promptly by recovery or great improvement—recovery or improvement which could not altogether or in large measure be ascribed to the drugs given. The beneficial results of this dietetic treatment were, on the whole, so striking that they suggest the general conclusion that chronic putrefaction toxemia of intestinal origin causes or aggravates a large number of common and important morbid conditions.

In considering this subject of chronic putrefaction toxemia of intestinal origin it must be borne in mind that the poisons resulting from intestinal putrefaction are found regularly in the blood of healthy people. This is a necessary consequence of the fact that a certain percentage of the animal protein which gets into the intestines in ordinary conditions of health and diet always falls a prey to the ever-present bacteria of putrefaction. Tappenheimer estimates the proportion of the ingested animal protein which thus rots instead of being dissolved by the digestive enzymes, to be one-tenth, and Macfadyen, Nencki and Seibert estimate it to be one-seventh. This normal or physiological putrefaction toxemia is not necessarily harmful, for the healthy body is so constituted as to be able to withstand it in ordinary conditions. It is only when this toxemia is excessive, or relatively excessive, that it acquires pathological significance. The absolute amount of these putrefaction poisons present in the blood depends on a number of factors, of which the following appear to be the most important: (1) The quantity of putrefiable protein which gets into the intestines: most of this is taken in through the mouth, but some is supplied by the secretions in the intestines and the detritus from

the walls of the alimentary tract; (2) The number, character and activity of the saprophytic bacteria in the intestines; (3) The extent to which the contents of the intestinal tract are alkaline, for these bacteria are active only in an alkaline medium; (4) The length of time during which the intestinal contents are exposed to the action of these bacteria; (5) The condition of the intestinal mucosa, whose walls, when healthy, possess a considerable antitoxic power, and which, when congested or eroded, permit absorption of putrefaction poisons without proper modification; (6) The functional activity of the liver, which is the chief defender of the body against these poisons, and which, if we can apply to men the conclusions suggested by Biot's experiments on dogs, is capable of destroying two-thirds of the poisonous products of intestinal putrefaction which are brought to it in ordinary conditions; (7) The activity of the ductless glands, which there is reason to believe possess an antitoxic function; (8) The activity of the eliminative organs, chiefly the kidneys, by means of which the remnant of these poisons which escape destruction by the natural defenders of the body is finally eliminated.

Variations in the absolute amount of this putrefaction toxemia in any given case naturally follow changes in these factors. Thus it is increased by an abundant flesh diet, gastric, and intestinal dyspepsia, constipation, dilatation of the stomach, enteroptosis, diseases of the intestinal walls, chronic appendicitis, and diseases of the nose and throat which contribute to the supply of putrefaction bacteria swallowed. It is also increased by anything which diminishes the functional power of the natural defenders of the body, particularly of the liver; and by anything which lessens the functional ability of the eliminative organs, notably of the kidneys. The combination of several of these factors may produce great increase of putrefaction toxemia over the normal. For example, a diet containing abundant flesh food combined with renal insufficiency can cause an accumulation of these poisons in the blood sufficient to excite uremic symptoms; and a liberal flesh diet combined with chronic constipation or hepatic insufficiency can easily maintain a degree of putrefaction toxemia capable sooner or later of producing pathological results, particularly in persons whose tissue resistance is low. The pathological results of chronic putrefaction toxemia seem to depend less on the absolute amount of the toxins in the blood than upon the relationship of any given amount to the tissue resistance of the individual: the individual tissue resistance is the relative factor which determines the pathological degree of the toxemia, and it varies greatly in different persons and in different conditions: the amount which is normal and harmless for one person in a particular condition apparently produces pathological results in another in a similar condition. Some people seem able to eat excessive quantities of meat and cane sugar all their lives, and at the same time to violate most of the laws of hygiene, and yet reach a good age, while others, eating and acting in the same way, or even much more carefully, develop Bright's disease, or cardiovascular disease, or diabetes in their fifth or sixth decade.

The diagnosis of chronic putrefaction toxemia of pathological degree and its identification as the cause or aggravator of existing morbid conditions in any particular case can usually be made by clinical means alone, and particularly by the therapeutic method. The therapeutic method of diagnosis consists in giving an antiputrefactive diet in any suspected case and watching results. If recovery or great improvement follows, especially when in this particular case or similar ones treatment by drugs or other agencies has failed to produce such favorable results, the diagnosis is confirmed with a reasonable certainty. This therapeutic method of diagnosis has the advantages of facility of application and absolute safety, and it is on the whole more satisfactory than any of the laboratory methods now at our command: even the most exact of the laboratory methods, which consist in finding the toxic coefficient of the patient's blood, or the aromatic coefficient of his urine, can only give an index to the absolute quantity of toxic substances present, and tell nothing of the relation of this absolute quantity to the tissue resistance of the patient, which is the essential fact in the diagnosis.

The practical question here arises, what constitutes an effective antiputrefactive diet? In the case reports already presented I have suggested in outline the antiputrefactive diet which I use with my own patients. That diet is extremely simple and easy to prepare, and it has proved successful. Other diets equally effective can no doubt be devised without difficulty, provided the essential requirements of an antiputrefactive diet are satisfied. The essential requirements of such a diet are: To reduce the putrefiable protein ingested to a rational minimum, that is, to a minimum which fits the particular case; to keep the contents of the intestinal tract acid throughout; to diminish greatly the amount of cane sugar in the diet or to eliminate it altogether, to be sufficiently laxative to insure a bowel movement once daily, and to restrict the total quantity of food to the needs of the body. The first requirement is met by reducing to a very moderate amount or to zero all protein in the diet which is of animal origin except milk, which is not ordinarily putrefiable because it is protected by its lactacidifiable carbohydrate. The second is met by including abundant milk and cereals in the diet; and if in addition to the lactacid bacilli normally present, we artificially colonize the intestines with extra quantities of those bacilli introduced with the milk or otherwise the acidification of the bowel contents is greatly facilitated: the cereals supply sugar in the lower part of the intestine out of which those bacilli can make lactic acid, which is the great acidifier of the bowel contents and our most direct antiputrefactive agent. The third requirement, to cut out cane sugar from the diet, depends for its sanction on the tendency of that in other respects desirable food to ferment in the alimentary tract and disturb digestion. The fourth requirement, to be sufficiently laxative to insure a bowel movement daily, is directed against that colonic stasis which favors so powerfully the production of putrefaction poisons. The fifth requirement, to limit the total amount of food to the needs of the body, has for its reason the advisability of making as light as possible the necessary work of the liver and kidneys, so that those organs can devote their fullest energies to neutralizing and eliminating the putrefaction toxins to which the tissues are intolerant.

Besides these essential requirements we have to consider, in prescribing an antiputrefactive diet for a particular patient, the indications and contraindications offered by his general condition and by special diseases which may be present. In some cases

it is sufficient to reduce the putrefiable protein to a moderate amount; in others it must be cut out of the diet altogether; in some the restriction of the total amount of food to the needs of the body should be as close as possible, while in others more latitude may be allowed: in young persons and those without demonstrable organic disease considerable latitude may often be allowed, provided the articles of food are appropriate; in older ones who have cardiovascular disease or nephritis, the total quantity of food should be closely restricted. The influence of habit is entitled to some consideration, especially in regard to the articles of food; it is not always advisable to put on an absolutely fleshless diet an elderly person who has been an extravagant eater of meat all his life; though such an one often accommodates himself to small and infrequent rations of flesh food, or even absolute deprivation of it, after having experienced the benefits of the more rigid diet; this is particularly the case when chronic nephritis is present.

Just what constitutes the minimum quantity of food necessary to maintain health, that is, the minimum amount of protein, and the lowest caloric requirement, I do not know, but clinical experience inclines me to the opinion that it is considerably less than what the standard text books on diet assert. In my antiputrefactive diets I rarely give more than 65 grams of protein per diem unless the patient is extra large; and the calories I regulate according to the body weight, the age, the amount of work to be done, and the temperature: a man working hard in cold weather might require thrice as many calories as one lying in bed in a warm room. In chronic putrefaction toxemia the regulation of the fuel ration is not of such precise importance as the regulation of the protein ration; a few extra calories do little harm if they are derived from articles which do not disturb the alimentary tract or the liver. If the patient is obese I usually scrimp the calories, and if he is emaciated I am generous with them.

In arranging my antiputrefactive diet I usually rely chiefly on milk, bread and cereals for protein, and secure extra calories from butter, olive oil, fat bacon, the starch of the roots and other vegetables, the sugar of fruits and honey, and milk sugar. One quart of milk, 12 ounces of cooked cereal, and six slices of bread, will give about 55 grams of protein and 1,300 calories. The vegetables, fruits, butter, bacon, etc., given to bring the calories up to between 2,000 and 2,500, will add enough protein to make the total of that food element about 65 grams. If more protein is required I increase the milk or cereals, or add cheese, or allow a small quantity of animal protein; in many cases of putrefaction toxemia a small portion of meat, fish, poultry or eggs can safely be allowed once to four times a week; and if such a relaxation of the diet increases the protein too much the milk, cereal or bread can be diminished to make the protein ration balance. Vegetables and fruits, though poor in protein content and of small fuel value, have an important place in an antiputrefactive diet because they supply necessary salts, add variety to the diet, which is often monotonous to the patient, relieve constipation, and are "filling."

The limitations of this paper forbid extensive discussion of the details of this antiputrefactive diet, but there is one very practical point in connection with it which I must not pass over; it is, how to make the patient take the diet when it is prescribed. For bringing this about I have found the two following precedures effective. First, I explain to the patient at considerable length and with considerable force, the purpose of the diet and how it will accomplish that purpose. A full and forceful explanation usually enlists the patient's interest and secures his cooperation—that is, if he is intelligent, and the treatment of other than intelligent people along these lines is a hopeless task. Second, I write out carefully the diet for each patient, and do it in his presence, stating exactly what things he may eat, with the quantities and the time of eating each thing, and also stating the things which are forbidden. It is not safe to trust anything in this matter to the discretion of the patient, for if it is possible for him to misunderstand any of his directions he may be confidently expected to do so.

I will close these remarks on the subject of chronic putrefaction toxemia of intestinal origin with a general summary of the conclusions to which my studies of that condition have so far led me.

(1). Man's natural diet is a mixed one, derived from both the animal and vegetable kingdoms; and it appears to be a fact that on such a mixed diet, other things being equal, he flourishes best and attains his highest development.

(2). In the normal physiology putrefaction products are regularly formed in the intestines as a result of the action on animal protein of the ever-present saprophytic bacteria. These putrefaction products, some of which possess toxic properties, being soluble, are absorbed into the circulation; a portion of them is destroyed or neutralized by the antitoxic organs of the body, and the remainder, after having produced a putrefaction toxemia, is eliminated.

(3). Putrefaction toxemia, which is a regular and normal occurrence in the healthy body, acquires pathological significance only when it becomes excessive, or relatively excessive.

(4). When this toxemia is excessive, or relatively excessive, either because of too much animal food in the diet, because of abnormal conditions in the gastro-intestinal tract, because of insufficiency of the liver or kidneys or other antitoxic or eliminative organs, or because of low tissue resistance, then it directly produces morbid conditions or aggravates existing ones.

(5). The diagnosis of the pathological complex due to chronic putrefaction toxemia of intestinal origin can be made with ease, safety and reasonable quickness by the therapeutic method, which consists in giving the appropriate treatment in suspected cases and watching the result.

(6). The treatment of this condition is essentially dietetic, and consists in reducing to a rational minimum the amount of putrefiable protein ingested; increasing the amount of lactic acid formed in the lower part of the alimentary tract; eliminating cane sugar and other disturbing articles from the diet; including in the diet articles which are laxative; and reducing the total amount of food to the needs of the body.

1239 Pacific Street.

Adrenalinemia and Its Determination.—Bröking and Trendelenburg determined with the aid of a delicate frog preparation that the proportion of adrenalin in normal blood is 1 to 2,000,000. This proportion is also found in arteriosclerosis, pregnancy, parturition, chlorosis, and diabetes. There is a diminution of adrenalin in cases of nephritis with hypertension and an increase in cases of Graves' disease.—*Deutsches Archiv für klinische Medizin.*

SOME OBSERVATIONS REGARDING THE CONTROL OF MEASLES.

By PAUL B. BROOKS, M.D.,

NORWICH, N. Y.

HEALTH OFFICER, NORWICH, N. Y.; MEMBER ALUMNI, BELLEVUE HOSPITAL; FORMERLY MEMBER OF STAFF OF BUFFALO STATE HOSPITAL, ETC.

Measles is a disease too well known to require introduction. We have all had experience with it, as our grandmothers had before us. In 1910 there were 70,000 reported cases in New York State alone. In spite of our long and intimate acquaintance with the disease, there are still some mooted points regarding it, notable among which are these: Whence does it spring? Can it be controlled or prevented? As for the etiology, it is safe to assume that it is a bacterial infection, but we know practically nothing of the nature of the organism. Such experiments as have been made in the inoculation of animals with the virus, while of scientific value, have brought us no nearer to the discovery of the organism.

Close observation of some two hundred cases during a recent epidemic led the writer to certain conclusions: First, that the disease is rarely communicated except through the presence of an individual suffering from the disease, and very rarely, if ever, through a third person, clothing or house infection; second, that it is infectious from the beginning of the catarrhal stage, possibly more so than after the appearance of the eruption, and that it is this fact which has rendered ineffective our efforts to control it. To return to the question of the identity of the causative organism, the conclusions above noted regarding the source of communication might lead to the hypothetical deduction that the organism is at least very sensitive to climatic and other influences and will live an extremely short time outside the living host. This susceptibility, if it exists, may help to explain the fact that, as during our recent epidemic, the disease often disappears as if by magic with the arrival of the warm and open summer months.

Can epidemics of measles be prevented or controlled? With 70,000 reported cases, as compared with 8,536 of typhoid, 22,626 of diphtheria, and 31,500 of scarlet fever, and considering the fact that at least a third of the measles cases are not reported, it is a safe assumption that it is not controlled in spite of vigorous efforts on the part of State and local health authorities. Why? In part because the public have not yet become reconciled to the loss of their inalienable right to give measles to their neighbors; but principally because our efforts are directed taward "locking the barn after the horse is stolen." We know that the public school is a fertile breeding ground for epidemics of this and other infectious diseases. A school child, during an epidemic of measles, presents the signs of an ordinary coryza. As "running at the nose" is a symptom prevalent among school children, especially among the poorer classes, the year around, this attracts little attention on the part of parent or teacher. The child goes about infecting every other susceptible child with which it comes in contact for three or four days, or until febrile symptoms, or the appearance of the eruption, call attention to the fact that the child has measles. Then, if a physician happens to be called and the case reported it is put in quarantine, and probably the house is fumigated when all the family have recovered. There is, therefore, a serious "leak" in our system. In short, quarantine and fumigation alone are ineffective. Indeed, as for fumigation, assuming that my previously noted conclusions are based on fact, it is a waste of time and a needless expense. In Norwich it has been discontinued, at least temporarily.

Any system of control, to be effective, must take first account of the cases in the catarrhal stage. It means systematic examination of all school children during an outbreak or, better yet, a daily examination during those seasons in which we can confidently anticipate outbreaks of this and other infectious diseases. Upon discovery of a suspicious case not only should that case be promptly isolated, but an effort should be made to learn, so far as possible, the names of all other susceptible persons who have been exposed, and to have them report for examination daily during the period of incubation. Upon the appearance of the first suspicious symptom each one should be isolated. The most potent arguments against such a system are that it would entail a greater expense than that now in vogue, and that public opinion in regard to the necessity for preventing measles is not sufficiently developed to make cooperation likely.

While the average man resents the application of public health regulations to his own person and affairs, there is a growing appreciation, on the part of the public, of the utter foolishness of being subjected to suffering or inconvenience on account of diseases which could be prevented. Public health measures do not ordinarily excite great public enthusiasm, but a system which could be recommended as giving promise of efficiency would appeal more readily than one offering the inconveniences without the results. Discourses something like this are common: "Doctor, they never used to quarantine and fumigate measles!" "No," and the health officer proceeds to enumerate the dangers attending complications and sequelæ and the excellent reasons which have led to an attempt to control the disease. "But, doctor," your inquisitor continues, "is it not a fact that there are just as many cases now as there ever were?" The reply depends largely upon the elasticity of the health officer's conscience. This is the question which should be settled before we undertake the control of this disease: Is measles sufficiently serious to warrant efforts toward its prevention or elimination? If so, then we might apply that time-worn aphorism "That which is worth doing at all is worth doing well."

Quoting from the Bulletin of the New York State Health Department for January, 1911: "In eleven years of the last twenty-five the deaths from measles have exceeded those from scarlet fever, and their average mortality has been annually 1,100 to 1,350. Taking account of its remote effects, measles is probably fully as large a contributor to mortality as scarlet fever." Aside from all consideration of mortality, there is also to be considered the inconvenience and interrupted school work which it occasions. A hundred cases among school children mean at least a hundred weeks lost from the school year, and in these days of intensive education this alone is a serious matter. It is probably safe to assume that intelligent public opinion would support any reasonable measures which would give promise of eliminating this disease, which is, to say the least, a nuisance.

Conclusions.—The organism which causes measles has not yet been discovered, but, reasoning by analogy, it may be assumed that it lives for a very short time outside the living body. Measles is prac-

tically always communicated through the presence of an infected person; rarely, if ever, through a third person, clothing, or house infection. It is infectious from the beginning of the catarrhal stage. Our present efforts to control it do not give satisfactory results, chiefly because we permit the cases in the catarrhal stage to go undetected. If it is to be controlled or prevented, it must be through isolation upon the appearance of the first symptoms.

THE TREATMENT OF MULTIPLE GLANDULAR TUMORS.*

By RUSSELL H. BOGGS, M. D.

PITTSBURG, PA.

The above form of title presupposes an extreme clinical view of the subject. To the pathologist, it would seem an exceedingly inadequate classification, but the fact is that the diagnosis between tuberculosis of the glands, lues, sarcoma and Hodgkin's disease is never absolute until the case has come to operation or autopsy. However, he who tabulates a series of successful treatments of tuberculous glands will undoubtedly have included a considerable portion of cases which were not tuberculous. It is highly unscientific to apply an exact classification in clinical work, where our knowledge is insufficient to insure accuracy. It is rather striking how similar is the treatment of all these conditions, even if the glands have been excised and a scientific diagnosis made. The best treatment remains the *x*-ray, the best drug either iodine or arsenic, except in syphilis, where we have a specific treatment. It is also noteworthy that tuberculous glands may be well treated with the iodides in spite of the detrimental effect this drug has on pulmonary tuberculosis. I have also been amazed frequently at the beneficial effect of alterative doses of mercury, even in cases where lues could be definitely excluded.

For the reasons just mentioned and for the purpose of describing the treatment, I have given the following clinical classification: A. Large glands, broken down. (1) Tuberculosis; (2) Sarcoma; (3) Glanders actinomycosis; (4) Syphilis; (5) Yaws. B. Large glands, not broken down. (1)Tuberculosis; (2) Hodgkin's disease; (3) Multiple sarcoma; (4) Syphilis. C. Small glands, not visible. (1) Syphilis; (2) Simple inflammatory; (3) Tubercular; (4) Carcinoma.

While the *x*-ray is indicated in all of the glandular diseases mentioned, with the exception of lues, my experience has been that the glands produced by Hodgkin's disease respond quicker to the *x*-ray and also recur more quickly than in any other disease mentioned. A large tuberculous mass of glands will not respond to eight or ten treatments to the same extent as Hodgkin's disease or sarcoma, but after they have responded the result is more permanent. In the patient with Hodgkin's disease, the enlargement can be made to entirely disappear, but usually within a few months after the treatment there will be a recurrence, and it is necessary to keep raying the patient at frequent intervals to keep down the enlargement. In this disease a patient, emaciated and bedridden may by the ray not only show a temporary disappearance of the glands but may even resume his occupation for a time. As soon as any recurrence is noticed, treatment should be administered and, as a rule, the external tumors can be controlled for a long time or until the patient succumbs to deep involvement.

Lymphosarcoma in which the disease disappears under röntgen treatment is slow to recur in comparison to Hodgkin's disease. However, the results do not compare with those in the cases diagnosed as tuberculous glands, but I have patients apparently well for three years in whom a gland had been removed and a pathological diagnosis made. In this connection I will mention the following case:

Mr. H., age forty-two, had a gland removed from the left cervical region at the Mayo Clinic and a diagnosis of lymphosarcoma made. On account of the size of the mass operation was not advised, and they referred him for *x*-ray treatment, stating that it was worth at least a trial. At the end of three months the mass had all disappeared and no glands were palpable. Two years and eight months have elapsed and there has been no recurrence. To be on the safe side a few treatments were given at intervals. To my surprise, last summer, when he came for an examination, he informed me that he had been married lately.

Another patient, aged twenty years, was operated upon for lymphosarcoma of the cervical glands, followed by a recurrence before the wound was entirely healed. The tumor increased under radiation, given three times a week for six weeks, when the recurrence was as large as the original growth. Then intense radiation daily given for two months, after which irregular treatments were given. At present, six months later, there has been no recurrence. The patient's sister, aged sixteen, developed a similar mass in the cervical region, and on account of the other recurrence, *x*-ray treatment was given at once, and within two months the growth had disappeared. In either case sufficient time has not elapsed to say anything except that the primary growths disappeared under *x*-radiation in about the same time and with about the same amount of radiation. This has been my experience in a number of cases diagnosed clinically.

In the tuberculous cases, the severity of the process ranged from large broken down glands and large glands not broken down to glands which were almost invisible. The rapidity of results is most striking in the large glands which were broken down, and it is particularly interesting to note that these cases were just as permanently benefited as in the cases where the glands were only of small size. In comparison to the size of the glands it requires less treatment to reduce the mass, in a tuberculous patient where the glands are large and broken down or about to break down. Strange as this may seem, it is true, but we are unable to account for this, unless it is due to the fact that there is so much more glandular tissue present in the large tumor which is much more easily affected by the röntgen rays. Most likely, there is a constitutional effect, and this is most pronounced when a large amount of tuberculous tissue is rayed, as well as the fact that the tissue is of lower vitality than in the smaller glands. These facts suggest that in the destruction of tissue an autogenous vaccine is set free. Crane claims to have demonstrated an increase of the opsonic index. It has been demonstrated when large tuberculous glands have been rayed that a tuberculous process in other parts of the body will often rapidly disappear. It is a well-

*Read before the Medical Section of the Allegheny County Society, October 19, 1911.

known fact that if a patient, having large cervical glands, is rayed intensely, tubercle bacilli may disappear from the sputum. The marked gain in strength and weight shows there must be a constitutional, as well as a local effect. This is more marked in tuberculous glands than in any other disease mentioned. Possibly this accounts for so much better end results in tuberculosis than in any other glandular disease by radiation.

Radiation is indicated in all enlarged glands that have reached any size, unless produced by an acute inflammatory process. In the earlier cases medical treatment should not be persisted in too long, as there is danger of suppuration followed by scarring. The medical measures can be continued in conjunction with the röntgen rays. The disease in the beginning is often local in the cervical glands, and by waiting there is danger of more extensive involvement. The treatment, to be effective, must be employed by a capable clinician and must be adapted to the individual patient. If the dose is too weak there will be no progress. On the other hand, treatment must not be pushed too far, as it would not be judicious to produce a necrosis or a late degeneration of the healthy tissues. When a patient has a breaking down or suppurating gland this should be incised in order to give free drainage. An excellent method is to swab out the cavity with equal parts of iodine and carbolic acid. It is better in such cases to ray the patient, at first daily, in order to secure a quicker result and get the disease under control as soon as possible. As before stated, the results are so good and permanent that no one should hesitate to adopt this method as a routine procedure in tuberculous adenitis, which does not readily respond to medical treatment. The average case will not derive much benefit until about ten radiations are given. The induration and infiltration will begin to disappear, leaving the surrounding tissue less swollen and the enlarged glands more freely movable. At the end of three weeks the skin usually becomes slightly red, followed by a reduction in the size of the mass, if the proper technique is employed, that is, raying the patient with the tube placed from 12 to 15 inches, passing the rays through a filter with the tube at the proper degree of vacuum and excited by the proper amount of current. It is necessary to make each case an individual study and vary the dosage the same as any other therapeutic agent, in order to produce the desired result. Then treatment, as a rule, is given two or three times a week, and the average case will require from twenty to thirty radiations. When the skin becomes slightly red it is followed by a tanning similar to that of a sunburn, and then a rapid reduction takes place. If the reaction is marked, by the time it disappears one is scarcely able to palpate the remaining portion of the glands. Lymphatic tissue, and particularly the lymphatic channels, are converted into fibrous tissue, thus eliminating entirely the possibility of a spread of the disease. The rays have a selective action for the glandular structure, and if given in proper dosage will destroy the glandular tissue, leaving only the stroma of the gland, and a large amount of this tissue is absorbed, leaving the patient's neck almost normal. Patients when referred early can be cured without the glands suppurating or the breaking down of a single gland, thus entirely avoiding scarring. It is evident that the röntgen treatment is the most effective method of treating tuberculous cervical adenitis in all varieties, because the most permanent and the best cosmetic results can be obtained. While the end results obtained by the röntgen treatment in other glandular diseases are not as uniform and permanent, this method offers as much as or more than other treatment alone or in conjunction with other methods. In view of the futility of all the various methods of treating malignant adenitis, the röntgen treatment offers a better prospect of temporary relief or permanent cure than any other method known at present.

The result in the treatment of lymphatosarcoma by the röntgen rays, if the patient has been referred before the glandular enlargement is too widely scattered, even if the mass has attained considerable size and the skin is not broken, are usually very gratifying, and in most cases the disease can be cleared up under radiation four or five times more intense than is required in Hodgkin's disease. If the skin is broken the same results cannot be expected, as then deep metastasis takes place rapidly. It has been stated that there is danger of the röntgen rays stimulating a malignant process, but this can be emphatically denied when radiation is given intensely and not in small stimulating doses. Intense radiation is never stimulating, even from the beginning, and has a tendency to prevent metastases.

TRANSILLUMINATION.

By A. L. BENEDICT, A.M., M.D.,

BUFFALO,

CONSULTANT IN DIGESTIVE DISEASES, CITY AND COLUMBUS HOSPITALS; ATTENDANT DIGESTIVE DISEASES, MERCY HOSPITAL; AUTHOR OF "GOLDEN RULES OF DIETETICS"; EDITOR "BUFFALO MEDICAL JOURNAL."

This article has been suggested by a very valuable contribution to the Medical Record, November 4, 1911, by Dr. Morris H. Kahn of New York. So much attention has been devoted to *x*-ray penetration, and transillumination has been so largely limited to the scrotum, to the antra of the head and to gastrodiaphany, that it is worth while to call attention to the really great value of ordinary light rays in diagnosis. Opacity is a relative term, as powerful Röntgen rays give very light shadows of bones, and as any bright light will penerate the soft tissues to a considerable degree. Thus, as Dr. Kahn points out, transillumination will enable one to locate an opaque foreign body, in any comparatively thin member, with great exactness.

The bones of the fingers can be inspected by sunlight almost as closely as with *x*-rays. Sunlight is harmless for any ordinary length of exposure, though capable of producing lesions quite comparable with *x*-ray burns from long exposure of parts ordinarily protected by clothing, as any one knows who has had experience with camp and water-side practice. Sunlight requires no expensive apparatus, and is available most of the time. A screen can be improvised from an old derby or soft felt hat, with part of the crown cut out. Anyone inspecting the hand by this means for the first time will be amazed at the distinctness with which the bones can be traced. One cannot hope to detect differences in calcification, imbedded needles, shot, etc, as with the *x*-rays, but deformities, displacements, and metallic bodies in the soft parts can be easily detected. Again, as Dr. Kahn states, splinters and similar substances, transparent to *x*-rays, may be detected by ordinary light, though, as to this, I have no personal experience.

Dr. Kahn cites Voltolini's and Heryng's application of light rays to the detection of diseases of the upper respiratory tract and it is possible that by the use of artificial light of great brilliancy, properly limited, diaphany may prove to be applicable to the chest and abdomen.

In several cases the differential diagnosis between ascites and different forms of abdominal cysts has been in doubt. Using any bright light and a tube of pasteboard, metal, etc., I have in these instances been able to exclude both solid tumors and cysts with more or less opaque contents, such as dermoids, multilocular ovarian cysts, with turbid contents, etc. In two instances the diagnosis has further been limited by auscultatory percussion, etc., to a definite collection of clear fluid, as opposed to fluid loose in the peritoneum. Practically, this means intraligamentous cyst, if the collection is large and of clear liquid. In one case I interrupted an operation for the injection of oxygen into the abdomen, for a supposed tuberculous peritonitis, showing that we had to deal with a cyst of clear contents, which must in all probability be parovarian, and this proved to be the case, materially altering the surgical procedure.

APPENDICULAR ABSCESS FOLLOWED BY PHLEBITIS OF THE EXTERNAL JUGULAR VEIN.

By JOHN H. RICHARDS, M.D.,

NEW YORK.

LECTURER IN GYNECOLOGY, NEW YORK POLYCLINIC; INSTRUCTOR IN CLINICAL PATHOLOGY, CORNELL MEDICAL COLLEGE.

The history of the case is as follows: A young woman aged twenty had a first attack of appendicitis about four years ago. She was treated by the usual medical methods after operation was refused. Since that time I have seen her in six acute attacks. At each time I advised operation, but after each recovery the patient found herself more easily able to make an excuse for the refusal of operation. On December 4, 1910, the last attack occurred. I saw her only once, for the mother telephoned me the next day that she was much better; that her bowels had moved well, and that her temperature was almost normal. The tenderness had not, however, left the appendicular region. About a week later they called me again, and at this time I found a large mass in the right lower abdomen. They consented to operation, so I sent the patient to St. Elizabeth's Hospital, where I operated, making the incision over the mass. I emptied the abscess, and removed a piece of greatly thickened omentum the size of my hand. Not finding the appendix easily, and being unwilling to break up the adhesions about the cecum, I did not remove the appendix and drained the abscess through the wound, sewing up the remainder of the incision. The drainage was free and on the third day following the operation the temperature was normal, and the bowels had moved well. No untoward symptoms developed until the eighth day, when the temperature rose to 105° and the pulse to 140. There was also a chill. The drainage was free and there were no signs of extending peritonitis. The drainage had a fecal odor, but not more so than at the time of the operation, and there was no fecal matter in the drainage. The patient complained of a stiff neck, with soreness in the left side of the neck. I did not pay much attention to this, thinking that she had muscular rheumatism. I called Dr. Bolling Lee in consultation. He advised opening up the wound a little and putting in a larger tube. He did not, however, think that there were signs of extending peritonitis, or other inflammation in the abdomen. On the following day the pain in the neck was much more severe, so I examined this region more closely and found the external jugular hard like a cord, and very painful to the touch. Just above the clavicle there was some perivascular inflammation. I did my best to immobilize the head, and gradually the inflammation disappeared. There was no tenderness at the last visit on January 15, 1911.

I report this case on account of the rarity of the complication. Phlebitis in the leg is common after such cases, but I have heard of none in the external jugular, nor have I been able to find any reports of this condition in the literature.

Medicopsychological Essay on the Causes and Remedies for Criminality Among Children.—H. Dauchez declares that only incorrigible children and those who have been caught repeatedly in crime should have meted out to them the extreme penalty of the law. Reformation is easily obtained under proper treatment if we can get the child to see his responsibility and exercise his will. Society, educators and parents are partly responsible for the fall of these children. The surroundings into which they get, the neglect of parents, the ideas inculcated by an irresponsible press, the inducements offered by wicked persons, all lessen the responsibility of the child, weak and immature, and often neglected by all those influences which should lead him upward. Still we should not forget that every normal child has a responsibility for his acts. Only among idiots, imbeciles, degenerates, those possessed by obsessions and hallucinations, kleptomaniacs and somnambulists, are acts committed for which they are not responsible. The hypothesis that children are born criminal cannot be sustained by scientific observation. In examining these children the physician should always give them the benefit of the possibility that they were led into crime by others, by the contagion of evil, and by the neglect of parents, allowing them to get into improper surroundings. True impulsion, like obsession, is rare in children.—*Archives de Médecine des Enfants.*

The Value of Medicopedagogical Treatment in the Care of Moral Anomalies.—Paul-Boncour says that there can be no doubt of the efficacy of the methods initiated by Seguin of treatment of mentally defective children. Every day the excellent results of this treatment are seen. But in cases of moral anomalies there is some question as to the value of committing such children to an institution with a certain hope of cure. The author believes that we shall get good results in those cases in which the moral anomaly is coincident with lack of mental development, but that in cases of moral anomalies in minds that are normal this treatment is liable to fail. Moral sentiments are not lacking in the mentally defective, they only require development and education; as their motor hyperexcitability is lessened and they become less unstable and impulsive their moral sentiments are increased, they learn to know good from evil, and to think about the results of their acts. There are congenital perversions of morality that do not result from intellectual insufficiency, and these children, while benefited by the regulation of habit, are not cured by it. They are true moral idiots. The creation of institutions for the treatment of young criminals is not going to be the solution of the problem of prevention of crime in all cases. Every case must be individualized and studied by itself.—*Le Progrès Médical.*

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THE ETIOLOGY OF ARTERIOSCLEROSIS.

THE knowledge of etiology of such a disease as arteriosclerosis is of more importance from the standpoint of prevention than of cure. Chronic degenerative changes in the walls of the arteries, when manifested by symptoms, are usually of a degree in which restitutio ad integrum can no longer be thought of, and the physician's task must be confined to symptomatic treatment and to the adaptation of the patient's mode of life to the limited function of the circulatory system. It was with the idea of preventive medicine that Max Herz, a well-known heart specialist of Vienna, sent out several hundred inquiries among Austrian physicians in the endeavor to learn the causes of arteriosclerosis, as understood by them. The letters were sent to the men who presumably were situated to study the causes of this condition, namely, the family physicians, who know more of the habits and mode of life of their patients than the specialists in large cities. The results of this method of investigation, reported in the *Wiener klinische Wochenschrift*, November 2, 1911, proved to be quite interesting, some 800 answers having been received by Herz. Of the causes named as productive of arteriosclerosis, without reference to the frequency of such causes, nervous and psychic influences were mentioned in 748 instances, age in 455, alcohol in 451, syphilis in 406, diseases of metabolism in 397, physical labor in 354, tobacco in 339, heredity in 267, food and drink in general in 103, infectious diseases in 104, tea and coffee in 61, and temperature changes in 53. The surprising thing in this table, according to Herz, is the number of answers mentioning nervous and psychic influences in the etiology of arteriosclerosis, for he says that specialists in the diseases of the heart and blood-vessels would not have given a similarly important place to these causes. Yet the opinions of the physicians addressed by Herz were in accord with the popular opinion of "premature age," that is, of arteriosclerosis, and moreover, were quite rational when the great importance of the psychic factor in bodily functions is remembered. The frequency of the other causes mentioned is much as can be expected from such an inquiry, the rôle of alcohol, tobacco, gout, syphilis, etc., in the etiology of arteriosclerosis having been unmistakably shown by clinical observations everywhere.

Herz's figures assume a somewhat different aspect when they are studied from the standpoint of importance of each cause of arteriosclerosis mentioned and not from the number of physicians naming it. Of course, the relative position in the scale of frequency gives this aspect of the etiology of arteriosclerosis, and the answers could be easily grouped into three divisions. Of them, psychic and nervous influences were mentioned first in 150 instances, physical work in 146, age in 138, alcohol in 133; in the second group, tobacco received 88 votes, syphilis 77, heredity 72; in the third group, food and drink in excess in 24 instances, metabolic diseases in 19, coffee and tea in 13, infectious diseases in 4, changes of temperature in 3 instances. Several causes received but scattering mention and cannot be discussed here.

This arrangement of answers is of still further interest, for it shows the great divergence of opinion among practical physicians regarding the importance of the various factors in the etiology of arteriosclerosis. It shows, too, that the active campaign against alcohol and against tobacco, with the usual statements about their importance in the causation of the degeneration of the arteries, has not led Austrian physicians to change their views on the subject. Indeed, many of them specifically remarked upon the rarity of arteriosclerosis in regions where men, women, and children were in the habit of using alcoholic beverages, or where the peasants never let their pipes out of their mouths. On the other hand, such a local arteriosclerotic condition as "intermittent claudication" was in every instance referred to the excessive use of tobacco.

We cannot here further consider Herz's interesting study of the etiology of arteriosclerosis, but it certainly should call forth similar inquiries in other countries, so that the causation of this widespread affection of modern life can be better understood. The pendulum has had its maximum swing in the direction of the study of infectious diseases, and it is time that diseases of metabolism and chronic degenerations, such as arteriosclerosis, recovered their proper place in medical research.

THE INFLUENCE OF IMMIGRATION UPON THE PREVALENCE OF TRACHOMA.

THE Treasury Department ruling that trachoma is a dangerous contagious disease makes deportation mandatory in the cases of all aliens who are found to be suffering from this affection at the time of their landing in this country. In view of the fact that there has been lately considerable agitation of this question, and that many men in the profession have stated that they believe the contagiousness has been greatly overestimated, and that some pressure has been brought to bear upon the federal authorities to reclassify the dangerous contagious diseases with a view of removing trachoma from the list, a consideration of the attitude toward this same question of the renowned eye specialists of other countries than our own is timely and worthy of note.

In the *Crónica Médico-Quirúrgica* of Havana for September, 1911, there is an article entitled, "New Considerations of Trachoma in Cuba," by

Dr. Juan Santos Fernandez, in which the author presents the results of his experience with this disease for the last thirty-six years. He still has under observation cases which he saw for the first time in 1875. In common with most ophthalmologists he recognizes two principal forms of the disease—the "granulosa" or follicular type, which is comparatively easy to cure, and the type which presents more deep-seated changes in the conjunctiva, and which he considers practically incurable. Although from the standpoint of scientific exactness, this last is the only form which merits the name of true trachoma, he nevertheless believes that the difficulties of diagnosis between the two types, together with the fact that the treatment is practically the same for both forms warrants us, in the interest of public hygiene, in retaining the old classification. Out of 36,242 eye affections which fell under his personal observations for the period of 28 years from 1875 to 1903 there were 1881 cases of trachoma, that is to say 3.25 per cent. of all his cases were classified under this heading. Since 1903 the percentage has gradually increased, until in his latest statistical compilation, embracing the period from 1908 to 1910 inclusive, 6.31 per cent. of all eye affections were trachoma. While making due allowance for the increasing tendency on his part to classify doubtful cases as trachoma in the interests of public hygiene, the author nevertheless believes that there has been an actual increase in the prevalence of this disease in Cuba, and he attributes this increase to the changed character of the immigration into that country. Of recent years this has been very much of the same nature and origin as the immigration into the United States and Canada. In common with those countries Cuba has taken legal steps to keep out the immigrant afflicted with trachoma, and, although the author does not believe that trachoma is to be classed as a highly contagious disease, he does believe that it is capable of being spread in this way, and that its dangers fully warrant the enforcement of laws prohibiting its entry into the country.

ACUTE DILATATION OF THE STOMACH IN PNEUMONIA.

Acute dilatation of the stomach is not an infrequent event after administration of an anesthetic in the course of an abdominal operation. The textbooks mention, too, that it sometimes occurs in acute infections or wasting disease, but give no more particulars. Among clinicians pneumonia is certainly seldom thought of as a disease in which this serious complication may occur, yet in the December issue of the *American Journal of the Medical Sciences* M. H. Fussell reports five such instances from his own practice, and collects six others from the literature. Early diagnosis of acute dilatation of the stomach is of such importance for the patient that Fussell does well to call attention to the symptoms and signs observed by him.

Vomiting was seen most frequently, the vomitus being very abundant, frequently of fecal odor. The act of vomiting was painless, much like that of general peritonitis. Pain, of course, depends upon the condition of the patient; in pneumonia delirium frequently masks this symptom. Abdominal distention occurs very quickly and is characteristic because of its situation in the epigastrium, causing an appearance of a "tumor" there; as the stomach increases in size, however, the distention becomes general. Splashing sounds can be usually obtained over the epigastric tumor and occasionally peristaltic waves may be noticed. Collapse is a most frequent and urgent symptom. The patient's face is anxious and pinched, his eyes are sunken, breathing is rapid, and the general appearance is that of approaching dissolution. Of course, conditions simulating this picture, such as general peritonitis, intestinal obstruction, acute hemorrhagic pancreatitis, etc., must be kept in mind and carefully differentiated.

Treatment should be prompt, for delay in this condition is dangerous. Treatment is very simple, consisting of the introduction of the stomach tube and lavage of the stomach, repeated as frequently as distention occurs. Collapse, in this instance, is not a contraindication to the use of the tube, for relief can be obtained only by mechanical evacuation of the dilated stomach. Turning the patient on the right side or on the face is frequently of much use, for it seems that in some instances constriction of the duodenum by the mesentery and its vessels may be the chief etiological or, at least, a contributory factor. Stimulation of the patient may, of course, be required, and all mouth feeding must be stopped for some time.

The severe toxemia of pneumonia frequently hides important symptoms from the attending physician. Fussell's paper is of real service in calling attention to one complication of pneumonia for which the physician must be constantly on his guard.

The Alleged Sanitary Menace of the Panama Canal.

A few years ago Sir Patrick Manson, lecturing on tropical diseases at the Cooper Medical College of California, voiced his fears that by means of the Panama Canal yellow fever might be conveyed to the teeming masses of tropical Asia, and other writers have followed in the footsteps of this great authority on tropical diseases. Events have, however, shown that his fears were groundless, and Juan Guiteras, writing in the Bulletin of the Cuban Department of Sanidad y Beneficencia for August, 1911, ridicules these fears for the seemingly very sufficient reason that yellow fever is wholly extinct even now in the Panama region. Furthermore, Guiteras suggests that the British acuteness of vision that sees the mote of yellow fever upon the Isthmus might, perhaps, be better employed in contemplating the beam that projects its shadow upon the map of India, in order that tropical Asia may cease to be a perennial pesthouse and stock for the distribution of cholera and plague throughout the world. The writer is of the opinion that the Indian authorities have not met the requirements of the situation with regard to grave problems of plague and cholera with all the energy

they demand. He contrasts the methods in vogue in this respect in the Philippines and those in India to the disadvantage of the British methods. He thinks there will be a greater danger to India and China from the propagation of yellow fever through equatorial Africa to the Indian Ocean than through the Panama Canal. The western coast of Africa may, indeed, become, in his opinion, the storehouse of yellow fever. Finally, considering the example set by the Americans on the Isthmus, and the lesson of Cuba, of Mexico, and of Rio Janeiro, the writer contends that the Panama Canal instead of being looked upon as a possible menace must be regarded as a guarantee against the spread of epidemic diseases by land and sea.

Progress in Skiagraphy.

One of the chief lines along which röntgenography is developing consists in the recognition of characteristic shapes assumed by the more indistinct types of shadow caused by special organic diseases. Designations of this sort are multiplying to such an extent as to suggest old and forgotten nomenclatures based on first hand observation before the introduction of diagnostic instruments of precision. Thus Grödel and Truepel in a recent address before the Aerztlicher Verein of Frankfurt (*Berliner klinische Wochenschrift,* October 30) enumerate various forms of "heart silhouette" as revealed by orthodiagraphy. There is the "spheroidal heart" of mitral insufficiency, the "standing ovoid" of mitral stenosis, and the "recumbent ovoid" of aortic valve disease. The pulmonary arch pouches out in persistent Botal's duct. Aortic aneurysms are readily recognized. Displacement of the heart from outside influence is easily apparent. The much deeper and more sharply defined shadows obtained by filling hollow and tubular organs with solutions of bismuth, silver, etc., show naturally an even greater variety and certain shadows are even characteristic of complicated conditions which could not be otherwise determined save by exploratory laparotomy, and perhaps not then. Thus a double perforating round ulcer of the stomach was actually made out by skiagraphy alone. Similar advances are reported in the skiagraphy of the urinary apparatus (pyelography).

Tuberculous Infection in Childhood.

That children are more susceptible to bovine tuberculosis than are adults is a conclusion that has been derived from a number of recent investigations into the type of bacillus in cases of human tuberculosis. This conclusion, however, has not remained unchallenged. In a careful examination of the bronchial and mesenteric glands of 400 children that had died from various causes, Rothe* found that, while 20 per cent. of the cases showed the presence of tuberculosis, in only one instance was the disease of bovine origin. Furthermore, it was shown that the portal of entry of tuberculosis in children in the vast majority of cases is the respiratory tract, just as in adults. The observations are therefore in agreement with the original contention made by the discoverer of the tubercle bacillus, namely, that the bovine organism is of little pathogenic significance so far as the human being is concerned. Nevertheless, the results of the investigations made by the British Tuberculosis Commission, and by Park in America, while they show the minor rôle of the bovine type of bacillus, at any rate indicate that this is responsible, particularly in children, for an appreciable percentage of tuberculous infections. In view of these discrepancies in the results of the German investigators on the one hand and the English and American workers on the other, the question of the importance of bovine infection for human beings cannot, as yet, be regarded as definitely settled.

*"Untersuchungen über tuberkulöse Infektion im Kindesalter. Veröffentlichungen den Robert Koch-Stiftung zur Bekämpfung der Tuberkulose. Heft. 2. Leipzig: Verlag von Georg Thieme, 1911.

News of the Week.

Homeopathic Practitioners of New York Urge Dr. Doty's Retention.—The Homeopathic Medical Society of the County of New York has added its testimony as to the value of the services of Dr. Alvah H. Doty as Health Officer of the Port of New York by passing resolutions expressing the confidence of its members in the efficiency of his administration of the office and in requesting Governor Dix to reappoint him as Health Officer of this Port.

Research Institutes and Universities.—In his annual report President Nicholas Murray Butler of Columbia University says it is a mistake to establish research institutions such as the Carnegie Institution of Washington and the Rockefeller Institute of New York separate from universities; they would do more effective work if they were connected with a university. Dr. Butler says the notion that research work cannot be successfully carried on together with teaching is a great mistake and points to the fact that during the past one hundred years nine out of every ten of the leading scientific investigators have been teachers and that some of the best and most original work was done by those overburdened with teaching.

Hospital Ships Needed for the Navy.—Surgeon-General Stokes has made the recommendation to the Navy Department that a properly equipped hospital ship be supplied for each of the Navy's fleets. He points out that no community of 14,000 persons ashore would be without a well-appointed hospital, and yet the 14,000 men and officers of the Atlantic fleet have only the inadequate facilities afforded by an old merchant steamer converted into a makeshift hospital. The department is asked to replace this old vessel by a properly equipped hospital boat.

Ban on Absinthe.—The Pure Food Board of the Department of Agriculture decided on December 14 that the importation of absinthe into the United States should be prohibited after January 1, 1912, under the Food and Drugs Act. The order awaits only the signature of the Secretary of Agriculture before becoming effective. This board also announces a series of new regulations aimed at the restriction of the importation of opium, morphine, and cocaine, which likewise awaits the signature of the Secretary of Agriculture. Every purchaser or receiver of drug imports will be required to fill out a declaration stating the amount and the proposed use of the drug.

New York's Birth Rate Increases.—The records of the Health Department show that there were 10,825 births in New York City during the month of November, an increase of 236 over November, 1910. There were only 5,620 deaths during the month, or a rate of 13.73 per 1,000 population.

This was lower than the average death rate for November since the formation of the Greater City in 1898. Child mortality decreased during this time from 37.05 to 28.97 deaths per 1,000 population, or 22 per cent.

Vaccination Against Typhoid in Torrington, Conn.—The State Board of Health in its Bulletin of December 15 gives the results of vaccination against typhoid fever resorted to during the recent epidemic in Torrington. About 400 persons were voluntarily vaccinated, and among these only one case developed. The disease developed after the second inoculation and ran a very mild and short course.

A Campaign Against the Common Towel.—At the meeting of the county health officers of the State of Connecticut in New Haven on December 7 it was decided to notify every hotelkeeper in the State before January 1 of the law passed by the last general assembly prohibiting the use of common towels in hotels and in other public places.

Antivivisectionists Begin New Campaign.—Some two hundred members of an organization, composed mostly of women and calling itself the Vivisection Investigation League, met on December 16 at the residence of Mrs. Stuyvesant Fish, where John Sherwin Crosby told them that they ought to insist on the passage of a bill that would establish a commission to see that vivisection was carried out under proper conditions. A benefit performance was recently given in one of the New York theaters to furnish funds for this campaign.

A Revolt Among the Eddyites.—The Christian Science Church of East Orange has declared its independencce of the mother church. The most generally interesting departure from the mother church is that medical treatment for children is advised and that members when called to treat certain cases of sickness will see that all the requirements of the State of New Jersey and the local Health Department will be complied with.

Exclude Opium from China.—A special despatch to the *Sun* from The Hague states that a resolution introduced by a Chinese delegate excluding all opium imports from China except such as were made under the Indo-Chinese agreement of May, 1911, was adopted by the Opium Congress on December 12.

Dr. John M. Baldy has been elected president and Dr. Nathan C. Schaeffer secretary of the new Pennsylvania Board of Medical Licensure.

Dr. Joseph S. Neff, who had been reappointed director of the Department of Health and Charities of the city of Philadelphia, has been presented with a gold chronometer watch by about one hundred prominent citizens as a testimonial of their appreciation of his official services.

Dr. Ralph W. Montelius of Mount Carmel has been appointed a member of the Board of Trustees of the new State Hospital of the Treverton, Shamokin, and Mount Carmel coal fields by Governor Tener.

Eleanor Colley has been admitted to fellowship in the Royal College of Surgeons of London. She is the first woman to be honored with that distinction.

Dr. John H. Huddleston, secretary of the New York Academy of Medicine, is recovering from a four weeks' illness with pneumonia.

Miss Catherine C. De Long, for many years superintendent of the Johns Hopkins Nurses' Home, has accepted the superintendency of the nurses' home at Bellevue Hospital, New York, while Mrs. T. Simpson, whose place Miss De Long will take, has been called to the Illinois Training School in Chicago.

Dr. Reynold Webb Wilcox has been elected president of the Society of Medical Jurisprudence.

Hospitals Object to Alcohol Fine.—Efforts are being made by hospital authorities in Baltimore, in common with hospital officials all over the country, to have the Treasury Department rescind the fines recently imposed for using alcohol and other drugs without paying internal revenue tax. The fines imposed on Baltimore hospitals amounted to more than $75,000, and the law, if imposed, will become a serious burden to the hospitals. It is said that, in the event of the Treasury Department refusing to have the fines rescinded, bills will introduced into Congress appropriating to each hospital an amount equivalent to the fine.

Lay Cornerstone for Cancer Hospital.—The ceremony of laying the cornerstone for a new St. Rose's Home for Cancer Incurables took place on December 16, Mgr. Joseph E. Mooney, representing Cardinal Farley, conducting the service. The new building is located at Jackson and Front streets; it will be five stories high, built of limestone and terra cotta brick with a steel frame, and will cost about $91,000. It will accommodate 100 patients and will be completed by June 1, 1912.

A New Hospital for Red Bank, N. J.—Mrs. Peter Fenelon Collier, the widow of the late publisher of *Collier's Weekly,* has given $60,000 for a new hospital to be built at Red Bank and to be named the Peter Fenelon Collier Memorial Hospital. The hospital will be non-sectarian and will have an ambulance service.

Lutherans to Build Hospital.—The St. Andrew's Hospital Association of Minneapolis has purchased property in that city for a site for a new hospital. The building planned will have accommodations for 100 patients and will cost about $100,000.

The New York Post-Graduate Medical School and Hospital announces that its new buildings and laboratory, which have just been completed, will be formally opened on the afternoon of January 11, 1912.

Many Red Cross Seals Sold.—The Committee on the Prevention of Tuberculosis announces that up to December 15, 700,000 Red Cross Christmas seals had been sold in New York City. These sales do not include those made by agents throughout the city. The sales of the seals from department stores and sub-postoffice stations are bringing in more than $150 daily.

The East New York Medical Society, an organization recently formed in the East New York section of Brooklyn, has elected the following officers: *Recording Secretary,* Dr. Joseph B. Kanter; *Corresponding Secretary,* Dr. H. Kalperin; *Treasurer,* Dr. G. Krimsky. Instead of a president, a temporary chairman is elected at each meeting. Meetings are held twice monthly, on the second and fourth Wednesday, the first being a business and the second a scientific session.

The Southern California Medical Association, which met in Los Angeles on December 7, elected the following officers: *President,* Dr. Charles C. Browning of Los Angeles; *Vice-President,* Dr. F. A. Mead of San Diego; *Secretary,* Dr. J. M. Clark of Santa Ana.

The Clinical Society of the New York Post-

Graduate Medical School and Hospital at its meeting on December 15 elected the following officers: *President,* Dr. Henry Dawson Furniss; *Vice-President,* Dr. W. J. MacNeal; *Secretary,* Dr. Ralph Tousey; *Treasurer,* Dr. Henry G. Bugbee.

Obituary Notes.—Dr. Conway B. Ackley of Denver, Col., a graduate of the Northwestern University Medical School, Chicago, died on December 6 at the age of 33.

Dr. Charles J. Burke, Assistant Registrar of Vital Statistics of the New York Health Department, died December 17 of pneumonia at his home in Mount Vernon after an illness of five days. He is survived by a widow and two children and two brothers, the Rev. Edward Burke, a professor at Holy Cross College, and Dr. William Burke of Middletown, N. Y.

Dr. Hugh Blake Williams died at his home in Chicago on December 4 at the age of 52 years. He was graduated from Tulane University, New Orleans, in 1884, and at the time of his death was a member of the faculty of Loyola University.

Dr. John T. H. Slayter, formerly a military surgeon in the Philippines, and later a resident of Helena, Mont., died at his home in Watertown, Mass., on December 1. He was graduated from the College of Physicians and Surgeons, New York.

Dr. J. Q. Wilbur died at the home of his daughter on December 4 at the age of 80 years. He was a surgeon on the Confederate side during the Civil War and had practised his profession for more than fifty years.

Dr. G. A. Ferdinand Reinhard died at his home in Baltimore on December 2 at the age of 80 years. He was born in Germany and graduated from the University of Marburg. He came to this country in 1865.

Dr. David Richard Fly of Amarillo, Tex., died at Forth Worth on November 29. He was born in 1865, graduated from the Kentucky School of Medicine, Louisville, in 1894, and at the time of his death was president of the State Medical Association.

Dr. Erion Erle Maddox, a graduate of Hahnemann Medical College, Chicago, in 1897, died at his home in Rockville, Ind., on December 1, after an illness of six months. He was 37 years of age.

Dr. Marion H. Barker of Forest Grove, Ore., died on November 29 at the age of 67.

Dr. Max V. Vander Horck died suddenly at his home in Minneapolis on December 5. He was born in 1862 and graduated from Jefferson Medical College, Philadelphia, in 1885. Since 1899 he has occupied the chair of genito-urinary diseases in the University of Minnesota.

Dr. George Henry McFarland of New York Ctiy died in Denver, where he went for his health some eighteen months ago, on December 4, at the age of 35 years. He was graduated from Princeton University and from the College of Physicians and Surgeons of Columbia University in 1902.

Dr. James W. Hannum died at his home in Ludlow, Mass., after a long illness on December 9. He was born in Williamsburg in 1851 and was graduated from the College of Physicians and Surgeons of Columbia University, New York, in 1877.

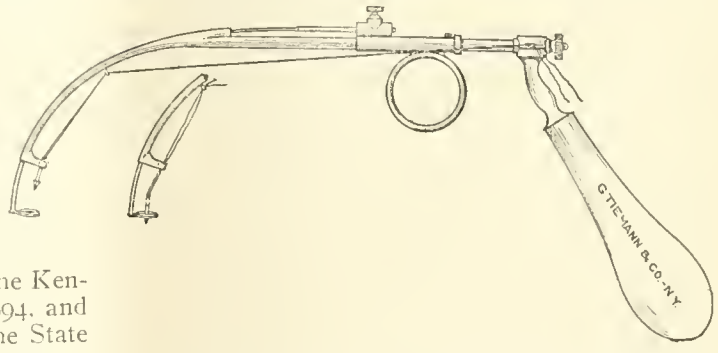
Dr. A. L. Harris, a retired physician of Birmingham, Ala., died at his home December 7, aged 74 years.

Correspondence.

THE EPIGLOTTIC SUTURE.

To the Editor of the Medical Record:

Sir:—In the Medical Record of December 9 there appears under the above title a description, with drawing, of an instrument by Dr. Cyril Horsford, shown at the International Laryngo-Rhinological Congress at Berlin, 1911. It is intended for passing a suture through the epiglottis by the aid of a needle threaded with a long piece of silk, thus holding the epiglottis against the root of the tongue. Dr. Horsford conceived his first idea July, 1906, and considers his latest instrument—called by him "The Epiglottis Suture Forceps No. 2"—the most efficient one. In his remarks he mentions, besides several authors trying to accomplish the same object, also the name of the writer, allowing the inference that he was acquainted with his work in this line. As the original article was not available, his opinion as to the instrument of the writer cannot be ascertained. The latter began to develop devices for this purpose as early as 1898, as shown by the records in the books of Tiemann & Co., the instrument makers, and had the instrument shown in the cut made by the same firm. It was demonstrated later at a meeting of the Laryngological Section of the New York Academy of Medicine March 27, 1907, and published in the *Laryngoscope* May, 1907.



It is not necessary to enter here at length into the action of the instrument, except to state that when the epiglottis has been pierced by the needle the latter is held fast by two spring-plates, thus enabling the whole instrument to be withdrawn, the epiglottis hanging on the thread.

It was called the "Self-Acting Epiglottis Lifter," and was the first instrument which allowed the needle, after having pierced the epiglottis, to be withdrawn without any other manipulation.

Comparing the two instruments, their similarity is evident, the principle being the same, only the size of the needle and the curve being different. But the greater curve of the writer's instrument appears to him more suitable, as the gentle curve of Horsford's instrument may make with a thick tongue, with a deeper situation of the epiglottis, etc., the introduction more difficult. Further deductions the writer leaves to the reader.

J. W. Gleitsmann, M.D.

616 Madison Avenue, New York.

Daily Cycle of Phosphoric Acid Elimination.—Sarvonat and Genty found that this elimination is greatest at night, and chiefly during its second half. This is true both of the healthy and of the tuberculous.—*Province Médicale.*

OUR LONDON LETTER.

(From Our Regular Correspondent.)

BUTLIN'S HUNTERIAN LECTURES ON CANCER—MEDICAL SOCIETY'S ADJOURNED DEBATE.

London, December 1, 1911.

Sir Henry Butlin devoted two Hunterian lectures on the 13th and 18th ult. at the Royal College of Surgeons to the parasite of cancer—*Unicellula cancri*. As long ago as 1905 he put forward the proposition that the cancer cell is an independent organism, like many a protozoon, living a life proper to itself, as a parasite "doing nothing to repay its host for the sustenance of which it robs him." Powell, White, and Hanser had previously spoken of the cancer cell as behaving like a parasite by taking on Adami's "habit of growth." But Sir Henry goes farther and regards it as a new organism, "a new creation of animal being—not a mere changed cell." This view he maintained in his Bradshaw lecture (1905) and now from further study of the material accumulated since he maintains it not only for carcinoma, but for every variety of malignant disease. He makes no pretense of possessing all the kinds of knowledge involved, is content to be a clinical pathologist who has spent years in studying cancer, and depends for his statements about the life history of the protozoa on the works of Calkins and Doflein. He endeavors, firstly, to show that there is no essential difference between cancer cells and certain other parasites in their relation to the host, and, secondly, that all the phenomena of cancer can be explained on this theory. He does not say cancer cells must be included in the protozoa but that they most resemble them in relation to the body of the host and perhaps in their mutual relations. He points out that some protozoa only live as parasites, others are never parasitic, and others can exist in either way. But, further, many are limited as to their hosts, many as to the particular organ or tissue of their special hosts. Some take an active part in their migration, others are passively carried by the blood and lymph. Many die when their host dies, many are killed by being invaded by bacteria—an important fact in reference to cancer cells. Many parasites produce toxins in regard to their hosts, *e.g.* the malaria parasite. The non-toxic may, however, injure and destroy cells or tissues which they invade or produce tumors or other effects dangerous or fatal to their hosts. It seems too that some parasites may exist in their hosts in a torpid condition and then after a long time become active. A patient who has had malaria and afterwards lived in a non-malarial region may be suddenly attacked afresh as if the person has become immune but for some reason has lost that immunity. The lecturer stated two other characters: if in a suitable host it does not reach a suitable part of the body in a reasonable time it dies; secondly, it breeds true. He then proceeded with a comparison between cancer cells and the parasitic protozoa, enumerating many resemblances. Clinically one of the most important is that they are never transformed into the tissues of the host, nor do they transform the body cells into cancer cells. Nor do carcinoma cells produce sarcoma. It is invariably the same variety which is reproduced. The points in which the cancer cell differs from parasitic protozoa were quoted by Sir Henry from a letter to him by Professor Calkins of Columbia University, New York, as (1) The cancer cell, so far as we know, undergoes no processes analogous to fertilization; (2) cannot live apart from the organism in which it grows; cannot be cultivated on artificial media as we cultivate amebæ and flagelates. As to these two points Sir Henry observes that already two workers in the Rockefeller Institute claim to have cultivated the cells and if in future no process analogous to fertilization be discovered the import of that process will have to be reconsidered.

Passing to the phenomena of cancer the first point was the tumor; it might be a trivial thickening at first but if examined microscopically would be seen to be composed of cancer cells massed together without law or order or, on the other hand, woven with wondrous skill like a natural tissue. There was also provision for maintenance, vessels, etc., forming a sort of scaffold or frame for the cells, the essential elements on which the tumor depends, for if they waste or die they are devoured by phagocytes. Perhaps this happens more often than is supposed. If they thrive they multiply and the tumor extends. In an organ like the breast it may become a large lump, in a limb, round the bone, enormous. The advance is seen in the destruction of the tissues, all of which may be replaced by cancer cells and their framework, but not all at the same pace or in the same manner. Sometimes the tumor atrophies from death of cells in the center but that is not cure as the margin may grow. All these changes are explicable if the cancer cell is an independent organism pursuing the same objects as parasitic protozoa—the maintenance of itself and reproduction. Another phenomenon, metastasis, might be due to the cells penetrating the interstices of the tissues or being carried by the blood or lymph. Metastasis is migration of the cells, precisely as with the protozoa the cells seek the places where they can live and multiply.

Six years ago the lecturer came to the conclusion, reluctantly, that the evidence in favor of the formation within the body was stronger than that of entrance from the outside. He said "reluctantly" as that implied logically a new species of living creatures being created in a way never previously imagined. But during those six years the evidence had grown stronger. There were the resemblances of the cancer cells to those of the tissues in which they start; of the secretions; of the degenerations; of the groupings; of the mode of reproduction of the normal and abnormal cells. These points may be regarded as traits of atavism but they explain some of the phenomena. Biologists and research workers are bent on finding why the cancer cell behaves so differently from the cells it is derived from. There is one and only one explanation, declared the lecturer. It has been endowed with the gift of life and become one independent creature. To borrow the figurative language of Scripture, the Creator has breathed into it the breath of life. Implant a normal cell—you cannot make it live. Implant a cancer cell—you cannot kill it. If it be a new creature in what class is it? It is nearest protozoa, but biologists will have none of it. So Sir Henry provides this, calling it *Unicella cancri*, to which as required qualifying terms may be added such as *squamosa*, *rotunda*, and so on.

The adjourned debate at the Medical Society of London was brought to a conclusion on November 20, all the speakers joining in full appreciation of Dr. Mott's opening paper. Dr. R. Russell agreed that in general paralysis mercurial treatment failed but in early tabes it should always be given in in-

unction or injection. Failure of the pupil to react to light proved organic disease; not so mere inequality of the pupils, which was not uncommon in neurasthenia. In cerebral syphilis headache was usually more severe than in neurasthenia though not invariably, for he had known a case of the latter in which trephining had been proposed. The cerebrospinal fluid was negative and the patient made a good recovery. He endorsed all that had been said of the Wassermann test. Ankle clonus and extensor plantar reflex were not of the value some have attributed to them in the diagnosis of brain cases from general paralysis.

Dr. Buzzard agreed that the pathological process underlying tabes was not a gross structural one like the inflammatory lesions of syphilis, but regarded it as an active intoxication rather than neuronic decay. The so-called parasyphilitic diseases were in reality the only syphilitic diseases of the nervous system, for cerebrospinal cases were those of its supporting and nutrient tissues. He believed that mercury rarely, if ever, did harm to tabetics; it was the most potent agent for arresting the progress of their disease. He was not so positive about general paralysis but he had thought it had benefited many cases, if only temporarily. The pains of tabes were often called rheumatic but the lightning pains were really unlike any others and so characteristic.

Mr. Fleming dealt fully with the diagnosis in relation to the clinical laboratory. He summed up the uses of the Wassermann reaction in nervous diseases as (1) to decide if the patient had syphilis (by the serum); (2) by the spinal fluid to detect parasyphilis (especially general paralysis); (3) to reassure a patient who had been cured.

Major French sent a written communication in which he stated that brain and spinal cases were rare in the army, which was due to the judicious use of mercury in primary infection and also to the fact that soldiers left the army as a rule under forty years of age. He had been told by Dr. Levy-Bing in Paris of five hundred injections of salvarsan without aborting the disease in any though the Wassermann often became negative but returned positive again within two months. The prevailing opinion was that mercury should be given for three years.

Mr. H. W. Bayly reported results of Wassermann tests at Queen Square hospital. With serum 70 per cent. gave a positive in tabes and 88 per cent. in general paralysis.

Dr. Wilfred Harris had hoped to have heard something about a special neurotoxin for tabes and general paralysis. There were instances of several persons infected from a single source. In one seven were infected from one blow-pipe and five of them developed tabes and general paralysis.

Lt.-Col. Scanlan, R.A.M.C., disagreed with the statements that syphilis was practically the cause of tabes. It was only one cause.

Dr. H. Corner thought something beyond syphilis was needed to produce general paralysis, of which the progressive character was very different from other syphilitic lesions.

Dr. Mott in reply answered several questions and thanked the speakers for their reception of his paper.

Dr. W. H. Hamer, whose work in the Public Health Department of the County Council has been conspicuous for many years, is to succeed Sir Shirley Murphy as Medical Officer of Health and School Medical Officer for the County of London.

A VISIT TO THE INTERNATIONALE HYGIENE AUSSTELLUNG, DRESDEN, 1911.

(From an Occasional Correspondent.)

The International Exhibition of Hygiene which was held at Dresden this year must be recognized by the future historian of the healing art as one of the most prominent and most significant landmarks of the progress of our knowledge of disease, and of the ways and means suitable to the prevention and cure of its manifold types and individual modifications. Also, as a convincing monumental proof of the parallel advances of each of the various auxiliary and ancillary sciences along their special lines of research and conquest, aided, perhaps, by the activity provided by the stimulus of national rivalry (even by that of racial prejudice); and, of recent years, made to converge so as to secure the meeting in a single cosmopolitan focus of all the available radiations of the common enlightenment of civilization. The central position of the beautiful and interesting Saxon metropolis was well suited to the most complete exhibition of the ways and means collectively devised and finally selected by struggling humanity in its attempts at self-preservation in presence of the germs of disease. Associations, racial and geographical, appeal strongly to the whole Anglo-American public on both sides of the Atlantic, and, indeed, all over the world. The focal settlement which represented the original germinal layer of the capital of Saxondom also furnished that of the body of the present Anglo-Saxon race. The group of Wendish "spores" which emerged from their forest homes to make a broad clearance for themselves on the right bank of the Elbe furnished the successful "culture colony" which was known in mediæval times as *Drjezdjenje* (home of the woodmen), a term which was filed down to our modern Dresden. The future beautiful and artistic metropolis grew from the absorption of the region, in the year 922, into the *Markgrafshaft*, which was founded under King Henry I. The wave of Germanic development soon overwhelmed the Wendish Altdresden, and the markgräfliche burg blossomed and bore its principal fruit on the left bank of the Elbe; but the union of the two sections into a single stadt was not completed till 1550. When the division of the Saxon territory between the brothers, Kurfürst Ernst and Herzog Albrecht, was carried out in 1485 Dresden fell to the latter and has been retained ever since as the residence of the representative of the line. How thoroughly and how patriotically both prince and citizen have discharged their duties, to themselves and to one another, is well displayed to the perceiving eye, even by a cursory glance at the beautiful, artistic, and hygienic city of which the picturesque position is so exquisitely emphasized by the graceful architecture of the splendid series of bridges which span the intersecting stream. It is more than doubtful whether any European city of the present day can be said to justify the eleven hundred years of its growth and development more satisfactorily than that which was so happily selected for the site of the greatest exhibition that the world has yet seen of the ways and means that modern art and science have devised for the preservation of health and the prevention of disease.

It seemed not a little remarkable to the casual scientific visitor to find that a display on which so much thought and labor, as well as time and space, had been skilfully as well as ungrudgingly ex-

pended was so slenderly advertised as to have attracted very little of the general public attention. The explanation offered by exhibitors was they did not appeal to the general public, but to medical men who must necessarily know of the existence of the exhibition. Still there can be little doubt that more advertising would have attracted a vastly greater number of visitors, and made the intelligent local business man and the touring foreigner far more appreciative of, as well as intimate with, the powers and objects of the embarrassing wealth of scientific mattrial displayed in the vast *Ausstellung*.

The site selected for the exhibition was worthy of this architecturally graceful capital. The entrance itself displayed architectural taste of distinctly Hellenistic type—a Propylæum-like series of gracefully pillared openings. After passing the turnstile the eye of the visitor was greeted by the display of guide books and catalogues that claimed his attention, and which, it must be added, were characterized by a thoroughness in detail of execution and in wealth of illustration which were entirely in keeping with the whole organization of the exhibition which they represented. The present writer was delighted to find that the *Historische Abteilung* (located in the *Steinpalast*) first claimed his attention. For he had long been an ardent champion of the view that what really sound and reliable knowledge we do possess of the healing art in the broadest and firmest sense is that derived from historic sources and empirical methods. The ways and means of clinical research, of physiological and pathological physics, do not yield themselves to the methods and rules of mathematical demonstration. And the best, indeed the only reliable, remedies even now utilizable at the bedside are those of which the efficacy was originally discovered by early empiricism. (Less than a decade will, pretty surely, decide whether "606" is destined to displace Hg permanently.) Also, the utter and wilful neglect to preserve a continuous traditional record of clinical experience and therapeutic efficacy must be held largely responsible for the unsatisfactory character of the progress of medicine, and surgery, and hygiene, and sanitation. The thinking observer was there, indeed, furnished with a vast fund of material for the repair of the spaces eroded by the tooth of time in the defences of a treacherous memory, and for supplying with the best existing furniture the untenanted spaces which occupy far too large a proportion of the byways of even the most cultured professional organ of mind. A series of forty-seven rooms displayed the recorded, as well as existing, methods and means of sanitation; from the prehistoric evidences of fossil remains and geological preservation down to the most complicated cosmetics and drainage, of dietetics and appliances for preservation from accident and safeguarding of life and limb, bathing, dress, housing, lighting, heating, diet, exercise, bedding, nursing, traveling, care of the sick, of the infirm, of children, the hygiene of the camp, and that of the prison, down through all the ages; all those were there represented by object lessons convincingly displayed. A forest of landmarks of the various stages of human research, and gradual or spasmodic enlightenment; monuments of epoch-making advances and discoveries; saddening evidences of devolution, of catastrophic oblivion, of unaccountable alteration of custom and of caprice in matters concerning human comfort and attempted conquest of Nature; of the vast influences of geographical, geological, and climatic conditions and environment on the development of the human body, mind, habits, tastes, and general disposition, temperament, and character all the way down from prehistoric antiquity to the closing year of the first decade of the twentieth century. Prehistoric, barbarian, Babylonian, Egyptian, Jewish, Mexican, and Peruvian hygienic codes of the most antique respective dates were shown in series with the Anglo-American, French, German, Italian, Spanish, Swiss, Danish, Scandinavin, Russian, Turkish, Persian, Arab, Hindu, Burmese, Chinese, Japanese, Korean, and Tibetian of the present day, and with those of less important nationalities and communities. And the whole mass of graduated, standardized and welded material was ground down to the finest "modern" edge at the terminal stage of the most recent scientific, "modern" hygiene, with its inoculation, and immunization, and asepsis, and statistics!

Then the contrasted methods of current civilizations were displayed in admirable serial detail in the *Ethnologische Unterabteilung*. The present prevailing sanitary conditions of the homes and public edifices of the Celestial Empire, which has so recently commenced to brush from its eyes the cobwebs of its lethargy of four thousand years, can be studied side by side with those of the Land of the Rising Sun, and the Land of the Morning Calm. The sanitation of dignified and despotic Islam, which will inevitably be made more familiar to the eyes and ears of Western communities in the very near future, is illustrated in an admirable series of plans and models, with, as in the case of every other department, copious and luminous descriptive literature. The picturesque, often very startling, contrasts of the racial, climatic, and temperamental conditions and characteristics of East and West, also of tropical, temperate, and polar, are here displayed so vividly as to impress the minds, and elicit the curiosity, of the most stolid and careless. The hunting methods of the natives of Central Africa are extensively illustrated, as are the piscatorial practices of the Eskimos and Icelanders in a neighboring compartment. The dress, weapons, and domestic sanitation of Turk and Hottentot, of Arab and Samoyed, of Sikh and Cingales, of Lama and Brahman, of the prudent and cultured (Zoroastrian) Parsee, and of the dreamy and self-annihilating Buddhist, of the Kamschatdale and the Patagonian, the Maori and the Filipino, and all the others, of every race and locality, have been collected under the roof of a single enclosure, and displayed to the eye of the inquiring visitor with an instructive skill, as well as luxury of illustrative wealth, which has never before been approached with the same success. It is no disparagement to the attainments of the cultured citizen of the great American Commonwealth to say that it is only members of the front rank of specialists who would not derive new knowledge and intellectual expansion from an examination of Raum III, which accounted for *Die Kulturwelt Altamerikas*, with its wealth of specimens and models demonstrative of the prehistoric hygiene of the American mound builders and cliff dwellers; as well as of the splendidly constructive civilizations of the gorgeous capital of Montezuma, and the more than modern agrarian socialism of Peru in the golden age of the monarchy of the Incas. How few people of the present day have any idea of the remote existence of the splendid *Kulturwelt* of the Antilles, of which the main traces and records have been almost

literally wiped off the face of the earth. And those who had been induced by the reverberations of the reports of progress of the Panama Canal to examine the map of Central America were further enlightened here by the evidences of the remarkable culture and civilization which characterized the ruined cities of Yucatan in the period of their glowing prosperity. And the Eden-like Mexico of the date of the advent of the rathless Spaniard, and the primitive hygiene and sanitation of the unsophisticated communities of the Polar Circle.

In the present state of medical knowledge and medical research it is inevitable that Saal 5, which dealt with *Infectionskrankheiten* should form one of the most attractive centers of interest, to both professional and lay visitors. And the demonstrative information provided in the compartments which accounted for *Mikrobiologie und Parasitolgie* and *Immunität und Schutzimpfung*, among others, surely merited the highest praise that a critical inquirer could well give, and were in themselves well worthy of a scientific pilgrimage from any part of the civilized world. Very appropriately, too, the next section was devoted to the allied *armamentarium* of the sanitary specialist, *Disinfektion;* and the collection of apparatus and appliances presented full opportunities for a liberal education in this department. Saal 6 introduced the visitor to the most up-to-date acquaintanceship with *Tropenhygiene;* the etiology, symptomatology, and geographical distribution of the tropical diseases of which recent literature has made us read and hear so much, and of the hygienic prevention and possible extermination of the same. Saal 7 exhibited treasures of *Statistik*. And I cannot leave this subject without specially calling attention to the more than Teutonic thoroughness with which the statistics of every department had been prepared. This could be seen at its acme of demonstrative efficacy in the volume, *Die Deutsche Arbeiter Versicherung, Blatt,* 1 of which displayed the genealogical tree, with its three great branching systems: *Kranken-Versicherung, Unfall-Versicherung*, and *Invaliden-Versicherung*. Indeed, one of the most impressive lessons necessarily conveyed to every thoughful visitor of the unique exhibition was the completeness of every imaginable detail of scientific precaution for the safeguarding of the health and life and limb of the working man of every variety of occupation, throughout every section of the German Empire. The most demonstrative, and wholly convincing, documentary evidence of the parental care with which every known scientific principle and every known mechanical invention is now continually utilized in the personal interest of the German artisan is, however, to be found in the truly monumental work: *Unfallverhütung und Betriebssicherheit: Denkshrift des Verbandes der Deutschen Berufsgenossenschaften aus Anlass des 25 jährigen Bestehens der gewerblicher Arbeitversicherung (Unfallverhütungstechnik. Dr. C. Schlesinger . . . eingeleitet durch eine Abhandlung Berufsgenossenschaftliche Unfallverhütung in ihrer Entwicklung von* 1885 *bis* 1910, *von Dr. K. Hartmann)*. The casual reader who scrutinizes the ponderous title of an imperial octavo of XX + 1231 pages, glistening throughout with illustrations and weighing nearly nine pounds avoirdupois, will be led to suppose that the text must be of unprecedented solidity if the expectations thus aroused by physical appearances are to be realized. And we can assure him that the scientific and logical qualities of the contents of this colossal landmark of the progress of technical means and methods, and technical literary record of the same, will successfully stand the severest test that the critical expert of the present day can fairly apply. And a perusal of its contents will carry conviction of the fact that the authorities of the great Teutonic Empire have anticipated every personal care of the safety of the working man that could well be formulated by any, even moderately sane, demagogue. That twenty-five years' record is surely a unique one in the annals of human progress and does honor not only to Germany, but to the collective human race. It is, perhaps, the most powerful document that the optimist of the present day can attach to his brief.

But the literature of the exhibition was quite as distinctive and as finished a feature as any other of its wonderful series of exhibits. Another conspicuous example of the truly Teutonic thoroughness with which its volumes and booklets were prepared was one drawn up for the instruction of inquirers interested in the comparative hygiene of the races of man. This wonderful octavo of 282 pages gives, in a series of chapters, an account of reproduction, variation, selection, mutation, inheritance of acquired characteristics, laws of heredity, Mendelism, degeneration, race hygiene, and Neomalthusianism, of which each is a model of the most concentrated and up-to-date presentation of the most advanced views and results of research in the respective departments. The whole is copiously and most instructively illustrated, and the perusal made the present writer somewhat bitterly conscious how manifold the brain wrackings and heart sinkings such a volume would have saved him if available in the bygone years of his own enthusiastic pursuit of knowledge under difficulties. The Schema, on page 49, for instance, which illustrates *Quanitative Variabilität nach Bastardierung bei Selbstbefruchtung*, shows at a single glance more of the results of the mysterious laws of Mendelism than can well be gathered from weeks of reading of some of the indescribable literature with which the subject has been so profusely decorated.

The department of *Bader und Kurorte, Mineralwasser*, which occupies Halle 13, was one of the most interesting, perhaps, to the average "practical" modern mind. For everything known regarding the meteorology, climatology, geology, and chemistry, as well as geography, of all the famous mineral springs and health resorts of the Continent were there concentrated. The hygiene of air and light are there illustrated in all their varied aspects.

What science and altruistic thought and consequent endeavor can effect in helping those who are necessarily unable to help themselves was well shown in the department which deals with hygiene of infancy and childhood, as it was in the case of the average artizan. And the possibilities of the utilization of applied science in the care of the young and the menial, so wretchedly neglected in the golden eras of the "good old days," are paralleled by those so fully displayed in Halle 54 of the *Ausstellung*, of which the exhibits illustrated the problems of *Ansiedlung und Wohnung*, that take thought for all the conditions of municipal and domestic sanitation, of town planning, and the hygiene of the city and of the private residence: of their geological and meteorological adaptations; their lighting and heating, and collective and indi-

vidual breathing spaces, as well as the strength of materials employed; combination of utility and esthetics in architecture, and quantity and purity of water supply.

Very appropriately was the display of the essentials of the hygiene of the healthy home followed by the deterrent demonstration of the ravages of alcoholism, which was exhaustively illustrated by models, photographs, engravings, pathological specimens (macroscopic and microscopic), substantial volumes, and scattered leaflets. *Rassenhygiene* came next in order, and constituted for the scientific physician and philosophic inquirer one of the most interesting sections of the whole exhibition.

Halle 56 exhibited the mysteries of nutrition, illustrating exhaustively the constituents of human aliment in all the climes and centuries; the basic principles of choice, devices for obtaining, and stratagems, scientific and primitive, for preserving; the scientific basis of choice: the methods of nutritional adaptation and control devised by experimental, traditional, and physiological cookery, and the aids to digestion, absorption, and assimilation which have been devised and transmitted to posterity by the students of this science. Even the votaries of the shot gun and the fishing rod were charmed to find their specialty so understandingly dealt with in the *Sportabteilung* of this wondrous revelation of the needs and resources of gastronomy.

But these could not be overlooked in a display which takes corresponding thought for the possibilities of odontology and gynecology; of muscular training, of railway and ocean travel; of the special aspects and necessities of military, marine, and colonial hygiene; of the local requirements of the tropical and arctic zones; of the sanitary and hygienic demands of the prison as well as those of the playground, of the theater, and even of the military parade.

The most important section of the great exhibition, from the viewpoint of the "man in the street," was the *Populäre Abteilung* which was included in Halle 18; for there the cream of the scientific hygiene of the period, flavored with the sedimentary precipitation of the preceding ages, was to be found skimmed, pasteurized, and predigested for the intellectual nutrition of every intelligent visitor. Another impressive item of evidence of the earnest and philanthropic zeal with which the aims and methods of the German scientist are being made to anticipate those of the Socialist.

From this bewildering treasury of the temple of the Goddess of Public Health, the writer of this article at last tore himself, after a final visit to the department of *Geschlechtskrankheiten* (Saal 9 of the *Steinpalast*), in which every stage of every type and aspect of venereal disease was to be found illustrated by flesh-tinted wax models and gypsum casts, and a library, inclusive of every notable volume dealing with the subject that has appeared since the opening of the present century, with endless addenda of picture and pamphlet, all of which were continuously scrutinized by visitors of both sexes, of most ages, and of all civilized countries. Surely we are traveling fast in this age of the marconigram and the aeroplane! And with this parting reflection, I reluctantly leave the consideration of this demonstrative record of the most effective conquests of humanity at its philanthropic best.

Progress of Medical Science.

Boston Medical and Surgical Journal.

December 7, 1911.

The Massachusetts Medical Society and the Public Service. A. T. Cabot.
Why and When to Operate on Fractures. F. J. Cotton.
Management of the Heart in Certain Cases of Interest to the General Practitioner. E. G. Cutler.
Facts Regarding the Relation of Tuberculosis of the Kidney to Tuberculosis of the Lungs. J. H. Cunningham.
The Diagnosis and Treatment of Inguinal Bubo. W. P. Coues.

Massachusetts Medical Society.—A. T. Cabot reviews the activities undertaken by this society in the public service during the one hundred and thirty years since its foundation.

Operative Treatment of Fractures.—F. J. Cotton presents the following summary of the recent fractures which require operative treatment: (1) Operable as a routine: compound fractures, fractures complicated with vessel lesions, fractures complicated with nerve lesions, patella fractures, fracture luxations, especially at the shoulder, acromioclavicular luxations. (2) Usually operable after trial of milder methods: carpal injuries, fractures of the femoral shaft. (3) Often operable: humerus fractures, leg fractures. (4) Operable on occasion: all fractures in fit patients that promise a bad result as they lie, even though they have had good care, provided that one can show good reasons for expecting a better result from operation.

Management of the Heart.—E. G. Cutler states that in pneumonia he does not favor the use of alcohol. In this disease morphine in small doses is a true heart tonic. Other drugs of value for this purpose are small doses of atropine and strychnine in alternation, and digitalis. In typhoid fever alcohol may be of service toward the end of the fastigium. In acute bronchitis in very young children and in the aged the heart is often better supported by spirits of nitrous ether and ammonia than by digitalis. In mitral insufficiency loss of compensation calls for tincture of digitalis in doses of twenty drops three times daily until the symptoms have disappeared, which will usually be in about three days. In aortic insufficiency, when dilatation gets to be in excess of hypertrophy, digitalis is to be used in doses of five drops three times a day, increasing the dose one drop daily until the proper results are attained, or until twenty drops three times a day are reached. An intermittent pulse in this condition contraindicates digitalis. The pulmonary symptoms of mitral stenosis are best met by the use of strophanthus and caffeine.

Renal and Pulmonary Tuberculosis.—J. H. Cunningham concludes from his experiments that it is not common, at least, for the tubercle bacillus to be eliminated through the kidney without affecting the organ in patients suffering from pulmonary tuberculosis. It does seem, however, that it is not the common thing for the bacillus to be eliminated in the urine in the usual form of phthisis. It may be that the bacillus is eliminated through the kidney in the miliary form of the disease in some instances, as there were 66 cases of miliary tuberculosis, while only 46 showed miliary tuberculosis of the kidney. Further evidence in favor of the passage of the tubercle bacillus through the kidney in the miliary form of the disease is found in five cases in which there was tuberculosis of the liver and spleen without evidence of the disease in the kidney.

Inguinal Bubo.—W. P. Coues from a study of the records of the past two years at the Boston Dispensary concludes that the cases in which the glands have been dissected out have not done as well as the cases in which the abscess was opened and drained, and the glands were left for future defense of the individual.

New York Medical Journal.

December 9, 1911.

A Consideration of Nitrous Oxide with Oxygen as an Anesthetic in General Surgery, with a Review of the More Recent Literature. H. W. Kearney.
The Diagnostic Value of Lateral Thoracic Glands. M. Manges.
The Reduction of Cancer Mortality. G. M. Wainwright.
Cancer Statistics and Their Meaning. I. S. Wile.
The Training of Nursery Maids in the United States. C. G. Kerley.
Modernized Views of Rabies. L. D. Frescoln.
Nomenclature of Poliomyelitis (Acute Infectious Paralysis). B. M. Randolph.
Various Infections and Inflammations in Children Treated with Tincture of Iodine. E. M. Sill.
Treatment of Persistent Occipitoposterior Position. S. Robbinovitz.

Nitrous-Oxide-Oxygen Anesthesia.—H. W. Kearney states that the backwardness of the profession in adopting this anesthetic may be accounted for to some extent by its inconvenience and expense as compared with ether and chloroform, as well as by the unfamiliarity with its action and advantages. Another reason is the prejudice which exists among physicians, in the minds of many of whom there arises at the mere mention of nitrous oxide a mental picture of the unpleasant appearance of the dentist's patient who has taken pure gas. Furthermore, there is misapprehension as to the cause and significance of nitrous oxide cyanosis. It is not appreciated that this symptom is due simply to lack of oxygen in the blood and that it is transient, not dangerous, and rapidly disappears on addition of oxygen, which is at instant command should emergencies arise. There is no specific poison to depress the circulatory center, which is a factor in the use of the other anesthetics which produce a cyanosis not due to respiratory obstruction and which really are dangerous.

Lateral Thoracic Glands.—M. Manges states that the presence of enlarged lateral thoracic glands, while by no means frequent, may at times be of value in giving early warning of the possibility of tuberculous infection of the lung. They may also be of value in corroborating the possibility of malignant disease of the lung, pleura, the posterior mediastinum, breast, or other more distant organs. As the mere presence of the glands does not necessarily denote malignant or tuberculous disease, but may only be a hyperplasia, excision and microscopical examination are the only means of positive proof of their carcinomatous or tuberculous nature. Their presence, in women, especially, should always require a careful search for suppuration in the adjacent or remote tissues, lest an erroneous diagnosis of carcinoma of the breast be made.

Reduction of Cancer Mortality.—J. M. Wainwright notes the following axioms: (1) Cancer in the first stage is always a purely local disease and permanently curable by complete removal. (2) Cancer nearly always indicates its presence while it is in this first local curable stage. (3) In about four-fifths of the cases cancer begins in regions which are accessible to surgery. (4) Most of the cancer deaths are due to delay.

Cancer Statistics.—I. S. Wile presents figures which show that cancer is increasing throughout the world and in all decades of life. The causes of this increase are still obscure.

Training of Nursery Maids.—C. G. Kerley describes the system of training nursery maids which was first undertaken in the United States in 1889 by the Babies' Hospital of New York. At the present time this system is conducted in over twenty different institutions in this country.

Rabies.—L. D. Frescoln reports a series of nine cases of this disease and reviews the present-day knowledge as to its nature and treatment.

Nomenclature of Poliomyelitis.—B. M. Randolph notes that the names under which poliomyelitis has been known are open to objection, because of their inaccuracy, incompleteness, or cumbrousness. He suggests the term acute infectious paralysis as best meeting the needs of the situation.

Tincture of Iodine in the Local Treatment of Infections.—E. M. Sill reports good results from the use of tincture of iodine applied locally in the treatment of various infections of the throat and nose in children.

Persistent Occipitoposterior Position.—S. Robbinovitz describes Jewett's method of treating a case of persistent occipitoposterior position.

Journal of the American Medical Association.

December 9, 1911.

Special Considerations in Surgical Treatment of the Female Pelvic Organs. H. P. Newman.
Uterovaginal Prolapse in Elderly Women. The Operation of Choice. G. B. Somers.
Tuberculin as a Diagnostic and Therapeutic Agent in the Treatment of Conjunctivitis Eczematosa. Based on the Study of Fifty Cases. R. J. Tivnen.
The Exciting Causes, Means of Prevention, and Early Treatment of Cancer of the Uterus. A. E. Benjamin.
The Problem of Conserving the American Medicinal Mineral Springs. H. G. Klotz.
A Case of Splenic Anemia with Unusual Features. H. L. Hull.
Pruritus Ani: the Probable Cause and an Outline of Treatment. A Preliminary Report Based on Results of Original Research. D. H. Murray.

Surgery of Female Pelvic Organs.—By H. P. Newman. (See MEDICAL RECORD, July 8, 1911, page 104.)

Uterovaginal Prolapse.—By G. B. Somers. (See MEDICAL RECORD, July 8, 1911, page 104.)

Tuberculin in the Diagnosis and Treatment of Conjunctivitis.—R. J. Tivnen states that the tuberculous nature of conjunctivitis eczematosa is established and this opinion is supported by the results obtained in the cases subjected to tuberculin, both diagnostically and therapeutically, and by the majority of the other essential clinical findings. The cutaneous diagnostic tuberculin test is a dependable method for the recognition of tuberculosis, particularly in children. Tuberculin as a therapeutic agent in the treatment of conjunctivitis eczematosa is an agent of distinct and special value and should be employed faithfully and judiciously in this class of cases.

Cancer of the Uterus.—By A. E. Benjamin. (See MEDICAL RECORD, July 1, 1911, page 50.)

American Mineral Springs.—H. G. Klotz regrets the neglect which American medicinal mineral springs have received, and attributes this largely to the commercializing and monopolizing methods which have so far existed. Physicians recommend patients only half-heartedly to American resorts. To do away with this neglect it will be necessary to establish the American springs on the standard of the European ones, subject to rules similar to those prevailing abroad. This would mean independence of the springs themselves from the hotels, all possible precautions against contamination and adulteration and the restriction of the use of the waters under supervision of competent and independent physicians. Attractive and healthful surroundings should be provided, together with arrangements for patients to take the cure at an expense graded according to their means. The author doubts whether all this can be brought about without State control.

Splenic Anemia.—H. L. Hull reports a case of splenic anemia differing from the ordinary run of cases. The special features to which he calls attention are the absence of hemmorrhages from the mucous membrane, which are so common in the reported cases, and the presence on several occasions of an excess of eosinophiles, of myelocytes, and nucleated red cells. The irregular and elevated course of the temperature for a period of at least three months and continuing until the time of the report is also noted as unusual.

Pruritus Ani.—D. H. Murray states that pruritus ani is caused by an infection by or associated with one of the streptococci group, which may be the primary, secondary, or aggravating cause; if it is the secondary or aggravating cause, the primary cause may already have passed away. Whether the infection occurs because the opsonins for streptococci are low or whether the opsonins are les-

sened because of the invading organism is not yet known. If the opsonic index is low for *B. coli*, or any other bacteria, there may be a complicating infection. A vaccine made from a culture of the offending germ offers the best hope of cure. Whether any local treatment for temporary relief, while awaiting the results of vaccine treatment, is advisable or not must be left to the judgment of the attending surgeon. Some of the cases detailed by the author were treated only with autogenous vaccine, and the results were as satisfactory as in those cases receiving topical treatment as well.

The Lancet.

December 2, 1911.

Unicellula Cancri: The Parasite of Cancer. Sir Henry Butlin.
The First and Last Kink in Chronic Intestinal Stasis. W. Arbuthnot Lane.
The Association of Hysteria with Malingering: The Phylogenetic Aspect of Hysteria as Pathological Exaggeration (or Disorder) of Tertiary (Nervous) Sex Characters. F. Parkes Weber.
Acute Osteomyelitis of the Vertebral Column: F. Fraser and T. McPherson.
Lead Bullet Removed from Metatarsal Bone after 23 Years. J. B. Christopherson.
The Lymphatics of the Scrotum in Relation to the Radical Operation for Scrotal Epithelioma. J. Morley.
The Systolic Blood Pressure in Diseases of the Heart. V. T. Korke
The Specific Gravity of the Blood from the Clinical Aspect. Athole Ross.

Unicellula Cancri: the Parasite of Cancer.—By Sir Henry Butlin. (See MEDICAL RECORD, December 16, 1911, page 1229.)

First and Last Kink in Chronic Intestinal Stasis.—W. Arbuthnot Lane calls attention particularly to the last kink which affects the large bowel where it crosses the brim of the true pelvis on the left side. This kink develops very early in life, and is caused by a band which develops before the erect posture is assumed, in order to resist the tendency to the downward displacement of the large bowel into the true pelvis. As this new band or mesentery contracts and becomes a definite ligament quite distinct from the normal mesentery, on whose outer aspect it exists, it fixes the large bowel securely at this level. It is so arranged as to oppose the backward passage of feces from the pelvic colon upward into the large bowel. The author believes that no one can become affected by tuberculous disease or by rheumatoid arthritis unless the resisting power to the entry of microorganisms has been depreciated by autointoxication consequent on the presence of chronic intestinal stasis. So in these conditions, and especially in the case of progressive tuberculous affections of joints, he employs no local operative procedure on the affected joint other than rest, and, if necessary, aspiration of any fluid material that does not readily become absorbed after the operation, but proceeds to free the patient of the autointoxication by putting the ileum into the pelvic colon below the kink at the brim of the pelvis. In these cases the results of the operation have been most successful. There is also an obstruction that frequently develops in the end of the ileum and which plays an important part in the production of the group of symptoms which are regarded by the physician as evidence of indigestion. Besides the minor effects of the damming back of contents resulting from this kink there is the development of the duodenojejunal kink, the dilatation and inflammation of the duodenum and of the stomach, which not infrequently leads to the development of cancer of the latter organ, and the infection of the biliary and pancreatic ducts, followed by the formation of gallstones, pancreatitis, and by cancer of the biliary ducts and pancreas.

Association of Hysteria with Malingering.—F. Parkes Weber presents phylogenetic conception of hysteria as an exaggeration or disorder of the so-called tertiary sex characters. By the latter is meant those characters dependent on the nervous system, including both characters of instinct and characters of mind. The functional paralyses and hysterical pains and paresthesiæ may be regarded as exaggerations of the slight ailments to which the "weaker sex" are supposed to be naturally more liable and which call for the sympathetic interest of the protecting males. The hysterical disorders of the circulatory system may be regarded as representing an exaggeration of the normal vasomotor excitability of young females. Hysterical deception or mythomania is an exaggeration of an instinct that has developed in the female from prehistoric times, and that has enabled her to protect herself from the stronger males, and to attract her partner.

Acute Osteomyelitis of the Spine.—F. Fraser and T. McPherson report a case of this condition in a boy nine years of age. The subjects of the disease are generally under the age of twenty, though occasionally it occurs in persons over middle age. In most instances there is a history of some slight injury such as a blow or strain, and sometimes some local cause of sepsis, such as furuncle, is present. The onset is accompanied by high fever and very severe local pain. Rigidity and tenderness of the spine are usually present, sometimes retraction of the head, or opisthotonos. It is said that jarring of the spine does not produce pain as it does in Pott's disease. Abdominal pain and distention are nearly always present, and may lead to much difficulty in distinguishing the disease from some acute abdominal condition. The nerve symptoms, when fully developed, are those of pressure on the cord at the segment affected—viz., root-pains with paralysis, and exaggerated reflexes below. Unless early relief is given by operation, these cases rapidly go from bad to worse, and are characterized by continued high fever, rigors, splenic enlargement, formation of abscesses in situations varying according to the locality of the lesion, visceral complications, and pyemia. The disease has been mistaken for typhoid fever, pneumonia, peritonitis, and acute spinal meningitis. The outlook is always grave, the mortality being estimated by different writers at from 60 to 75 per cent. The only possible chance of recovery must lie in early diagnosis and prompt operation.

Bullet Removed from Metatarsal Bone.—J. P. Christopherson reports the case of the removal of a lead bullet from a metatarsal bone of a man, twenty-three years after the bullet had been received in battle. During this time it had caused no trouble.

Lymphatics of the Scrotum.—J. Morley states that, in consequence of the very free anastomosis between the superficial lymphatic network of opposite sides, it is obvious that whenever an epithelioma approaches the median raphe the glands of both groins must be removed. In view of the termination of the medial trunks from the anterior surface in the superoexternal glands, it is important that, when a growth approaches the anterior raphe, the subcutaneous tissue and glands should be removed to within one inch of the anterior superior spine of the ilium.

Systolic Blood Pressure in Diseases of the Heart.—V. T. Korke concludes that in valvular lesions of the heart (with or without complications), due to rheumatic endocarditis and other causes, the blood pressure is found to be normal or above normal. In aortic incompetence complicated with anginal attacks, the blood pressure is subnormal during the interparoxysmal periods. The low systolic blood pressure is, perhaps, an expression of the failing power of the myocardium. The high blood pressure observed in some of the cases of simple uncomplicated rheumatic valvular lesions is a physiological compensation, though it may be mistaken for a pathological state. The blood pressure in cardiac muscle failure is normal or well above normal, as the result of various pathological causes which produce a change in the myocardium.

Specific Gravity of the Blood.—A. Ross notes that usually the specific gravity of the blood has not much importance from the clinical point of view. One is, however, impressed by the important part which the determination of the specific gravity of the blood plays in the treatment of cholera. That a parallelism exists between the specific gravity of the blood and the hemoglobin content of the red cells is well known, and both Hammerschlag and Schmaltz have constructed tables showing the percentage of hemoglobin corresponding to different degrees of specific gravity.

British Medical Journal.

December 2, 1911.

Unicellula Cancri: the Parasite of Cancer. II.—The Parasite of Cancer. Sir Henry Butlin.
Some Manifestations of Pituitary Growths. J. J. Evans.
The Vaccine Treatment of Gonococcal Arthritis. Ralph Stockman.
The Albumin Reaction in Tuberculous Sputum. N. Raw.
Epidemic Paralysis (Polioencephalomyelitis). S. C. Hounsfield.
The Ophthalmo-Reaction in the Diagnosis of Chronic Pulmonary Tuberculosis. A. S. MacNalty.
On the Use of the Sphygmooscillometer of Pachon. H. L. Watson-Wemyss.

Unicellula Cancri: the Parasite of Cancer.—By Sir Henry Butlin. (See MEDICAL RECORD, December 16, 1911, page 1229.)

Pituitary Growths.—J. J. Evans classifies the manifestations of pituitary neoplasms under the two groups, hyperpituitarism and hypopituitarism. These two classes of symptoms may be due to prevented action of the hyphophysis or to prevented action and interaction of several ductless glands (polyglandular syndrome). Under hyperpituitarism are included acromegaly and gigantism. According to Brissaud and Meige "gigantism is the acromegaly of the growing period; acromegaly is the gigantism of the period of completed development; acromegalogigantism is the result of a process common to gigantism and to acromegaly, overlapping from the period of adolescence into that of maturity." The essential feature in each case is exaggerated growth of the skeletal tissues, hard and soft, especially of the extremities, associated with alteration in the physiognomy and in the contour of the skull. The symptoms which may be ascribed to the mechanical effects of the intracranial tumor may include headache, vomiting, vertigo, tinnitus, polyuria, or glycosuria, convulsive or apoplectic attacks, and certain psychoses, including delirium, delusions, perverted or excessive appetite, and melancholia. Mental and physical torpor are often complained of, and whereas the pulse may be accelerated the temperature of the body is lowered. The localizing symptoms of the intracranial growth are mainly exhibited in connection with the eyes and the ocular muscles. Impairment of vision in one or both eyes is often complained of, and in cystic or vascular tumors, which may vary in size or burst, the vision may be definitely variable. The impairment of sight may be associated with the appearance of a blue haze over everything. As a general rule the impairment of sight slowly but surely progresses to almost complete blindness. Alterations in the visual fields are a striking feature of pituitary enlargements, and bitemporal hemianopia is the most common and most characteristic of these alterations. Under hypopituitarism are included the cases of retarded skeletal development designated ateliosis, and also certain cases of excessive development of fat with mental and physical torpor, and disturbance of sexual functions—dystrophia adiposogenitalis of Fröhlich.

Vaccine Treatment of Gonococcal Arthritis.—R. Stockman has found that the administration of dead gonococci exerts no curative influence in gonococcal arthritis.

The Albumin Reaction in Pulmonary Tuberculosis.—N. Raw states that in the large majority of cases of pulmonary tuberculosis the reaction is easily obtained, and out of the ninety cases which were diagnosed as pulmonary tuberculosis, seventy-five gave a positive reaction and fifteen gave a negative reaction. The latter fifteen cases presented the physical signs of tuberculosis with a positive von Pirquet reaction, but in nine of the cases no tubercle bacilli could be obtained. In six cases, however, tubercle bacilli were found ,and this test was found to be negative in these cases. In the cases of penumonia in the acute stage the reaction is generally positive, although in one case the reaction was not present until the sputum became rusty. In chronic bronchitis and emphysema the reaction is usually negative. In the two cases of tuberculous joints the reaction was negative, and in one case of neurasthenia without lung symptoms the reaction was positive.

Poliomyelitis.—S. C. Hounsfield reports an epidemic of this disease in Howmarket. He believes that it is possible for flies to carry infection from sewage, refuse, or other dirt to food and thence to the alimentary canal, or, at any rate, for infective dust to enter through the same channel.

Ophthalmo-Reaction in Pulmonary Tuberculosis.—A. S. MacNalty states that a negative reaction does not exclude tuberculosis, while a positive one may be present in cases in which no evidence of tuberculosis exists. The reaction appears, however, to be an adjunct to the other methods of diagnosis of tuberculosis.

Pachon's Sphygmooscillometer.—H. L. Watson-Wemyss notes that the readings obtained with this instrument are considerably higher than those obtained with the Riva-Rocci apparatus.

Berliner klinische Wochenschrift.

November 27, 1911.

Abortive Treatment of Syphilis with Salvarsan.—Géronne and Gutmann give their experience with attempts to abort syphilis with 606. It must be borne in mind that, with few exceptions, excision of the chancre has not proved abortive—even when the sclerosis is in its earliest formative period. The attempts to abort with Hg also succeed in but a limited number of cases and even the association of the two abortive resources does not give us any degree of confidence in the outcome. The authors have injected salvarsan into subjects comprising two classes; first, with positive Wassermann already accompanying the chancre and, second, with negative reaction present, the positive phase being as yet undeveloped. The results were brilliant. Of 20 cases of the latter type the Wassermann reaction failed to appear in 17. In 17 cases in which the positive reaction was already present 8 never developed symptoms. The observation periods were long, abundantly sufficient for the development of constitutional symptoms—one year being the shortest. Thus at least twenty-five people were prevented from having syphilis and the author adds a few others entitled to be regarded as aborted cases. Now that the preventive power of salvarsan has been shown, it behooves the practitioner to examine the first suspicious erosion following coitus for spirochetes; for it will no longer answer to await a Wassermann reaction. This employment of salvarsan may be associated with the inunction of mercurial ointment, especially in Wassermann-positive cases. The greater the age of the sclerosis the more urgent the indication for Hg. One thing only we cannot state, to wit, that gummata and metasyphilitic affections will never develop.

Demonstration of the Diphtheria Toxin in the Blood.—Aaser has experimented with Römer's diphtheritic cutaneous reaction and is able to vary the claims put forth. In a boy aged 10 years with toxic diphtheria who had received 8,000 units of antitoxin an attempt was made to determine whether or not the toxin was still circulating in the blood. Some of the latter, withdrawn before the in-

jection, was centrifuged and its serum injected into the skin of guinea-pigs in various quantities. The characteristic necrosis developed. Some 60 hours after antitoxin injection the test was repeated and proved negative throughout. In a second case, which ended fatally, it was correspondingly shown that neutralization had not occured. The first onset had yielded but more toxin was evidently formed in the throat and the subsequent attempt at neutralization proved incomplete.

Streptomycosis Oris Febrilis.—Fleischer believes that he has discovered a new disease to which he gives the preceding name. He has been seeing cases of it for the past 10 years. His first observation was as follows. A young woman was taken with a chill, fever, and slight angina, profuse perspiration—like that of acute rheumatism—being a special feature. There were no further symptoms, but it was learned later that a delicate false membrane was present on the gums. This seemed to be the source of the constitutional reaction. Similar cases seen afterward gave opportunity for bacteriological tests, and the membrane was found to contain streptococci. In some cases the fauces, soft palate, and uvula presented the delicate membrane, which occurred, for the most part, in discrete points which, while closely aggregated, showed little tendency to coalesce. The constitutional symptoms showed no uniformity. The formation in some cases was associated with acute articular rheumatism; in others meningeal irritation; in others perityphlitis, etc. The condition may, of course, be regarded as an expression of streptococcus sepsis of unusual mildness and unusual origin. In ordinary sepsis of oral origin we should expect to find deep ulcers, but here there was no formation whatever of pus.

Münchener medizinische Wochenschrift.

November 14, 21, and 28.

Action of the Peristaltic Hormone on the Blood Pressure.—Dittler and Mohr have made the discovery that in sufficient dosage the peristaltic hormone of Zuelzer causes marked lowering of blood pressure, and believe that this activity may throw some light on the nature of hormone action. They were engaged at the time in a research as to whether or not the peristaltic action was a truly specific one, it having been asserted that various other organ extracts possess this property. Experiments with Witte's peptone show that some connection may exist between lowering of blood pressure and peristalsis. In animal experiments every intravenous injection of the hormone is followed at once by lowering of blood pressure, while the peristaltic action may not be in evidence for some hours. The connection is therefore not clear. In the human subject a therapeutic injection of the hormone caused collapse, the blood pressure falling from 125 to 100. The patient had developed paralytic ileus after pneumonia and nephritis.

The Fever Which Follows Intravenous Injections.—Heubner refers to the pyrogenetic power of physiological saline solution when injected intravenously as a specific activity of the sodium ion. The same result does not occur when Ringer's solution is used. Another cause of temperature rise has been found in the mere presence in the blood of minute colloid particles of any substance foreign to the organism. This has been studied recently in brass molders, who are subject to a malaria-like affection due to the inhalation of minute particles of zinc, which appear to be able to enter the blood from the air cells. It has therefore been thought possible that malarial fever itself may have a mechanically operating cause in the gymnospores. The author has shown the reality of this corpuscular fever by injecting fine suspensions of paraffin. The fever which follows intravenous injections in general may hence be sometimes accounted for without invoking the presence of an anaphylatoxin.

Spontaneous Recovery in Sinus Thrombosis.—Haymann has shown that spontaneous cure of sinus thrombosis may occur and the inference is that this termination is by no means rare. Even with the primary otitis media persistent, the obliterated sinus may not only undergo resolution but may in a sense again become permeable to blood. The author claims to have for the first time secured complete histological proof of these salutary changes. Replying to the possible criticism that the sinus thrombosis may not have been otogenous he states that he successfully excluded all other possible causes. The exclusion was not only made clinically but to a large extent on anatomical grounds as well.

Recovery in a Case of Rhinogenous Abscess in the Frontal Lobe.—Butzengeiger reports a case of this termination, which should make the total number twelve. Patient was a boy aged twelve. The source of infection was an abscess of the frontal sinus, which, although it broke externally, nevertheless managed to infect the brain. In this respect the case appears to be unique. There was also a double relapse during the management of the case, requiring in all three separate operations. In both interventions for relapse it was necessary to remove notably large portions of prolapsed brain substance, it having been shown that such removal is not prejudicial to the subsequent perfect functioning of the brain. The very unfavorable prognosis in these abscesses in comparison with that of otogenous abscesses appears to be due chiefly to imperfect facilities for drainage.

Intermittent Limp.—Erb has continued to collect statistics of this complaint with especial reference to the smoking habits of victims. All but 7 per cent. used tobacco and nearly 80 per cent. were heavy smokers. Other causal factors seem much less significant—syphilis, alcoholism and exposure to cold. It is also evident that tobacco does not exert its pernicious influence in the same direction. In addition to various types of arteriosclerosis it seems to cause a severe vasomotor neurosis and thus is able to produce two difficult types of the limp. Erb was able to show that an acute arteritis of the femoral disappeared when tobacco was discontinued

Salvarsan in Minute Doses.—Waelsch concludes that salvarsan may produce its favorable results in very small doses. This was noted especially in syphilis of the labyrinth. These small doses were able also to cause local Herkheimer's reaction. The author was able to give salvarsan in severe syphilis of the type said by authorities to furnish contraindications.

Salvarsan Cure of Syphilitic Pancreatis and Acute Atrophy of the Liver.—Umber publishes a remarkable cure of a case of visceral syphilis. The lesion of the pancreas set up diabetes. The case was instructive throughout. The male subject contracted syphilis at the age of 47. He had always been healthy and during a year of syphilis had received proper treatment. He was attacked by gastric symptoms and jaundice and passed fatty matter by the bowel. The pancreas enlarged and diabetes set in. The fatty stools continued and so much fat was present that it formed a thick layer which solidified on cooling. Soon after salvarsan was exhibited the pancreatic symptoms showed improvement and patient made a good recovery. In regard to the acute yellow atrophy diagnosticated, the diagnosis seems to have been made from the character of the stools to the uterus and physical signs and also from the not infrequent occurrence of this lesion in syphilis (the author has personal knowledge of fifty cases). The urinary picture was not that of hepatic insufficiency. The author made autopsies in a number of cases of acute yellow atrophy in syphilitics and also treated cases which recovered. One can only explain the incomplete picture of acute yellow atrophy in his case by the prompt curative effects of the salvarsan before the hepatic parenchyma broke down.

Objective Findings in Spastic Constipation.—Singer and Holzknecht gave cylsmata of bolus alba in aqueous suspension and took radiograms of the colon of normal subjects and victims of spastic obstipation. They conclude that in the great majority of cases there is a high degree of hypertonicity of the distal segment of the colon, while the proximal segment shows for the most part normal tonus and increased motility. The boundary between the two segments is not always in the same locality, but always lies somewhere between the right flexure and end of the descending colon. At the sigmoidorectal angle is to be found a spastic intermission. Its demonstration is not always successful.

Scarlatinal Nephritis. — Leede believes that the scarlatinal virus injures every kidney to a greater or less extent, just as it injures the liver (urobilinuria) and skin (Rumpel-Leede phenomenon). This injury does not, in itself, constitute a nephritis or lead to one. This develops when a predisposition exists—a congenital or familial insufficiency; so that we may see nephritis at times with scarlatina of the mildest course. The Wassermann reaction is twice as often positive in scarlatinal nephritis as in scarlatina without nephritis; and it is possible that in general a positive Wassermann means that parenchymatous organs are involved. Nephritis *per se* has no significance in the reaction. There is a possibility of remote ancestral syphilis in scarlatinal nephritis, but this has not in any sense been shown to exist.

Reciprocal Relations Between Filling, Form, and Site of the Stomach and Colon.—Groedel and Schenck find that when the stomach is distended the position of the colon is but little altered. An exception is found in the left flexure, which is sometimes forced backward. The stomach is influenced by any sort of colonic distention—gas, feces, enema. If a segment of the transverse colon is distended the stomach is indented or displaced laterally. If the entire transverse colon is distended the stomach is elevated. In ptosis or pathological distention of either organ these effects are enhanced. It is, therefore, necessary to evacuate the colon before a pyloroptosis or gastrectasia can be made visible. A thorough emptying of the colon should, however, be practised in all *x*-ray work.

Fatal Familial Angioneurotic Edema.—Harbitz reports a case of fatal edema of the face and throat. The patient's father and grandfather had died the same death. Enough cases of this familial type are on record to make a total of 170, of which number no less than 36 ended fatally through edema of the larynx. In addition to the three fatal cases in patient's family other members were sufferers from the affection. The trait inherited appears to be an anaphylaxis to some unknown substance. Aside from the ordinary angioneurotic edema of the face and extremities it may be expressed as effusion into a joint. And in addition to these massive types there are, no doubt, other recurrent affections due to slight, almost imperceptible, edema.

Deutsche medizinische Wochenschrift.

November 30, 1911.

Crossed Toe Reflex.—Maas states that in healthy subjects we see, as a rule, no crossed toe reflex. We do see at times bilateral crossed reflex in subjects with heightened reflex irritability. The unilateral crossed reflex, if no organic nerve disease is present, is seen only in subjects with advanced tuberculosis. When the latter can be excluded, the unilateral reflex indicates organic changes in the central motor neuron, and is also found in cases with Babinski reflex absent. The symptom, therefore, presents clinical interest. It is often the earliest evidence of beginning spastic paralysis. The autho, who was the first to call attention to this reflex, refers to the sluggish dorsal flexion of the great toe of a paralyzed limb which follows irritating the sole of the sound foot.

Venesection and Saline Infusion in Dermatological Practice.—Simon believes that one has a valuable addition to the armament of the dermatologist in Bruck's method. It is especially indicated in the toxicodermatoses, which include forms of chronic pruritus, urticaria, furunculosis, pemphigus—in short, wherever we have reason to suspect the presence of a toxin in the blood. Pruritus is often the essential cause of eczema. The author has thus far treated in this manner 100 cases of skin disease. The most brilliant results were obtained in generalized pruritus, and the next best in urticaria. The author withdraws from 100 to 200 c.cm. of blood and injects through the same cannula from 300 to 700 c.cm. of 0.9 per cent. sterile saline infusion.

The Nucleoproteid of the Thyroid Colloid in the Treatment of Graves' Disease. — Tschikste of Prof. Kocher's clinic has employed this substance hypodermically for typical Basedow's disease, obtaining it from large colloidal goiters removed at the Berne surgical clinic. The substance was prepared according to Oswald's method. It seemed to exhibit a distinct antagonism to the thyreotoxic principle, and so modified the metabolism as to increase the retention of N and phosphoric acid. It naturally contains phosphorus itself, perhaps as an indispensable constituent of an enzyme substratum. The phosphoriferous substance of the thyroid may be said to antagonize the iodine-containing component—the former heightens unduly while the latter retards undue metabolism.

Salvarsan in Japan.—Dohi and Tanaka of Tokio, who have tested salvarsan for a year, are enthusiasts in regard to the abortive and curative power of the latter in syphilis. They even pronounce it to be an ideal remedy. They use chiefly the intravenous method and administer Hg in combination. They state, on the other hand, that salvarsan should be given at certain intervals during months and perhaps years, just as we give mercury. When given for other diseases of whatever kind, the results were negative, save in cases amenable to ordinary arsenical medication.

Diagnostic Significance of Diastase Excretion in the Urine.—Marino notes that the urinary excretion of diastase is diminished in diabetes mellitus, nephritis, and in pernicious and secondary anemia. It is increased in diseases of the pancreas.—*Deutsches Archiv für klinische Medizin.*

Qualifications for Military Aviators.—A special aviation corps has been established in the Italian army, and in connection with it Dr. M. Falchi, one of the military surgeons attached to the school of aviation, has published the following as his idea of the qualifications of a military aviator: Officers are best between twenty-five and thirty-five years of age. Under twenty-five men are apt to attempt senseless and foolhardy flying; over thirty-five, they may be more susceptible to the dangers of aviation, because of the beginning senile changes in circulatory and respiratory apparatus. They should be light in weight, weighing about 165 pounds; they should not, however, train excessively for the mere purpose of reducing weight. They must be of robust physique, should not be alcoholic, and have no inherited tendency toward epilepsy or other nervous disorders. They must have excellent vision and hearing, and no disease of circulatory or respiratory organs. They should be of even character, being neither emotional nor hesitating. They should be prompt in obedience as well as in command. They should, finally, be intelligent persons.—*Giornale di Medicina Militare.*

Insurance Medicine.

THE MORTALITY OF ALCOHOL.

The effect of alcohol upon the mortality figures of a community has become a threadbare subject in speeches and writings of prohibition and anti-prohibition publicists; yet, indeed, few subjects of sociological nature deserve more frequent mention. The trouble has been, however, that such mention was rarely, if ever, founded upon a real study of the subject, but was simply an indicator of the intolerance of the defenders of one or the other political or social creed. There is no question that for men interested in insurance matters the problem of the "mortality of alcohol" is one of foremost rank, and it is to their credit that one of the best scientific studies* of the matter that has yet appeared comes from one of their number. Mr. Phelps, who has published several statistical studies in similar fields, has taken the total adult mortality in the United States for the year 1908 as the groundwork of his study. His method was simple: he obtained from the medical directors of three large insurance companies their estimate of the percentage of male deaths between the ages of twenty and seventy-four, directly or indirectly due to alcohol, for each of the 106 causes of death listed in the census statistics for that year. From these estimates he figured the probable mortality from the same cause among females, and then made an approximation of the probable total mortality ot the entire country, including the so-called non-registration area, from which direct mortality statistics were not available. In defense of this method of study it may be granted that medical directors of insurance companies have much broader knowledge of the general subject of mortality and the effect upon it of certain specific causes than even the busiest and most prominent of practitioners of medicine. Moreover, the differences in the individual estimates were such as to lead to the reasonable conclusion that a poll of, say, several hundred physicians would not have resulted in a nearer *average* approximation than the average obtained from the poll of these three physicians only.

Before stating the results of Mr. Phelps's study it may be of interest to name the various estimates previously made. Mr. G. Archibald Reid, in his work "Alcoholism—A Study in Heredity" places the mortality from the use of alcohol in the United Kingdom at "about one-sixth of the total mortality from all causes," or at more than 16 per cent.! The Rev. Christian F. Reisner, in a speech from the pulpit of the Grace Methodist Episcopal Church of New York, is reported to have said that "liquor kills 440 out of every 1,000 every year," or 44 per cent.! Without going into minute analysis of the methods used by Mr. Phelps, we may state that to a disinterested mind his use of the statistical tables seems to be quite correct from the standpoint both of statistical science and of every-day methods of arriving at approximations. His final result is that 66,000 deaths was the mortality directly or indirectly due to alcohol in this country during the year 1908, or in percentage figures, about 5 per cent. of the total mortality from all causes at all ages during that year.

*The Mortality of Alcohol: A Statistical Approximation of the Deaths in the United States in Which Alcohol May Figure as a Causative or Contributory Factor. By Edward Bunnell Phelps, M.A., F.S.S. New York: Thrift Publishing Company, 1911.

This, then, forms the first scientifically constructed approximation of the effect of alcohol upon mortality in this country. To the rabid prohibitionist it will, of course, appear to be too low a figure. To the medical man, however, this figure is large enough to prove the appalling waste of life due to the excessive use of alcohol. Moreover, no mere mortality statistics can give an idea of the economic waste due to loss of working time and of productive efficiency among habitual and heavy drinkers, and the daily scenes in our courts of law, both low and high, are but an indication of the number of crippled and unhappy lives which result from the abuse of alcohol.

The whole subject of alcohol is a borderland problem between medicine and sociology. As a medical man the physician must defend the use of alcohol in medicine, as a drug and as a vehicle in the preparation and administration of drugs; he must work at the task of preventing or curing chronic alcoholism by better methods than are at present available. As a citizen the physician must lend the weight of his word and vote to such measures as will diminish the rôle of alcohol as a solace to the poverty stricken and the downtrodden. Mr. Phelps's study gives the firm foundation by which any future results of such activities may be studied and measured.

A Suggested Readjustment of Our Views on Heart Examination for Life Insurance.—By Chas. F. Martin, M.D., Montreal, Canada. (See page 1259.)

Medical Section of the American Life Convention.—The midyear meeting of this society will be held at San Antonio, Texas, on Wednesday, Thursday, and Friday, February 28 and 29, and March 1, 1911. The headquarters of the section will be at the St. Anthony Hotel, where rooms can be had at prices ranging from $1.50 per day for a single room to $4.00 per day for a double room with bath, for two persons; these prices are for rooms which do not look onto the park. It is suggested that those who expect to attend the meeting secure their hotel accommodations in advance. The railroad fare from Chicago is $48.50 for the round trip; from St. Louis, $37.50. The chairman of the Medical Section is Dr. Ambrose Talbot of Kansas City, Mo., the secretary is Dr. F. L. B. Jenney, Marquette Building, Chicago.

Pleurisy and Insurance.—Bourgy says that pleurisies the cause of which can be well established, or such as are simply complications occurring in the course of other acute diseases, in a word, non-tuberculous pleurisies, are not contraindications to acceptance for insurance, if the following conditions have been fulfilled: The cure is complete, as corroborated by freedom from signs and symptoms for a sufficient period of time. There has remained no sequel of the disease that may embarrass other organs in performing their functions. The same attitude should be adopted in regard to empyema, even though surgical interference has been necessary for effecting a cure. So-called essential or primary pleurisy, on the other hand, must be looked upon from a different point of view. It is usually due to tuberculosis, and the applicant giving a history of such pleurisy must be thoroughly examined with regard to any manifestations of tuberculosis. Personal and family antecedents, age, sex, surroundings at home, profession, habits, date of the pleurisy, etc., are the points which must be fully considered. Whenever there is any doubt it is always a good general rule to recommend postponing the acceptance of the applicant for a fairly long period of time.—*Third International Congress of Insurance Physicians.*

Book Reviews.

The Healer. By Robert Herrick, Author of "Together." Price $1.35. New York: The Macmillan Company, 1911.

In this age of muck-raking the physician has come in for his share of calumny. Neither the crude gibes nor the venomed discourses of the popular writer have succeeded is presenting a caricature of the medical man as huge and unreal as that portrayed in this novel. The author has chosen as his hero Eric Holden, a morphine-habitué, who retires to the Canadian woods to conquer his ailment by dint of hard work in the practice of medicine among the lumbermen. Although skilled in the modern development of his art, he gains repute by employing the methods of psychotherapy. He scorns the business foresight of the city physician, nevertheless this does not prevent him ultimately from amassing wealth in the primitive spa which he establishes about his "Healing Spring." He marries a city girl whose life he has saved by a timely surgical operation; but in a few years he deserts her and his children. A combination of savage and savant, his taciturnity, bad manners, and indifference to his nearest kin, make him a most repulsive type, whose sharp features are not relieved by his better traits. The author is apparently pained at the thought that certain practitioners make more than a bare living, for he preaches the doctrine of nationalizing the practice of medicine. He would have physicians in the employ of the State, which would also conduct all medical research. If this volume is meant to be a criticism of modern medical practice, it is neither clever nor enlightening. Its dialogue is insipid, its allusions are commonplace, and its realism is indelicate. The book, unfortunately, will be widely read.

The Fourth Physician. A Christmas Story. By Montgomery Pickett. Illustrated by Gordon Stevenson. Price, $1.00. Chicago: A. C. McClurg & Co., 1911.

This is a short and well-written story about doctors. There is Dr. Frederick, the kind-hearted country practitioner, who would miss his Thanksgiving dinner to respond to a charity-call ten miles over the Virginia roads, in a pouring rain. Another type is Dr. Warren, the self-sacrificing worker in the slums. Then there is the hero of the story, Dr. Livingston Shepherd, the fashionable and exclusive children's specialist, whose engagement to announce his important "discovery" before the medical society makes him deaf to the pleading of his sweetheart to save the life of a dying child by the administration of his "specific." His heart is finally melted by the spirit of Christmas, but too late to save the child. Repentant, he bows before the venerable negro servant as the latter delivers these inspired words: "Can't you see, sah? *You* wah de patient, an' you am *healed!* You is made *de one great* discov'ry!" The devotion to science and to a rich clientèle had sclerosed the instinct of humanity which finally softened under the ministration of the fourth Physician.

Diseases of the Skin. By James H. Sequeira, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng. Physician to the Skin Department and Lecturer on Dermatology at the London Hospital, in charge of the Queen Alexandra Department for Light Treatment; Hon. Secretary of the Dermatological Section, Royal Society of Medicine; Editor of the *British Journal of Dermatology*, formerly Physician to the North-Eastern (now the Queen's) Hospital for Children. With 44 plates in color and 179 other illustrations. Price $8.00. Philadelphia: P. Blakiston's Son & Co., 1911.

Sequeria has designed his book chiefly for the use of the student or the general practitioner and has certainly succeeded in producing a very valuable volume. He has utilized all modern developments in dermatology to classify skin diseases on etiological lines and, where this is impossible, on morphological characters. The book, therefore, reads more like "systematized knowledge" which a textbook should be, than a dictionary of names and lesions which many dermatological books resemble. Historical references and weary discussions of debated points have been omitted and more room has therefore been gained for discussion of diagnosis and treatment. The latter topic has been brought up to date and very valuable information is given by the author in regard to the use and effect of *x*-rays, radium, light, Ehrlich's salvarsan, etc., etc. This information, too, is founded on the author's personal experiences, as shown by the numerous photographs presented, and not upon a mere compilation of literary data.

The distinguishing value of the book, however, lies in the number and the character of the illustrations. The usual photographs are marked by distinctness and objectiveness, that are often sadly lacking in pictures of skin lesions; most remarkable, however, are the plates which represent photographs in three colors taken directly from patients by Dr. Arnold Moritz. We have never seen better pictures of this character, and can only express the hope that future editions of the book may be enriched by more plates of similar type.

The work is heartily recommended to the American reader as the best of the recently issued textbooks on diseases of the skin.

A Manual of Clinical Diagnosis. By Means of Laboratory Methods, for Students, Hospital Physicians, and Practitioners. By Charles E. Simon, B.A., M.D., Professor of Clinical Pathology and Experimental Medicine at the College of Physicians and Surgeons; Pathologist to the Union Protestant Infirmary and the Hospital for the Women of Maryland; Clinical Pathologist to the Mercy Hospital of Baltimore, Md. Seventh Edition, enlarged and thoroughly revised. Illustrated with 168 engravings and 25 plates. Price $5.00. Philadelphia and New York: Lea and Febiger, 1911.

Dr. Simon's Clinical Diagnosis has been very well known and highly appreciated by medical students and members of the medical profession for a considerable period of time. The present work has been brought up to date and besides inaugurated a new departure. In the first instance a great deal of material which had been included in the former editions has been eliminated, the author deeming it superfluous matter or rather matter out of place. This decrease of material rendered it possible for Dr. Simon to so draw up the plan of the book that the exposition of laboratory methods of diagnosis and the applications thereof have been arranged systematically instead of as heretofore following in somewhat promiscuous order. In order to accomplish this, almost half of the volume has been devoted to the laboratory diagnosis of each disease arranged under its name in alphabetical sequence, thus making the comparison of a case with the diagnostic picture of the disease a comparatively easy task. The present arrangement is: Part I, representing the technical portion, and Part II, the new part, the clinical portion. By judicious elimination, revision, and condensation the contents of the previous volume have been so shaped that while containing all essential information they occupy rather more than half the present edition. It was chiefly to aid the student to interpret correctly laboratory findings that Part II was written, and there is little doubt that it will accomplish this object to a great extent. The Wassermann reaction is described in detail and carefully. The chapter on the blood presents clearly the most modern morphological, biological, and chemical methods. The entire work is well arranged, excellently bound and printed and the illustrations are exactly what illustrations should be—they sufficiently elucidate the text. The book can be conscientiously recommended as, perhaps, the best work in its particular line in print.

Die Wohlfahrtseinrichtungen für Kinder in grossen Städten. Von Geh. Med.-Rat Prof. Dr. A. Baginsky. Nach einem am 6 December, 1910, in der Gesellshaft für öffentliche gesundheitspflege zu Berlin gehaltenen Vortrage. Price 0.40 mark. Berlin: August Hirschwald, 1911.

The supervision of the dependent child is the theme of this address. The most important aspect of this question, as emphasized by the author, is that the public or private efforts to care for the dependent child should not be relaxed before the latter reaches the age of puberty. The eminent German pediatrist discusses this subject with the authority of one who has had ample opportunity to observe the best organized systems of child-welfare work in the world.

Veröffentlichungen der Robert Kochstiftung für Bekämpfung der Tuberkulose. Herausgegeben von Vorstand der Stiftung. Heft 1. Uber den Typus der Tuberkelbazillen in Auswurf der Phthisiker. Von Stabarzt Dr. B. Thällers. Price 3 marks. Leipzig: Verlag von Georg Thieme, 1911.

This is the first number of the publications of the Robert Koch Foundation. It presents the results of an investigation of the sputum of 51 subjects of pulmonary tuberculosis, as to the type of bacillus, bovine or human, contained in the sputum. In no instance was the bovine bacillus isolated. The author concludes that this investigation supports the original contention of Koch, namely, that bovine tuberculosis plays an insignificant rôle so far as human susceptibility to it is concerned.

A Reference Handbook of Obstetric Nursing. By W. Reynolds Wilson, M.D., Visiting Physician to the Philadelphia Lying-in Charity; Member of the American Pediatric Society, etc. Illustrated. Second edition. Thoroughly revised. Price $1.25. Philadelphia and London: W. B. Saunders Company, 1911.

This little book will compare favorably with other and larger works on the same subject. In it the nurse will find all that she is likely to require; and the book is not burdened with non-essentials. This new edition contains a new chapter, on Precipitate Labor. In the preface the author says that "the Appendix has been amplified"; but we are unable to find any appendix to the book.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. September 1, 1911. Price $6.00 per annum. Philadelphia and New York: Lea and Febiger.

In this number of Progressive Medicine will be found the annual review of Diseases of the Thorax and Its Viscera, including the Heart, Lungs, and Blood-Vessels; Dermatology and Syphilis; Obstetrics; and Diseases of the Nervous System. The first articles, by Ewart, will prove of value to all physicians. In Gottheil's contribution will be found a very useful summary of the literature of arsenobenzol (606). The third and fourth sections by Davis and Spiller will be read with interest and profit by all who wish to keep up to date with Obstetrics and Nervous Diseases.

The Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P., Consulting Physician to Guy's Hospital; Consulting Physician to the Evelina Hospital for Sick Children; Physician to the Seamen's Hospital, Greenwich; Examiner in Medicine at the University of Cambridge and at the Queen's University, Belfast; late Examiner in Medicine at the Universities of London, of Durham, and of Birmingham, and to the Royal College of Physicians, London. Ninth Edition. Price $6.00. New York: The Macmillan Co., 1911.

That this work has gone through nine editions renders it superfluous to expatiate on its worth. The present issue has been very thoroughly revised and several new subjects introduced. With regard to the transmission of infectious diseases, the author appears to believe in the theory that fomites may convey infection in certain diseases, for he advises disinfection of whatever clothes, books, room, or furniture the sick person may contaminate. With regard to the paratyphoid infections the account given, as in most books on medicine, is somewhat scant, especially as to the differentiation of these infections, a question which is arousing considerable interest at the present time. The author is inclined to hold with Dr. Sambon's views with respect to the origin of pellagra. In referring to acute poliomyelitis it is stated that the inflammatory change is almost entirely limited to the anterior cornua of gray matter, a view which is not generally held nowadays. Nor is any reference made to the discovery by Flexner of the infective virus. On the whole the work is comprehensive and up to date. The type is rather diminutive and apt to be trying to the eyes. There are sixty-seven illustrations.

The Diseases of Infancy and Childhood. For the use of Students and Practitioners of Medicine. By L. Emmett Holt, M.D., Sc.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons, Columbia University, New York; Attending Physician to the Babies' and Foundling Hospitals, New York; Corresponding Member of the Gesellschaft für Innere Medizin und Kinderheilkunde, Vienna, and Honorary Member of the Gesellschaft für Kinderheilkunde, Germany. Assisted by John Howland, A.B., M.D., Professor of Diseases of Children in Washington University, St. Louis; Late Associate in Diseases of Children in the College of Physicians and Surgeons, New York. Sixth Edition, fully revised. With two hundred and forty illustrations, including eight colored plates. Price $6.00. New York and London: D. Appleton and Company, 1911.

This new edition of Holt's work shows the author's desire to keep abreast with the current progress in pediatrics. The following subjects, among others, have been fully revised: Pyloric Stenosis, Appendicitis, Acute Peritonitis, Endocarditis, and Pericarditis, Cerebrospinal and other forms of Acute Meningitis, Acute Poliomyelitis, Hereditary Syphilis, and Tuberculosis. The most significant change, however, is noted in the section on Artificial Feeding, and a quotation from the edition of 1903 may be placed in juxtaposition to a statement in the present edition to show the great importance of the changes made. That edition said: "The modification of proteids is the most important change necessary in cow's milk, for it is the proteids which give most of the trouble to the infant's digestion." The present edition says: "To the modification of the protein of cow's milk most of the attention was formerly given. The evidence seems conclusive, however, that healthy infants digest this protein without difficulty." These two statements illustrate better than anything else the great impression made by Finkelstein and his school upon the practice and theory of artificial feeding of infants. They are also an argument for the acquisition of the present edition of Holt by all who, as the reviewer, possess older issues of the work. Similar far-reaching revisions are seen in other departments, especially in sections on poliomyelitis and on the treatment of syphilis; in the latter Holt speaks favorably of salvarsan. Many new illustrations have been added, among them *x*-ray pictures of rare bone changes, and old plates have been replaced by new ones.

Food Values. Practical Tables for Use in Private Practice and Public Institutions. By Edwin A. Locke, A.M., M.D., Instructor in Medicine, Harvard Medical School. Price $1.25. New York and London: D. Appleton and Company, 1911.

In this little volume the author gives the necessary information as to the composition and nutritive value of the foods in common use. The book is of more than ordinary value, inasmuch as it is one of the very few that aim at practical utility rather than encyclopedic fullness with corresponding complexity of statement. The book is recommended to the notice of physicians, medical students, and nurses.

Manual of Pathology. Including Bacteriology, the Technique of Postmortems, and Methods of Pathological Research. By W. M. Late Coplin, M.D., Professor of Pathology, Jefferson Medical College, Philadelphia; Medical Director of the Jefferson Medical College Hospital; Pathologist to Jefferson Medical College Hospital and to the Philadelphia (Blockley) Hospital; Director of the Clinical Laboratories of the Jefferson Medical College Hospital; Pathologist to the Friends' Asylum for the Insane, Frankford. Fifth Edition, rewritten and enlarged. With six hundred and twelve illustrations and twelve plates, eleven of which are in colors. Price $4.50 net. Philadelphia: P. Blakiston's Son and Co., 1911.

The changes in the new edition of this well-known manual of pathology have been most extensive. Enough new matter has been added to increase the text by nearly one-fourth and the material has been completely rearranged. On of the new chapters, entitled the "Pathology of Infection," deals with the questions of incubation, defervescence, etc., in bacterial invasion, and another addition of seventy pages is devoted to the pathology of the reproductive organs. Noteworthy changes have been made in the chapters on bacteria as causes of disease, in the internal secretions, on poisons and intoxications, and in many other parts of the book. The appendix contains the sections on technique and among others includes chapters on bacteriological methods, microscopic examination of the urine, and the technique of sputum examination which might perhaps be dispensed with, as they cover subjects belonging by rights to special text books. The work is a highly pleasing one, agreeably written and unusually comprehensive so that it is well adapted to the needs of the student, while the careful and modern bibliographies make it useful as a reference book for advanced workers also. In its new enlarged form it will undoubtedly increase its former success and find a constantly growing field of usefulness.

Refraction and Visual Acuity. By Kenneth Scott, M.D., C.M., F.R.C.S. Edin., Consulting Ophthalmic Surgeon to St. Mary's Hospital for Women and Children, London, E.; Late Lecturer on Ophthalmology, West London Post-Graduate College; Professor of Ophthalmology, Egyptian Government Medical School; and Ophthalmic Surgeon, Kasr-el-aini Hospital, Cairo, Egypt. With sixteen illustrations and a colored plate. Price $1.75. New York: Rebman Company, 1911.

This book has been written for the general practitioner who may feel the need of a more intimate knowledge of the errors of vision and their correction. The author limits himself to the discussion of only the essential points. He divides his book into two parts—Refraction and Visual Acuity. Included in the part devoted to refraction are chapters on the average price of glasses, color blindness, simulated blindness, and the medical inspection of the eyes of school children. The author's style is clear and concise.

Society Reports.

SOUTHERN MEDICAL ASSOCIATION.

Fifth Annual Meeting, Held at Hattiesburg, Miss., November 14, 15, and 16, 1911.

The President, Dr. Isadore Dyer of New Orleans, La., in the Chair.

The scientific work was divided into three sections.

The Stokes-Adams Syndrome.—Dr. J. G. Gaither of Oxford, Miss., after detailing a case that had come under his observation, stated that in the list of reported cases there seemed to be two distinct classes: first, in patients past middle life in whom arteriosclerosis had become pronounced in its effect upon the brain, heart, and kidneys; and, second, a younger class of patients under fifty, usually men, in whom a variety of causes were found. Competent pathologists had frequently made autopsies upon subjects of Stokes-Adams disease, and had failed to find any lesion sufficient to justify the assumption of a causal relation. The prognosis was serious and uncertain. The treatment was purely symptomatic. The subcutaneous administration of a fourth of a grain of morphine was indicated in frequently recurring attacks. The head of the patient should be put low to overcome the cerebral anemia, which was particularly pronounced in a case with the complication of an aortic stenosis. The treatment after the attack resolved itself into the general hygienic and the administration of iodide of potassium. Any particular line of diet which was found to lessen the frequency of the attacks should be followed. Eliminative treatment should be instituted in cases showing a tendency to renal involvement.

Dr. J. B. Elliott, Jr., of New Orleans had seen only one case of Stokes-Adams disease, and this was associated with arteriosclerosis. The patient died in the second attack. Patient was a man, seventy years of age. There was an atheromatous cicatrix found in the bundle of His post mortem.

Dr. J. B. McElroy of Memphis pointed out the importance of distinguishing clinically between two groups of cases, one the cardiac group and the other the neurologenous. Much work had been done with reference to the disturbance of the conductivity of the bundle of His, but undoubtedly there were many of these cases which presented the symptoms of the Stokes-Adams syndrome in which this bundle was not involved. Adami had reported such a case, and the speaker had autopsied one case himself in which the bundle of His was involved and almost completely destroyed by a gumma in which there were no symptoms or evidence of the disease during life.

Dr. J. B. Guthrie of New Orleans had not had the good fortune to see either one of the two diseases described by the essayist, although he had been on the lookout in a large hospital service for the Stokes-Adams syndrome, where the cardionephritic cases predominated.

Dr. Frank A. Jones of Memphis stated that in the last several years he had seen five cases of heart block, three of them in men, and two in women. In nearly all these cases or types of heart block there was pronounced arteriosclerosis. Not only was there pronounced arteriosclerosis, but the arteriosclerosis was accompanied with high blood pressure in contradistinction to arteriosclerosis with a low blood pressure. We did not know what the exact pathology of Stokes-Adams disease or heart block was. He had seen one case with bradycardia with the pulse as low as eight for nearly a week before the patient died in coma instead of a convulsive seizure. In the five cases he had seen there had always been well-defined arteriosclerosis with high blood pressure.

Causal Factors in Malarial Recurrences.—Dr. Graham E. Henson of Crescent City, Fla., reviewed the possible etiological factors in malarial recurrences, the significance of such cases, and considered their treatment. He drew the following conclusions: (1) Parthenogenesis could not be considered a factor in the recurrence of malaria for the reason that the very existence of such a phenomenon was a matter of great doubt, many observers working over a period of years having failed to demonstrate such forms. (2) There were many cases reported that had at no time during the infection shown the sexual forms but had frequently relapsed. (3) The four cases cited by Ross in which inoculation experiments containing only sexual forms failed in each instance to produce clinical symptoms of malaria or to reveal the presence of any plasmodia, while in fifty-one cases cited by the same author inoculation experiments containing the asexual parasites in every instance produced clinical symptoms of the infection and parasites of the type inoculated were demonstrated in all of the cases experimented with since the discovery of the plasmodia.

Pernicious Malaria.—Dr. H. H. Booth of Drew, Miss., reported three cases of pernicious malaria with cerebral symptoms which resembled heat stroke.

Dr. R. H. von Ezdorf of Mobile stated that, according to investigations made in 1898 and 1899, parthenogenesis might have something to do with the recurrent cases of malaria. He had noticed in blood examinations what appeared to have been the conjugate forms. Again, he had observed cases where only the gametes had been present, and he had not been able to find the gametes changed into the form which would revert to the schizodont cycle. In making examinations of the blood of the estivoautumnal cases where the gametocytes were present, he had found that under the specific treatment of quinine the microgametes would disappear in a short time and the macrogametocytes would predominate.

Dr. Louis Leroy of Memphis had not had an opportunity to study parthenogenesis or asexual reproduction, but the resting form mentioned by the essayist had occurred to him a number of times. He had had quite a number of patients who came from latitudes that were considered more malarious than in his section of the country who had in many instances been free from any malarial attacks for a period varying from six months to several years, and invariably after a week in that district outbreaks of malaria would occur. As a matter of curiosity, at the time he examined a dozen or more specimens of blood he failed in many instances to find any parasites, and yet inside of ten days or so apparently new attacks of malaria would be developed. Most of these patients would have enlargement of the spleen develop generally subsequently. Whether or not the spleen or the bone marrow was the site of the resting parasites, which under these changed conditions brought that about, he was not able to say but that was his working hypothesis. He had also brought about paroxysms in one patient following exposure of the enlarged spleen to the *x*-ray, in whom again he was unable to find parasites in the blood. Again, under similar conditions he had seen malarial paroxysms following the administration of large doses of ergot and hydrastin, given with the idea of attempting to reduce the size of the spleen.

Dr. J. B. McElroy of Memphis said that his impressions, as gained from a study of the blood itself and from the literature, were directly in opposition to those of the essayist. He could see no evidence from a study of the blood of these conjugating forms developing in the body. On the other hand, according to the work of Schaudinn, parthenogenesis was a well-established principle. He agreed with Dr. von Ezdorf that the macrogametocytes continued in the blood after the continued and heroic administration of quinine, and he would further say that in the diagnosis of malaria we should not only include the presence of malarial parasites, but the varieties of them,

and we should determine from an examination of the blood whether or not we were dealing with a relapse. This would be easily determined both by the presence of the macrogameotcytes and by the tertiary and the estivo-autumnal types.

Vaccine Therapy in Typhoid Fever.—Dr. J. B. Elliott, Jr., of New Orleans stated that in a series of over two hundred vaccinations among the senior class of Tulane University during the past two years they had had only one case of typhoid fever, which case was proven to have had the infection previous to vaccination. The most remarkable report was that made by Cullinan of an epidemic of typhoid which occurred in an asylum of which he had charge; to prevent its spread Cullinan had inoculated some five hundred who consented and of these only 1.3 per cent. had it, while of the non-vaccinated 14.6 per cent. went down with typhoid fever. In a hasty review of those cases treated with vaccines, he found that Russell had collected 118 cases, with a mortality of 4 per cent. Callison, up to July 1, 1911, had collected 32 cases with a mortality of 5 per cent. Almost every individual reporter had declared that the temperature, course and convalescence had been markedly benefited. Personally, he had treated only three cases. While he fully realized the danger of drawing conclusions from such a very small number of cases, and while he was very conservative, as a rule, in therapeutic matters, yet he had become a little enthused over this method of treatment and should continue to administer the vaccines to all cases of typhoid fever, if seen within the first eight or ten days, and if the practitioner made blood cultures early and often few cases would escape diagnosis in their incipiency.

Dr. A. W. Freeman of Richmond, Va., said it was hardly fair to say that typhoid vaccination at the present time was without danger. In a recent issue of the *Naval Medical Bulletin* the case of a young marine was reported. He was inoculated with the same vaccine that was used in the routine inoculations of the marines of that corps, and who within two or three days developed a most virulent case of typhoid fever and died of it promptly. At the autopsy typhoid bacilli were found in the circulating blood and in the various tissues of the body. Those who studied this case and did the bacteriological work, as well as the clinician, agreed that this young man was in the incubative stage of typhoid fever, and a dose of vaccine was sufficient to overwhelm him and result fatally, when he might have had a case with demonstrable symptoms of the disease. There was no doubt that typhoid vaccination did confer immunity against this disease, but the degree of that immunity had been variously estimated by various experimenters and observers.

Dr. Louis Leroy of Memphis said that, at present, we were suffering very largely from a pernicious activity in pushing and recommending indiscriminately biological products of this nature. It was claimed that negative phases were not as frequent in typhoid as in some other forms of vaccine administration; still with all that, it was calling upon the reserves and without skillful clinical observation we were apt to call out all of our reserves, squander them in an almost helpless charge, and leave the patient helpless in the face of his increasing infection. Dr. Elliott was careful to say that he limited the use of the vaccine to the first ten days. Even at that it would require some discrimination, which he was willing to concede he had, in the administration of this vaccine to all cases. All had seen typhoid patients who were almost overwhelmed from the beginning, and he would question the administration of large doses of vaccine to a patient in that condition. Again, late in the disease it did not seem to be of much use. The main thing he wished to protect against was the indiscriminate use of typhoid vaccines and untruthful advertising of these remedies by therapeutic houses and by detail men who did not know the first principles about it, urging its indiscriminate use in all patients with typhoid fever.

Dr. Charles Le Baron of Gulfport, Miss., mentioned the Spanish-American war, stating that shortly after his return from Chickamauga Park there was quite an epidemic of typhoid fever below this region. Twenty people were exposed to the disease. Every one of them was given typhoid vaccine, and not one contracted the disease.

Dr. Graham E. Henson of Crescent City, Fla., mentioned the case of a man, who, after typhoid vaccination, developed a temperature which varied from 103° to 105°, and was very sick in the hospital for a week. As a prophylactic agent typhoid vaccination was valuable; but the unfavorable results of typhoid vaccination should be reported as well as the successful ones.

Dr. J. B. McElroy of Memphis thought Dr. Elliott should hedge in these good results from typhoid vaccination by a warning or by putting a large question mark against the proposition as to whether or not these typhoid vaccines could be used promiscuously for the prevention of typhoid fever. Theoretically, we would expect that while these individuals were acquiring immunity from one or two doses which had been administered there was a negative phase or sensitization of the individual during which he was more liable to contract typhoid fever than at other times. It was questionable whether we should use these vaccines promiscuously because one or two cases of the disease had occurred in a community.

Dr. R. H. von Ezdorf of Mobile stated that one patient to whom the vaccine was given developed a temperature of 104° which lasted two days. On the second injection the same reaction occurred which did not last quite as long. Statistics showed that we could expect these reactions to take place in about 10 per cent. of the cases.

Dr. Hiram Byrd of Jacksonville, Fla., said that about a year and a half ago they began the administration of typhoid vaccines. They vaccinated 125 people. In two instances the reaction was severe. In a woman the reaction lasted for three days. Aside from these reactions, the results had been very favorable. The youngest child vaccinated was 16 months old. There was a reaction in that instance, as in two other children. They had vaccinated several children under five years of age in whom the reaction had been very slight.

Dr. J. B. Guthrie of New Orleans felt that physicians were perfectly justified in resorting to vaccination as a preventive of typhoid fever when the present condition of sanitation in some of our cities and country towns was considered, particularly where streams were so liable to contamination. Any person whose occupation brought him in contact with typhoid patients, or who was forced to live in a neighborhood where typhoid infection was rife, should be vaccinated against typhoid fever.

Dr. William Krauss of Memphis said one might take it for granted that the German Government would not countenance any system of experimentation with its troops which would prove detrimental to the personnel of the army, and, considering that soldiers were regarded as priceless possessions, no government would permit vaccination against typhoid fever if it was so dangerous as some gentlemen would have us believe it was.

Diphtheria.—Dr. W. W. Harper of Selma, Ala., said that in diphtheria an early diagnosis was essential to successful treatment. Not only could the disease be more promptly cured, but the patient could be spared the complications and sequelæ that followed the delayed administration of antitoxin. As to the treatment, if the patient was seen on the first day of the illness he gave 5,000 units of antitoxin as an initial dose in faucial, and 10,000 units in laryngeal and severe nasal diphtheria. This dose was repeated in twelve hours unless there was marked improve-

ment. He had seldom found it necessary to repeat the dose.

Dr. P. W. Rowland of Oxford, Miss., did not know by what reasoning the author arbitrarily gave 10,000 units of antitoxin in all cases. No rule could be laid down for regulating the dose of antitoxin. It depended largely upon one's habit and practice. He saw no need of giving such large doses. The ordinary dose of antitoxin in any given case of diphtheria was from 3,000 to 5,000 units, and this was found generally sufficient.

Dr. J. J. Stevens of Hattiesburg, Miss., was called to see a case in the night that had all the earmarks of laryngeal diphtheria, but careful inspection failed to reveal any membrane. He gave liberal doses of calomel, left the patient, but was called back early after this and found the child in great distress. The laryngeal symptoms were very prominent. He immediately asked for a consultation and ordered antitoxin. His consultant seemed surprised that he had not administered antitoxin at his first visit. He gave the child a liberal dose of antitoxin some hours after the calomel had been given, and the next report he received was that the child had passed a number of very large worms and was immediately relieved. He thought this case fitted in very well with the essayist's case of appendicitis which was relieved by the administration of antitoxin.

Dr. P. R. Brown of West Point, Miss., emphasized the importance of the early use of antitoxin. He did not believe one would have more than one death in a thousand cases if one used antitoxin within the first twelve or twenty-four hours. He had administered antitoxin to four or five patients within the first twelve or twenty-four hours and had no need to repeat the dose. He generally opened the bowels with calomel and in some cases washed out the throat with an antiseptic solution.

Dr. W. V. Davis of Booneville, Miss., asked whether in giving immunizing doses to members of the family and to others who had been exposed to the disease, any member had noticed urticaria or other skin manifestations.

Dr. John L. Jelks of Memphis stated that in follicular tonsillitis of streptococcic origin, it would be more reasonable and scientific to give some streptococcic vaccine.

Dr. William Krauss of Memphis said we sometimes had diphtheria bacillus carriers that kept up infection for weeks and months, and it seemed utterly impossible to eradicate the infection. It had been found that the application of a pure culture of *Streptococcus aureus* would destroy the diphtheria bacilli in the throats of these patients, and it was the only thing that had been found to do so.

Dr. Harper, in closing, stated that many practitioners did not get results in cases of diphtheria because they did not use large enough doses of antitoxin.

Intubation.—Dr. Joseph J. Waller of Oliver Springs, Tenn., said the two most common types of disease demanding intubation were the severe cases of acute laryngitis and laryngeal diphtheria. This operation had many advantages over tracheotomy. While possibly it might be more difficult and required greater skill for its proper performance, it was not a cutting operation. It was quickly done and was safe.

Dr. W. W. Harper of Selma said he would rather be able to do intubation than to do a cesarean section, for one could oftentimes get competent assistance in performing cesarean section, whereas the country doctor was by himself, in a place where he could not get help, and if he was competent to perform intubation he would save many lives.

Value of the Clinical Laboratory in Diagnosis.—Dr. E. S. Sledge of Mobile drew the following conclusions: (1) Laboratory methods were invaluable in diagnosis, were a great aid in prognosis and in the intelligent observation of the course of the disease. (2) The source and interpretation of the results were of extreme importance. (3) Results were to be considered only as symptoms with the other clinical manifestations of the case. (4) Every physician should do as much laboratory work as was compatible with his time and equipment. For the more advanced work many laboratories were at the disposal of the physician at moderate fees, and provision was made for the transportation of specimens. (5) Every physician should strive to avoid laxness in the employment of laboratory information when occupied by a busy practice and avoid the human tendency to take chances.

Acute Poliomyelitis.—Dr. B. L. Wyman of Birmingham gave the history of epidemics of this disease in the United States.

Dr. E. M. Mason of Birmingham said the virus of poliomyelitis occurred most abundantly in the central nervous system, but had also been found in certain lymphatic glands, and in the nasopharyngeal mucosa. In both man and monkeys one attack of poliomyelitis, even the abortive form, protected against subsequent infection. As to the pathology, the virus became implanted not only upon the leptomeninges throughout the central nervous system, but especially in the region of the spinal cord and medulla, where it set up infiltrative changes that were most marked in the perivascular lymph spaces of the arteries entering the nervous tissues. There was a diminution in the total leucocyte count with a relative lymphocytosis.

Dr. Louis Leroy of Memphis said they had had acute poliomyelitis on the reportable list of the State Board of Health of Tennessee for some time in anticipation of some outbreaks or epidemics within that State. Up to the present time they had only had reported a few scattering isolated cases, but not enough to warrant the name of epidemic at any point. Personally, he had only seen half a dozen cases within the last six years in Tennessee. These cases started with the ordinary symptoms of an infection, with no one definite symptom that he could recall to mind. The cases had all been in children. After detailing the symptoms manifested by these cases, the speaker said that improvement generally began in a couple of weeks after the disease had practically subsided and continued probably under medication, massage, and general treatment for possibly a year. He had seen no marked improvement occur after that length of time.

Dr. W. G. Somerville of Memphis stated that in some epidemics of anterior poliomyelitis there were cases of the cerebral type in which coma came on and lasted for several days, and the patients died or recovered with infantile paralysis. In this type the upper neuron was affected and the patient got spastic paralysis. Some of the cases could not be diagnosed until the paralysis came on, unless there was an epidemic of the disease. The child had fever, convulsions, vomiting, and it was only when the paralysis came on that one was able to make a diagnosis unless he was looking for the disease. In the course of an epidemic, however, when one was on the lookout for such cases, it might be possible, in the early stages, before the paralysis came on, to make a diagnosis by examining the cerebrospinal fluid, as had been pointed out by Flexner.

Dr. Willis C. Campbell of Memphis said the orthopedic treatment of infantile paralysis was very important. There might be a slight weakness of the extremities to a total paralysis of the four extremities. More frequently there was paralysis of both lower extremities. A patient frequently recovered good use of one extremity, while the other remained more or less disabled. Orthopedic treatment should begin as soon as the diagnosis was made. There was nothing that would probably give better results in these cases, Dr. Campbell said, than to begin treatment at an early period and thus prevent deformity from taking place.

(*To be continued.*)

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held November 27, 1911.

The President, Dr. James F. McKernon, in the Chair.

The entire evening was devoted to annual reports.

Report of the Counsel.—Almuth C. Vandiveer, Esq., read this report. He submitted a résumé of the work of the legal department for the year; this showed a greater diversity of legal activity for and in behalf of the Society than the records of the past had shown. He commended to the consideration of the Society the following accomplishment in the past year. (1) The decision of the Appellate Division of the Supreme Court defining in unmistakable terms the power and authority of the Society under the charter granted it in the year 1806, and the laws passed by the legislature supplementing the same in the 105 years since its establishment. (2) The determination of the Appellate Division that the $7,500 judgment for malicious prosecution obtained against the Society by an individual prosecuted by the counsel's predecessor, who was acquitted on the charge of illegal practice, should be in all respects reversed, vacated and set aside, and the same was set aside. (3) The challenge by the courts of the rights of so-called faith healers in practicing the healing art in the State of New York under the provisions of the Public Health Law regulating the practice of medicine. In this latter category were Christian Scientists, New Thought advocates, mental healers, and other similar persons claiming to alleviate suffering by methods not included in the curriculum of any medical college in the civilized world. Under the authorization of the Board of Censors the Counsel had made a vigorous attack upon the wealthy and incorporated strongholds of quackery by prosecuting numbers of corporations organized under the Laws of the State of New York and engaged in the practice of medicine through registered physicians. During the pendency before the Board of Censors of charges against a member of conduct unfavorably affecting the character, dignity, and interests of the medical profession, the accused member invoked the aid of the Supreme Court to enjoin and restrain the Society from hearing the charges against him. The learned justice before whom this application came decided that the Medical Society of the County of New York had no authority in regulating the practice of physic and surgery in the State of New York, and had no authority to pass by-laws providing qualifications of applicants for membership therein, and regulating the conduct of members after election. The learned judge further held that no member of the Medical Society of the County of New York could be expelled from membership therein for the commission of any act other than that which would be adjudged under the Laws of the State of New York, a crime punishable by imprisonment in the State prison. This adjudication was presented to the Appellate Division of the Supreme Court and five judges unanimously differed from their colleague of the Special Term and decided that the society had ample legal authority to pass by-laws regulating the qualifications of applicants for membership therein and regulating the conduct of members, and that the society had ample power to expel any member for unprofessional conduct, and intimated that unprofessional conduct of any physician in the county might be a subject of inquiry by this society.

Following up the decision of the Court of Appeals and the prosecution instituted by the society against the Woodbury Dermatological Institute, other corporations of consequence, engaged in the practice of medicine, against which the necessary evidence could be secured, had been vigorously prosecuted. Many of these individuals had ralled to their defense the highest priced and ablest practitioners of the criminal and civil bar.

The work done by the counsel had covered a very wide field, for the persons who strove to practice medicine without the necessary educational and legal qualifications cloaked their actions under many alluring forms of quackery. Not only were the ignorant classes of the community used as a means of livelihood by medical fakirs, but the well-to-do and educated classes were equally imposed upon by persons preaching a doctrine of the superiority of thought and mind over matter and body. It was indeed surprising to know the remarkable following that these persons had among the educated citizens of this city. One person arrested and charged with violating the medical law was reputed to have 2,000 persons in this city as her personal followers.

The counsel of the society had had the honor of presenting violations of the medical law to every judge sitting in the City Magistrates' Courts, and in the Court of Special Sessions. In addition, cases had been presented and considered by several judges of the Court of General Sessions. He felt that the prosecutions brought in the name of the society had received from the courts as serious consideration and as respectful attention as any class of cases presented for their judgment. The Court of Special Sessions inflicted heavier penalties upon persons convicted of violating the medical law than upon any other class of offenders brought before it. A total of fifty-seven cases had been presented during the year. Sentences were imposd in four cases at the time the last annual report was rendered. Thirty-six convictions had been obtained, four persons were acquitted, one died, and twelve cases were still pending. Five cases were now ready for presentation to the courts.

Mr. Vandiveer then gave a more detailed account of a number of the cases that he had worked upon during the past year. Among them was the Collins New York Medical Institute, a corporation formed under and existing pursuant to the Business Law of this State, which was prosecuted for advertising to practise medicine without being legally authorized to do so. After a legal battle lasting nearly a year the defendant was convicted and sentenced to pay a fine of $150. Mr. Vandiveer had called the attention of the postoffice department to the work of this corporation and the officers of the corporation were prosecuted in the Federal Courts by the United States District-Attorney and Dr. Samuel E. Hyndman, the medical director of the corporation, and William H. Rudolph, President of the Corporation, and one Julius Jellsik, were convicted and were sentenced to imprisonment at Atlanta, and Dr. Hyndman was fined $500. Other instances were cited where the counsel had called the attention of the postoffice department to persons who were using the mails to defraud. The Tompkins Corbin Company, an institution having patented proprietary medicines for the treatment of cystitis, diabetes, and uremic poisoning was also convicted upon evidence obtained by the Counsel of the Society. The Manhattan Medical Association, which offered to the public the services of doctors, dentists, oculists, and opticians at fees varying from ten to twenty-five cents, was summoned to court and finally pleaded guilty. The court suspended sentence in this case because the attorney for the defendant corporation showed that the corporation had completely abandoned the business of treating the general public, and because the certificate of incorporation was legal at the time that the company was incorporated, but became illegal after the passage of the medical practice law passed in 1907. Likewise they had failed to convict the Oppenheimer Institute because it was in operation under a certificate of incorporation issued before the present medical practice act was passed. It was the purpose of the Counsel to compel this institution to obey the provisions of the present law.

Mr. Vandiveer then related some of the facts in con-

nection with the Rheumaticide Company, which was convicted and fined $250, and with the Anthos Company, whose method was to give lectures to Ladies' Aid Societies in churches of various denominations and to obtain the names of the women attending, and then these women were visited by agents of the company and the remedies of the corporation were recommended or prescribed.

Men professing to practice mechanotherapy were among the most persistent violators of the present medical law. Two educational institutions, the Institute of Science at Rochester, N. Y., and the American College of Mechanotherapy at Chicago, Ill., graduated men to whom they gave diplomas with the degree M. T. D., doctor of mechanotherapy. These men offered to cure practically every form of disease by means of manipulation, massage, baths, and herbs. They had banded together and one attorney was now employed to defend the mechanotherapists who were arrested at the instance of the Society. Among this class five men had recently been convicted. Several hypnotists were convicted and also a number of druggists who were found guilty of prescribing over the counter and of selling drugs to procure abortion and to prevent conception. A number of unregistered physicians were found to be practicing medicine; this was especially true of Italians, some of whom were well qualified but had neglected to take the examinations and procure licenses.

Mr. Vandiveer also told of the conviction of a num- of midwives and metaphysicians and related the interesting case of the prosecution of the Christian Scientist, Willis Vernon Cole, who was arrested at the instance of the Police Department and charged with practising medicine without a license, and also the cases of Wentworth Byron Winslow and Julius Benjamin. These cases had been transferred to the Court of General Sessions where they would be conducted by an Assistant District Attorney and not by the counsel of the Society, unless he was especially appointed by the District Attorney to try them. The general defense offered by these men was that the exception in the statute which said that the law should not be construed to apply to the practice of the religious tenets of any faith exempted their acts and permitted them to do as they were doing in the practice of the tenets of the Christian Science Church. The question as to what the tenets of the Christian Science Church were was a difficult one to decide, as Mrs. Eddy's book did not specifically name or include the acts of the Christian Science healers. Closely allied with the Christian Science prosecutions were those of the High Priestess of the cult of Advanced New Thought, who mixed clairvoyancy with dissertations on the principles of Advanced New Thought and with actual rubbing of alcohol on the affected parts and with prescription as to the diet to be followed and colors to be worn in order to calm the nervous system. They had also dealt with the system known as "Chiropractice," the principle of which was the manipulation of the spinal column by pressing with the hand to bring about a proper circulation, thus tending to cure all diseases. In the trial of one of these practitioners it was brought out that he had among his patients many prominent society women.

During the past year at least 300 investigations of complaints had been made by the counsel of the Society. The evidence, while not sufficient to warrant prosecutions, had been obtained and might be of considerable use in the future. The work done by the Society in prosecuting violators of the medical law was generally known to the public and to the Police Department and they had worked in conjunction with many organizations engaged in bettering social conditions in New York City.

Report of the Committee on Legislation.—Dr. E. Eliot Harris, chairman, said there were introduced 3,668 bills in the legislature of 1911, of which number 1,713 were Senate bills and 1,955 were Assembly bills. To these bills there were over 1,000 amendments printed in both houses. The New York Legislative Index Company of Albany furnished the committee with about 200 so-called medical bills.

These so-called medical bills that were killed or died a natural death with the expiration of the legislature, were too numerous to mention even by title. Of those killed there were seven which provided either to regulate, or to inspect, or to supervise, or to establish a commission to investigate animal experimentation. These bills were being each year more carefully framed to hide their true purpose, but were any one of them placed upon the statute book such a law would have the effect of hindering the trained workers in medical research and would militate against the interest of humanity and of individuals and the public health.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held November 20, 1911.

The President, Dr. Reynold Webb Wilcox, in the Chair.

A New Sigmoidoscope.—Dr. Anthony Bassler presented this instrument. Among its features are: ease of introduction; tube so marked that the distance up from the rectum, when lesions are met with, can be quickly estimated; advancing rim protected from injuring the mucous membrane; window quickly put on and taken off, without requiring any in or out force to be exerted; tube tightly closed when the window is on, so that air from the bowel cannot come back into the operator's face. The basin-shaped proximal end permits of turning the instrument without the necessity of a handle. The light carrier is held in place by a screw attachment, so that the bulb cannot slip back into the tunnel and cause the darkening of the further end. The air tunnel leading into the lumen is part of the solid instrument, and not of the detachable window. A single ball can be used for the inflation without a special connection therefor.

A Case of Chondrodystrophy.—Dr. George Dow Scott said that, as the cause of this condition was absolutely unknown, the designation "fetal rickets," sometimes applied to it, was an entire misnomer. The pathological process began in fetal life and consisted of a disturbance of the normal ossification of primary cartilage. The flat bones and the vertebræ escaped, while the bones of the extremities suffered most. This patient, a child of 19 months, showed the characteristic short arms and legs, with the skin lying in deep folds and the flesh "cuffed" on itself, in consequence of the shortness of the bones. A depressed, flattened nose, prominent forehead, large, round head, open fontanelle as large as a ten cent piece, and the so-called trident hand completed the picture.

Saratoga Springs—History; Origin; Chemical Constituents; General Therapeutic Action.—Dr. D. C. Moriarta of Saratoga said that, notwithstanding the fact that Saratoga Springs had long enjoyed the reputation of being a great health resort, many persons who had gone there to drink the waters had done so in a desultory manner, and the local medical profession had not given these great natural therapeutic resources the consideration they deserved. In the winter of 1908-9 an organized effort to bring about a change in this condition of affairs was inaugurated by the Saratoga physicians, and to help in this Dr. Comstock and himself decided to imitate the work reported from the European spas, so far as they were able. These springs were all of the saline variety, saturated with carbonic acid gas. The predominating chemical was sodium chloride, with other ingredients in lesser quantities, and according to the predominance of

these chemicals several types of water were recognized: the cathartic, the alkaline, the chalybeate, and the sulphur A remarkable fact concerning these waters was that the quality and quantity of the chemicals contained in them had not fluctuated since their early discovery. The first spring known was the old High Rock, the water of which found its way to the surface, through thirty feet of earth, by the pressure of its own gas. The result of the first drilling was the famous Geyser spring (about 1870), and this bore no relation to the fault in the rock, which for so many years it had been thought necessary to follow if mineral water was to be found. The origin of the springs at Saratoga had been discussed at various times by learned chemists and geologists. To the speaker's mind the most important feature was the origin of the carbonic acid gas. As there was no acid to account for the evolution of this from the decomposition of the carbonates, it must be concluded, he thought, that such decomposition was caused by heat, and also that it occurred in a region remote from the springs, since there was no geological evidence of a high temperature immediately beneath the site of Saratoga. The special character of each spring was probably determined by the particular chemicals existing in the channels through which the carbonated water found its way. The trouble with the Saratoga springs began about fifteen years ago, when commercial industries began collecting the gas from the waters, condensing it, and shipping it for the market. To meet the demands for the gas, deeper pumping was resorted to, and, as the demand continued to increase, larger plants were built and more powerful pumps installed. Finally, deep water gang pumps were set up which pumped, in all, 1,000 gallons a minute, continuously day and night; the gas being collected and the water wasted. Naturally, the level of the water was lowered by this exhaustive pumping, making it a physical impossibility, except in rare instances, for it to flow at the surface as it had done formerly. When this had become known the conclusion was formed by both the laity and the medical profession that the springs at Saratoga had failed. The simple fact, however, was that the water was not allowed to accumulate, as it had formerly done. The solution of the question why the pumping did not affect all the springs alike was to be found in the fact that certain areas were less affected by it, probably because of the impervious walls separating one stratum of earth from another. The water wasted at these gas plants had been repeatedly analyzed, and the chemicals found to exist always in the same relative proportion, though not in the same quantity, as in the original analyses. The few grains difference per gallon in the total salts was no doubt due to the smaller quantity of gas, as, naturally, water 500 feet below the surface would not contain the same amount of gas in solution as water flowing at the surface. Having referred to the prohibiting of the pumping and the creation of the Saratoga State Reservation by act of Legislature, Dr. Moriarat said that, while the entire scheme of the commission appointed by the Governor had not been made public, it had already purchased for the State a number of springs and gas plants. The fact that it was now known positively that the spring waters possessed just the same qualities as formerly should make it possible to reestablish the confidence of the public in the waters and restore Saratoga to her old-time prosperity. In considering the therapeutic value of the waters two essential points were to be borne in mind: (1) that we were dealing with a composite remedy, and (2) that the results would be modified, as in the case of other drugs, by the general state of the patient's health. Since in the analysis of the springs there was no deviation, a definite amount of water always represented a definite amount of the ingredients in solution, and might be estimated and prescribed accordingly. While each type of water depended of necessity on its ingredients for its action, the clinical results would be modified by the quantity of water taken, as well as the hour at which it was taken in relation to food. The cathartic waters had a stimulating effect upon the mucous membrane of the stomach and intestines, dissolving the mucus, increasing the natural secretion, and exciting peristalsis. The alkaline waters had the action of the alkaline salts. They would neutralize free acid, of course, whenever taken; but if used for an acid condition of the stomach they were better taken after food, since, as Bartholow taught, alkalies taken before meals increased the total acids. Brunton and Ringer advocated their administration before meals, believing that they increased the flow of gastric juice and that the carbonic acid present stimulated the mucous membrane and glands of the stomach. The chalybeate waters were of use in anemia, and it seemed that bicarbonate of iron was more readily taken up than iron salts generally. With the genuineness of these waters certified to by the State, there could be no further question as to their therapeutic value. The speaker next described the great natural and added advantages in general of Saratoga as a health resort, and then went on to say that within a short period the local physicians had awakened to the necessity of an individual regime for their patients. They now made a routine practice of taking a complete history before prescribing the waters to drink, the diet, amount of exercise, periods of rest, etc., and the services of an efficient physiological chemist were available for laboratory work. The bathing in the mineral waters would seem to be quite as effective therapeutically at Saratoga as at any foreign spa, but this had never taken on the popular and social side there as abroad because the bathing facilities were limited and lacked the luxury and elegance of the foreign pavilions. The village had, however, in addition to the mineral and sulphur bath houses, the Saratoga Bath House, where the Turkish and Russian and special douche baths were given, and where there was a very large swimming pool. Here there were always trained attendants to give or direct such mechanical therapeutics as might be prescribed for special cases. At the Strong sanatorium there were similar appliances and, besides Russian and Turkish baths, all kinds of hydrotherapy and electrical treatment were given.

Saratoga Springs—Specific Clinical Indications.—Dr. George F. Comstock of Saratoga said that the number of these springs and the manner in which their properties varied enabled the "Kurarzt" to meet many clinical indications, and he could confidently seek therapeutic success here from nature's wholesome forces in the admirable combination of air, exercise, baths, and waters which assisted to so great a degree in increasing the powers of nutrition, and so of resistance, of the human organism. It was with this knowledge in mind and with the hope of furthering such a work that a cure had been established at Saratoga Springs, where the laboratory side had been given the prominence it justly deserved; for it was through the laboratory findings that we best judged the condition of a patient's metabolism and followed the effect of our regime with accuracy. Having quoted from Chittenden and Mendel in regard to the rôle played by the inorganic salts in metabolism, he said that to obtain the best results in using the Saratoga waters it was obvious that no hard and fast rules could be laid down, but it was essential that they should be drunk at the spring itself to get them at the temperature at which they left the earth and in their freshest state; when they were not only more efficacious but more palatable. A proper discrimination should be made in prescribing the waters, as it was only in those cases to which an individual water was adapted, and where this water was properly taken, that we could expect to see the wished-for result. Indiscriminate drinking, and especially mixing, of the waters did much harm, by caus-

ing severe headache, loss of appetite, intestinal irritation with diarrhea, and a general feeling of malaise. It was not possible in the time allotted to refer to all the numerous conditions in which the waters were indicated, and he could only touch upon a few in which especially good results had been obtained. With a certain class of patient, the high-pressure business man, who so often passed on to the later stages of arteriosclerosis and its resulting complications, the "Kurarzt" could work a veritable transformation if he were able to secure a proper cooperation. By means of the changed conditions of living and the active catharsis, diuresis, and diaphoresis obtained by the mineral waters the toxemia of faulty metabolism from which the patient had been suffering was weeded out as it were, roots and all, and a blood-pressure which had hovered around 180 became reduced to 150 or 140, and often even nearer the normal. It was not alone in the early stages of high blood-pressure, however, that relief could be secured by the cure regime. In many instances of long-standing arteriosclerosis, with its concomitant unpleasant symptoms, the same result had been accomplished. In diabetes he had seen so many remarkable improvements, both in early and late cases, that he had come to look upon the Saratoga waters as being of the first importance in the treatment of this disease, in which the alkalinity of the blood was always low from the continued loss of its inorganic constituents. By the use of large quantities of the alkaline waters the alkalinity of the blood was increased and the osmotic properties of the body fluids restored to their normal condition. As high as eight quarts of these waters in 24 hours had sometimes been taken for several days before the desired effect could be secured—an alkaline urine. This once obtained, one could feel assured that with a proper diet a good result would follow. The carbohydrates should not be withdarwn to too great an extent. In fact, in many instances they had to be increased, for it had been found that patients could take even large amounts of carbohydrate, provided only one kind were given. With most, oatmeal was tolerated best, and wheat flour least. The mineral waters, by their direct action on the parts, gave more striking results in the gastrointestinal tract than anywhere else. In chronic gastric catarrh with abundant production of mucus, muscular atony, and diminished reflex irritability of the mucous membrane, the alkaline water, with its carbon dioxide, acted not only as a solvent of the mucus, but also as a direct stimulant to the stomach-wall; causing thus an increase in both motility and secretion. In both hyperchlorhydria and hypochlorhydria, contradictory as the statement might seem, a beneficial effect was produced; in the one by the neutralization of the excessive amount of acid, and by inducing renewed and continued secretion of the gastric juice in the other. Chronic congestion of the liver was frequently successfully treated by the waters and the cure regime, and in commencing disease of the gall-bladder and bile-ducts, before too great inflammatory changes had occurred in their mucous membrane, brilliant results had been obtained. Gallstones having once been formed, all that could be hoped for was the lessening in a measure of the resulting inflammation. In order to overcome chronic constipation it was necessary to prescribe a correct diet and sufficient exercise. Here the saline water was ordered to be taken before breakfast, at its normal temperature, and in sufficient quantity to produce a watery movement. It was a mistake to suppose that these waters were more active when taken hot, as he believed that the cool water excited peristalsis reflexly and energized intestinal action in a way that warm water could not do. In gout and gouty arthritis an increased uric output had been demonstrated, the patients showing a corresponding improvement, while rheumatoid affections were improved by baths, manipulations, and waters. In nephritis the increased elimination caused by the waters gave marked relief, and skin diseases were improved both by the sulphur baths and the saline-alkaline waters. Obesity was well controlled by the same waters and by exercise and diet, and the anemias and chlorosis did well as the result of the tonic environment and the use of such saline waters as contained considerable traces of iron. After speaking of baths and other external adjuvants, Dr. Comstock remarked that in conducting the course of treatment each patient must be considered individually in regard to the nature of his disease, his powers of resistance, and his previous habits. In all cases it was necessary to restrict the diet, but not to the extent often carried out in the cures abroad. He then gave a sketch of the daily program of an average individual who was taking the cure, and in conclusion said that the departing patient was warned not to resume active commercial or social duties too soon; for, though it was not requisite to take an after-cure as was the case with many foreign spas, he should get into harness slowly, continuing the open air life and simple diet until strength and well-being were thoroughly established.

Saratoga and Carlsbad.—Dr. P. Brynberg Porter, the recording secretary, read a letter from Dr. F. Schuman LeClercq of Carlsbad in which he said it was a great satisfaction to him to see that the scientific bodies here were realizing more and more what a treasure was possessed in Saratoga, and what grand possibilities it promised for the future, when America, with its admirable energy and thoroughness, had made up its mind to act. "Under the auspices of your influential association," he wrote, "the American medical world at large will be successfully aroused to the consciousness of the unique advantages which Saratoga has over many—nay, all—of the European spas, by the universality of its applicability and by the chemical variety of the springs which the geological strata of the locality have produced for the benefit of mankind. Since the Carlsbad Cure has been stripped of a lot of superstition and tradition, founded on a hereditary adherence to humoral pathological views, and has now become a more common-sense, individualized application of some crude truths, more or less adroitly handled in accordance with honest principles, there remains little or nothing to be said of the "Carlsbad Kur"; which becomes in every instance a special matter, admitting of no generalization. Therefore, even if European spas should not be discussed at your symposium, such experts and shining lights as you have in your association will, no doubt, successfully elucidate the eminent blessings to be derived from Saratoga, when they direct their searchlight, in the Edisonian spirit and geniality, on the fact that the priceless Rheingold of Saratoga has at last been recovered."

Franzensbad and Its Remedies.—Dr. Bruno Fellner, Jr., of Franzensbad said that the three most prominent watering places of Bohemia had been compared to the members of a body destined to serve the health of suffering humanity: Carlsbad being designated as the stomach, Marienbad as the intestine, and Franzensbad as the heart. Formerly, at Franzensbad, the drinking of the waters was considered the most important feature of the treatment. This was not now the case, though considerable importance was still attached to it. There were a number of springs rich in iron which had long been valued in chlorosis and anemia, as well as other weakened conditions. After seven years' practical experience he could state that more particularly the chlorosis of young girls and the anemia associated with a variety of enfeebled conditions of the female genital organs were very favorably influenced by Franzensbad cures; which, in addition to the water drinking, included hot moor or mud baths. Other springs yielded alkaline waters containing sodium sulphate, sodium carbonate, and free carbonic acid, and the use of

the water from one of these, the Salzquelle, in combination with mud compresses was declared by the well-known clinician Frerich to constitute the ideal treatment for various gastric affections, especially ulcer. The Nathalie spring, containing a fair amount of lithium, was employed in gout and similar conditions. All the springs were very rich in natural carbonic acid, which favored the assimilation of various substances, particularly the salts of iron. According to Frerich, the greatest treasure possessed by Franzensbad was its iron mineral-moor. Whether their action was mechanical, chemical, thermic, or bacteriological, the results met with from the use of the moor baths were marvelous. Pleuritic and peritoneal deposits, exudates of all kinds, especially in the pelvic organs, nodules and deformities in bones and joints (in rheumatic conditions, gout, etc.) were scarcely ever able to resist their absorptive and hyperemic influence. They were the sovereign remedy for all sorts of gynecological affections, and had a special stimulating action upon the ovaries. This might account for the cure of sterility as obtained at Franzensbad; which, though often scoffed at, had nevertheless been proved in a considerable number of cases. The preparation and application of the mud baths had been developed into an exact art. Each bath was prepared individually with the same mineral water which flowed through the moor in nature, and the temperature and duration of the bath were increased very gradually and with scrupulous care, in accordance with the prescription of the physician. The natural carbonic acid baths had been found to diminish the frequency of the pulse, regulate the blood-pressure, and increase the active reaction of the vasomotors, and Dr. Fellner had been able to demonstrate that, under a rising dosage, the heart was first soothed, then exercised, and finally strengthened. Other physical measures, such as gymnastics and massage, were combined with the baths, and special stress was laid upon an individualizing diet. The patients were controlled with all available methods of clinical examination, for which the facilities were ample, and many who had formerly been erroneously condemned to rest in inactivity were permitted to indulge in invigorating sports. The old proverbial ennui of the health resort had been banished by entertainments of all descriptions, and, altogether, Franzensbad could be regarded as possessing the ideal requirements of a "Herzkurort," or center for the treatment of heart affections.

The Treatment of Stomach Disease at Carlsbad and Wiesbaden.—Dr. H. G. Watson said that the treatment at these resorts really began with the ocean voyage and continued until the return of the patient to work and worry. At Carlsbad among the institutions for the "kur" was the Strangers' Hospital, for the exclusive use of non-residents, which accommodated 400 patients. The following affections were much benefited by the treatment at Carlsbad and Wiesbaden: chronic catarrh of the stomach and intestines, hyperacidity, abnormal irritation leading to spasm of the cardia or pylorus, atony and dilatation of the stomach, chronic ulcer of the stomach and duodenum, different forms of dyspepsia due to the liver, gall-bladder, stomach, or intestines, chronic constipation, and chronic diarrhea. Cases of achylia gastrica were treated most satisfactorily at Wiesbaden. The treatment consisted of drinking the waters, taking the proper baths, dieting, exercise, and rest. Precise directions were given by the physician as to the spring one should drink from, the number of glasses, kinds of baths to take and the length of time, the diet, and the hours for rsting, exercise, and sleep. The principal constituents of the Carlsbad water were sodium sulphate, bicarbonate, and chloride and calcium bicarbonate. The temperature of the water in the different springs varied from 95° to 162.5° F. The mode of action upon the stomach and its secretion was complex, but in cases of hyperacidity in connection with ulcer and atony it had been demonstrated that there was a diminution of the hydrochloric secretion up to 50 per cent. as a result of the four weeks' course of the Carlsbad waters. Taken hot, in small doses, the water had proved successful in various cases of diarrhea. The effects of the baths, for which the facilities were profuse in Carlsbad, was secondary in importance, though they no doubt helped toward a cure. The most beneficial in stomach diseases were the hot Sprudel and hot mud baths. The following articles were excluded from the diet while taking the cure: fresh fruits, salads, acids such as vinegar and lime juice, cheese, butter, canned, dried, or smoked fish, nuts, sweets, wine, and all highly seasoned dishes. Wiesbaden was a good place in which to take the cure in the autumn and winter months. All stomach diseases were treated there, but it was best for cases of low acidity and those with rheumatic tendencies. There were twenty-three springs, the principal one being the Kochbrunnen. Its temperature was 144° F., and its chief ingredients sodium chloride and salts of potassium and lithium.

The Relative Merits of the Spa Treatment of Heart Troubles at Bad-Nauheim and in America.—Dr. Louis F. Bishop said that every resort where any particular form of disease was handled had some special kind of treatment which characterized that place, but it was recognized that the elemental treatment at any such place was not the whole cause of the improvement in the patient. At Nauheim the elemental treatment was the carbonated saline bath, and it had gained its reputation, in a great measure, through the use of this bath in conjunction with resistance exercises. Those who had attempted to copy the Nauheim treatment in other parts of the world had taken great pains to copy the chemical composition of the baths, as well as the mode of administration, but had often neglected to try to copy the other elements of the cure. We had to acknowledge that people with circulatory disease who went from America to Nauheim often came back greatly improved, and, as obviously we could not send all our patients of this character to Nauheim, it behooved us to discover how we could imitate the Nauheim cure right here at home. When the Germans spoke of a patient taking a cure they did not mean that the treatment undergone would necessarily lead to the removal of the disease; what they understood by a cure ("Kur") was a course of treatment and a period spent under changed conditions, by which a person who was suffering from, or threatened with, some disease was put in the best possible condition. This conception of the word cure was very important, and we needed to learn it in this country. The American people should be taught that persons generally, and certainly those past middle life, should give up a certain time every year during which they were to be put in the best possible condition. A vacation was supposed to do this, but that was a random sort of thing, and quite frequently people came back from their vacations in worse shape than when they went away, as a result of unsuitable hygiene, dissipations, or various other causes. In Europe they combined a vacation with a cure, and obtained great benefit, and the fact that this was generally done had led to the great development of cure resorts. Dr. Bishop then proceeded to describe some of the characteristics of the Nauheim cure. The cooking, he said, was plain (vegetables cooked in water and no made-over dishes), and the meals were served very deliberately; so that the patient ate slowly and carefully. A band was generally playing in the garden of the hotel, where the meals were served in good weather, and the meal hour was thus rendered a pleasant diversion. The place was so attractive that the temptation to be out of doors was great. When persons first came to Nauheim they were inclined to sleep a good deal, partly on account of a certain quality in the air and partly because coffee deprived of its caffeine was

always served. The organization of the place was so complete that all disagreeable things were kept out of sight, and one element in the success of the cure was the hopefulness and general spirit of optimism prevailing. The maintenance of a proper moral atmosphere was very important in the handling of cases of heart disease. When the patient first came to Nauheim all drugs, stimulants, and tobacco were removed from him, and it was the practice to restore such only when in the patient's treatment they were actually needed. The baths consisted essentially of a strong brine bath, with a considerable amount of calcium chloride and a certain amount of carbonic acid gas. In imitating these in America persons were apt to add more carbonic acid gas than was in the Nauheim baths and to forget all about the salt. It took a good many pounds of salt to make a bath-tub-full of water of the same strength as the natural bath at Nauheim. A man who had learned the ultimate principles of the treatment of heart disease, and had sufficient strength of mind, could get just as good results in New York as were met with at Nauheim; but, on account of the absence of the natural baths, of the peculiar air, of the diet, and of the proper kind of exercise, as well as of the atmosphere of hopefulness, it would be essential that he should exercise an iron control over his patient. The Nauheim treatment had been imitated in a considerable number of places in America, with varying degrees of success. Everything depended on the physician, and whether he could control the conditions. The trouble with health resorts in this country was that they were often essentially money-making institutions, while the medical control was not absolute, or else so many kinds of affection were treated that the heart patients could not receive the special different attention they required. Often the baths alone, without the requisite regimen, were not worth taking, and often both the baths and exercises were stronger than was wise. The speaker thought we ought to have a place in America that was not too fashionable and not too much devoted to money-making, which should be under the direction of a man especially qualified for this kind of work, and not too far from New York, so that the patient could be more or less under the control of his own physician. On the whole, however, it was better for the physician to undertake the treatment without attempting to get the assistance of any particular place, and if he would bear in mind that a cure at Nauheim meant a period spent under conditions designed to contribute to the well-being of the patient, that the word did not mean the magic removal of disease, and that change of scene, diet, exercise, and the withdrawal of all depressing influences were just as essential a part of the treatment as the baths, he could carry out the spirit of the Nauheim treatment with his patients.

Some European Spas—A Peep Behind the Scenes.—Dr. Heinrich Stern criticized certain of the health resorts of Germany, and the commercialism prevailing there, with no little severity. He said that almost within his own recollection the medical powers had caused Nauheim to change its skin three times. Until about 1870 its waters were exploited as a sure cure for tabetic degeneration; from then until the early nineties it was mainly rheumatics who swelled the coffers of the Nauheimers, and ever since it had been the cardiopaths, real and imaginary. The water of the Karlsbrunnen, however, had remained precisely the same, and the amount of its carbon dioxide was decidedly less than that of Soolsprudel in Kissingen, the Soolbrunnen in Soden, the Elizabethbrunnen in Homburg, and the Salzquelle in Pyrmont, and less than half that of the warm Soolsprudel in Soden. This was not certainly an impressive showing when it was remembered that carbon dioxide was the main asset of contemporaneous Nauheim. In the beginning of its cardiocurative era the place had no other method than that in vogue in dozens of other German health resorts, the Oertel terrain cure. The resistance movements came as an afterthought, and thus on the flimsy basis of carbon dioxide and Swedish gymnastics the reputation of Nauheim was founded. Granted, even, that there ensued a transitory feeling after a Nauheim bath or exercise, would any thinking physician really maintain that lasting benefit to the genuine cardiopath would result from a course of the Nauheim treatment? It could be positively asserted that the Nauheim physicians entertained no such delusion. But few foreigners traveled directly to a German watering-place. They were mostly directed by their home physicians to certain well-known consultants in various cities, especially university towns. These gentlemen did the final apportioning. They might send the patient to this or that resort, but he would always land in the office of a secret co-partner of the great professor. The division of fees between certain "Badeärzte" and the referring consultants was an open secrét; it prevailed at all German health resorts where there were more than half a dozen practitioners. At Wiesbaden the local profession counted some of the most illustrious German physicians among its members, and the practitioner there depended much less upon a business connection with the medical authorities than did his confrère in smaller health resorts. Wiesbaden, however, abounded in mucous membrane specialists of every type, and, though some of them prescribed the Kochbrunnen water, the real benefit to the patient resulted from treatment other than balneological. Some very good work concerning the pathology and treatment of gout had been done in Wiesbaden, but the speaker said he had never been able to fathom the causative connection between the mild sodium chloride spring and the cure of this affection. Aix-la-Chapelle (Aachen) was far-famed for its method of treating syphilis, but Wiesbaden had stolen the thunder of the Aacheners by employing their methods, and its syphilitic clientèle was now actually larger than that of Aachen. Why should a man sneak to Aachen for treatment (which fact alone stamped him as a syphilitic) when he could pose in Wiesbaden as one of the 50,000 sufferers from mucous membrane disease who annually gathered there? As far as the cure-tax was concerned, Wiesbaden was more liberal than the smaller spas, though the custom that the townspeople paid 10 per cent. less than the cure guests for everything they bought also prevailed there. The reputation enjoyed by Schwalbach was due to its Stahlbrunnen, with its iron bicarbonate and carbon dioxide, but the local conditions doubtless contributed not a little to the well-being of many of that species of English hothouse females who frequented this tranquil resort. It was entirely natural that a certain proportion of cases of uterine disorder depending upon anemia should be benefited by a course of treatment there; but it was the combination of change of surroundings, rest, bracing air, regulation of diet, and hydrotherapeutic and balneological measures in general which brought about the improvement. The iron water alone would probably not accomplish much. As to the alleged efficacy of the treatment both at Schwalbach and Franzensbad in the cure of sterility, Dr. Stern was rather skeptical. Homburg was the most fashionable, as well as the most expensive, of German spas. It had for many years been a resort of the English aristocracy, and the German public in general knew very little about it. Really sick people rarely went to Homburg, as the place was not sufficiently a freak of nature to attract real live patients without so-called scientific work on the part of its physicians. These were quite contented, and they had not created a specific system of treatment because there was no need of such. Though the practice of medicine was of secondary importance there, it was a pleasure and recreation to practise at Homburg. The duties were light, the fees high, the chances great—the chance to become a

duke's private physician or to marry an English heiress. Health resorts might serve a good purpose, but the fake sanatorium, with its eccentric dietary and pseudo-religious atmosphere, had no place in the honest practice of medicine. It was such, and the railroad companies exploiting every tepid spring along their lines as a cure-all, that were preventing a natural development of spas like our own Saratoga.

Dr. George Meyers said the success of spa treatment was in reality due to the change of scene, air, habits, and regimen, and it seemed to him that the result would be just the same if the baths and the mineral water drinking were omitted.

Dr. L. L. Seaman said that in the library of the Academy of Medicine were two volumes published by his grandfather, Dr. Valentine Seaman, respectively in 1793 and 1809, containing elaborate analyses of the Saratoga waters, and it certainly seemed remarkable that analyses made at this early date were so accurate and so nearly identical with those of the present day. A familiarity with the waters of many of the springs abroad led him to believe that at Saratoga and in the Yellowstone Park we had waters which possessed remedial properties equal, if not superior, to those of any European spa, and it was a matter for congratulation that both our State and National governments had at last awakened to a realization of the enormous value of these assets.

Dr. T. E. Satterthwait said that, notwithstanding all that might be said against the foreign spas, he believed it to be true that these resorts afforded unusual opportunities for the special study of disease, because at each were to be found a large number of cases of one particular class. At Franzensbad there was a physiological laboratory belonging to the town and facilities were offered the physician for availing himself of everything which would throw light on a case scientifically. Something of this kind, he thought, was what was most needed at Saratoga.

Dr. Moriarta said he could not agree with Dr. Stern and Dr. Meyers. It was scarcely reasonable, he thought, to assert that mineral waters with a definite amount of active medicinal agents in their composition did not have any effect. In these waters we were dealing with a composite remedy, and one which must be used with discrimination.

Dr. Comstock said he could not believe that patients who merely took a rest, with change of scene, but without the benefit of mineral waters, would do just as well as those who had such additional benefit. Thus, he had seen a good many Cubans in poor health who had come first to New York and then gone to the mountains without getting any better. For the most part they were jaundiced, had disordered livers, and were suffering from anemia; and invariably, unless some organic trouble was present, they were immensely benefited in every way by a course of treatment at Saratoga. It seemed evident, therefore, that the improvement was due more to the waters than to simple change of environment and mode of life. These had their effect, however and he agreed with Dr. Bishop that the general air of hopefulness which was met with at health resorts constituted, by its moral effect, an important element in the benefit to the patient.

Colloidal Nitrogen in the Urine in Cancer.—Maucini, employing Salkowski's method of determining the colloidal nitrogen in the urine, found that when the kidneys are healthy the excretion of colloidal nitrogen is increased by all processes that increase the amount of colloidal nitrogen in the blood and lymph, namely, exudates and transudates, pneumonia, pleurisy, circulatory failure, and inflammatory and suppurative processes. The increase associated with carcinoma is attributed to metabolic changes and to autolysis of the tumor.—*Deutsches Archiv für klinische Medizin.*

Pathological Society of Philadelphia.

At a stated meeting held November 23, Dr. H. B. Allyn exhibited a specimen of "Primary Cancer of the Gall-bladder with Secondary Cancer of the Liver." Dr. M. B. Hartzell demonstrated "A Convenient and Effective Method of Paraffin Imbedding without a Thermostat." The device comprises a so-called thermos bottle partially filled with hot water, and over which is placed a test-tube containing the paraffin, which, when liquefied, impregnates the bit of tissue removed from strong alcohol. With the test-tube is connected a water vacuum-producing mechanism for the abstraction of the chloroform vapor, a flask being interposed between the two to receive any overflow. By the use of this device tissue can be imbedded in a half-hour without risk of in any way injuring the tissue. It has proved most satisfactory in an experience of more than two years. Dr. Percival Nicholson made "A Demonstration of a New Sphygmomanometer." The instrument is small enough to fit into a 15-inch bag and it weighs about two pounds. It consists of a U-shaped tube through which flows a column of mercury and which is secured to the lid of the containing box. It is ready for use when the lid is deflected upward at a right angle. The escape of the contained mercury is prevented by means of a stop-cock, which must be shut off before the lid can be closed. The escape of air is prevented by means of a needle valve, and an additional cock is provided to preclude such escape. The cuff is lined with felt so that it may fit snugly and not slip when applied over the covering of the arm. The air is introduced by means of a small hand pump. Dr. Karl F. Meyer made a demonstration of the "Serodiagnosis of Glanders," and pointed out the practical utility of this procedure, especially in veterinary medicine. Dr. S. S. Woody presented a communication entitled "The Epidemiology of Measles." He pointed out that the disease prevails in practically all parts of the world, and that its incidence is largely in children, adults escaping principally because of the immunity conferred by an attack in early life. It occurs at all seasons, but is observed most frequently in the winter because of the confinement of children indoors and the greater opportunity for conveyance. It is transmitted by more or less immediate contact. It seems probable that the infection resides in the discharges from the mucous membranes and little if at all in the scales. Dr. John F. Anderson, Director of the Hygienic Laboratory of the U. S. Public Health and Marine Hospital Service, read by invitation, a paper entitled "Experimental Measles." He cited observations showing that the disease could be conveyed from man to monkeys by means of the blood and of the discharges from the nose and pharynx, but the infectivity gradually disappears after the fourth day of the disease. Dr. John A. Kolmer read a paper entitled "Streptococcous Antibodies with Special Reference to Complement-fixation." His investigations were directed in part to determine whether the streptococcus bears any etiological relation to scarlet fever, and also the utility of a streptococcus vaccine in the treatment of this disease. He reached the conclusion that the streptococcus is not specific for scarlet fever, and that vaccine treatment might be useful for complications but not for the disease itself.

Cardiac Tumor Causing Heart-Block.—Armstrong and Mönckeberg demonstrated in a case of heart-block in a five-year-old child the presence of a lymphangioendothelioma at the site of the bundle of His.—*Deutsches Archiv für klinische Medizin.*

Syphilitic Cardiovascular Disease.—Jakobäus believes that this is more common than is generally realized. Aortic insufficiency particularly is due not only to direct syphilitic processes, but also to indirect arteriosclerotic changes.—*Deutsches Archiv für klinische Medizin.*

Medicolegal Notes.

Physician's Book of Accounts Held Competent Evidence of Services Rendered.—A claim was made against an estate for services rendered and medicines furnished to the decedent by the claimant as a physician, and contested by the administrator, whose chief objection was that the physician's book of accounts was incompetent as evidence against the estate because of the provisions of section 829 of the New York Code of Civil Procedure, forbidding a party to testify at the hearing on the merits of a special proceeding against the personal representative of the decedent as to personal transactions between the witness and the decedent. The rendering of the services was abundantly proved by the claimant's book of accounts, if that book was properly received as evidence. The book was produced by the claimant and identified by him as his book of accounts. He testified that he made the entries in it, and that he so made them at the time the transactions referred to occurred, and that he kept no clerk. He then proved by others that some of the services charged for were rendered, that some of the medicines charged for were delivered, that the amounts charged were reasonable, and that he kept correct books, the latter fact being shown by the testimony of several persons who had settled with him from the book during the period covered by the account in question, that their accounts upon the books were shown to them, and that they found them correct. In allowing the claim the court distinguished the case from that of Davis vs. Seaman, 64 Hun. 572, where the only evidence that the claimant kept correct books was his own testimony, given under objection and exception. He merely produced his own record of his dealings with the decedent and then swore that the record was correct. In the present case the correctness of the claimant's book of accounts was proved by the testimony of third persons. The book itself was not therefore incompetent evidence merely because of the fact that the entries in it were made by the claimant himself. Any other rule would render it impossible in the majority of cases to establish a claim against an estate, where the claim consists of many items of goods and services rendered. In re Runions, 128 N. Y., Supp. 1030.

"Healer" Without Drugs Practises Medicine Within Meaning of Statute—Power of States to Control Practice.—On appeal from a conviction for practising medicine without a license it appeared that the defendant kept a furnished office for healing the sick and the signs on his windows read, "Professor Smith, Healer." He claimed his treatment was a natural one—a gift from the Almighty; claimed to restore people to health; said he could cure any disease medical men could, and many they could not; could cure diarrhea and stomach, spinal, nervous, and throat troubles, and pneumonia; mentioned several cases of pneumonia he had recently cured that doctors had given up; said he diagnosed his cases and treated them without medicine. He testified that he belonged to the church of "The Divine Scientific Healing Mission," a corporation; that he charged some of his patients and some not; that he could not tell whether they had gout, smallpox, or rheumatism, but could and did treat and cure them. The Colorado statute (Rev. St. 1908, §6069), defines the "practice of medicine as the holding onesself out to the public as engaged in the diagnosis and treatment of human diseases, or the prescription of any treatment for the relief or cure of any physical or mental ailment with intent to receive any compensation, or the maintenance of any office for the reception, examination, or treatment of any one suffering from any disease, or attaching any word or abbreviation to one's name indicating that he is engaged in the treatment or diagnosis of diseases. The act provides that nothing therein shall prohibit the practice of religious tenets or the general belief of any church, whatsoever, not prescribing medicine. It was held that the accused was "practising medicine" within the statute. The defendant was engaged in a business venture, not a religious exercise. The provision of the statute did not authorize one under the cover of religion or a religious exercise to go into healing commercially for hire, using prayer as the curative agency or treatment. The Legislature under the police power of the State could create the State Board of Medical Examiners and fix its powers and duties. The police power of the State relates to the preservation and promotion of the health, safety, and morals of the people. The law is settled that the Legislature ay control the practice of medicine, and define what constitutes such practice.—Smith v. People, Colorado Supreme Court, 117 Pac. 612.

Hypothetical Question as to Insanity.—In a criminal case where the accused's mental capacity is in issue it is improper for the prosecution to state to a medical expert an isolated instance given as a reason by witnesses for the defense for their opinion as to the accused's insanity and ask him if that was an evidence of insanity and so on, one by one, through the category of separate and detached occurrences mentioned by the witnesses for the defense. On the other hand, the hypothetical question should be germane to the matter in hand, and not clouded with references to other matters which, though relating to the crime, do not relate to the question of the accused's insanity. State v. Garrison, Oregon Supreme Court, 117 Pac. 657.

Statute Requiring from Physicians Certificate Containing Certain Facts as to Births Held Unconstitutional.—Sections 14, 17, and 21 of "An act to establish a bureau of vital statistics and to provide for the prompt and permanent registration of all births and deaths occurring within the State of Ohio," so far as they relate to a physician or midwife, in attendance upon a case of confinement, have been held by the Ohio Supreme Court to be unconstitutional and void because they were enacted by an unnecessary, unreasonable, and arbitrary exercise of the police power of the State. The statute imposes upon the physician or midwife the duty of investigating and certifying as to certain facts which would not necessarily or naturally come within the knowledge of the attendant physician or midwife, viz., whether the birth was legitimate or illegitimate, and, except in case of illegitimacy, the full name, residence, color or race, birthplace, age, and occupation of the father; also the maiden name in full, residence, color or race, birthplace, age, and occupation of the mother; likewise the number of this child of the mother, and the number of living children of the mother. This information was required to be supplied without compensation. Without deciding the point, the court doubted whether statutes imposing the duty of making such report or certificate were not unconstitutional because they did not provide for compensation to physicians.—State v. Boone, 95 N. E. 924.

Malpractice—Evidence—Letter That Medical Society Defended Its Members.—After suit brought by a patient against his physician for malpractice the defendant wrote a letter to the plaintiff, stating ,in substance, that the medical society of the State defends its members in actions for alleged malpractice. This letter was offered in evidence by the plaintiff and received by the trial court over the defendant's objection and exception. The re-examination with reference to the letter developed the fact that by reason of membership in the society the member was entitled to be defended by the attorney of the society in such actions, and to that extent the defendant was insured or indemnified. On appeal it was held that the letter was not evidence upon any subject before the jury and it could only tend to prejudice the defendant's case by making the jury believe that the medical society in some way must bear a part of the burden of the defense. Perhaps the jury reasoned that if the defense cost the defendant nothing its verdict against him would not be a very serious burden.

The appellate court thought that the familiar rule in negligence cases excluding evidence that the defendant is insured against liability applied in principle to this case. The letter could not be said to be an admission of the defendant's guilt, as the suit was already pending, but it was an unwise attempt by the defendant to frighten the plaintiff from further prosecuting the case, not by a false statement, but by a statement which, as a matter of fact, rested upon a substantial basis. Perhaps standing alone the erroneous ruling might not call for a reversal, but the case was reversed on another point (see next note).—Terier v. Dare, New York Appellate Division, 131 N. Y. Supp. 51.

Opinion Evidence—Answer—Based on Sufficient Data.—In a personal injury action the plaintiff's right elbow was injured by a dress suit case thrown from a rack on the opposite side of the railroad car in which she was traveling. A physician was asked what in his opinion would be the natural result of an injury to the elbow, such as the plaintiff had received, with respect to synovitis, swelling, inflammation, blood poison, stiffness. It was held that the answer, which was as restricted as the question was not objectionable, although, on cross-examination the physician admitted that the answer was based upon the fact that there was a fracture involving the joint and an injury to the ulna nerve; that those two elements do not always produce the same results; that you have to consider the treatment in order to determine the probability of recovery of a fractured arm, and that he did not take that into account in his answer.—Parker vs. Boston & M. R. R., Vermont Supreme Court, 79 Atl. 865.

Books Received.

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THE INDIVIDUALIZATION OF PUNISHMENT. By RAYMOND SALEILLES. 313 pages; cloth; price $4.50 net. Little, Brown & Company, Boston, Publishers.

DIE DIFFERENTIALDIAGNOSE ZWISCHEN MAGENGESCHWUR UND MAGENKREBS. By Prof. Dr. V. SCHMIEDEN. 92 pages; illustrated; paper; price 4 M. August Hirschwald, Berlin, Publisher.

KLINIK FÜR PSYCHISCHE UND NERVOSE KRANKHEITEN. By Dr. ROBERT SOMMER. 293 pages; paper. Carl Marhold, Halle, Publisher.

DISEASES OF THE STOMACH. By MAX EINHORN, M.D. Fifth Revised Edition. 531 pages; illustrated; cloth; price $3.50 net. William Wood & Company, Publishers, New York.

DISEASES OF INFANTS AND CHILDREN. By HENRY DWIGHT CHAPIN, A.M., M.D., and GODFREY ROGER PISEK, M.D. Second Edition Revised; 636 pages, with 181 illustrations and eleven Colored Plates; price $4.50 net. William Wood & Company, Publishers, New York.

ORTHOPEDIC SURGERY. By EDWARD H. BRADFORD, M.D., and ROBERT W. LOVETT, M.D. 410 pages illustrated; price $3.50 net. William Wood & Company, Publishers, New York.

TEXT-BOOK OF EMBRYOLOGY. By FREDERICK RANDOLPH BAILEY, A.M., M.D., and ADAM MARION MILLER, A.M. Second Edition. 672 pages, with 515 illustrations; cloth; price $4.50 net. William Wood & Company, Publishers, New York.

A TEXT-BOOK OF PATHOLOGY. By FRANCIS DELAFIELD, M.D., LL.D., and T. MITCHELL PRUDDEN, M.D., LL.D. Ninth Edition. 1114 pages, with 13 full-page plates and 687 illustrations in the text in blank and colors; cloth; price $5.50 net. William Wood & Company, Publishers, New York.

CASE HISTORIES IN NEUROLOGY. By E. W. TAYLOR, A.M., M.D. 305 pages; illustrated; cloth. W. M. Leonard, Publisher, Boston.

THE HOUSE-SURGEON'S VADE-MECUM. By RUSSELL HOWARD, M.B., M.S., F.R.C.S. 511 pages; illustrated. Longmans, Green and Company, Publishers, New York and London.

ELECTRICITY. By CHARLES S. POTTS, M.D. 509 pages; with 356 illustrations and 6 plates; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

PROCEEDINGS OF THE AMERICAN SOCIETY FOR PSYCHICAL RESEARCH. By Dr. W. H. HAMILTON, Dr. J. S. SMYTH, and JAMES H. HYSLOP. 672 pages; illustrated; paper. American Society for Physical Research, New York, Publishers.

CURRENTS OF HIGH POTENTIAL OF HIGH AND OTHER FREQUENCIES. Second Edition. By WILLIAM BENHAM SNOW, M.D. 275 pages; illustrated: cloth: price $3.00 net. Scientific Authors' Publishing Company, Publishers, New York.

OPERATIVE OBSTETRICS. By EDWARD P. DAVIS, M.D. 483 pages, with 254 illustrations; cloth; price $5.50 net. W. B. Saunders Company, Publishers, Philadelphia and London.

MATERIA MEDICA FOR NURSES. Second Edition, Revised. By GEORGE A. PAUL, M.D. 282 pages; cloth; price $1.50 net. W. B. Saunders Company, Publishers, Philadelphia and London.

MINOR AND EMERGENCY SURGERY. By WALTER T. DANNREUTHER, M.D. 226 pages; illustrated; cloth; price $1.25 net. W. B. Saunders Company, Publishers, Philadelphia and London.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS. 25th Annual Meeting Held at the Hotel Astor, New York City, May 31, June 1, 2, and 3, 1911. Vol. VI.; 198 pages; paper. Frederick H. Hitchcock, New York, Publisher for the Association.

THE REPORT OF THE PHILADELPHIA MILK SHOW. By ARTHUR EDWIN POST. 123 pages; illustrated. Published by the Executive Committee.

A MOTHER'S GUIDE. By FRANCIS TWEDDELL, M.D. 181 pages; cloth; price $1.00. James T. Dougherty, New York, Publisher.

DIE GASTROSCOPIE. By Dr. HANS ELSNER. 129 pages; illustrated; cloth; price 8 M. Georg Thieme, Leipzig, Publisher.

DIAGNOSTIK UND THERAPIE DER MAGENKRANKHEITEN. By Prof. Dr. I. BOAS. 670 pages; illustrated; cloth; price 17 M. Georg Thieme, Leipzig, Publisher.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended December 16, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	465	152
Diphtheria	244	14
Measles	406	11
Scarlet Fever	226	9
Smallpox	2	—
Varicella	225	—
Typhoid Fever	105	13
Whooping Cough	46	6
Cerebrospinal Meningitis	3	2
Malarial Fever	—	—
Totals	1,722	207

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended December 15, 1911:

Places	Date	Cases	Deaths
CHOLERA			
Bulgaria: Varna	Oct. 18	1	..
On s. s. *Boris* from Asia Minor.			
Dutch East Indies	July 17–Aug. 22	127	90
Bulletin Quarantenaire d'Egypte, Nov. 16, 1911.			
Java	Oct. 22–28	9	2
France: Marseilles	Oct. 1–31	..	13
India: Calcutta	Oct. 15–21	..	32
Madras	Oct. 29–Nov. 4	90	70
Italy		..	..
Total, Nov. 5 to 11: Cases 112, deaths 59.			
Provinces—Calatabriano	Nov. 5–11	2	2
Palermo	Nov. 5–11	3	..
Palermo	Nov. 5–11	4	..
Rome	Nov. 5–11	3	1
Nine other provinces	Nov. 5–11	102	57
Malta	Oct. 15–Nov. 11	22	10
Montenegro: Antivari	Dec. 6	9	6
Russia	Oct. 15–Nov. 4	..	..
Total cases 16, deaths 6.			
Bessarabria, government	Oct. 15–Nov. 4	1	..
Don territory	Oct. 15–Nov. 4	4	3
Novoryssisk	Oct. 15–Nov. 4	1	..
Rostov on Don	Oct. 15–Nov. 4	5	..
Saratov government	Oct. 15–Nov. 4	3	3
Taganrog district	Oct. 15–Nov. 4	1	1
Taganrog	Oct. 15–Nov. 4	1	..
Servia: Belgrade	Oct. 22–28	2	1
Straits Settlements: Singapore	Oct. 15–21	21	24
Tunis Regency		..	..
Total Oct. 23–30: Cases 780, deaths 713.			
Bizerta	Oct. 23–30	219	195
Tunis	Oct. 23–30	5	1
Turkey in Asia: Damascus	Oct. 22–Nov. 5	14	8
Haifa	Nov. 6–12	2	1
Medina	Nov. 4–11	14	13
Mersina	Nov. 15–21	1	..
Turkey in Europe: Dardanelles	Nov. 5–11	..	1
Saloniki	Oct. 20–Nov. 6	232	169
YELLOW FEVER			
Brazil: Manaos	Nov. 5–11	..	2
Columbia: Sabanilla	Nov. 18	..	1
On the schooner *Margarita Sophia* from Rio Hacha.			
Ecuador: Bucay	Nov. 1–15	3	3
Chobo	Nov. 1–15	1	..
Guayaquil	Nov. 1–15	7	2
Milagro	Nov. 1–15	1	1
Naranjito	Nov. 1–15	1	1
PLAGUE			
Brazil: Para	Nov. 12–18	1	..
China: Hongkong	Oct. 22–28	1	1
Ecuador: Guayaquil	Nov. 1–15	57	22
Egypt: Port Said	Sept. 23–Nov. 14	3	2
Province of Giseh	Oct. 29	1	..
India: Bombay	Oct. 29–Nov. 4	6	6
Calcutta	Oct. 15–22	..	5
Karachi	Oct. 29–Nov. 4	1	1
Rangoon	Sept. 1–30	72	69
Java: Pasoeroean Residency, Malang district	Oct. 22–28	10	5
Straits Settlements: Singapore	Oct. 15–21	1	1
Turkey in Asia: Mersina	Nov. 1–15	1	1
SMALLPOX			
Austria-Hungary: Trieste	Nov. 5–11	1	..
From s. s. *Amphitrite* from Beirut.			
Brazil: Rio de Janeiro	Oct. 8–11	9	1
Canada: Montreal	Nov. 26–Dec. 2	1	..
Ottawa	Nov. 26–Dec. 2	3	..
Quebec	Nov. 26–Dec. 2	19	..
Ceylon: Colombo	Oct. 22–28	1	..
Chile: Talcahuano	Oct. 29–Nov. 11	11	3
China: Hongkong	Oct. 22–28	3	1
Egypt: Cairo	Oct. 29–Nov. 4	1	..
Hawaii: Honolulu	Dec. 4–9	22	8
From s. s. *Willesden.*			
India: Rangoon	Sept. 1–30	10	6
Italy: Naples	Nov. 12–18	11	1
Palermo	Nov. 5–11	208	108
Java: Batavia	Oct. 22–28	3	..
Spain: Cadiz	Oct. 1–31	..	5

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Original Articles.

THE QUANTITATIVE ANALYSIS OF HUMAN AND OF COWS' MILK.*

BY ARTHUR V. MEIGS, M.D.,

AND

HOWARD L. MARSH, B.S.,

PHILADELPHIA.

WE have undertaken the quantitative analysis of human milk for the purpose of proving the accuracy or inaccuracy of the analyses published by Arthur V. Meigs† in a paper on Milk Analysis in 1882, and in various subsequent publications, and of cows' milk because of its great importance as a food and because it was impossible not to use it for various experiments, as it is always so easy to obtain. In the paper mentioned it was asserted "that human milk never contains more than from seven-tenths of one, to one and a half per cent. of casein." At that time the term casein was used to designate what is now named the protein of milk. The conclusion that human milk contains only a small amount of protein, much less than had previously been supposed, was commonly accepted as a fact by physicians and the artificial foods recommended for infants have almost all since that time been based upon the estimate that the proper amount of protein for the newborn human infant is about one per cent. Chemists have seemed indifferent upon the subject, and although Meigs has a number of times asked for the confirmation or refutation of the important conclusion in the twenty-nine years that have elapsed since the publication of the original paper, no one has made any investigation with a view to answering the question. Analyses have been published, and continue to be published, by chemists of repute in which the protein of human milk is estimated to be as high as three and even four per cent. It is quite unreasonable to accept as correct analyses that rate the protein as high as three or four per cent., and at the same time to accept the conclusion of Meigs that human milk never contains more than about one per cent. of protein. For many years past, however, physicians have failed to perceive that the two statements are contradictory, and that if the one is correct the other is not. Most analyses have been made by determining the nitrogen by the Kjeldahl method and multiplying by a factor to ascertain the amount of protein, and the copper reduction method (Fehling's) to ascertain the amount of lactose. In many analyses direct determinations have not been made of both the protein and the lactose, but only of one of them, and the other has been estimated by difference. The reason why the determination by difference of one of the ingredients of a complex and unstable organic fluid like milk is unreliable and unscientific has been repeatedly shown by Meigs. No analysis either of human or cows' milk has heretofore been made in which the various constituents were determined gravimetrically—each one isolated from a single sample and weighed separately and the separate weights when added together shown to be equal to the weight of the original sample.

After waiting so many years, and as no one else has undertaken to solve the question at issue, we have been enabled to make an arrangement to carry out an extended study of the subject from the standpoint of pure chemistry. During the past two years we have pursued our investigations, and the junior author has devoted his entire time to the laboratory work. Dr. John Marshall, Professor of Chemistry in the University of Pennsylvania, has given us the use of his laboratory, and the work has been carried on under his supervision, and we have been guided by his advice. During the first year the work was supervised by Dr. William H. Welker, then demonstrator of physiological chemistry under Professor Marshall. While the investigation was being directed by Dr. Welker, it was carried to a point that it became evident that in human milk especially, and in cows' milk to a less extent, there exists a nitrogenous constituent which is not coagulable. This nitrogenous constituent does not react to any of the ordinary tests for protein.

It would have been impossible for us to have carried out the analyses of human milk, which necessitated the use of large quantities, but for the kindness of Professor B. C. Hirst, who placed at our disposal the facilities of the maternity department of the hospital of the University of Pennsylvania. Further, we are indebted to Miss Marion E. Smith, Superintendent of the Hospital, and to her assistants who have obtained from the lying-in women as much human milk as we have required as it has been wanted.

It is important that it should be understood at the outset that in the present state of chemistry it is impossible quantitatively to analyze an organic material like milk and to attain the accuracy of conclusion that can be had when inorganic substances are in question. It is not unreasonable to think that this will always be the case, for the component parts of milk are of composite structure instead of being simple like inorganic elements, and therefore they are liable to undergo change in the course of the manipulations of analysis. This quality makes them to a certain extent elusive. Although such accuracy as is demanded in inorganic analysis is unattainable in milk analysis, on the other hand the fat, protein and lactose of milk are such distinctive substances that it is possible to analyze milk so accurately as to obtain results in all essential features correct.

*Read at a meeting of the College of Physicians of Philadelphia, November 1, 1911.

†"Milk Analysis," by Arthur V. Meigs. Transactions Philadelphia County Medical Society, February 22, 1882, and Philadelphia Medical Times, July 1, 1882.

The percentage of water was determined by the difference between the percentage of total solids and 100 parts by weight of the milk.

The total solids were determined by weighing 5 c.c. of milk in a weighed platinum dish and evaporating to dryness on a water bath. The contents of the dish were then desiccated to constant weight over sulphuric acid.

The ash was determined by slowly igniting the total solids contained in the above mentioned weighed platinum dish. To obtain the best results the platinum dish should at no time be heated to more than a dull red glow. Sufficient heat to produce a dull red glow should be used only during the last few seconds of the ignition. A white ash was produced after about twelve hours' heating.

The determinations of the fat, protein, lactose and extractives were all made from one sample of milk; 10 c.c. of the milk were accurately weighed into a 100-c.c. glass-stoppered cylinder, and to this were added 20 c.c. of distilled water and 20 c.c. of ethyl ether, and the mixture was shaken for five minutes. Then 20 c.c. of 95 per cent. alcohol were added and this mixture was agitated for five minutes. After the cylinder had been allowed to stand a few minutes two layers separated. The upper layer consisted of an ethereal solution of all the fat, a small amount of lactose and an infinitesimal amount of nitrogenous substance which was soluble in alcohol but insoluble in water and in ether alone.

The lower layer contained all of the other solid constituents of the milk.

The upper layer was removed into a weighed glass dish by means of a pipette, care being taken not to take any of the lower layer; 5 c.c. of ether were added to the contents of the cylinder in such a way as to wash down the sides as well as practicable, and this was then drawn off with a pipette and discharged into the same glass dish. The washing in this manner was repeated five times to remove all the fat. The contents of the dish were then evaporated to dryness on a water bath and desiccated to constant weight over sulphuric acid. This water-free fat was treated with sufficient dry ether to dissolve it and the solution was filtered into a small weighed beaker. After thoroughly washing the filter with dry ether the washings were added to the filtrate in the weighed beaker and the solution was evaporated and desiccated over sulphuric acid to constant weight. The residue in the beaker consisted of all the fat originally contained in the milk. The residue insoluble in ether remaining on the filter which consisted of a very small amount of lactose (varying between 0.05 and 0.20 per cent. of the milk) and an infinitesimal amount of nitrogenous extractives, was treated with hot water, which dissolved the lactose, leaving the nitrogenous extractive on the filter. This hot water solution of lactose was added to the lower layer of milk liquid from which the protein had been removed and which contained all of the lactose except that small amount just mentioned.

The remaining portion of the contents of the cylinder, *i. e.* the lower layer, was transferred to a 200-c.c. beaker and evaporated on a water bath to a volume of about 10 c.c.; 100 c.c. of 95 per cent. alcohol were then added, to bring the mixture to a content of 86 per cent. of alcohol, in order to precipitate the protein. This was allowed to stand five minutes before filtering. If allowed to stand longer than twenty minutes there is likelihood of the lactose separating by crystallization. It was then filtered through a weighed alundum porous crucible by means of a suction pump and washed with one liter of boiling 86 per cent. alcohol and subsequently with 500 c.c. of ether. As soon as the protein had been transferred to the crucible all the lumps of protein were very carefully and gently pulverized with a glass rod.

The contents of the crucible were dried at 110° C. and desiccated to constant weight over sulphuric acid. The ash content of the protein was determined by slowly igniting the contents of the crucible. The loss of weight due to the incineration represented the amount of protein.

The clear filtrate and washings from the above precipitate, to which had been added the solution in hot water of the residue derived from the ethereal solution of the fat from the original milk, was evaporated on a water bath to a small volume and transferred to a weighed platinum dish and evaporated to dryness on a water bath and desiccated to constant weight over sulphuric acid. The residue in the dish was then slowly ignited and weighed in order to determine the amount of ash. The loss in weight due to the material burned represented the amount of the lactose and extractives.

The lactose of the milk was determined by Fehling's method. The method was carried out as follows: 25 c.c. of cow's milk, or 15 c.c. in the case of human milk, or the amount of residue containing all of the lactose of the milk together with the extractives secured from 10 c.c. of milk were diluted to 400 c.c. in a 500 c.c. graduated flask, 15 c.c. of N/5 sodium hydroxide, and 10 c.c. of cupric sulphate of the strength used in a Fehling's solution were added and the volume of the liquid in the flask was diluted to 500 c.c. with water.

After this mixture had been well shaken it was filtered through a dry filter into a dry flask; 100 c.c. of this solution were added to 50 c.c. of hot Fehling's solution and the mixture was boiled for six minutes. It was then quickly filtered through an alundum crucible and washed with about 600 c.c. of boiling water. The resulting cuprous oxide in the crucible was dissolved with nitric acid and the solution poured into the beaker which had been used in the reduction. The crucible was then thoroughly washed by passing hot water through it and this wash water was added to the nitric acid solution which had been poured from the crucible. This nitric acid solution of the cuprous oxide was evaporated on a water bath until free from nitric acid. It was then dissolved with acetic acid and water, 8 grams of zinc acetate were added to the solution, and the liquid was transferred to a small glass stoppered bottle. Four grams of potassium iodide were added and the solution titrated against N/10 sodium thiosulphate with starch as an indicator.

The amount of lactose corresponding to the amount of copper found was ascertained by referring to a table given in Bulletin No. 107 (revised) of the U. S. Department of Agriculture, Bureau of Chemistry.

The amount of extractives in the milk was the difference between the lactose plus extractives and the lactose as determined by Fehling's method.

The method of Meigs for the extraction of fat from milk gave the same results as were obtained by the Soxhlet method. It has no effect upon the other constituents of the milk and is decidedly more rapid and simpler in execution than the Soxhlet method.

The protein precipitate produced in the fat extracted milk when alcohol was added so that the

mixture contained 86 per cent. of alcohol was all the coagulable protein of the milk. It was of high purity as it contained only a trace of lactose and extractives. The proteins of the cow's milk and of human milk contained respectively 14.5043 per cent. and 13.1110 per cent. of nitrogen corresponding to the factors 6.89 and 7.62. In calculating these nitrogen determinations the ash was in every case subtracted. The protein precipitate from cow's milk contained the larger portion of the ash of the milk, whereas the protein from human milk contained the smaller portion of the ash.

In this method of analysis we may for convenience term the fat the first fraction, the coagulable protein precipitate the second fraction, and the remaining liquid the third fraction. This third and last fraction of the milk contained all but a very slight quantity of the lactose, a portion of the inorganic salts and some other material of unknown composition, the presence of which chemists have recognized for many years past and have indefinitely named extractives.

Notwithstanding the use of all solvents known to us we have failed in our attempts to quantitatively separate all of the extractives from the lactose. Our best effort succeeded in separating only about one-half of the extractives from the mixture of lactose and extractives, and this portion of extractives contained only a very slight part of the nitrogen which remained in the unextracted portion.

A part of the extractives, however, could be removed by evaporating the third fraction of the milk to a volume of approximately 1.5 c.c. and adding about 50 c.c. of methyl alcohol. At this stage difficulty was encountered in getting the solid residue derived from the 1.5 c.c. of evaporated liquid to completely dissolve in methyl alcohol. The volume to which the third fraction must be evaporated depends upon the amount of lactose present. At too great a concentration the lactose will not go into solution in methyl alcohol, and at too great a dilution the extractives will not go into solution in methyl alcohol, and the lactose will not be completely precipitated when the ether is added. If unable to secure a perfect methyl alcohol solution of the lactose at the first attempt one should concentrate and try again with different volumes.

This methyl alcohol solution was poured into 500 c.c of dry ether contained in a glass-stoppered cylinder and violently shaken for five minutes. All the lactose and most of the nitrogen and extractives separated in large flocculi. The mixture was allowed to stand twelve hours and was then filtered through a dry filter. By evaporating the filtrate a small portion of the extractives was secured. The extractive matter thus obtained was insoluble in water but readily soluble in ethyl alcohol, chloroform, and ether. By slow evaporation from an absolute alcohol solution a very small amount of minute, yellow crystals having a sharp melting point of 115° C. was obtained. The crystals, when observed under the microscope, had the appearance of double wedges.

What advance can we claim to have made? Our method is an advance upon previous analyses because after taking one sample of milk to determine the water, total solids and ash in the usual way, we then from one other sample of the same milk take out first the fat and then the protein and weigh them, each one by itself. Afterwards what remains is dried and weighed; there is, therefore, no chance for loss. This residue contains the lactose, with some salts and a material which contains nitrogen. The nitrogenous material we have been unable to isolate, and of its nature we know little, except that it has solubilities similar to those of lactose. Whether it is in combination with the lactose, or if it simply remains with the lactose because its solubilities are similar we do not know. All that it has been possible to do has been to test the residue by Fehling's method, the best now known, to ascertain the amount of lactose present, and to ascertain the amount of nitrogen by the Kjeldahl method.

By the methods described above the following results were obtained:

	Cow's Milk. Per Cent.		Human Milk. Per Cent.	
Water	88.279		87.569	
Fat	3.032		3.087	
Protein	2.942		1.481	
Lactose	4.482	5.085	6.574	7.574
Extractives	0.603		1.000	
Ash	0.733		0.252	
Total	100.071		99.963	
Experimental Error	0.071		0.037	
	100.000		100.000	

The methods of analysis heretofore ordinarily used have all been more or less indirect. The determinations of water, total solids, fat and inorganic material can be said to be certainly correct except that the amount of salts is underestimated because incineration must cause some change and loss, but this is probably a small error. The lactose and protein and the material of unknown nature, whose presence is acknowledged because of the universal use of the term extractives to describe it, have all been determined indirectly. In many published analyses only the lactose or the protein has been determined and the other one calculated by difference. The protein is generally estimated by the Kjeldahl method for the determination of nitrogen. As far as the determination of the nitrogen is concerned it is accurate, but as there is always nitrogen present in the extractives, there is no way of finding out for certain what factor should be used to multiply the nitrogen amount in order to ascertain the quantity of protein. Fehling's test for lactose cannot be said to yield results which are certainly reliable when the solution of lactose contains other substances which might increase or diminish the copper reduction, and this is always the case in milk analysis. The truth about it, therefore, should be acknowledged that it is the best test for lactose at present known to science, but that the results obtained from its employment in any new field are to some extent uncertain. Some idea of the difficulty of dealing with lactose and of testing it may be had from the statement that we have never succeeded in obtaining a sample of absolutely nitrogen-free lactose. The best that can be purchased always contains a small amount of nitrogen, and even Merck's lactose, after having been dissolved and recrystallized five or six times, still contained a minute amount of nitrogen. By our method the fat is more easily and accurately obtained than by any other. The protein also is better separated. No reagents except volatile fluids—ether, alcohol and water—are added to the milk, and at no time is sufficiently high temperature used to change any of the component parts. The residues are not yellow or gummy, as milk residues are so prone to become. The protein when obtained by itself is a white powder. After the fat and protein have been completely removed from a single sample of milk the re-

maining portion, which has been named the third fraction, contains the lactose, part of the salts, and a material or materials which for a long time have been spoken of by chemists as extractives. The problem that remains is to find some solvent or something else that will make it possible to separate in a pure state from this third fraction the lactose or the extractives. Our efforts to do this have as yet been unsuccessful, although a part of the extractives have been separated by precipitating with ether, as has been described. The precipitated portion of the extractives thus obtained contains, as has been said, a crystallizable substance whose nature we do not recognize, but whose presence in milk has been heretofore unknown. It has been obtained only in such minute quantities that it has been impossible as yet to make any conclusive study of it.

From the point of view of the physician the results of the analysis of human milk are important in that they seem to prove the essential correctness of the conclusion reached many years ago from the analyses made by Meigs that the amount of protein in human milk is always small, only about one per cent., and to confirm also the conclusion that human milk does not change very greatly during the course of lactation. We have analyzed a good many samples of human milk, both samples of milk from one woman and samples of the mixed milk of a number of women, and have never found any that contained much more than one per cent. of protein, nor have we found any reason to think that human milk changes greatly in quantitative composition during the course of lactation. The milk of a woman whose baby is six months old does not seem to be materially different from that of a woman whose baby is one month old. In the writings upon the subject of the composition of human milk it is often assumed that the milk becomes stronger as lactation progresses. Therefore physicians generally advise that in artificially feeding infants the food be increased in strength from week to week and from month to month. There is no good reason to think that in the lower animals the milk strengthens from month to month during lactation. The young calf probably obtains more milk as the weeks go by because the cow yields an increasing amount up to a certain point, but it does not increase in strength. If the young animal does not obtain sufficient nourishment by sucking its mother, or some other form of nourishment is desirable, it obtains this by picking up small quantities of the same foods as are eaten by its mother. A parallel to this would seem to indicate that in the artificial feeding of infants their principal food, which in civilized countries is made in imitation of human milk, should not be increased in strength from week to week and from month to month, as is commonly taught, but should be given in the same strength but in increased quantities during the first few months of life. This method has been advised by Meigs upon various occasions, and especially in an article published in 1902.*

Most of the resemblances and differences between human and cows' milk are in a general way pretty well known, but on the other hand information upon the subject has not been formulated and recorded so that it is easily accessible to physicians. It is important that every one who is concerned in directing the artificial feeding of infants should be accurately informed in this regard. Human milk is the best food for infants, and it must therefore be imitated, and cows' milk forms the basis of almost all of the artificial foods used. The amounts of water, total solids and fat are not very different in the two kinds of milk. The average amount of water is a little higher and the total solids a little lower in human than in cows' milk, but the difference is not great. Fat is perhaps a little higher in cows' than in human milk, but this difference also is slight. (By a curious chance the two completed analyses that we give contradict our statement in regard to the slight differences between the amounts of water, total solids and fat generally found when human and cows' milk are compared.)

Most common cows give small percentages of fat, and there are a great many more common than there are high-grade butter cows. The amount of fat, therefore, is perhaps little if any higher in average cows' than in human milk. In artificial feeding the difference in the fat percentages, if there be any, may safely be ignored. It is in the amounts of water, total solids and fat, therefore, that cows' and human milk resemble one another. The differences are in the percentages of ash, protein and lactose. The percentage of ash, which is the salts, is about three times as great in cows' as in human milk. This difference is so well known that it is not necessary to dwell upon it. The differences between cows' and human milk that are of importance are those of the percentages of protein and lactose. The importance of these differences lies in the fact that they are not at the present time known by everyone to exist, and because, assuming that their existence is certain, the food value and the digestibility and possibility of assimilation of the two kinds of milk must be very different. This, if true, makes it certain that pure cows' and pure human milk cannot safely be interchangeably used as food for infants. That pure cows' milk is not a proper food for the young human infant is now almost universally accepted by physicians in the civilized world to be a fact. The general acceptance by physicians as correct of analyses which rate the percentage of protein in human milk as high as three or even four per cent. shows that the differences of the two kinds of milk in the percentages of protein and lactose contained are not known and understood as they should be. An examination of the figures of our analyses shows at a glance the difference in the percentages of protein and lactose. In human milk the protein is much lower and the lactose much higher than in cows' milk. It is a curious fact that the sums of the amounts of protein and lactose in human and cows' milk when they are added together are nearly equal. The way in which this fact of the equality of the sums of the amounts of protein and lactose in human and cows' milk has been the cause of the failure for many years of an attainment of a general understanding of the composition of human milk was long ago pointed out by Meigs in a paper called "Proof that Human Milk Never Contains More Than About One Per Cent. of Casein."* It was stated at the beginning of this paper that the principal reason the work was undertaken was to show the accuracy or inaccuracy of analyses of human milk that were published many

*"Analysis of Human Milk the Basis of the Artificial Feeding of Infants." Transactions of the College of Physicians of Philadelphia, Vol. XXIV, 1902, page 136.

*Transactions of the College of Physicians of Philadelphia, Vol. VI, page 92, 1883-4, and "Milk Analysis and Infant Feeding," page 38, by Arthur V. Meigs. P. Blakiston, Son and Co., Philadelphia, 1885.

years ago. It does seem to us that the evidence brought to light by two years of work at the subject comes very near to proving that those analyses are in all essential particulars so nearly correct that the generalizations drawn from them should be accepted. It is as a guide to an understanding of the best method for the artificial feeding of infants, when unfortunately they must be artificially fed, that an accurate knowledge of the relative composition of human and cows' milk has its greatest value. It is upon this knowledge alone that must be based any reasonable understanding of the subject, and without it infants can be artificially fed only as the result of experiment.

TRUNK ANESTHESIA.

A CASE OF MUTISM FOR SEVEN MONTHS—FORCIBLE CLOSURE OF THE LIDS FOR THE SAME TIME—UNWILLINGNESS TO TAKE FOOD IN THE PRESENCE OF OTHERS FOR NINE MONTHS—ALL CURED IN TWO WEEKS BY SUGGESTION, UNCOVERING EVIDENCES OF ABSCESS IN THE RIGHT SIDE OF THE BRAIN, PROBABLY DUE TO OTITIC ORIGIN—OPERATION, RELATIVE RECOVERY.

By BAYARD HOLMES, M.D.,

CHICAGO.

Gale D—, 18 years old, the younger of two brothers, was born at Whitefield, Ill., and has always been a well though not a very strong boy. He was active in spirits until 13 and a good shot and devoted hunter. He was bright in school, but rather bashful. He was tall and weighed about 145 or 150 pounds. His father is a blonde, German appearing man, weighing nearly 200 pounds, who has healthy brothers and sisters, but two uncles who have become insane in their old age. His mother is a brunette weighing about 95 pounds and has been troubled for many years with indigestion and sick headache. It is easy to make a diagnosis of gallstones in her case. Her family is a rather sturdy, active and wide-awake lot of people, without any hereditary taint of any kind except possibly two cases of consumption.

During the summer of 1905, when he was about 13 years old, Gale met with some accident which his family looked upon as trifling. He looked upon it as the cause of all his trouble. In September, 1909, he came to Chicago and consulted Dr. William E. Quine, who said that the boy had heart disease and that he ought to go home and remain in bed for some weeks.

While in bed his father discovered that there was a very bad smell coming from the bed and after close inquiry found that the boy was troubled with a suppurating paraphymosis. He was circumcised by two doctors from Henry, Ill., but the wound did not get well until April, 1910. During this time he remained much in bed and got into the habit of eating in his room and refused to eat at the table with the family.

Some doctors known as Chiropaths took him to Davenport, Iowa, and kept him there for two months. About the first of July he escaped from the Chiropathic place and ran some distance in the street and pounded his own head with a brick or stone. He was said to be running for the river to drown himself. When he was picked up by the police he was carried to a Catholic hospital. The hospital authorities telephoned his father that he was in a dying condition and that he could not be removed, but on July 6 he was taken home, a distance of more than fifty miles, in an automobile.

When he got home Dr. Hess saw him and found that he was dreadfully emaciated, that he had sores on his lips, and that he had retention of urine, involuntary discharges from the bowels, with rapid pulse and low fever. He was placed in a tent in his father's dooryard and carefully attended to. On his arrival from Davenport he was perfectly mute, his eyes were forcibly closed, he refused to move, or at least did not move in any person's presence, and lay in a comatose condition all the time. He could not be fed, but if a meal was set by the side of his bed he ate it. During the months of July, August, and September he made great improvement and was believed to weigh as much as 135. During all this time he never spoke except once, when he called for more to eat to his mother, who was just outside. He never ate in his mother's or father's presence and no person visited him except Dr. Hess. During all this time, also, he never opened his eyes in any person's presence. He was quite tidy after the first two weeks at home and used the chamber which was kept conspicuously by the side of his bed. He had always been myopic and he wore his glasses all of the time except in the night. He never took them off himself, but he would put them on early in the morning. Dr. Hess considered it a case of dementia præcox, but claimed no special skill.

I first saw the patient with Dr. Hess on February 9, 1911. Gale's eyes were closed, he lay in bed with a pulse of 88 and a normal temperature. On raising the lids the pupils were seen to be distinctly dilated. They responded sharply to light and seemed to be equal in every particular. I found the abdominal, the scrotal, the patellar, and the ankle reflexes normal, or thought them so. There was, however, almost complete anesthesia from the neck down, except upon the fingers and toes and the bottoms of the feet. I was able, without his flinching, to thrust needles through the skin that I picked up on his arms and legs. However, he did respond to light touches and seemed to enjoy having his legs moved passively. I was unable to get him to open his mouth or to speak a word or swallow a particle of water or milk. Nevertheless, while I was out of the room he ate a moderate breakfast. After breakfast I went over the examination again and concluded it was a case of hysteria. I alarmed his family by asking for his clothes and after dressing him I placed him on a horse and took him for a little ride. When he came back alone with the horse he was holding the lines and his brother said his eyes were wide open as he approached the barn.

A short time later I brought him to Chicago. He walked to the train, from the train to the carriage, and from the carriage into the hospital. On admission he weighed 95 pounds. For three weeks previous to his entrance to the hospital he had vomited every time any one went into the room and he had lost greatly in weight and strength. His eyes were closed, it was impossible to get him to open his mouth except by force, and he would not drink or eat anything even though it was left near him. During the first twenty-four hours in the hospital his stomach was washed out three times a day and filled with a pint of eggnog. Every time he vomited this eggnog another pint was put in his stomach with a stomach tube. At night he had a large enema consisting of four quarts of hot water, twice repeated one after the other. On the second

day I suggested to him that he could open his mouth and eat and so far succeeded, with the help of Dr. P. G. Kitteman and two nurses, that we were able to feed him a full meal of solid and liquid material. We suggested at the same time that he could not vomit this and he did not vomit after that time. Twenty-four hours later we suggested to him in the same manner that his eyes would open and they did open and have remained open ever since. He walked around the hospital from room to room. He was still anesthetic and I frequently demonstrated this anesthesia to physicians. He was still mute and I suggested that three days later he would begin to talk. He did begin to talk and since that time has responded to questions after considerable urging and has shown some emotion, crying about his conduct on two or three occasions. At the end of the second week his physical examinations had shown a pulse continuously in the neighboorhood of 120, his temperature was slightly fluctuating and was taken by the rectum. It was not more than a degree above normal at any time and never subnormal. From the time that he entered the hospital up to the end of the third week there were frequent occasions when his breath was distinctly strong of acetone. During all this time he had a leucocytosis of 12,000 to 24,000—one count which must be looked upon as absolutely reliable was only 4,400. The polymorphonuclear neutrophiles were 89 per cent. and there were no eosinophiles.

About two weeks after he came to this hospital the results of our examination showed a uniformly high pulse 110 to 120, a uniformly increased leucocytosis, 12,000-24,000, a blood-pressure of 120, a stationary weight in spite of forced feeding, and a hebetude which was hard to overcome and from which it was difficult to arouse the patient to answer questions. He now began to fall down when walking, but never in a manner to suggest a lack of equilibrium. It seemed that the falling down was the result of a suggestion made during a visit to one of the patients who had a resected knee. Two or three shocks from the coil restored his legs to activity, and he would walk around and only fall in the presence of other people. During ten days he had hot and cold spray to the back and general massage. During this time he talked with the masseur, Mr. Grimstead, and told him a great many things about his mental life during the time he was mute and had his eyes closed. He felt very sorry that he had caused his family so much trouble, and cried on several occasions.

Mental and Neurological Examination by Dr. Ralph Hamill of Gale D—, Saturday, February 25, 1911.—Patient just returned from hydrotherapeutic treatment. Speaks in whispers, answers sometimes prompt, sometimes delayed, usually correct and to the point, occasionally a tendency to show relevancy without exactness (suggesting Ganser symptom). Asked if he ever heard voices said, "Yes, sometimes." "Whose are they?" "I don't know." "Where do they come from?" "The next room." "Where else?" "The hall." "What do they say?" "They tell me to quit." Another time: "Quit it." "Quit what?" "Seem to know what I'm doing." "What were you doing? Were you doing anything bad?" "They told me to stop when the stuff was running out of me." "What do you mean?" "When I soiled the bed." "What else did they say?" "They told me to let it alone." "What do you mean?" No answer. Finally it came out that a voice seemed to come through the door of the bathroom telling him to stop masturbating. Thinks it might have been the voice of a servant, *i. e.* hospital orderly, though he says the door was closed. Asked why he stopped eating, said it was because he thought that might stop his soiling the bed and vomiting. Answered that voices seemed to tell him to stop eating. Oriented fairly well as to time and surroundings. Asked to shake hands, made no move. Examiner's hand held directly over his hand, no move, with slight pressure beneath his hand it was gently started toward examiner's hand and patient completed the act. During the examination patient's behavior was completely free from motor acts, simpering, foolish smiles, turning of the head, etc.

Stroking the left foot sole caused first slight plantar movement of entire great toe with subsequent slow dorsal flexion. After two or three strokes, motion was entirely dorsal. Right always plantar. No Achilles reflex, no knee reflexes. Patient could not be made to use Jendrassik. Wrist, biceps, and triceps taps reduced but equal. Abdominals reduced and equal. Cremasterics ditto. At times pupils showed slow contraction and relaxation; reacted well to light and convergence. Patient could not be gotten to make extreme lateral movements with the eyeballs. Lesser movements showed no abnormalities. Ophthalmoscopic examination showed nerve heads white, no physiological cups, outlines very indistinct, vessels approximately normal. No apparent difference in cranial nerves. In attempting to walk with support, legs tended to hyperextend at knees, but all movements are very feeble. Passive movements are resisted. No apparent abnormality to coarse sensory tests. Diadochocinesis could not be tested for. Fine tremor in both hands. Turning chin over either shoulder causes no dizziness nor nystagmus. Visual fields + to finger test. No hemianopsia.

February 27.—Patient just returned from laboratory. Reflexes as above. Patient would not answer questions. Attempts to make him follow with eyes to lateral positions unavailing. When the chin was turned over either shoulder by the examiner the patient would maintain position indefinitely. The patient can tell the color of flowers, red; also the color of paper cover on the flower pot, green. He writes his name here.

Both pupils react to light and accommodation and dilate on stimulation of the sympathetic, pinching the cheek. The media are clear. The optic nerve heads are too white—a greenish white, the outlines of the nerve head are gone. There is no physiological cup; the nerve heads are slightly swollen. The relative size of veins and arteries is out of the normal—veins too large, therefore, secondary optic atrophy.

On February 22 the same examinations were conducted by Dr. Pusey and the previous findings confirmed. He said at that time, and wrote upon the history, "This probably means a localized process in the cranial cavity and a recessive one, such as an encapsulated or absorbing abscess. The duration of the process that has caused the optic atrophy could hardly have been less than two months. The atrophy is more marked on the right side; the swelling of the nerve head is a little more marked on the left side. According to Horsely, this would mean a right-sided lesion." The patient was weighed at this time and found to weigh only 96, stripped. All the blood, urinary, and serolytic examinations were repeated. Dr. Dennis examined

the ear drums and considered them both normal except for retraction. There is no indication of perforation.

Several test meals were given and one of them, on February 6, is recorded as follows: Ewald, 30 c.c. brown color, two layers well digested in fine state of division with no frothing. It had a sour odor on removal. There was no swallowed mucus and only a moderate amount of stomach mucus. There were no blood clots or pulpy ground material, and no fragments of mucous mebrane. The microscopical examination showed a few squamous epithelial cells, but no cylindrical cells or pus cells, no blood; no Opler-Boas bacilli, no sarcinæ; a few yeast cells and a few other bacteria; no muscle fibers, but a few starch granules. The clinical examination showed an acid reaction to litmus and to Congored. The total acidity was 30. The dimethylamidoazobenzol hydrochloric acid reaction was negative. There was no free hydrochloric acid, but a moderate reaction to lactic acid. No blood and no bile.

The examination of the urine was repeatedly made and was quite uniform. Just before the operation a single specimen was of an amber color, of slightly acid reaction with no sediment, slightly cloudy, strong urinous odor, specific gravity 1.025, with no albumin, no sugar. The urea was not estimated and there were no other abnormal constituents. The centrifuged sediment contained no casts and no blood cells, very few pus cells, occasionally squamous epithelium, and a few mucous shreds.

The blood examinations, as we have previously mentioned, varied between 5,260,000 reds, 24,400 white, 14 per cent. lymphocytes, 86 polymorphonuclear neutrophiles, hemoglobin, 85 per cent., Dare; and 4,700,000 reds, 4,400 whites, 17 per cent. lymphocytes, 13 per cent. large mononuclear, 69 per cent. polymorphonuclear, and 1 per cent. eosinophiles. Several blood cultures were made and all found negative. There were no indications of endocarditis, as repeated examinations of the heart showed, and no evidence of enlargement of the spleen and liver. No stools were examined.

It seems that the following negative results of our examination can be distinctly set forth: (1) There is no tuberculous disease in the boy's body, as the careful and repeated examination of the lungs, the testicles, the two kidneys, the seminal vesicles, and the lymph apparatus generally demonstrates. The condition of the blood (leucocytes 12,000-20,000), the negative effect of tuberculin injections, and the Pirquet reaction all are against tuberculosis. (2) There is no evidence of septicemia as demonstrated by two blood cultures, by the absence of auscultatory signs of endocarditis, by the absence of bacterial nephritis, by the normal size of the spleen and liver, by the absence of tenderness over the appendix, the gall bladder, the liver, and the kidney region. (3) There is no local infection in any extremity as demonstrated by careful examination of the digits, the joints, and the inguinal and axillary lymph glands. (4) There is no infection in the chest or abdomen, as a careful examination of all of the accessible and probable foci clearly demonstrated. (5) There is no serious blood disease such as syphilis, lead poisoning, chlorosis, or the more conspicuous parasitic infections, since there is no abnormality in the blood or lymph apparatus, and the Wassermann test is distinctly negative. (6) There is no contraindication in the condition of the heart or the lungs to a general anesthetic. (7) There is no evidence of disease of the cord.

It seems that the following positive indications exist as a result of our combined examinations: (1) The leucocytosis, the slight variation in temperature, the history of sweats, all stand for a pyogenic infection. (2) The condition of the fundus, the pupillary conduct and reaction, the absence of patellar reflexes, the occasional tremor, the presence of Babinski, all localize the infection inside the cranium. This is also consistent with the mental hebetude and the secondary psychosis. (3) The absence of vertigo and incoordination, and the absence of localizing motor symptoms suggest the hypothetical abscess in the frontal lobe or at least in the cerebrum. (4) The Babinski on the left side, the condition of the fundus oculi, the history of the suppurative otitis media, all suggest the abscess upon the right side of the brain and in the right cerebrum. (5) The presence of acetone in the urine and the peculiar odor of the breath are all significant of abscess of the brain.

Taking all these positive and negative findings into consideration, we must say that the great probability is a pyogenic infection in the right half of the calvarium from an antrum disease which may or may not be associated with a hemorrhage or incysted hemorrhage in the neighborhood of the petrosa, due to the accident which occurred in 1905, six years ago.

There are three distinct forms of infection which must be looked for, a sigmoid sinus thrombosis which may extend into the neck and obliterate the jugular, or may extend to the torquelar and up the superior longitudinal sinus, or may extend from the torquelar to the left and obliterate the lateral sinus on that side; in the second place it may consist of an extradural abscess in the middle fossa (this may be directly connected with the sinus thrombosis); or in the third place it may be due to a true cerebral abscess which has arisen from the migration of bacteria from the petrosa into a residue of hemorrhage due to the accident or into a non-resisting space in the frontal lobe, the tract of which infection has now become perfectly normal tissue.

The course of the operation should then be an ordinary évidement of the mastoid, opening of the sigmoid sinus, the obliteration of any infection thus discovered by a ligation of the jugular deep in the neck and the opening of its peripheral end in the upper corner of the wound after the ligation. In the absence of sinus thrombosis, the middle fossa should be opened to discover any extradural abscess which may have arisen from the perforation of the antrum or the tegmen tympani. If no extradural abscess is found then the middle lobe and the frontal lobe of the brain should be carefully explored with the aspirator and the latter approached through a second opening in the parietal region in front of the ear. A sinus thrombosis of such extent may be treated by the method of canalization which I suggested in the *Journal of the American Medical Association*, January 13, 1906.

Seven skiagraphs were made of the head in various positions. Dr. Lewis and Dr. Max Richmann thought that there was indication of a fracture six inches behind the glabella, about an inch and a half in extent, but subsequent skiagraphs did not support this diagnosis, and when the operation was performed no evidence of such displacement of the lower table of the skull could be determined.

The mental condition of the boy was not such as to make it possible to examine the condition of his internal ears. The only thing we could feel confident of was that there was no vertigo or other symptom which would indicate disease of the labyrinth.

I had the support and advice of Drs. Brown Pusey, Ralph Hamill, Besley, Dooley, Howard Hess, and several visitors during the operation.

The patient was prepared for the operation by shaving the head completely and giving the ordinary intestinal flushing. Under ether anesthesia the right mastoid was approached by the usual incision, the fleshy meatus was cut across, and the ear was turned over onto the face. The posterior part of the mastoid was then rapidly chiseled away with a large chisel and hammer. The air cells were found to be of enormous size, the walls extremely eburnated, but no evidence of pus in any of them, or even of an old infection in the form of cholesteatoma or residue.

With a smaller chisel the antrum was carefully approached, and found equally empty of infectious residue. In the course of these procedures the sigmoid sinus was exposed for three-quarters of an inch. It showed no evidence of infection. The middle fossa was now opened in close proximity to the antrum. The dura gave no evidence of thickening or of any infection. A small slit was made in the dura and a considerable quantity of serum poured out. A blood vessel of the pia was accidentally wounded, which made it necessary to pack this wound to stop the blood. The sigmoid sinus was now opened with a Hagedorn needle. It bled freely, showing that there was no thrombus in the sinus. The wound was now packed with a strip of iodoform gauze and the incision was closed, bringing the ear back into place.

We now made an incision over the posterior part of the frontal lobe and the frontal part of the middle lobe, reaching down to a point immediately in front of the middle meningeal artery, giving us a flap two inches and a quarter long and an inch and a half wide, with its base containing the branches of the temporal artery. The bleeding was trifling and was controlled with forceps. A smaller incision was made in the skull with the small trephine and a de Vilbis machine. When the flap of bone was turned up it broke, but hung by the temporal muscle, which was attached to its lower half. The surface of the brain did not protrude as if under great pressure. The dura was white, smooth, and unattached to the surrounding skull. Two small incisions were made in the dura and the meningeal fluid poured out rather freely.

The aspirator was now introduced for a distance of two and a half inches into the brain and toward the base, and two drams of a clear fluid, believed to be meningeal fluid, was withdrawn. It had no odor. More than 20 other punctures of the brain were made in all directions, and only once was any fluid withdrawn. This was in the direction of the frontal portion of the middle lobe of the brain. This fluid was examined by Dr. Bulig and was believed by him to be cerebrospinal fluid, and without any evidence of infection. The bony flap and the scalp were now returned to their places and closed without drainage.

The patient vomited two or three times after returning to his room, and the last time he called for a basin. This was the first time he had asked a question or demanded anything since he came to the hospital four weeks previously. During the afternoon he asked for water and conversed with his nurse and his father. He had a much more human expression upon his face, and when he answered questions he gave extended answers which involved considerable thought. His father told him that he had moved to Henry, and he replied that he told him last week he was going to do so. His father asked him if he knew what house he had bought, and he said, "Why, yes, of course. You told me when you were here the last time that you had bought the Gregory house."

When I visited him in the evening he told me that he was feeling quite well, but that the side of his head was a little sore, and that it hurt him to bend his head on his neck. He told me that he was not dizzy to amount to anything, and that he would like to sit up on the side of the bed. When we brought him to an erect position he said that he was dizzy and volunteered this information and asked to be allowed to lie down again. His pulse was 114, his temperature 99°, and his respiration slow. He had a trifling cough and expectorated with some distress on account of the pain in his neck.

The first night after the operation he slept perfectly well, and was relieved of the mucus in his stomach and intestines, and became hungry. He asked without suggestion for something solid to eat, and had a long conversation with his nurse and his father. A good many nurses and doctors called on him during the day and he spoke to each of them pleasantly. He talked for a half hour with his interne, Dr. Hall, and described his father's farms and gave their value and what was raised on them. On the evening of this day his temperature rose to 101°, but fell again without any medical treatment.

On the morning of the second day he was just as bright as ever, and his head was dressed, and it was found dry and apparently united, except where the drain from the mastoid protruded in the neck. Dr. Pusey examined his fundi and found them in the same condition as before the operation. He demonstrated the potency of every muscle of both eyes, and the normal reaction of the pupil.

Immediately following the operation the patient made great improvement in his appearance and his interest in the outside world. At no time after the operation, either in the hospital or since he returned home, has he had involuntary discharges from the bowels or from the bladder, and he has been perfectly tidy. He went with his nurse to the theatre two weeks after the operation, paid the street car fare, and conducted himself properly. He seemed to enjoy the performance and expressed himself vivaciously and rationally at all times. He returned to his home on March 30. At that time there was only slight improvement in the appearance of the retina, but the Babinski had entirely disappeared.

After returning home the improvement continued and the patient was able to meet all the requirements of his home life, taking good care of himself and his room, and doing chores about the house. He complained of weakness in his leg, and on measurement the calves were found distinctly smaller and softer than they ought to be for a boy of his size. On leaving the hospital he weighed 119½ pounds, having gained almost exactly 20 pounds since the operation. He has made a further gain of 15 pounds, and has maintained a steady

weight above 135 for more than three months. On December 1 he weighed 160 pounds in light shoes and without overcoat.

There has been a distinct improvement in the expression of his face, and he has shown renewed interest in the newspaper, especially the sporting pages, in romantic literature, and in substantial history, which was formerly his great delight.

During the past summer he has suffered consecutively the loss by suppuration six of his toe nails, beginning with the right big toe, and this in spite of superior surgical precautionary treatment.

This was either a case of dementia præcox or it was not. If it was of this nature then we are warranted in assuming that the hysterical symptoms which disappeared so promptly on suggestion, namely, the forcible closure of the eyes, the mutism, the persistent vomiting, and the refusal to take food, were of a more superficial nature than the remarkably general anesthesia which remained in spite of suggestion. There must, moreover, have been some serious condition which prevented the patient from gaining weight previous to the operation, which was in some manner removed by that procedure. Again, his constant untidiness before the operation and his habitude disappeared promptly after his recovery from the anesthetic. It is my opinion that the amount of fluid removed from the cavity, natural or unnatural, was insufficient to produce compression. Moreover, there was no evidence of compression when the dura was exposed.

The possibility of a tuberculous chronic meningitis which was jogged out of place by the operation is not supported by the frequent tuberculin tests, by the condition of the fluid withdrawn from the center of the frontal lobe, or by the condition of the leucocytosis.

The subsequent history of this patient will be of great interest, and if it is a fact that dementia præcox is an absolutely progressive, destructive disease, with an invariable tendency to extreme dementia, then time will complete the diagnosis. In the present state of our knowledge of the etiology of this disease, no further tests or evidence can be expected.

Since the patient is now in a perfectly rational conversational condition, it would be interesting to see what the Freud and Jung psychoanalysis would show.

108 North State Street.

CHRONIC INVALIDISM DUE TO PATHOLOGICAL CONDITIONS OF THE COLON AND APPENDIX.*

By JAMES TAFT PILCHER, M.D.,

BROOKLYN, N. Y.

There are two conditions in the abdomen presenting pathological entities, which though existing for many years in the majority of cases, have been persistently overlooked as the etiological factors of the chronic indisposition which the patients complain of, and have in too many instances caused a chronic invalidism. I refer particularly to chronic inflammatory processes in the appendix, which present little or no local subjective disturbance and to the definite fecal stasis in the large bowel consequent to deformities of it caused by pericolic inflammatory films. Anything that can throw light upon the symptomatology of these conditions and which would lead to an earlier recognition of its causes must be of importance.

Persistent recurrent indigestion has for many years been treated as if it arose from conditions in the stomach itself and the measures directed against it have been as a rule local in their effect and have proved ineffectual, as demonstrated by the recurrence of the distress at a later date. The fact is beginning to be appreciated that primary disturbance of the functions of the stomach is very infrequent. As illustrative of this contention the author, in examining something over eight thousand patients complaining of stomach distress, was able to find approximately but 10 per cent. of the cases in which the condition was primarily caused by some organic change in that viscus. In the remainder, correction of the extragastric factor which was reflexly causing the stomach symptoms, as chronic appendicitis, cholelithiasis, colecystitis, inflammation of the intestinal tract in any of its parts, etc., sufficed promptly to ameliorate and in many instances entirely to stop the gastric distress.

Of great interest is that distress reflexly produced in cases of chronic appendicitis, and this is quite readily recognized as the etiological factor in the majority of cases. The duration of the distress referred to the stomach by these patients averages many years. If the history is traced back far enough a large percentage can be found who even in childhood suffered more than other children from frequent "stomach aches," "cramps about the navel," and unexplained attacks of "diarrhea." This triad undoubtedly represented the inception of the appendical inflammation.

After a few years short spells of transient epigastric distress ensued, usually ascribed to "catching cold" or "some indiscretion in diet" or "overexertion." Certain kinds of food caused distress. There was belching, slight nausea, and a bloated sensation in the "pit of the stomach." After a few days or a week the patients regained their normal health. After a period of years when they had attained young man or womanhood, the periods of discomfort became more frequent in their occurrence; they lasted longer, the distress was more severe, and the interval of freedom not so complete. There was always some discomfort in the abdomen.

The relation of food to the distress is noteworthy in differentiating the symptoms from those of ulcer, with which the condition is frequently confused. Its ingestion usually *increases* the discomfort, while in ulcer food temporarily relieves the pain. The distress is peculiar in its character. It is indefinite. In most cases it is possibly described best as a bloated sensation over the entire upper abdomen. At times these patients experience epigastric cramps which we now appreciate are due to a spasm of the pylorus, which structure can frequently be palpated momentarily, only to have the tumor disappear while yet under one's fingers, as the musculature relaxes.

Vomiting is occasionally complained of and at times remnants of a former meal may be found if the pyloric spasm has been continuous. Nausea is, however, a much more frequent symptom. Belching is of little diagnostic import, though usually present, and while acid eructations are frequently noted they are not of such a definite character as those present in cases of ulcer, although I have noted instances in which they were very frequent and persistent.

*Read before the Second District Branch of the Medical Society of the State of New York, October 26, 1911.

In the gastric analyses of several hundred patients exhibiting the above phenomena the only finding of interest was the frequent occurrence of a hypersecretion and a tendency to a very slight increase in the hydrochloric acid contents. There were, however, several cases with marked diminution of the acidity and even a complete absence of it.

It is rather exceptional to have one of this class of patients mention any subjective sensations referable to the right iliac fossa, all of their complaints being centered on the distress in the epigastrium, and, indeed, frequently no tenderness can be elicited on pressure over the appendix. But that is not absolute evidence that it may not be markedly diseased. Fortunately the opposite is the case in the majority of patients and deep pressure over McBurney's point will usually cause some discomfort, and, what is particularly distinctive, deep manipulation of the cecal region has been observed in some instances to elicit a renewal of the epigastric distress previously complained of.

Much may be accomplished by the judicious introduction of medical and dietetic measures to relieve to some degree and occasionally to cause the complete disappearance of symptoms from which these patients suffer. Each case must, however, be treated on its own merits and the degree to which the disease has progressed must be taken into consideration.

In general, methodical lavage is an important item of treatment, especially where there is a disturbance of the gastric motility present, and if one dram of sodium bicarbonate be added to each quart of water used, the results seem to be better. A course of Carlsbad salts or, if possible, a few weeks at one of the mineral springs is beneficial. Care should be taken, however, to interdict the use of too large amounts of these mineral waters. Massage is absolutely contraindicated owing to the pathological process present, but if evidence exists of dilated or prolapsed organs these should be supported by an appropriate binder. Much relief may be afforded by the proper arrangement of the diet. This should consist principally of amylaceous substances which are not predigested and which are not digested in the stomach in order not to stimulate the gastric activity. The addition of fats, cream, and oil to the dietary is a most essential adjunct. Moderate amounts of green vegetables may also be given.

We have found bismuth carbonate or subnitrate in combination with calcined magnesia to act most favorably, not only as an antacid, but as a real gastric sedative, when administered two or three hours after meals. Diastase may be given with the meals with benefit.

Thus by careful medical supervision through symptomatic treatment and the suppression of the more urgent symptoms many patients may lead a moderately comfortable life, but sooner or later in a large number the onset of complications or an exacerbation of the causative factor necessitates surgical intervention, the results of which have been most encouraging. In the cases in which the appendix was removed and which have been followed up to find out their present condition, 75 per cent. have absolutely no complaint whatever; 15 per cent. are very much improved; 5 per cent. have occasional recurrences, and 5 per cent. are unimproved.

The second condition to which I wish to draw attention is the symptomatology of chronic intestinal stasis. The increasing importance attached to the general effects produced by the continuous absorption of poisons formed within the body, especially those elaborated in the large intestine, is one of the most striking features of practical pathology as applied to clinical practice in the present day.

The physical signs and symptoms indicating a condition of stagnation, particularly in the colon, are quite unmistakable, but seem until lately to have been disregarded or possibly incorrectly interpreted. Peculiarly it is seldom that patients suffering from this condition consult the physician because of the fact that they are habitually constipated, but more frequently their chief complaint is that of abdominal discomfort, to which they ascribe their chronic invalidism, and it is to be relieved of this that they primarily seek advice. This discomfort varies much as to the degree and situation. It may be intense and continuous or intermittent and mild. Its position is seldom described as being at a definite spot. More frequently the whole hand is laid on the abdominal wall to indicate the extent of the distress. In the large majority of cases it is referred over the course of the ascending colon and tenderness or pressure over this area is usually noted.

Subjectively these patients present a symptomatology consisting usually of the following ten cardinal factors:

1. *Constipation,* usually persistent and necessitating constant employment of laxatives. As a rule the bowel has become so tolerant that many of these patients can go several days without any inclination to defecate.

2. *Mental apathy,* at times so marked as to cause a state of stupor. Symptoms of melancholia are not infrequently present. They are unable to center their attention on any one thing for long, and, as they state it, "they feel as if they had lost all ambition and can do no work."

3. *Cold and clammy hands and feet* as evidences of sluggish circulation. A marked slowing of the pulse to forty or fifty is also to be noted.

4. *Headache,* usually vertical and occipital, which is frequently severe in character and frequent attacks of vertigo occur, which in some has been their chief complaint.

5. *Anorexia* is almost always present.

6. *Nausea* and even repeated vomiting are complained of.

7. *Loss of weight* is always noted.

8. *Foul taste in the mouth,* accompanied by a furred tongue and carious teeth.

9. *Myalgia,* especially referred to the muscles of the extremities, particularly the legs, and also pains in the joints, which are usually ascribed to rheumatism.

10. *Bloating,* occasioning at times severe discomfort.

All of these symptoms are temporarily improved when free movement of the bowel is evoked, only to recur when the feces reaccumulate in the colon. On inspection of such a patient one almost invariably notices a sallowness or irregular brownish pigmentation of the skin, more marked probably at points where there is pressure from the clothing and in the groins, axillæ, or under the eyes. The breasts are usually atrophic and flaccid in women and tend to undergo cystic degeneration, being particularly liable to the future development of malignant degeneration.

On palpation of the abdomen one easily appreciates the tender, dilated cecum and ascending colon in many cases. Ocular demonstration of our infer-

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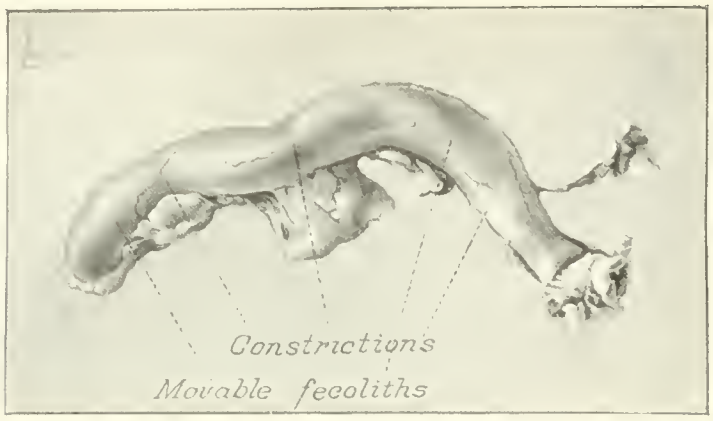

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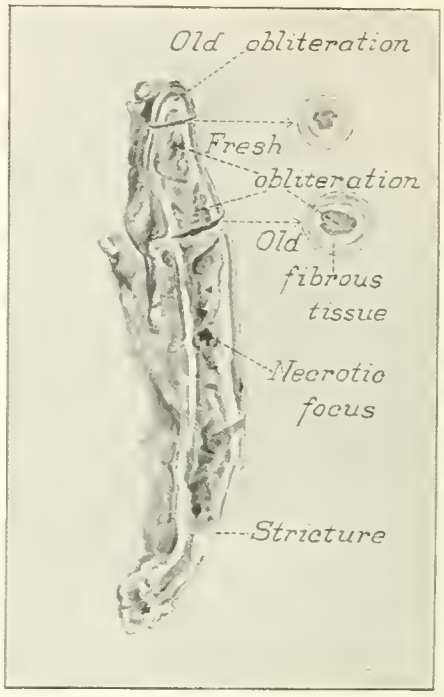

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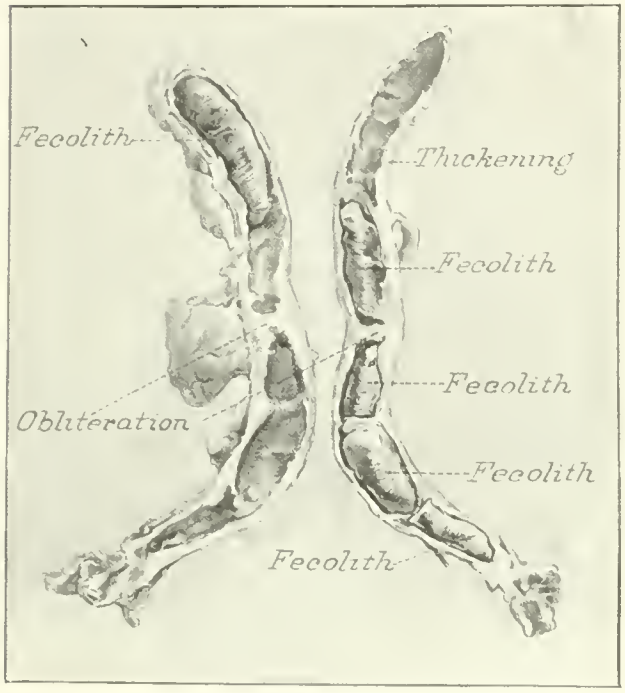

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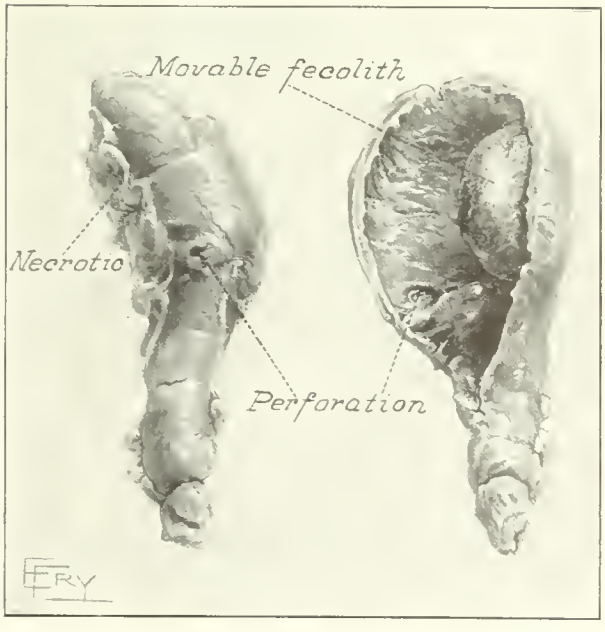

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5

PATHOLOGICAL CONDITIONS OF THE COLON AND APPENDIX CAUSING CHRONIC INVALIDISM.

ences has thus far without exception been offered to us by the intelligent interpretation of *x*-ray plates prepared by Dr. Eastmond.

The pathology causing a continuance of the trouble is indicative of its prolonged course, and the ever-increasing difficulty of bowel evacuation. The appendix and terminal ileum and cecum are bound down to the walls of the right inguinal fossa by strong bands in many instances. In others, in which the symptoms were less severe, a chronic obliterating inflammation of the appendix and in addition a veil or film of tissue covering over the entire cecum and extending up onto the ascending colon were noted. In those in whom the symptoms were of longer duration, and who had reached a greater degree of invalidism in consequence, the chronic productive inflammation which evidenced itself in the newly formed pericolic tissue completely enveloped the entire ascending colon and had drawn down the first part of the transverse colon to which it was closely adherent, thus causing the formation of two acute angles, at which points it was evident the greatest stenosis occurred, and one can readily appreciate the limitation of mobility and the inhibition of the peristalsis which the inflammatory films caused in the colon itself.

Here also the internist may for years successfully combat the more distressing symptoms and in many instances effect a complete return to health through unremitting oversight. The measures usually employed consist in regulation of the diet, intestinal antiseptics, saline laxatives, abdominal massage and support, and colonic irrigation. We have noted at times the introduction of large olive oil enemata, retained over night, to be followed by very marked relief. These should be repeated biweekly. Unfortunately, however, even after the most thorough treatment the patient's invalidism becomes augmented, and it would appear justifiable therefore that after such measures by a medical man had proved ineffectual the opening of the abdomen and liberation of the structures involved should be undertaken, and secondarily, if the symptoms recurred, a resection of the colon and an end-to-side anastomosis between the ileum and sigmoid or upper rectum shall be made, as this procedure has in many instances resulted in a complete return to health of a patient who was otherwise condemned to remain a progressively useless invalid.

As illustrative of the gross pathological findings in the class of cases considered in this paper, the accompanying figures are inserted.

Explanation of Plate. Fig. 1.—Chronically thickened angulated appendix, containing fine movable fecoliths.

Fig. 2.—Longitudinal section of the appendix, showing chronic thickening of the walls, an impermeable partition in the middle, and five fecoliths.

Fig. 3.—Old partial obliteration of the tip of the appendix, with secondary partial obliteration of the lumen recently produced; in the middle is a focus of necrosis with acute inflammation, and at the base is a stricture.

Fig. 4.—Two views, external and internal, of an appendix with bulbous tip containing a large movable fecolith, irritation at the proximal pole of which caused a chronic ulceration with subacute perforation.

Fig. 5.—Extensive involvement of the ascending colon, appendix, and small intestine by newly formed pericolic films (drawn at operation).

145 Gates Ave.

THE QUESTION OF TRANSPLANTATION OF THE CORD IN OPERATIONS FOR HERNIA;

WITH A NOTE ON THE ROLE OF THE TRANSVERSALIS FASCIA IN THE PRODUCTION OF ABDOMINAL HERNIA.*

By ALEXIS V. MOSCHCOWITZ, M.D.,

NEW YORK.

VISITING SURGEON HAR MORIAH HOSPITAL, ASSOCIATE SURGEON MOUNT SINAI HOSPITAL.

According to the best statistics a radical cure of hernia can be obtained, in practice, in 95 per cent. of the cases. This rather large percentage of cures is noteworthy, when we consider, than on *theoretical* grounds the majority of herniæ are incurable Surprisingly enough, I refer especially to the most common forms of hernia, namely, inguinal and femoral. By this I mean that every operation thus far devised for the cure of these herniæ, and I feel safe in saying that any operation that may ever be devised, will still leave an opening through which an escape of abdominal contents is possible.

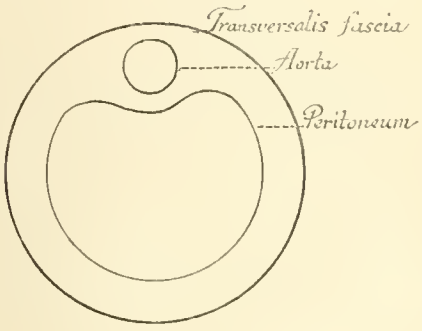

Fig. 1

In order not to be misunderstood, it is necessary to preface my remarks by explaining my conception of hernia. Before proceeding with this explanation a definite understanding of certain underlying and fundamental principles of the anatomy of the abdominal parietes is essential. If the elucidation of my theme may appear somewhat elementary or even prolix, I plead justification for the sake of clearness.

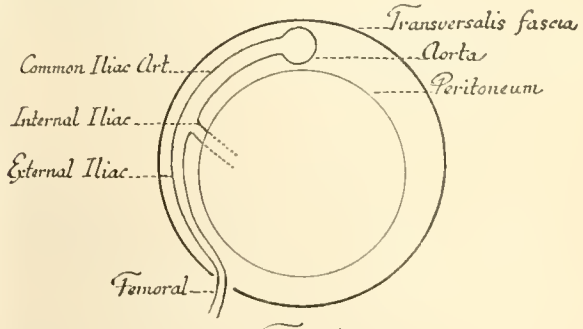

Fig. 2

1. The entire abdominal parietes are lined by peritoneum.

2. Externally to the peritoneum there is everywhere a layer of fascia. This fascia has received different names in different parts of the abdomen, *e.g.* transversalis, pelvic, iliac, diaphragmatic, etc.

*Read at a meeting of the Surgical Section of the New York Academy of Medicine, December 1, 1911.

If traced, however, it will be found that these are merely parts of one continuous layer. For the sake of ready understanding I shall term this fascia, throughout this paper, the transversalis fascia.

3. All the large vessels in the posterior abdomen lie *upon* the transversalis fascia, and are *covered by* the peritoneum. I regard this fact as one of the most important in the proper understanding of the anatomy of hernia. For this reason I shall discuss this subject in detail.

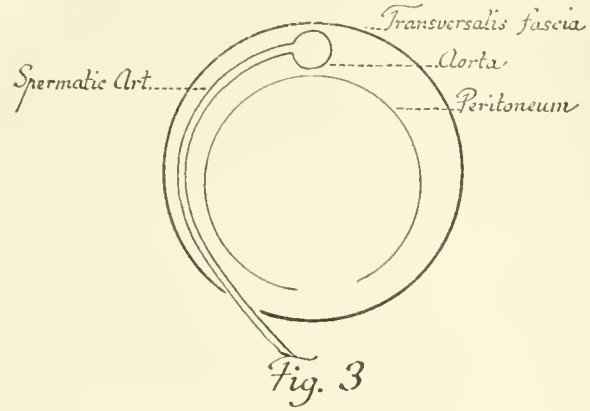

Fig. 3

Fig. 1 represents schematically a cross-section of the abdomen at any point above the bifurcation of the aorta. At the point of exit of the femoral vessels into the thigh, the diagram is modified as in Fig. 2. Fig. 3 is a modification of Fig. 2 and represents the exit of the spermatic vessels. If Fig. 2 and Fig. 3 are closely examined it will be seen that at the point where the vessels lose their relationship to the peritoneum there is an opening in the transversalis fascia, in order to permit the escape of these vessels from the abdomen.

As a matter of fact, however, careful dissection will show that the transversalis fascia is continued downward for a certain distance upon the vessels, gradually becoming thinner and thinner, blending finally with the vessel wall itself. To be exact therefore the last two diagrams should be modified as in Fig. 4 and in Fig. 5.

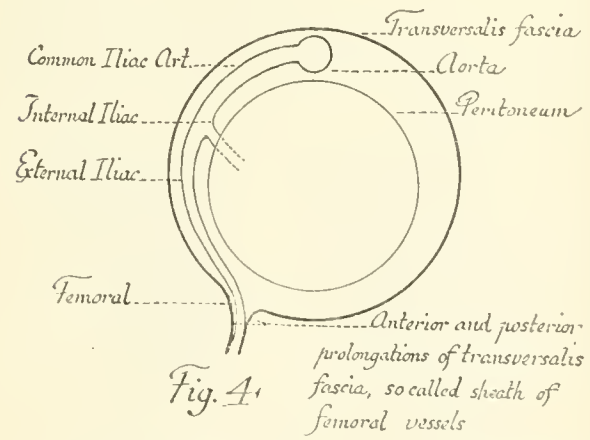

Fig. 4

In certain parts these perivascular prolongations of the transversalis fascia have been carefully studied, are well marked and, indeed, have received special names. I mention as such the prolongation upon the spermatic vessels, which is called the infundibuliform fascia, and the prolongation upon the femoral vessels, which has received the name of sheath of the femoral vessels.

There is no doubt, though it never was stated before, that a similar anatomical arrangement holds true for every blood-vessel that escapes from the abdomen to the periphery, as for instance the obturator or sciatic arteries. Likewise a similar prolongation of the transversalis fascia accompanies all viscera, which escape from the abdomen to the periphery, for instance, the rectum and vagina, which accounts for the occurrence of herniæ in these locations.

Although the importance of the transversalis fascia in hernia has not, I believe, been estimated

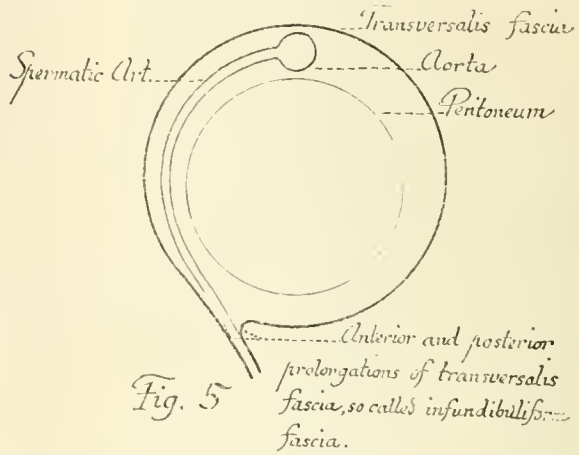

Fig. 5

at its true worth, it is an established fact that this fascia is, as a rule, strong enough to retain the viscera within the abdomen. It is, however not strong enough to do so at certain definite anatomical points; and it is at these points, and at these points only, that we find herniæ. A little reflection will show that herniæ occur only where blood-vessels or viscera make their exit normally. In other words, it is very apparent that these weak anatomical points must be the attenuated perivascular or perivisceral projections of the transversalis fascia. (See Figs. 4 and 5.) Every hernia can therefore be diagrammatically represented, as shown in Fig. 6.

Now in some locations these vessels are small and of minor importance; in others, on the other hand,

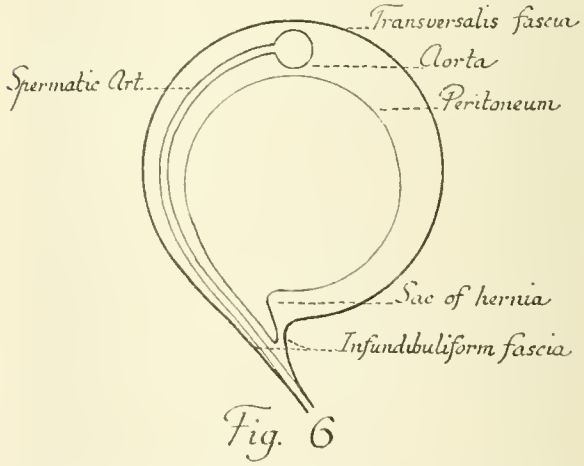

Fig. 6

the vessels are of vital importance to the structures which they supply. Therefore some herniæ are *theoretically* readily curable, because it is merely necessary to divide the vessels and close completely the hole in the transversalis fascia. In other herniæ, however, in which the blood-vessels are of vital importance, *e.g.*, in inguinal hernia (spermatic vessels) and femoral hernia (femoral vessels), these vessels can not be divided, the hole in the transversalis fascia must remain, and therefore *in*

theory these herniæ are incurable. In practice, however, we find that the surgeon gets around the difficulty by ignoring the weak spot in the transversalis fascia, but fortifying it by building a buttress of fascial and muscular structures in front of the opening.

I claim, therefore, that our operation is only a makeshift, and as long as it must remain a makeshift it is of the utmost importance to build this artificial buttress at that point where it will do the most good, *i.e.*, directly in front of the opening in the transversalis fascia, or at least as close to it as possible. This brings me to my original inquiry, when should the cord be transplantedé

Permit me now to present a diagrammatic cross-section of the inguinal region, in order to indicate the anatomy of the two forms of hernia which occur in this region, namely, direct and indirect. By referring to the diagram (Fig. 7) it will be seen

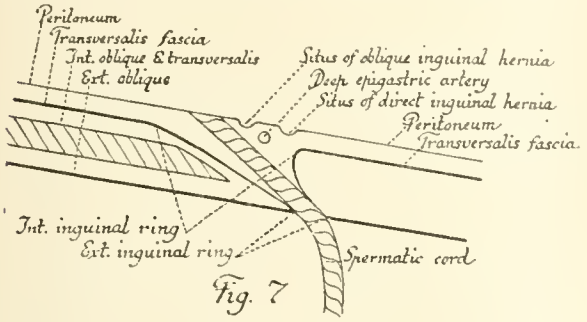

Fig. 7

that the internal inguinal ring (site of exit for an oblique inguinal hernia) is situated to the outer side of the deep epigastric artery. It is somewhat overlapped by the internal oblique and transversalis muscles, and wholly by the aponeurosis of the external oblique, and is situated at some distance upward and outward of the external inguinal ring. Furthermore, it is evident that the internal opening of a direct inguinal hernia lies to the inner side of the deep epigastric artery, directly behind the external inguinal ring, and practically without any protection, unless one chose to call the spermatic cord and the delicate intercolumnar fascia such. It follows, therefore, that the logical procedure would be in direct hernia, to put our buttress to the mesial side of the deep epigastric artery, and in oblique hernia to the outer side of the deep epigastric artery.

Let us now turn to the final phase of the subject and see what we really accomplish in our operations for inguinal hernia. In order to fully comprehend this it will be necessary for me to draw a diagram of a finished hernia operation, of which Fig. 8 represents an operation with transplantation of the cord, and Fig. 9 one without any transplantation.

In all operations for inguinal hernia, as is well known, the internal oblique and transversalis muscles are sutured for a greater or lesser extent to Poupart's ligament. When the cord is transplanted, this line of attachment extends from the point of emergence of the spermatic cord, down to the spine of the pubis. (I omit as irrelevant all mention of the sutures, which are placed by some surgeons externally to the cord.) When the cord is not transplanted the line of attachment extends from the Poupartian origin of the internal oblique and transversalis muscles more or less to the spine of the pubis, but never quite to it, as an opening must be left to permit the escape of the spermatic cord into the scrotum.

Now note for a moment in Fig. 8 the site of exit of an indirect inguinal hernia. The hole in the transversalis fascia, through which the cord emerges, is seen. Assuming, for example, that a Bassini operation with transplantation of the cord

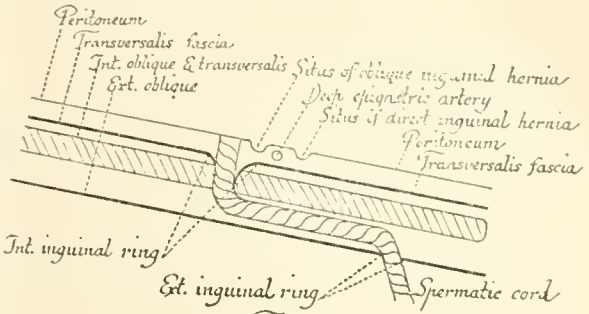

Fig. 8

is done; then the muscles are sutured to Poupart's ligament. But a hole is necessarily left for the exit of the cord. In other words, the hole in the transversalis fascia still remains, and we have accomplished merely an increase of the depth of this hole. This "hole" really represents a cylindrical hollow, very shallow when its wall is composed merely of the thickness of the transversalis fascia alone. By suturing the muscles to Poupart's ligament, this shallow section of a cylinder is deepened to the extent of the thickness of the muscles, but a literal closure of this "hole" or cylinder is not thereby accomplished. Over this opening is then sutured the aponeurosis of the external oblique; and, to my mind, this aponeurosis of the external oblique is the only structure that really occludes the hiatus. It is very apparent, however, that this operation very materially fortifies the canal to the mesial side of the deep epigastric artery. It follows, therefore, that this is evidently not the best operation for oblique inguinal hernia, but is the one of choice for direct inguinal hernia.

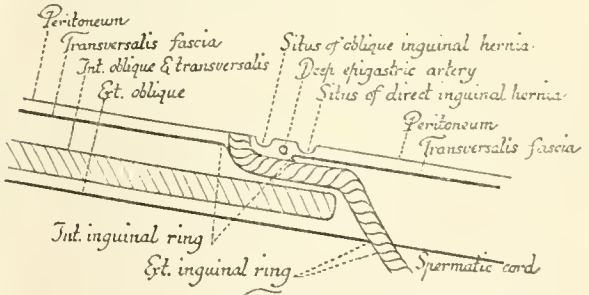

Fig. 9

Finally let us turn to Fig. 9. Again we see the hole in the transversalis fascia, through which the cord emerges. A Ferguson-Coley operation, without transplantation of the cord, is done. The cord is not disturbed, and over it the muscles are sutured to Poupart's ligament. Over that, as in all operations, the aponeurosis of the external oblique is sutured. It is true that in this case also, we have to leave an opening for the escape of the spermatic cord into the scrotum; but we have placed this opening downward and inward, at some distance from the internal inguinal ring, where it does not interfere with our buttress in front of the internal inguinal ring. Considering these points we must arrive at the conclusion that this is the operation of choice in oblique inguinal hernia and not in the direct variety.

I believe that if the rules I have offered be followed in practice, the percentage of recurrences after operations for inguinal hernia will be materially diminished.

Conclusions: 1. Oblique inguinal herniæ are to be operated upon without transplantation of the cord.

2. Direct inguinal herniæ are to be operated upon with transplantation of the cord.

925 Madison Avenue.

SCRUBBING ULCERS.

By ERIC CARL BECK, M.D.,

NEW YORK.

ATTENDING SURGEON TO ST. MARK'S HOSPITAL, INSTRUCTOR OF SURGERY AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, CHIEF SURGEON AT THE GERMAN POLIKLINIK, ETC.

The varicose ulcer is the form of ulcer that I shall have reference to in particular, but as there is no plausible reason why this form of treatment should not be just as successful in the vast majority of ulcers that come under our care, I think it would not be out of place to discuss the definition, the structure, and pathological changes of ulcers in general.

The following sentences are taken from Rose and Carless' Manual of Surgery. "Ulceration has been defined as the 'molecular or particulate death of a part,' by which is meant the disintegration of the superficial tissues, which liquefy and disappear, usually without any obvious slough. It differs from gangrene in that the latter term is used to denote the simultaneous loss of vitality of a considerable portion of tissue. The two processes are, however, often closely associated, in fact both signify tissue necrosis; in the former the dead particles are not always visible to the naked eye, whereas in the latter the necrotic portions, if superficial, can always be seen." I use this definition because it seems to me both the simplest and most complete, especially appealing through the stress it lays upon the tissue necrosis. I shall quote further from the same source, going into the different stages of the ulcer, as we must endeavor to force each ulcer to go through its normal stages of development to healing and repair.

Stage 1: Ulceration proper, or extension. "The stage in which destructive changes are still continuing, and may be described as inflamed, spreading or sloughing ulcers. Naked-eye appearance: Surface covered with ashy gray or dirty yellow material, partly slough, partly lymph, partly breaking-down tissue; no granulations are present; the tendency to slough is most marked when the organisms are particularly virulent, or if the resistance of the tissues is much diminished; discharge considerable in amount, thin, sanious and often irritating and offensive, rarely purulent; margins thickened and inflamed, and the surrounding tissues often edematous and infiltrated; edge sharply cut and well defined; the base of the ulcer is thickened and fixed to the underlying structures. Stage 2: Transition period. The stage of preparation for healing. Naked-eye appearance: When the destructive process has ceased and the septic element has been eliminated, the surface of the ulcer begins to clean, and becomes, as it were, glazed over; sloughs and portions of dead tissue are either removed in the dressing or absorbed by the vitality of the leucocytes and fibroblasts. The discharge becomes less abundant and more serous in character, and the angry red blush is replaced by a rosy hyperemia. The infiltration of the base also diminishes, so that the tissues around are less fixed and more supple. The film on the surface becomes more and more defined, and in the course of time, shorter or longer, according to circumstance, little red spots make their appearance here and there; these gradually increase in number and size, and coalesce, until the whole surface is covered by what has now become granulation tissue. The processes occurring in this stage are: (a) the removal of the sloughs; (b) the covering of the surface with a cellulo-plastic exudation; (c) the vascularization of this newly formed material, and its conversion into granulation tissue. The varicose ulcer, which comes under the heading of this stage, occurs in the leg of a patient who is the subject of aggravated varicose veins. The skin becomes passively congested, and its nutrition is consequently impaired; any injury or abrasion which would readily heal in a sound limb is likely under such circumstances to give rise to a chronic sore."

It is of these chronic sores, or varicose ulcers that I wish to speak. I do not think that I make the percentage too high if I say that almost 40 per cent. of the cases we treat in our surgical clinics are varicose ulcers of the leg in their various stages of development. And what a bother they are as a rule! I remember how, in the *Königliche Chirurgische Universitäts Klinik* of Berlin, I and my fellow assistants drew lots, and the unfortunate loser spent all the morning cleansing and dressing varicose ulcers. Since that time it has ever been a trial during the treatment of these cases to find some other method that would cause a decided revolution in the stages of healing, some form of treatment that would overcome the sluggishness, the impassive course of the affliction. I believe that every physician who takes a personal interest in his clinic cases has also lost patience during their treatment, and has tried the countless ointments and moist applications that have been suggested. The latest one on the market is scarlet red, and it must be admitted that it does far more good in these cases than anything else of its kind. It is also valuable in treating burns. But in ulcers where we have a rather free discharge, its stimulating qualities do not go into effect until the ulcer has cleansed itself, and is well on the road to repair.

The definition of the second or transitional stage, given above, distinctly says, "sloughs and dead portions of tissue are either removed in the dressing or absorbed by the activity of the leucocytes and fibroblasts." And there we have the keynote, Nature's command, for the rational treatment: If we have a necrosis of bone, or osteomyelitis, we take out the necrotic pieces; the focus is removed, and repair begins. The tendency is there, in the process going on in these ulcers, but it is not quite powerful enough of itself and cries for outside assistance. So we help it along by a thorough cleansing, by "scrubbing" the ulcer with soap and water.

The patient is placed on the operating-table and deeply anesthetized. All crusts surrounding the ulcer or on any other portion of the leg are removed. An ordinary stiff brush, such as is used by the operator and his assistants for cleansing the hands before operation, is to be thoroughly sterilized. Tincture of green soap and sterile water is all that is necessary. The soap is poured on the ulcer, just enough water to cause a froth, and the scrubbing may begin. At first diseased and spongy tissue comes off in a dark black or grayish mass. A little clean water now and then will wash off the débris and show us

how far we have succeeded. Scrubbing should be continued until the base of the ulcer is smooth and the edges stand out clearly, red and hard, giving the whole the appearance of being "punched out." There will be some bleeding, but the bleeding seems to be conducive to quick healing. Strenuous scrubbing of the edges is necessary; it smooths them off sufficiently, and the hyperemia resulting therefrom will show its beneficial results within twenty-four hours, when the little blue line of infant granulations will bring its glad tidings of healthy recovery.

Before applying a wet dressing of either boric acid or bichloride solution, I paint the entire ulcer and its immediate vicinity with tincture of iodine to prevent reinfection as much as possible. As a rule when the patient regains consciousness she will complain of extreme pain, and if thought advisable some form of hypnotic may be administered. But if the bandage is kept moist with warm solution the pain and burning are only of short duration.

This method of scrubbing has been employed by several German surgeons who have used it to stimulate sluggish healing in unhealthy wound surfaces, and it seems to me that this form of mechanical stimulation promises a very large field of activity. The last case I treated in this vigorous manner presented a chronic ulcer of 16 months' duration, situated about two inches above the ankle-joint and approximately the size of a silver dollar. The woman was stout and 61 years of age. After the scrubbing, which was done very thoroughly, she remained in bed for four days, and then was treated by me in the dispensary of St. Mark's Hospital. After three weeks the entire ulcer had healed over completely with a thick, smooth, white scar. Granulation sets in at many different places and the repair is so quick and so ideal in its consummation that I am sure it can easily be called the perfect treatment of varicose ulcers of the leg. The only difficulty lies in the unwillingness of the average patient to be operated upon for a little thing like an ulcer.

37 East Thirty-first Street.

AN AUTOMATIC DEVICE FOR READING SYSTOLIC AND DIASTOLIC BLOOD PRESSURES.

By B. RAYMOND HOOBLER, M.D.,

NEW YORK.

INSTRUCTOR IN CLINICAL PHYSIOLOGY CORNELL UNIVERSITY MEDICAL COLLEGE.

During the past few years many different forms of instruments have been devised for recording blood-pressures. With few exceptions these instruments depend upon pressure over the radial artery to determine pulse obliteration. Thus there is introduced into the blood-pressure reading of all instruments requiring tactile pressure over the radial artery to determine systolic pressure, what may be termed the personal element. With careful observers this may result in very small variations. However, different readers set for themselves different degrees of tactile sensation; some will read the pressure upon receiving the first sensation of a pulse wave even though other pulse waves do not come through; others demand that they shall feel all the pulse waves under the finger tips. Again different amounts of pressure with the finger over the radial artery will give various readings. Or a very slight movement of the muscles of the arm or hand of the patient may cause sensations similar to the reappearing of the pulse wave. In the tips of one's own fingers when the pressure is firm over the radial, there are often felt pulse beats which may become confused with the first faint pulse wave in the patient's artery. And, furthermore, all these difficulties are magnified when blood-pressures are taken in little children.

These chances of error are entirely eliminated and blood-pressure readings standardized through the use of the "double cuff" arrangement in connection with the Fedde pith-ball device. The principle on which it operates is a simple one. A cuff, such as is ordinarily used on any blood-pressure instrument, is placed about the upper arm of the patient. (A. Fig. 1.) This cuff is connected with

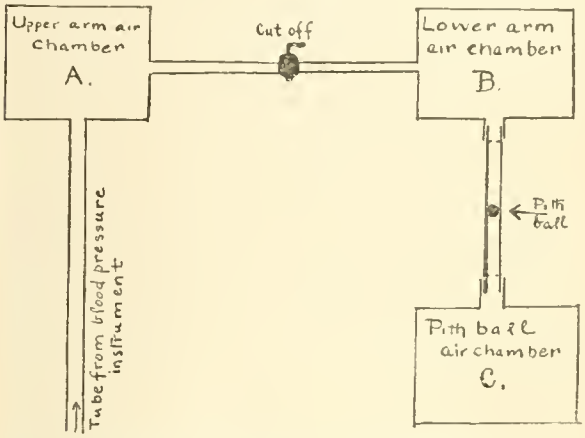

Diagram showing the air-chambers in the "double-cuff" arrangement for reading systolic and diastolic blood-pressures.

a much smaller one about the lower arm (B. Fig. 1) by means of a rubber tube in which is inserted a cut-off valve. (D. Fig. 1.) Also, from the lower cuff a rubber tube connection leads into another air-tight chamber (C. Fig. 1) which consists, for example, of a small rubber bag. Into this rubber tube connecting the lower arm cuff (B) with this rubber bag (C) is inserted a small glass tube (E) open at either end into whose bore is introduced a small pith ball after the manner devised by Fedde and described by him in the Medical Record of July 16, 1910.

From this description it will be noted that there are in the system three air-tight rubber bags connected with one another, viz., the rubber bag in the upper arm cuff (A), the rubber bag in the lower arm cuff (B), and the third one (C), which for convenience may be attached to the outside of the lower arm cuff.

In order to operate, the cut-off between the upper and lower arm-cuff is opened and air is pumped in as in filling the ordinary upper arm-cuff of any instrument. Instead, however, of filling the upper arm-cuff only, the air is passed into the lower arm-cuff as well as into the extra bag leading from it. The air is passed in continuously until the pressure in all the bags is about 100 mm.* mercury, as shown by the blood-pressure instrument. At this point the cut-off between the upper arm-cuff and the lower arm-cuff is closed, making now two distinct air-tight chambers, the one in the upper cuff (A) and the other made up of the rubber bag in the lower arm-cuff (B) and the bag connected with it (C). The two last mentioned bags are connected by the pith-ball tube (E).

*The exact pressure for most accurate reading is now being worked out and will be reported later.

As pulsations pass into the forearm there is at each pulsation slight enlargement of the volume of the forearm. Each enlargement will cause the air to pass from the bag in the cuff about the lower arm, through the tube containing the pith ball, into the rubber bag connected with it. This will force the pith ball to move in the direction of the air current, hence with each arterial pulsation air will rush from the lower arm-bag, causing the pith ball to jump. On the other hand, after each pulsation the arm will return to its smaller size, thus in obedience to the law of equalization of pressure, the air is made to flow back into the lower arm-bag, thus drawing the pith ball back toward the arm. Hence there are oscillations of the pith ball as long as there are arterial pulsations in the forearm. Now, if additional air is pumped into the upper arm-cuff, which is shut off from the lower arm-bag by the cut-off valve, to the point of obliterating the forearm pulsations, there will likewise be a cessation of the oscillations of the pith ball. At this point the height of the mercury column is read for the systolic pressure. Or, the air may be pumped into the upper cuff far above the true blood-pressure and allowed to escape through a needle valve. By this method, as soon as the pulsations appear in the forearm, they are recorded by the instant oscillations of the pith ball, this being the systolic reading. These results are identical whether taken at the cessation of the pith-ball oscillations or at the first appearance of such oscillations.

If the operator now opens the shut-off between the upper and lower arm bags and watches the oscillations of the pith ball as the air is permitted to escape through a needle valve, the point at which the oscillations are greatest is the place at which the diastolic pressure is read, according to the method devised by Fedde and referred to above.

This double cuff arrangement is particularly suited for taking blood-pressures in children. Instead of using the arm, which is often too small for the ordinary cuffs, one may apply it to the leg, placing what has been described as the upper arm-cuff about the thigh and the lower arm-cuff about the calf of the leg. The child does not object so much, and when the cuffs are once applied the child may be covered up, permitting blood-pressures to be taken out of doors as well as indoors, without exposure.

This lower arm or leg cuff can be attached to the cuff already in use on any blood-pressure instrument and does not necessitate a new outfit or a cumbersome addition to the one already possessed. This additional cuff, when carefully rolled up, measures 2 inches in diameter by 5 inches long, and in carrying can be placed inside the regular cuff, occupying practically but little additional space in the outfit.

What is more convenient, however, is that the two cuffs be combined into one cuff by suitable fastenings so that it may be used upon the upper arm if in adult or if used for children may be separated, one portion fitting below the knee or elbow and the other above either of those parts. It will be seen, therefore, that the only change that is necessary in adapting this improvement to any blood-pressure instrument is to substitute this new cuff for the old one.

Summary.—1. By means of this additional cuff systolic blood-pressure may be accurately read without the use of the fingers, thus eliminating all personal error and standardizing all blood-pressure readings.

2. Diastolic pressure readings are made with the same ease and accuracy.

3. The cuff may be attached to any outfit now owned whether aneroid or mercurial in type.

4. It is extremely simple and takes up but little space.

5. It may be used on the legs of children, thus overcoming the difficulty of small arms.

131 East Sixty-Seventh Street.

CONFIRMATION STUDIES OF WEINSTEIN'S TEST FOR CANCER OF THE STOMACH.

By LEONARD K. HIRSHBERG, M.D.,

BALTIMORE, MD.

Ever since the Neubauer and Fischer method of diagnosing cancer of the stomach was displaced by the plain tryptophan test, first evolved by Dr. J. W. Weinstein of the Vanderbilt Clinic in New York, I have been employing this simple method upon every case of uncertain gastrointestinal disturbance, particularly of the subacute or chronic variety.

Weinstein and Warfield have finally proved to our satisfaction that glycyltryptophan is not necessary for the demonstration of the Emerson enzyme—the peptidolytic enzyme present in cancer cells that digests proteins beyond the albumose through the amino-acid stage—and may be of no value, because of saliva that is swallowed. If the alkaline mouth juices are mixed with a faintly acid stomach content, tryptophan is produced from glycyltryptophan, thus vitiating the test.

In the early fall of 1910 Weinstein announced that tryptophan was one of the amino-acids always formed in the stomach if cancer was present. He showed that all of the common food proteins, such as egg albumin, casein, yield tryptophan by enzymolysis. Therefore it is unprofitable to waste time with the discredited Neubauer-Fischer method.

In an admittedly brief, yet painstaking experience, the older tests for cancer of the stomach, such as occult blood, hemolysis, present of lactic and absence of hydrochloric acids, and other newer methods, like Oppler-Boas bacilli, miostagmin, and Solomon tests, have proved decidedly less reliable than Weinstein's procedure. It is in my hands employed as follows:

A test meal, consisting of a glass of milk, a piece of white bread buttered with granulated sugar, or a piece of zwieback, an egg, and a glass of water; is extracted in one hour and a half. This is filtered, and immediately examined for tryptophan, thus: Six (6) c.c. of the filtrate in the test tube is mixed with four drops of 3 per cent. acetic acid solution. Four drops of a saturated watery solution of bromine are carefully added with a pipette. A reddish-violet color indicates the presence of tryptophan. If the rosy red color does not appear, allow it to stand twenty minutes. Should it not appear then, more bromine water, drop by drop, must be cautiously added. Excess of bromine will show as a yellowish tint.

If the procedure as thus far followed is uncertain or negative, the remaining stomach contents (both unfiltered and filtered) are placed in an incubator for one or two days. Antiseptics need not be added, for the microorganisms form no tryptophan. If then the examination shows no tryptophan, it does not necessarily prove the absence of

carcinoma. If, on the other hand, it is positive, cancer may be considered to be present.

Mrs. E. O. Physical examination negative. Weight stationary at 190 pounds. Fell from a step-ladder three months ago. Has lost her appetite since, but no weight lost. Is now constipated, except when taking purgatives. Was never so before. Five examinations made on alternate mornings gave positive tryptophan tests. An exploratory examination made by Dr. George DeHoff, her physician, showed an inoperable scirrhous carcinoma of the pylorus. The patient learned accidentally of the diagnosis and left the city for her mother's home in the West. This patient is 39 years old.

Twenty-one other patients with various gastro-intestinal symptoms, any one of which might possibly occur in carcinoma of the stomach, yielded negative test meals.

One other patient, B. H., aged 57, with a family history of carcinoma, has given so far seven negative results for tryptophan in tests extending over an interval of three weeks. The other signs, such as tumor, loss in weight, anorexia, occult blood in the gastric contents, and free lactic acid, seem to point positively to cancer. The patient refuses operation, although advised unanimously by her consultants to submit to one.

A NEW TYPHOID FEVER TEST.

(PRELIMINARY REPORT.)

By FRANCIS A. PRENDERGAST, M.D.,

BROOKLYN, N. Y.

ADJUNCT ASSISTANT PHYSICIAN, KINGS COUNTY HOSPITAL.

In the following report I desire to bring to the attention of the profession a new means of making an early and sure test for the presence of typhoid fever.

The test consists in injecting with a fine hypodermic needle a few drops of a suspension of dead typhoid bacilli of the strength of less than 5,000,000 per c.c. This strength may be easily made by taking the ordinary typhoid vaccine now on the market and diluting it as follows: Take one drop of the 1,000 million vaccine and add it to 20 drops of sterile saline solution. Mix thoroughly.

After the solution has been injected intradermally (care always being taken to raise as superficial a bleb as possible and with a well-mixed solution) in 24 hours the *non-typhoid* patient shows a well-marked area of redness around the point of injection. The typhoid patient shows absolutely no reaction. The reaction (as a rule) begins to appear in 12 hours, reaches its maximum in 24 hours, and has disappeared in 48 hours. Any redness after 48 hours is considered an infection and is not taken as a reaction. The test should be repeated with better precautions against infection. Rub the skin at the point of injection with alcohol, have a clean hypodermic syringe and needle, and use fresh sterile vaccine.

This test gives no constitutional reaction (rise of temperature, malaise, chill, etc.), and has no elements of danger. In the negative cases (controls) a few patients have complained of slight soreness and itching at point of injection 12 to 24 hours after the injection was given. This quickly subsided without treatment and gave no after trouble.

The following cases show the results as obtained on patients found in the wards of the Kings County Hospital. No attempt has been made to select them.

	ACUTE TYPHOID FEVER				NON-TYPHOID (CONTROLS)			
	No Reaction, Test Positive	Reaction, Test Negative	Widal		No Reaction, Test Positive	Reaction, Test Negative	Widal	
Case 1	Yes	. . .	Present	Case 13		marked redness	Absent	
Case 2	Yes	. .	Present	Case 14	Yes	. .	Present	
Case 3	Yes	. . .	Present	Case 15	Yes	. . . .	Absent	
Case 4	Yes	. .	Present	Case 16	. .	Yes		
Case 5	Yes	. .	Present	Case 17		Yes		
Case 6	Yes	. .	Present	Case 18	.	Yes		No Widal Taken
Case 7	. . .	Slight redness	Absent	Case 19	. . .	Yes		
Case 8	Yes	. . . .	Present	Case 20		Yes		
Case 9	Yes	. . . .	Present	Case 21	. .	Yes		
Case 10	Yes	. . . .	Present	Case 22	. . .	Yes		
Case 11	Yes	. . .	Present	Case 23	. .	Yes		
Case 12	Yes	. . .	Present	Case 24	. . .	Yes		
.	. . . .		. . .	Case 25		Good reaction	Absent	
. .	. .	. . .	. . .	Case 26	. .	Yes	Absent	
. .	. . . .	. . . .	. . .	Case 27	Yes	. . . .	Present	

Remarks: Case 7 ran a typical typhoid course, had several hemorrhages. The Widal test was made several times—always negative.

The patients used as controls suffered from such diseases as tuberculosis, chronic nephritis, chronic myocarditis, senile dementia, chronic rheumatism, acute bronchitis, etc.

Case 13 gave a history of typhus fever 40 years ago; very intense reaction. No treatment. No after trouble.

Case 14 gave history of typhoid fever 6 years ago.

Case 15 gave no history of typhoid fever. Unable to explain findings. Faulty technique.

Case 25 gave history of typhoid fever 3 years previous.

Case 26 gave history of typhoid-pneumonia several years ago.

Case 27 gave no history of typhoid fever. Urine not examined for bacilli.

Advantages of the Test.—No danger to patient. No danger from live culture (as in the Widal test).

No constitutional or local after-effect.

No microscope, no blood of patient, required.

Appears early—one case (case 6) 3 days before the Widal. How early future cases and a greater number will show.

Simple and easy to apply. No wait for laboratory report.

Seems to establish the diagnosis of typhoid fever even after the lapse of years, as exemplified in cases 14 and 25.

340 CLINTON STREET.

The Slight Nutritive Needs of the Cholera Vibrio.—M. Pergola has made various experiments to ascertain how much nutritive pabulum is necessary for the proper nutrition and multiplication of the cholera vibrio. For these experiments he made use of solutions of sodium chloride, ordinary potable water, distilled water, sea water, fecal broths, alkaline blood serum, and solid substances. He concludes that one must take great care in all epidemics of cholera not only to disinfect the stools and other excreta of the patient, but one must see that all fecal remains of healthy persons are disinfected, for it is found that a slight fecal mixture is all that is needed to cause a flourishing growth of the vibrio in any soil or water.—*Il Policlinico.*

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MODEL QUARANTINE ADMINISTRATION.

THE enemies of Dr. Doty and those who want his place, either for themselves or for a personal or political friend, are untiring in their attacks upon his administration of the New York quarantine service. The investigator appointed by Governor Dix exhausted all the possibilities of unfair denunciation in his official report, and the others can only paraphrase the charges made by him, but they know the force of iteration and evidently believe that by constant repetition they can turn public opinion against the abused Health Officer. It makes no difference to them, of course, that Mr. Bulger's charges have been refuted, the refutation being supported, as his *ex parte* charges were not, by facts and figures open to the Governor or to anyone who cares to spend a half hour in their examination. Much capital is made, for instance, of the statement that three days after the "shocking disclosure" that little children suffering from pneumonia were treated by fresh air instead of being kept in rooms with doors and windows hermetically sealed, the children's hospital was discontinued, the patients thereafter being treated at the Ellis Island hospital. The fact was that the hospitals at quarantine were needed for the detention of cholera suspects; the cholera patients could not be sent to Ellis Island, but the children could be sent there, and so they were, in order to make room for patients or "contacts" who were of necessity detained at quarantine. Expert accountants were employed to search the records, and their report proves without question that the financial administration of quarantine was as correct as that of any business house in the country. These findings are ignored by the accusers of Dr. Doty, who prefer to accept the testimony of discharged employees and disgruntled immigrants.

It is a waste of time to repeat the refutation of all these charges in detail, but it is not without interest and may be of use to see what has been accomplished by way of betterment at the quarantine station under Dr. Doty's administration. When he was placed in charge of the station in 1895, there were less than twenty men employed in the Department; there are now one hundred and thirty-five persons employed in carrying out the various details of the work. These persons have been selected with reference solely to fitness for the particular service required of them, and the Health Officer is of necessity compelled to depend upon them in carrying out his orders. If any failed in their duty they have been called to a strict account and have been discharged if their dereliction was serious. No more than this can be expected of any administrator; even Mr. Bulger would hardly recommend himself for dismissal solely on the ground that his cook was found to have given a pork chop to her favorite policeman. At the beginning of his service Dr. Doty inaugurated a precise system of bookkeeping and accounting in connection with the financial affairs of the office; this system has been maintained, and the recent investigation by expert accountants shows that it has been effectual in safeguarding the funds of the State and in furnishing a permanent record of every important transaction of the office.

Prior to June, 1909, Hoffman and Swinburne Islands were under the jurisdiction of the Quarantine Commissioners, the powers of the Health Officer being limited in matters pertaining to general supervision, equipment, etc. At that date the Quarantine Commission was abolished and the Health Officer was placed in control of these islands. Urgently needed repairs and improvements were at once begun and wards were provided for the care of patients suffering from contagious diseases, making it possible to remove from incoming vessels all cases of infectious disease, thus avoiding unnecessary detention of the vessels, to the evident benefit of commerce. The needed improvements have not been made as rapidly as the Health Officer desired, for the reason that his time and that of his subordinates was absorbed night and day in dealing with two visitations of cholera, brought by incoming vessels. How successfully these visitations have been met is evidenced by the calm confidence of the community last summer as compared with the alarm felt when the *Normannia* brought a few cases to port twenty years ago. Although, for the reason just mentioned, there is yet much to do, nevertheless both Hoffman and Swinburne Islands are now fairly well equipped to deal with the work ordinarily required of them. At present Hoffman Island can care for upward of 1,500 suspects held for observation, being divided into three parts, so far as isolation is concerned, each part having everything that goes with scientific segregation—dormitories, large spaces for exercise, sanitary equipment, as well as ample kitchen and dining arrangements.

Swinburne Island is fully equipped to deal with the work required of it, including apparatus for the disinfection of stools and other discharges by boiling water. There are accommodations here for nearly one hundred patients, one ward having eight separate apartments for the isolation of suspects held for observation; two, and sometimes three medical officers are in constant attendance here, and there are also from six to ten trained nurses. The water supply on both islands has been greatly improved. one of the islands having a plant distilling four thousand gallons of sea-water a day, thus supplying a water free from all possible infection. At the

Boarding Station the bacteriological laboratory has been greatly enlarged; in place of one bacteriologist on duty there is now a permanent force of five or six. Not only is the ordinary bacteriological work carried on in connection with the diagnosis of cases on incoming vessels, but a large amount of original work has been accomplished in the investigation of steam, formaldehyde, sulphur dioxide, ozone, etc., to determine their germicidal value, and the results of this work have been made public for the benefit of quarantine officers and sanitarians in general. The disinfecting arrangements at Hoffman Island consist of three large apparatuses for steam disinfection, constituting probably the largest disinfecting plant in the world.

Did space permit, many more details might be given of Dr. Doty's faithful and scientific administration which has made the New York quarantine station a model that is being studied and imitated by sanitarians the world over. Enough, however, has been said to demonstrate the remarkable efficiency of the Health Officer in the difficult and responsible task of safeguarding New York and the entire country from imported epidemics of fatal disease. Not only the public health but the business interests of the country demand that this work be continued and perfected by the man who has brought it to its present condition. Medical men know, as no others can, the danger of entrusting this work, not yet completed, to inexperienced and possibly incompetent hands, and the medical profession of New York is practically unanimous in urging that Dr. Doty be reappointed, especially at this time, for it may be regarded as quite certain that within a very few months cholera will again be knocking at our door. Woe to the man who fails to recognize that knock and in his ignorance or incompetence opens wide the portal!

THE REWRITING OF MEDICAL HISTORY.

So far is the history of disease and medical practice from being a really closed chapter that one would almost be warranted in stating that it is yet in its beginnings. New histories of medicine continue to appear, along with new journals devoted to medical history. An increasingly large number of representative medical men are becoming interested in historical episodical research. New documents come to light, not only in writing but in all other aspects of archeology. New and improved translations of old texts are made, and new interpretations are continually supplied, as suggested and illuminated by modern discoveries. As a matter of fact this movement, if continued sufficiently, would mean an exhaustive rewriting of medical history.

The vigor of this tendency cannot be better illustrated than in the mixed reception given to Bloch's demonstration that syphilis must henceforth be regarded as purely an American disease and that syphilis could not have existed in (old world) antiquity. While the majority of well-informed readers owned themselves convinced by Bloch's arguments, not a few new documents to the contrary have since come to life, prominent among which is an apparently unassailable manuscript showing that an Italian expression corresponding to "French disease" was current before Columbus was born.

The Division for the History of Medicine and the Sciences in the Congress of German Naturalists and Physicians, together with the Archives which form the official publication of this section, is doing much for this work of revision. At the recent annual meeting of this body (*Münchener medizinische Wochenschrift,* November 14) Richter gave evidence to show that anthrax—splenic fever—must be more reckoned with in dealing with ancient epidemiology. This should be true of all plagues of animal origin, for we have knowledge enough that such diseases prevailed unheeded in old civilizations ignorant of hygiene. We have every reason to believe that most if not all of the diseases originating in animals or having a strong incidence therein were prevalent in remote epochs when men shared their houses with all the domestic animals and not with dogs and cats alone, to a degree hardly conceivable to-day.

Bubonic plague is now known to be a disease primarily of certain rodents. The plague of old Athens has recently been compared with modern typhus because both diseases claim dogs as co-victims with men. Richter seeks to prove that much so-called erysipelas in ancient and medieval times was the disease which we now commonly associate with cattle and sheep, and term variously "anthrax," "splenic fever," "splenic edema," "wool-sorters' disease," etc. The same writer, dissatisfied with the old translations of the great Arabic-writing physicians of the tenth and eleventh centuries made by Constantinus Africanus and Stephanus, has recently caused new ones to be made and finds numerous misconceptions in the older renderings. He believes that our knowledge of the beginnings of smallpox may be carried back several centuries beyond the period of first recognition heretofore assumed. It would appear that, so far from having been derived originally from India and China, variola was first heard of among the Christianized Ethiopians and entered Arabia from Africa before the time of Mahomet. The Arabians spread it to the Persians and these perhaps to the more Eastern and Southern Asiatic peoples.

The thirteen years which have expired since the creation of this scientific body have certainly been so prolific of results as to justify renewed extension of the movement in the future. This movement is now represented by organized effort in France, Germany, and Italy; while the well known Dutch periodical, *Janus,* devoted for years to the history of medicine, will in the future be published in French under the designation *Archives internationales pour l'histoire de la médecine et la geographie médicale.* It is, of course, comprehended fully that a movement of this sort is not inferentially committed to any sensational overturning of the older history. It simply regards all matter of historical significance, however trivial it may seem, as worthy of the most careful study. New interpretations and new criticism become inevitable, and in turn stimulate renewed interest.

The Lenhartz Dietetic Treatment.

This remedial procedure, which has been tested by its sponsor and others upon a very large material which comprises every type of underfed patient, is said to differ chiefly from the Weir-Mitchell and other examples of forced alimentation, first, in relative limitation of fluids, and second, in a harmonious increase of all three basic classes of nutriment; finally, the number of meals is not increased over that demanded by custom. The regimen differs to some extent from some of the older plans in being suited to subjects who are able to take voluntary exercise in the open air, and this exercise is part of the regimen. Bed rest is often required at the outset, and during this period massage and passive motion are practised. With disappearance of exhaustion and irritability an active existence is begun. Sleep is secured by hydrotherapy; regular bowels by diet and enemata, together with massage. The only drugs used are bismuth for hyperacidity, and iron and arsenic for anemia. At a recent meeting of the Hamburg Aerztlicher Verein (*Muenchener medizinische Wochenschrift*, November 7) Kissling reported the results of the regimen in several hundred cases. In four to six weeks the average weight gain was seven or eight kilos, and in six to eight weeks ten kilos. The regimen is particularly suited to nervous dyspeptics. In discussion Schottmüller stated that many rebelled against the cure, and that vomiting and diarrhea were set up with loss of weight. Hirschstein appeared inclined to credit some of the benefits attained to the large dosage of sulphur derived from the increased amounts of meat, eggs, and milk consumed. The good results in neurotics attributed to increased nitrogen could be explained more rationally in this manner. Nonne thought the benefit was best explained by suggestion. Brauer attached importance to the development of culinary resources, which is a phase of hospitalism as yet hardly essayed. Each hospital should have special diet catering for the underfed.

The Seriousness of Measles.

Physicians in this and other countries are beginning to regard measles in its true light, that of a disease serious in its menace to health and life. Reports recently of the death rate from measles have revealed the fact that it is by no means a disease to be treated lightly. When it attacks adults it generally leaves in its wake a train of dangerous sequelæ. Sir John F. H. Broadbent, writing in the *Practitioner* for October, draws attention to the lack of wisdom shown by medical men in Great Britain in allowing the old belief that measles was a trifling complaint to be perpetuated. It seems that it is not even a notifiable disease in London, and few, if any, measures are taken to hinder the spread of infection. That it is acutely infectious in the catarrhal stage is well known, but on account of the ignorance of parents it is seldom that attempts are made to carry into effect the lesson to be learned from this fact. Dr. Sykes, medical officer of health for St. Pancras, goes so far as to recommend that inasmuch as the mortality from measles is mainly among children under five years of age, and infection is spread chiefly through the convergence of a large number of children to different centers, such as schools, all children under five years of age should be permanently excluded from the elementary schools. The great mortality that not infrequently accompanies an epidemic of measles, for example the mortality in the recent epidemic in London, is invariably due to neglect of precautions in the early stages of the disease.

Function of Cell Oxidases.

Intracellular oxidation has recently been studied through color reactions as observed under the microscope, this method constituting a check on the older one of investigating the enzyme properties of tissue juices and extracts. The color method is well adapted to the study of leucocytes, and in fact furnishes us with a new resource for counting the latter in any tissue section or in any fluid. In localities like the appendix, for example, it becomes possible to determine the degree of inflammation present. But if the new method be a criterion for the existence of oxidases in tissues our knowledge of the latter will have to be recast, for it has recently been asserted that with the exception of the salivary and lacrymal glands no color reaction has been obtained that would not be accounted for by the presence of the leucocytes in the tissues. The color method has therefore been investigated thoroughly by von Gierke (*Muenchener medizinische Wochenschrift*, October 31), who devised new technical resources and was able to produce color reactions in the various cells which differed from that given by leucocytes. Muscle substance, as might have been expected, gave a pronounced reaction, the colored granules appearing in the sarcoplasm; and doubtless all cells which perform active functions show some reaction, although the author could obtain none from the glomeruli of the kidneys. It is not claimed that the reaction throws much light on the intimate nature of cell metabolism. At most it shows that cell oxidation receives a new demonstration which is unlike any other in that it is concerned with the cell as an individual. The nature of the color reaction is such that it could occur only in the presence of certain oxidizing substances and enzymes.

The Department of Insurance Medicine.

When, with the beginning of the present volume of the Medical Record, a department of insurance medicine was established, it was largely in the nature of an experiment. While the physician engaged in insurance work is, and from the nature of his work must be, interested in general medicine and all its branches, there are nevertheless certain problems and facts which bear more particularly upon his special calling, and it is to his advantage to have these topics grouped in a special place where they can be found readily without searching through the fifty or more pages in each issue of the journal. It was because we believed that the thousands of examiners and medical officers of insurance companies would appreciate this effort to meet their wants that we established the department, but only a trial would prove whether or no this belief was well founded. It is a pleasure now to state that the many letters of commendation received from individuals and the formal endorsement given to the project by associations of medical directors and examiners have convinced us of the acceptability of this feature, and we can therefore promise that the page or more of Insurance Medicine will be continued as one of the regular departments in each issue of the Medical Record during the coming year.

News of the Week.

Dr. Charles H. Mayo of Rochester, Minn., has had the unpleasant experience of submitting to two abdominal operations within a week. On Friday, December 15, on his arrival in this city from Washington, where he had been at the annual meeting of the Southern Surgical Association, he was seized with abdominal symptoms suggesting both appendicitis and cholecystitis. An operation was performed the following evening and a gangrenous appendix was removed. On the next Friday he was taken with unmistakable symptoms of cholecystitis and was operated on again Saturday, when a number of gallstones were removed. Both operations were successful and the welcome report comes from the Presbyterian Hospital, where the patient lies, that he is convalescing satisfactorily. The operator both times was Dr. Joseph A. Blake.

The Typhoid Epidemic in Trenton.—During the second week of December 16 new cases of typhoid fever were reported to the Health Board of Trenton, making a total of nearly two hundred cases in the past two months. The water supply has been given the hypochlorite treatment and the people are claiming that it is undrinkable.

School Inspection in Bridgeport.—At the monthly meeting of the Health Board of Bridgeport, Conn., the report read showed that during November 1,773 pupils in the public schools had been inspected and that of this number 635 were found physically defective and 22 mentally defective. A free clinic has recently been established in this city for the treatment of school children and a number of dentists have given their services, without charge, to children whose parents were unable to pay.

Pellagra in Mississippi Town.—The town of Meriden, Miss., has just commenced to keep a record of vital statistics and the report for the month of November caused considerable surprise in that 27 cases of pellagra were recorded, there being more than twice as many cases of pellagra reported as of any other disease.

Insanity Increases in New Jersey.—The annual report of Dr. Britton D. Evans, Medical Director of the State Hospital for the Insane at Morris Plains, says that, while he has room in his institution for only 1,600 patients, he has to care for 2,245, and that a similar condition is reported at the State Hospital in Trenton. The ratio of increase in the number of patients over previous years is startling. There have been only 188 deaths, or 7 per cent. of those under treatment, while the number of patients discharged as cured or improved has been 25 per cent. of the number admittted. It is pointed out that New Jersey has no hospital for the criminal insane.

Pennsylvania State Vaccination Commission.—Governor Tener has appointed the following members of the State Vaccination Commission, all of Philadelphia: Dr. Wm. H. Welch, Dr. Jay F. Schamberg, ex-Governor Samuel W. Pennypacker, George Wharton Pepper, Emil Rosenberger, Porter F. Cope, and John Pitcairn. The law provides that two members of the board shall be pro-vaccinationists and two anti-vaccinationists. The duties of the Commission are to examine into the history, nature, and pathology of smallpox; the means to be employed for diminishing the prevalence of and the mortality from the disease; the history, nature, and pathology of vaccination; the original sources from which the various strains of vaccine virus now in use have been obtained. Study is to be made further of the mode of preparation of virus used for vaccination and of other matters pertaining to smallpox and its treatment. The Commission is to make a report to the Legislature on or before February 1, 1913.

Smallpox Spreads in Pawtuxet Valley.—The epidemic of smallpox which has been raging in Pawtuxet Valley, R. I., has spread until the victims now number several hundred cases. Several cases have appeared in the vicinity of Brown University and all of the students have been compelled to submit to vaccination.

Public School Children Must be Vaccinated.—Owing to a smallpox scare in Maspeth, the Health Department and the Board of Education have ordered all children in the public schools of Queens who have not been vaccinated within two years to submit to that operation.

English Physician's Oppose Lloyd-George's Insurance Scheme.—A mass meeting of over 2,000 doctors from all parts of the United Kingdom met in London on December 19 for the purpose of protesting against the Lloyd-George insurance plan. They hissed Sir Victor Horsley and members of the Council of the British Medical Association, which they charge with having sacrificed the interests of the profession. Sir Victor Horsley was denounced as a traitor when he tried to defend the action of the Council in promising Mr. Lloyd-George that the doctors of the United Kingdom would do their share toward the success of his measure. Resolutions were passed in favor of boycotting the scheme and refusing to treat the poor under its provisions until the demands of the medical profession were granted. The local insurance committees are now left to provide medical attendance and to pay the doctors, and the British Medical Association has asked that 10 per cent. of the committeemen shall be doctors. They claim that it is impossible to bring the resources of modern medical science within the reach of all at the estimate of the Chancellor of the Exchequer of six shillings per head. It has been foreseen that some of the poorer members of the profession may suffer by the stand taken and be tempted to accept conditions which will be degrading to themselves and a detriment to the public, and the National Medical Union has formed a plan to raise a fund of $2,500,000 from which to make grants to physicians who refuse to treat beneficiaries under the law. Six thousand doctors are already pledged not to accept service under the act.

Pasteurization of Milk Compulsory After January 1.—The resolution of the New York Board of Health adopted as an amendment to the Sanitary Code requiring that after December 31, 1911, all milk and cream offered for sale in the city, except that used for manufacturing and cooking purposes, must be of the grades designated and recognized by the Board of Health as "certified" or "guaranteed" milk, or it must be pasteurized under the conditions prescribed by the regulations of the Board of Health, has been slightly modified. There has been a change in the subdivision of grades which will permit the great bulk of milk used in manufacturing and in bakeries to go through without stringent precautions. Neither the corner groceryman nor the local dairyman will be able to get

any milk of this grade. The grade to be known as inspected milk will be practically the same as the certified milk, except that the cattle have not necessarily been subjected to the tuberculin test. With the exception of the certified and inspected milk the bulk of milk sold to small consumers will be pasteurized at a temperature of from 150° to 160° F. for twenty minutes. It is claimed that nothing like this system has been put into effect in any other city in the world, and that it is so thorough in its application that the consumer will have the assurance that every quart of milk bought is pure.

Would Make Use of Antitoxin in Diphtheria Compulsory.—The Scott County Medical Society recently met at Davenport, Ia., for the purpose of adopting resolutions asking the State Board of Medical Examiners to revoke the license of a practitioner who failed to use antitoxin in two cases of diphtheria, which resulted fatally. The resolutions denounced the failure to use antitoxin in a case of diphtheria as a crime against the patient and against the community.

To Prosecute Unlicensed Physicians.—The State Board of Health of Illinois announced that it is preparing to prosecute graduates of medical colleges and others who are practising medicine without a license. Notification was sent to Chicago Hospitals some time ago calling the attention of hospital authorities to the fact that graduates in medicine should not be allowed to practise in hospitals under the guise of assistants unless licensed and that this warning has been disregarded.

New York Hospitals Overcrowded.—The Department of Charities reports that New York's facilities for caring for its sick poor are still inadequate. The city hospitals are overcrowded and thousands are being turned away who are in need of treatment. It is believed, however, that the hospitals now under construction on Blackwells Island, in Flatbush, and on Staten Island will help toward the solution of the problem.

New Hospital for Ontario.—The new general and marine hospital erected in St. Catherines, Ontario, was opened on November 24 by Lieut.-Governor Gibson. This hospital is said to be the best equipped hospital in Ontario; it was built at a cost of $75,000 and can accommodate 50 patients. The old hospital will be renovated and used for any overflow that may occur.

Hookworm Dispensaries in North Carolina.—It is announced that free dispensaries for the treatment of hookworm will be established in Hanover County, N. C., by the Board of County Commissioners acting in conjunction with the State Board of Health. In Pender County 5,000 persons were examined; in Columbus County, 6,000, and in Onslow County, over 7,000; and it was found that from 60 to 75 per cent. of this number were infected with the hookworm.

The Ninth Congress of American Physicians and Surgeons.—At the first meeting for organization of this Congress, held in this city on December 23, the following officers were elected: *President of the Congress*, Colonel William C. Gorgas, U. S. Army; *Chairman of the Executive Committee*, Dr. William H. Carmalt, New Haven, Conn.; *Treasurer of the Congress*, Dr. Newton M. Shaffer, New York; *Secretary of the Congress*, Dr. Walter Ralph Steiner, Hartford, Conn.: *Secretary of the Executive Committee*, Dr. William Kelly Simpson, New York. The Congress will meet in Washington, D. C., in May, 1913.

The Canadian Public Health Association held its first congress in the new medical building of McGill University on December 13, 14, and 15 under the presidency of Dr. T. A. Starkey. The first session was held in the Convocation Hall of the Royal Victoria College when His Royal Highness, the Duke of Connaught, Governor-General of Canada, made the opening address. Many cabinet ministers and premiers have lent their names to the association and Canada's High Commissioner sent a check of $2,500 to be used as they pleased. The Hon. Martin Burrell, Minister of Agriculture, said that he believed that the time had come when, if public health did not need a portfolio, it should at least have a full-fledged department in the Federal Government. The meeting was a success in every particular.

The Surgical Association of the Chicago and Northwestern Railway, which held its fifth annual session in Chicago on December 14, elected the following officers: *President,* Dr. H. M. Workman of Tracy, Minn.; *Vice-Presidents,* Dr. A. L. Wright of Carrol, Ia., and Dr. R. B. Bowen of Maquoketa, Ia.; *Secretary and Treasurer,* Dr. J. D. Andrews of Chicago.

The Southern California Medical Society, which held its forty-fifth semi-annual meeting in San Diego, Cal., on December 7, elected the following officers: *President,* Dr. Stanley F. Black of Pasadena; *Vice-Presidents,* Dr. T. A. Stoddard of Santa Barbara, and Dr. Robert L. Doig of San Diego; *Secretary and Treasurer,* Dr. John A. Colliver of Los Angeles.

The Clinical Society of the Mountainside Hospital was organized at Montclair, N. J., on December 4, 1911, and elected the following officers: *President,* Dr. Richard P. Francis; *Vice-President,* Dr. William H. Areson; *Secretary and Treasurer,* Dr. Stella S. Bradford.

Professor Odilon Marc Lannelongue, one of the leading surgeons of Paris, died on December 22. He was born in 1840, received his medical degree in 1867, and was appointed professor of surgery at the University of Paris in 1884.

Dr. Emil Altman was tendered a dinner by the Executive Committee of the Eastern Medical Society at the Café Boulevard on December 15. Among those present were Dr. Graeme M. Hammond, Dr. Louis K. Neff, Dr. L. J. Ladinski, Dr. Frederic Bierhoff, and Dr. S. J. Kopetsky.

Dr. Peter K. Olitsky has been appointed Assistant Adjunct to the Gynecological Department of the Har Moriah Hospital, New York City.

Removal.—Dr. W. E. Bullard has removed from Palm Beach, Fla., to Larchmont, N. Y.

Dr. James J. Walsh, Professor of Medical History in Fordham University, has been appointed medical editor of the New York *Herald.*

Montclair Wins Milk Fight.—After resisting that section of the Sanitary Code of the Montclair Health Board for four years requiring the tuberculin test for the herds from which the local milk supply is obtained, it has been announced that the Borden Condensed Milk Company has decided to submit to the ordinance. The ordinance requires that tuberculin tests be made of all cows from which the Montclair milk supply is obtained and that charts showing the results of the test be filed. The

veterinarian's certificate must also contain a statement as to the number of cows in the herd that are free from disease of any kind.

Charitable Bequests.—By the will of the late J. Henry Cochran of Williamsport, Pa., the sum of $10,000 is bequeathed to the Williamsport Hospital.

The will of Sarah A. Teller, who left a large estate in the Bronx, gives the residuary estate to Lebanon Hospital.

The Far Eastern Association of Tropical Medicine will hold its second Biennial Congress at Hong Kong from January 20 to 27, 1912. Papers will be classified so as to give, if possible, a day to each of the following groups: I. Protozoology, Helminthology. II. Cholera, Plague, Leprosy, and Tuberculosis. III. Tropical fevers, including Malaria, Beriberi, and Dysentery. IV. Surgery, Obstetrics, and Infantile Diseases. V. Climate, Hygiene, and Sanitation. Medical men in the Far East willing to introduce subjects for discussion should communicate at once with the secretary, Dr. Francis Clark, Hong Kong. Papers may be read in English, French, or German, but a brief abstract in English should be sent in.

Obituary Notes.—Dr. Andrew Benedict Ward of New York City, a graduate of the College of Physicians and Surgeons in 1896, member of the American Medical Association, the Medical Society of the State of New York, the Harlem Medical, Clinical Assistant, Department of Pediatrics, Vanderbilt Clinic, died at his home December 16, aged 39 years.

Dr. William F. Millington died at his home in Brooklyn on December 15. He was graduated from the New York University Medical School in 1877 and served three years in the Marine Hospital Service. He was 57 years of age.

Dr. Robert C. Lindsey of Moultrie, Ga., a graduate of the Atlanta College of Physicians and Surgeons in 1900, died suddenly on December 7 at the age of 37 years.

Dr. J. W. Warner of Miami, Fla., died at his home December 8.

Dr. J. C. Egan, who was during the Civil War chief surgeon in charge of the Confederate military hospitals, died at his home at Mount Lebanon, La., December 9.

Dr. Elizabeth Henderson Lang McClure died at Philadelphia on December 12. She was graduated from the University of Boston School of Medicine in the class of 1877. She was a member of the Homeopathic Medical Society of the County of Philadelphia, of the Pennsylvania State Homeopathic Medical Society, and of the American Institute of Homeopathy.

Dr. Summerfield R. Bond of Baltimore, a graduate of the University of Maryland in 1883, died of pneumonia at his home in Baltimore on December 21 at the age of 48 years. He was the chief medical examiner of the Relief Department of the Baltimore & Ohio Railroad.

Dr. Milton Robert Bailey of Peoria, Ill., a graduate of the Western Reserve University Medical College, Cleveland, Ohio, in 1882, died at his home November 22, aged 56 years.

Dr. William R. Page of Washington, D. C., died at his home November 26. He was a Civil War veteran and for many years practised medicine in Washington.

Dr. George Leroy Rice of North Adams, Mass., a graduate of George Washington University, Department of Medicine, Washington, D. C., in 1862, died at his home November 28 at the age of 73 years.

Dr. Pierre George Dausch of Baltimore, Md., a graduate of the University School of Medicine, Baltimore, Md., in 1868, died at his home November 26. He was 65 years old.

Dr. Joseph Bassett Trudgian, a graduate of the George Washington University in 1887, died suddenly at his home in Washington, D. C., on November 26. He was born in 1856 and served as a surgeon in the Spanish-American War.

Dr. John Wagner, who had been practising medicine in San Francsico for forty years, died suddenly in that city on November 22. He was born in Ohio, and graduated from Cooper Medical College, San Francisco, in 1872.

Dr. John T. H. Slayter, formerly a military surgeon in the Philippines, and later a resident of Helena, Mont., died at his home in Watertown, Mass., after a long illness, on November 24. He was a graduate of the College of Physicians and Surgeons, New York City.

Dr. Albion S. Whitmore died at the Deaconess Hospital in Boston on December 1. He was born in 1851, graduated from Bowdoin College in 1875, and from the Columbia Medical School at New York in 1878.

Dr. E. S. McClellan of Saranac Lake died at the home of his daughter in Northampton, Mass., December 2, at the age of 87. For twelve years he was president of the Saranac Lake Board of Health and compiler of a Sanitary Code for the prevention of tuberculosis.

Dr. James Sumner Greene died from pneumonia at his home in Dorchester Lower Mills, Mass., on December 15, at the age of 77 years. He was graduated from Harvard Medical School in 1863 and was a Civil War veteran.

Dr. Peter David Hughes of Kansas City, Kan., died of cancer of the stomach on December 11. He was born in 1855, graduated from the College of Medicine at Fort Wayne, Ind., in 1884. He was chief of the surgical staff of Bethany Hospital, Kansas City, Kan., and president of the Northeast Kansas Medical Association in 1905-1906.

Dr. John W. Thorp died of pneumonia on December 15 at his home in Oxford, N. Y. He was born in 1839 and was graduated from the University of New York, Medical Department, in 1871.

Dr. La Fayette Rinkle of Boonville, N. Y., a graduate of the Long Island Hospital Medical College in 1874, was paid a well-deserved tribute by members of the Oneida County Medical Society. He died December 6.

Dr. J. E. MacNeill of Denver, Col., a graduate of Northwestern University Medical School, Chicago, in 1878, died in Waukesha, Wis., December 3.

Dr. William D. Collins of Cambridge, Mass., a graduate of Harvard Medical College, 1866, died December 16 at the age of 71.

Dr. Fabius J. Haywood, who graduated in medicine in 1868 from Bellevue Hospital Medical College, New York City, died suddenly at his home in Raleigh, N. C., December 14, at the age of 71 years.

Dr. William A. Moore, a graduate of Memphis Medical College in 1888, died at his home in Quit-

man, La., December 13. He was 45 years of age.

Dr. C. J. C. Ficher of Carlinville, Ill., a graduate of Washington University, Medical Department, St. Louis, in 1877, died at his home December 15. He was 57 years old.

Dr. Patrick H. McMahon, a graduate of the University of Vermont in 1894, died suddenly at his home in Burlington, Vt., on December 14 at the age of 57.

Dr. James C. Egan of Shreveport, La., died at the home of his daughter, Mrs. A. J. Colbert, in Mt. Lebanon, on December 15 at the age of 89. He was graduated from the New York University Medical School in 1846, was chief surgeon of the military hospitals in Louisiana during the last two years of the Civil War, and for a time vice-president of the State Board of Health, and also of the State Board of Medical Examiners.

Dr. Dennis P. Wims, a graduate of Dartmouth Medical College in 1897, died of pneumonia at the Rhode Island Hospital, Providence, on December 8.

Dr. John W. Flatley died of pneumonia at his home in Philadelphia on December 12 at the age of 30 years. He was graduated from Jefferson Medical College in the class of 1903.

Dr. Henry K. Hartzell, a retired physician, died of pneumonia at his home in Allentown, Pa., on December 20. He was a graduate of Jefferson Medical College and of the University of Vermont.

Dr. J. Gaunt Edwards of Williamstown, N. J., died of heart disease on December 22 at the age of 63. He was graduated from Jefferson Medical College in 1878 and was formerly coroner of Gloucester County.

Dr. Rhett Goode died of Bright's disease at his home in Mobile, Ala., on December 22 at the age of 58 years. He was graduated from the Medical College of Alabama, Mobile, in 1871, was president of the American Railway Surgeons' Association, and dean of the medical department of the University of Alabama.

Obituary.

JOSEPH EDWARD JANVRIN, M.D.,

NEW YORK.

Dr. Joseph E. Janvrin died at the Roosevelt Hospital on December 20 following an operation for appendicitis performed some days previously. He was born in Exeter, N. H., on January 13, 1839, and received his degree from the College of Physicians and Surgeons in this city in 1864, after having served through the Civil War as assistant surgeon of the Fifteenth Regiment, New Hampshire Volunteers. His war record earned him membership in the Union League Club and the Loyal Legion, of which he was an active member. From 1872 to 1882 he served as assistant surgeon to the Woman's Hospital of the State of New York. Since 1883 he was consulting gynecologist to the New York Skin and Cancer Hospital. His contributions to his specialty speedily won him a high position in the profession. Dr. Janvrin was one of the founders of the International Congress of Gynecologists. He was president of the American Gynecological Society in 1902 and 1903, and president of the New York Obstetrical Society in 1890 and 1891. He had previously been president of the New York County Medical Society in 1896 and 1897.

Dr. Janvrin is survived by his widow, a daughter, and a son, Dr. Edmund R. P. Janvrin.

Correspondence.

AUTOBIOGRAPHY OF A CASE OF ANEURYSM OF THE INNOMINATE ARTERY.

To the Editor of the Medical Record:

Sir:—The fact that it is almost universally conceded that an aneurysm of any large intrathoracic vessel is practically always fatal prompts me to report the history of my own case to awaken interest in a new method of cure first suggested by Dr. Albert Abrams of San Francisco, in his work on Spondylotherapy. Dr. Abrams has reported in the *British Medical Journal* of July 8, 1911, and in *La Presse Médicale* of Oct. 4, 1911, forty cases of aneurysm of the thoracic and abdominal aorta that were symptomatically cured after a few weeks' treatment by his method of concussion. Some of these patients were seen four years after their discharge with no recurrence of symptoms.

The history of my own case is as follows: Age 80 years; practised medicine continuously for 47 years, during 8 years of which time I was A. A. Surgeon in the U. S. Army. Had influenza in 1888, and since this time have suffered from cardiac arrhythmia. During the last 5 years I have experienced almost constant coldness and numbness in my left leg. About one year ago pains of a peculiar sickening and prostrating character were experienced in the arms and chest; they would awaken me at night, when I felt as if somebody were pressing with all his might and main on my chest. About three months ago I felt a pressure on my trachea which affected my voice to the extent of aphonia. Since about one year I first observed a diffused pulsation of the suprasternal fossa. My symptoms increasing in severity, I was examined by Drs. Gallagher, Brown, Callan, and Fleming of El Paso, all of whom concurred in the diagnosis of an aneurysm.

I then decided to go to Dr. Abrams for treatment. An examination by Dr. Abrams revealed a dilatation of the arch of the aorta, but the arteria innominata was chiefly implicated in the angiectasis. After my very first treatment a troublesome and persistent cough disappeared and has never returned. At the commencement of treatment my voice, which was then only a "squeak," was rapidly restored to normal. After twelve treatments I observed the following relative to my condition: cardiac arrhythmia disappeared, coldness and numbness in my left leg are no longer present, the pressure on my trachea and the air-hunger have disappeared. In fact, I regard myself as absolutely well. At about the end of a week the suprasternal pulsation was reduced fully 50 per cent.

The following, which bears on the subject of this article, is interesting. For some time I had noted that after riding in my automobile at home there was a development of an intense paroxysm of dyspnea, but this was not observed after riding in large autos. In directing the attention of Dr. Abrams to this fact, he explained it as follows: While concussion of the seventh cervical spine will produce contraction of the aorta by the elicitation of the aortic reflex of contraction, concussion of the third dorsal spine will dilate the aorta by elicitation of the aortic reflex of dilatation. In riding in my car the position of the third dorsal spine corresponded to the back of my seat, and there is no question in my mind that the paroxysmal dyspnea was evoked by the constant concussion of that particular part of my spinal column.

The disappearance of arrhythmia and other circulatory disturbances can be attributed to Dr. Abrams' method of myocardial-toning, inasmuch as his method for contracting the large blood-vessels is equally efficient in producing the heart reflex of contraction.

W. T. Baird, M.D.

El Paso, Tex.

OUR LONDON LETTER.

(From Our Regular Correspondent)

INSURANCE BILL SENT TO THE LORDS; SOME MEDICAL OPINIONS ON IT—HOSPITAL ASSOCIATION—GENERAL MEDICAL COUNCIL—BRITISH MEDICAL ASSOCIATION'S CIRCULARS AND THREAT, SECRETARY TO BE A COMMISSIONER—GASTRIC SECRETION, EXPERIMENTS WITH TEA, COFFEE, ETC.—INFECTIVE ENDOCARDITIS WITH RECOVERY—NORMAN KERR LECTURE—FOOT-AND-MOUTH DISEASE MICROBE—OBITUARY.

London, December 8, 1911.

The Insurance Bill has passed the Commons after a third reading remarkable for its acrimonious character. Mr. Lloyd George indulged in his most objectionable platform style, charged his opponents with being actuated by bad motives, and asserted that his own intentions were of the highest. He harped so much on this that the opposition leader responded sarcastically: "I know the road down which the Chancellor would lead the House is paved with the best intentions, but the beauty of the pavement does not alter the destination."

So the bill goes to the Lords with the blessings of the government and followed by protests of various interests besides the medical. Most curious is the revolt of the trade unions and labor party, who have actually addressed a petition to the House of Lords they did so much to destroy, and on whose support the government confidently counts. It looks like a huge political joke. But I must turn to medical opinions.

The Hospital Association has held a meeting at which 195 delegates of hospitals were present and reaffirmed the unanimous opinion previously passed, that the bill is incomplete unless it provides for hospital treatment of the insured, and, further, that this cannot be adequately maintained by voluntary contributions, as they will be diminished in consequence of the provisions of the bill. Sir H. Burdett, in an effective speech, said when they saw Mr. Lloyd George he told them the remedy was in their own hands; they had only to ask applicants, "Are you insured?" for, if so, they had no right to go to voluntary hospitals. So insured persons were ineligible. Sir Henry declared in that case the only alternative was State hospitals, which the Poor Law Commission said would cost twenty millions a year in addition to the twenty millions required to put this bill into operation.

The fear of hospital authorities provoked by the bill is further illustrated by the committee of the Maidstone Memorial to King Edward. At first they intended to endow a new wing to the West Hunt General Hospital with the £6,500 they have already raised. They have now passed a resolution that "in the event of the hospital or any of its trust funds or investments being taken over by the State, or any department of the State, the special fund shall immediately cease to be held for the benefit of the hospital, and shall be dealt with as may hereafter be decided by the committee or its successors." This is a plain indication of the mistrust entertained in many directions as to how far the example of confiscation set by this government may be followed.

Even the General Medical Council has been roused from its habitual torpor, and appointed a committee on this bill and adopted its report and submitted the same to the government. Fair words and some minor changes formed the response, but despite these the president was not satisfied as to the grave danger to voluntary hospitals, and suggested that if their fears were justified government should be asked to legislate to obviate the danger.

But by far the most active professional body has been the B. M. A., and that not only this week, but from the time the bill was proposed. Its managers have throughout insisted on the six points they first laid down, and though they have not gained them they have shown that other means can be employed. Circular has followed circular in rapid succession. The whole profession has been urged to support the six points and also to sign an undertaking not to accept any office under the bill except in accordance with these terms. As to this, the Council seems to be disappointed at the slight response, for another circular was issued yesterday to those who had not signed the form, reminding them of their neglect and, I am sorry to say, accompanied by a threat. Admitting that "probably no two members of the profession would agree upon identically the same policy," it goes on to say there will be no alternative but to regard those who refuse to commit themselves "as being, however unintentionally, enemies of the profession." I think that a most unjustifiable threat. Some call it a monstrous assumption as well as a contradiction in terms. Others talk of a strike and say the Association is learning the trade union methods of "intimidation of blacklegs." In the same envelope as this threat went a stiff request for a subscription toward the expenses.

Another development of the situation is also exciting some attention. The Medical Secretary of the Association, Mr. J. Smith Whitaker, has been appointed deputy-chairman of the "Insurance Commission" under the bill. Before accepting he referred the question to the Council of the Association, which held a special meeting. After discussion they recommended him to accept. Then they sent a circular to members "to make them aware of the reasons for this step," the principal one being that it provides a prospect that the "schemes and proposals of the Local Insurance Committees shall be considered by a competent expert in the interests of the medical profession."

Nevertheless many are discontented and a correspondence has been started in the *Times* and other papers, calling the consent of the Council "a shameful betrayal," and other choice things. Officials of the Metropolitan branch have replied, expressing inability to understand how the appointment can be so regarded, seeing Mr. Whitaker is a staunch supporter of the Association and its six points.

Drs. F. C. Moore and H. S. Allanson have communicated to the Medical Section (R.S.M.) some interesting observations on the human subject as to the varying effects of gastric secretion of tea, coffee, and other accessory foodstuffs. A test breakfast was given at 8 A.M. containing 10 ounces of water or other fluid at an agreeable temperature. One hour after the stomach contents were removed,

at once filtered, and in the filtrate the free HCl and the total acidity estimated; the peptic activity was also estimated. The results with a test breakfast of 10 ounces of water and four breakfast biscuits were used as the basis of comparison, the measure of the secreting activity being determined by an average of not less than three experiments in each case. The observations were made on fifteen individuals, including healthy subjects as well as some with gastric disorder. The results show that tea (infusion) induces greater secretion of gastric juice than water, the average in fourteen cases being with tea, HCl 53.2, total acidity 70.8, peptic activity 8.0, in place of 42.7, 62.2, and 6.7, respectively, with water. In the individual cases a similar, but varying, relation was found in all except two, in which the secretion was diminished. A solution of caffeine (3 grains in 10 ounces water) was used in a number of experiments on three individuals; in two it was more potent; in the third it was somewhat less than tea and weaker than water. The average of the total observations showed the watery solution of caffeine and infusion of tea were equally stimulating to the gastric secretion, but seemed to indicate that individual susceptibility is more pronounced with coffee than with tea. Cocoa showed some individual originality and took its place between water and tea as a stimulus of gastric secretion. The observations with milk in five out of six cases showed its stimulus was less than that of water. The authors suggest that this is due to the inhibitory action of its fat, and they attribute further to the splitting of this an excess of total acidity, though the HCl and pepsin were diminished. A watery infusion of a meat extract and albumin water both proved powerful stimulants of gastric secretion. Alcohol and tobacco-smoking, tried in two normal individuals, gave opposite results, probably dependent on individual susceptibility at the time.

At the Medical Society of London Dr. Walter Carr brought forward a case of recovery from infective endocarditis. A woman of twenty-six, who was confined in January and was suddenly attacked with right hemiplegia on February 28, was admitted to hospital March 10. She then had a systolic murmur at the apex and *Staphylococcus pyogenes* was found in the blood. She got steadily worse for five weeks, temperature being irregular (98° to 104°). Heart became greatly dilated, dullness from one inch to right of sternum to over one inch outside of left nipple line. Urine often contained blood and albumin, right kidney palpable and tender. Three injections were given of an autogenous vaccine without benefit. Antistaphylococcic serum was then injected six times in all—10 c.c. twice and then 15 c.c. After last injection temperature became normal and improvement followed. The patient left hospital June 30 in good health and doing full ordinary household work. Mitral regurgitation remains, and the only remnant of the hemiplegia is a slight weakness of the hand.

The Norman Kerr lecture this year was delivered on November 14 by Dr. Sims Woodhead, professor of pathology in the University of Cambridge, and he gave it in the theater of his department. Dr. Hyslop, president of the Society for the Study of Inebriety, which was founded by Dr. Kerr in 1884 and which now takes charge of the memorial lecture, occupied the chair. The subject taken by Professor Woodhead was the effect of alcohol on the heart and this he illustrated by tracings thrown on the screen. Among these were three pairs of curves from persons who had taken each ½ oz. of absolute alcohol. In each there was a rise of temperature in the axilla and a simultaneous fall in the rectum. When food was taken the reverse took place—a rise of visceral and fall of surface temperature. But when hot fluids were taken there was a sudden rise in both but not of long duration. Dr. Woodhead intimated his intention of carrying on his experiments on an extended scale.

Dr. Collingridge, the Medical Health Officer for the city, has resigned on account of failing health. He has worked for the city—and worked well, too—for just thirty years.

Dr. Siegel of Berlin claims to have discovered and cultivated the microbe of foot-and-mouth disease. To some extent he says immunity is conferred by inoculating the cattle with his microbe, which he has named cylorrhyctes and which he demonstrated at the Prussian Veterinary Congress on the 25th ult.

Surgeon-General Gerard James Irvine, R. N., died suddenly at Lucknow on November 18.

Dr. J. Wise Martin, consulting surgeon to the Jessop hospital for women at Sheffield and secretary of the Medical Society there, died after a long illness on November 23, the end coming rather suddenly of apoplexy. He had practised in Sheffield over thirty years and was highly esteemed by his colleagues. He had been lecturer on midwifery at the university and examiner under the midwifery board. He had also served in the Rifles, in which he attained the rank of Surgeon-Colonel.

Dr. F. W. Bond, M.O.H. of Gloucester, has died at the age of seventy-seven. For many years he has been one of our leading sanitarians. He qualified in 1856, taking an arts degree the same year in the London University, in which he proceeded to graduate in medicine, M.B. with the medal 1857, M.D. 1860. He became professor of chemistry at Queen's College, Birmingham, and afterwards of clinical medicine with the physiciancy to the Queen's Hospital. He translated Radicke's "Medical Statistics" for the new Sydenham Society and contributed to the journals and societies on medical subjects, as well as many reports on public health, officially and otherwise. He also founded the Jenner Society for the defence of vaccination, the practice of which he advocated with great effect.

Mr. H. R. Heather Bigg died on the seventh inst. in his fifty-eighth year. He took the double qualification at Edinburgh in 1884 and the Fellowship of the Surgical College there in 1888. He wrote several works on orthopedic subjects especially with regard to the mechanical treatment of deformities, also a report for the government on possible improvements in substitutes for lost limbs granted to soldiers.

Progress of Medical Science.

Boston Medical and Surgical Journal.

December 14, 1911.

An Outbreak of Tonsillitis or Septic Sore Throat in Eastern Massachusetts and Its Relation to an Infected Milk Supply. C.-E. A. Winslow.
Clinical Aspects of the Epidemic of Septic Sore Throat in Cambridge, May, 1911. E. A. Darling.
An Epidemic of Tonsillitis Due to Infected Milk. M. W. Richardson.
Observations on the Epidemic of Sore Throat Occurring in Boston and Vicinity During May, 1911. J. L. Goodale.
The Practical Application of Blood-Vessel Surgery. E. H. Risley.
Tuberculous Epididymitis: An Analysis of 153 Cases. J. D. Barney.

Septic Sore Throat in Eastern Massachusetts.—C.-E. A. Winslow presents an epidemiological study of an out-

break of this condition in Boston and its vicinity, during May, 1911. The cases occurred mostly in households supplied with milk from a certain dairy.

Clinical Aspects of Epidemic Sore Throat in Cambridge.—E. A. Darling states that about one thousand cases of this disease were observed in Cambridge during May, 1911. Nearly all occurred in well-to-do families living in the best residential parts of the city. The organisms found in the throat were streptococci, often associated with staphylococci or pneumococci. The most serious cases occurred in persons above the age of forty. The period of incubation was short, not more than thirty-six to seventy-two hours. The throat symptoms were those of follicular tonsillitis, or simulated those of diphtheria, and were accompanied by marked constitutional symptoms. Practically all except the mildest cases had more or less marked involvement of the cervical lymph-nodes. About one-quarter of the cases had complications of one kind or another. The most frequent complication was abscess formation in or near the throat. Other complications noted were acute arthritis, peritonitis, pleurisy, pneumonia, endocarditis, nephritis, and erythema. The complications were metastatic processes. There were twenty-seven deaths.

Epidemic Tonsillitis.—M. W. Richardson describes how the epidemic of tonsillitis which prevailed in eastern Massachusetts during May, 1911, was traced to a farm supplying milk to a certain dairy.

Epidemic Tonsillitis.—J. L. Goodale reports his experiences in twenty-six cases of this condition that came under his observation in Boston during May, 1911.

Blood-Vessel Surgery.—E. H. Risley states that uniformly successful blood-vessel sutures are not easily made, but by the persistent application of a careful technique, which has as its bases the utmost respect for the extremely delicate tissues dealt with, and a certain regular amount of laboratory work, reasonable success can be insured by any one doing general surgery.

Tuberculous Epididymitis.—J. D. Barney presents an analysis of 153 cases of this condition noted at the Massachusetts General Hospital.

New York Medical Journal.

December 16, 1911.

Psychological Mechanisms of Paranoia. A. A. Brill.
A Discussion of the Pathogenesis of Hypertrophic Pulmonary Osteoarthropathy; with a Report of Four Cases. H. Brooks.
Corrective Placement of the Uterus: A New Ventral Suspension. G. S Foster.
On Certain Hemolytic Tests in a Case of Blackwater Fever. C. Wellman and C. C. Bass.
A New Diagnostic Reflex Sign in Typhoid Fever. C. B. Burke.
Enteroptosis and Altered Function of the Diaphragm Resulting from Intrathoracic Inflammations. F. M. Pottenger.
Diphtheria Antitoxin and Anaphylaxis. J. A. Roddy.
On the Value of the Noguchi Reaction to the General Practitioner. M. Lederer.
Observations on the Influence of Ipecac upon Intestinal Amebiasis. D. Roberts.
Relation of Salvarsan to the Ear. S. Seegman.

Psychological Mechanism of Paranoia.—A. A. Brill reports the history of a case of paranoia which he analyzes with reference to Freud's conception of this disease. According to Freud, the paranoiac character lies in the fact that as a reaction to a defense against a homosexual wish-phantasy there results a delusion of persecution.

Hypertrophic Pulmonary Osteoarthropathy.—By H. Brooks. (See MEDICAL RECORD, December 16, 1911, page 1247.)

Ventral Suspension of the Uterus.—G. S. Foster describes a new operation that he has devised for ventrofixation of the uterus.

Hemolytic Tests in Blackwater Fever.—C. Wellman and C. C. Bass tested in a case of blackwater fever the following reactions: (1) complement fixation; (2) the hemolyzing effect on normal human corpuscles of serum from the patient ill with blackwater fever; (3) the hemolyzing effect of quinine sulphate on corpuscles from the patient ill with blackwater fever. The complement fixation reaction showed in most instances complete hemolysis. The other two reactions were negative.

New Reflex Sign in Typhoid Fever.—C. B. Burke describes this new sign as follows: The arm of the patient is bared to the shoulder. The thumb and middle finger of the examiner are arched in the shape of a horseshoe and placed over the biceps muscle of the arm, so that the arch thus formed is completely filled; then firm pressure is made by the finger and thumb, and the hand is briskly raised (pressure being continued) so that the thumb and finger come together with a slight concussion. The result, if the reflex is present, is a fibrillary contraction of that portion of the biceps muscle traversed by the thumb and finger, producing an oval ridge without complete contraction of the biceps muscle. The ridge thus formed disappears slowly. If the reflex described is absent, the author concludes that typhoid fever is not present. This sign is, however, found also in other diseases, which is also true of nearly all other signs. The absence of this reflex in diseases simulating typhoid fever may be of signal aid in arriving at a correct diagnosis. This reflex seems to be governed by the virulence of the infection.

Enteroptosis and Altered Function of the Diaphragm.—F. M. Pottenger calls attention to disturbances in the function of the diaphragm due to pathological conditions within the thorax. He emphasizes the fact that patients suffering from chronic diseases of the lungs and pleura often suffer from enteroptosis, not only because of wasting or a congenital enteroptotic habit, but because of the pathological conditions found above the diaphragm. This is especially true in all those conditions which result in a chronic cough and an emphysematous condition of the lungs. One finds this in so-called idiopathic emphysema; also in all compensatory emphysemata, such as those found as a result of asthma, mediastinal tumors, or chronic tuberculosis, especially when the active disease has been circumscribed at least for a considerable portion of time. In the latter case, as a result of prolonged coughing, those portions of the lungs which are not affected usually take upon themselves a chronic emphysema, and the lower borders are pushed down and often fill the entire pleural space, pushing the diaphragm and the underlying abdominal organs before them.

Diphtheria Antitoxin and Anaphylaxis.—J. A. Roddy states that a first injection of horse serum into man is innocuous; anaphylaxis is rarely manifest after a subsequent injection, and when it occurs complete recovery usually follows. The danger of anaphylaxis is insignificant in comparison with the danger of diphtheria. The necessity of administering a second dose of diphtheria antitoxin, and consequently the occurrence of anaphylactic phenomena can be almost, if not entirely, avoided by the proper administration of the first dose.

The Noguchi Reaction.—M. Lederer concludes that with a positive Noguchi reaction in the primary stage antisyphilitic treatment can be instituted early. In tertiary syphilis a positive reaction is often present and is of aid in diagnosis. So-called cured syphilitics should be examined for latent syphilis. Efficiency of and indication for further treatment can be guided by routine blood tests. As a prophylactic test in human hematological therapeutics and to those who have had syphilis and are contemplating marriage a serological test is of value.

Ipecac in Intestinal Amebiasis.—D. Roberts reports good results in the treatment of intestinal amebiasis by means of the administration of large doses of ipecac, which he regards as a specific in this condition. After preliminary catharsis, the patient takes forty grains of powdered ipecac in pills carefully prepared with successive coatings of salol and keratin. When the pills were properly coated, no nausea or emesis resulted, although the fact that they dissolved in the intestine was proved by the appearance

of methylene blue in the urine, which drug was included in the makeup of the pill. The stock pills were found to be useless. The ipecac in the forty grain dose was given, usually daily for five days. Preceding the ipecac by one-half hour, fifteen drops of tincture of opium, or a corresponding amount of powdered opium, were given. The opium was not always necessary to prevent nausea or emesis when properly coated pills had been used, but was exhibited rather to check the active catharsis brought about by the doses of ipecac. Ice compresses at the throat were found to be of comparatively little value. After five days of large doses the ipecac was reduced ten grains each day and the treatment was completed in eight days.

Salvarsan and the Ear.—S. Seegman concludes that in affections of the ear, no matter how slight, there is the danger of salvarsan intensifying the symptoms.

Journal of the American Medical Association.

December 16, 1911.

Supraclavicular Subcutaneous Lesions of the Brachial Plexus Not Associated with Skeletal Injuries, with Report of a Case of Avulsion of the Anterior and Posterior Spinal Roots. C. H. Frazier and P. G. Skillern.
The Simultaneous and Cyclic Appearance of Epidemics of Pneumonia, Grip, and Enteritis on the Northern Hemisphere and Their Synchronism with Solar Activity Circles. C. M. Richter.
An Unusual Case of Gunshot Wound of the Arm: Recovery. G. A. Skinner.
Strangulated Appendix in a Femoral Hernia. P. Oliver.
Habitual Epigastric Protrusion. A. Bassler.
Experience with Albumin Milk. J. M. Brady.
Multiple Neuritis with Twelfth Nerve Paralysis. Report of a Case with Recovery. R. P. Smith.
Korsakoff's Psychosis and the Amnesic Symptom-Complex, with a Report of Three Cases. A. W. Hoisholt.
Postoperative Retention of Urine and Cystitis. J. H. Jacobson and J. G. Keller.
Pericystitis. M. L. Harris.
The Beginning of Occupational Disease Reports. J. B. Andrews.
The Value of Pyelography. W. F. Braasch.
A New Tonsil-Pillar Divulsor. L. R. Culbertson.
Cultures from the Thyroid Gland in Goiters. A Bacteriological Study of Fourteen Cases. J. J. Gilbride.
Rapid Preparation of Hematoxylin Stain. J. A. Johnston.
A New Sinus Punch. W. P. Reaves.
The Diagnosis of Retrolabyrinthine Affections. H. B. Graham.
The Hygiene of the Swimming-Tank. W. J. Lyster.
A New Object Test-Card or Kindergarten Card for Visual Tests. W. Reber.
A Self-Retaining Postnasal Hemostat. H. R. Boettcher.
New Instruments. F. Allport.
A New Scalp Hemostat. H. J. H. Hoeve.

Supraclavicular Subcutaneous Lesions of the Brachial Plexus.—By C. H. Frazier and P. G. Skillern. (See MEDICAL RECORD, July 1, 1911, page 51.)

Cyclical Appearance of Pneumonia, Grip, and Enteritis.—By C. M. Richter. (See MEDICAL RECORD, July 1, 1911, page 46.)

Gunshot Wound of the Arm.—G. A. Skinner reports a case of wound in a boy aged 13, from a charge of shot which removed an extensive area of skin and superficial structures from the forearm, tore away the whole of the outer head and belly of the biceps in the upper arm and a portion of the lower end of the deltoid, and broke the humerus squarely across. The brachial artery was exposed uninjured. While the case looked hopeless as far as saving the arm was concerned, it was cleaned up, the patient was transfused with saline solution and conservative measures were decided on. Two days later the sloughing tissues were removed. There was a severe infection of the wound requiring daily dressings, and necrosis occurred at the broken ends of the humerus. A resection was made and a portion of calf's femur, duly prepared, was inserted and fixed with bone pegs. The fixation apparatus was arranged and the wounds began to heal, skin grafts being employed to make up the deficiencies. The torn ends of the biceps were united and filled up the wound with slight shortening of the arm. An unexpectedly good recovery was made.

Strangulated Appendix in a Femoral Hernia.—P. Oliver reports a case of this condition.

Habitual Epigastric Protrusion.—A. Bassler reports a case of this condition occurring in a boy aged seventeen years, and resulting from habit.

Albumin Milk.—J. M. Brady notes that in this preparation an effort is made to have the milk-sugar as low as possible, as this is regarded as the chief offending element, giving rise to fermentative changes in the bowels. Therefore, the whey which contains the lactose is removed as much as possible; the buttermilk which is added also contains a low lactose percentage. An average percentage of fat (2.50) is fed, as the fat itself only takes part secondarily in the acid fermentation, if the fermentation of the milk sugar has already begun. The high proteid diet counteracts fermentative changes caused by the feeding of a very high carbohydrate percentage. Clinical results seem to prove the incorrectness of the belief that high proteid feeding injures the organism by the excessive demand made on the metabolism of the infant, particularly the kidneys. It appears that the reason that one can cause a gain in weight so rapidly in these run-down infants is the fact that one can incorporate in the mixture such a large carbohydrate percentage, without causing an intoxication. The prevention of the development of the intoxication is due to the high percentage of proteid, and low percentage of lactose and mineral salts.

Multiple Neuritis with Twelfth Nerve Paralysis.—R. P. Smith reports a typical case of multiple neuritis with the unusual complication of paralysis of the twelfth nerve on both sides. About two months prior to the appearance of any symptoms the patient had been taken with an acute and severe pain in the ovarian region, necessitating the attendance of a physician, who found a well-defined excessively tender mass over the left ovary, with a rise of temperature ranging from 101 to 103° F., which disappeared in about three days, leaving only a local tenderness. A week or two previous she had been exposed to cold and damp, but this is not considered by the author as an efficient cause of the trouble, though it may have been to some extent a factor. He suggests that the mass found over the ovary may have been an ovarian cyst, the breaking down of which caused a toxemia and the paralysis observed.

Korsakoff's Psychosis.—A. W. Hoisholt reports three cases of this condition, which has been observed in connection with intoxications other than that of alcohol, in morphinism, etc., and after certain diseases such as erysipelas and certain brain tumors. It is difficult to definitely give a prognosis in cases in which the amnesic symptom-complex appears. An infectious etiology and one due to carbonic acid or arsenical poisoning may have a more favorable prognosis, but where the disease has developed in previously unhealthy brains following alcoholic excesses and in arteriosclerotic and senile cases the prognosis is not so good. Exercise of the recording faculty may lead to improvement in cases that are amenable to treatment.

Postoperative Cystitis.—By J. H. Jacobson and J. G. Keller. (See MEDICAL RECORD, July 8, 1911, page 103.)

Pericystitis.—By M. L. Harris. (See MEDICAL RECORD, July 8, 1911, page 103.)

Occupational Disease Reports.—By J. B. Andrews. (See page 1340.)

Pyelography.—By W. F. Braasch. (See MEDICAL RECORD, July 8, 1911, page 102.)

Tonsil-Pillar Divulsor.—L. R. Culbertson has devised this instrument for removing a submerged tonsil.

Cultures from the Thyroid.—J. J. Gilbride reports six cases of exophthalmic goiter and eight cases of cystic goiter, in which cultures were made from the gland. A growth of *Micrococcus tetragenus* was obtained in one case of exophthalmic goiter, and a growth of *Streptococcus vermiformis* of Sternberg was obtained in one case of cystic goiter. In none of the others was a growth obtained.

Hematoxylin Stain.—J. A. Johnston describes a method for the rapid preparation of this stain.

Sinus Punch.—W. P. Reaves describes a new instrument of this kind that he has devised.

Retrolabyrinthine Affections.—H. B. Graham states that Barany has shown that in intralabyrinthine affections the kinesthetic sense is not interfered with, while in the retrolabyrinthine affections involving the vestibulo-cerebellar tract there is a marked disorder in the motions of the body which accompany the nystagmus. One can diagnose affections of the vermis by the patient always falling in the same direction, no matter what the position of the head may be, and with disturbances of the cerebellar hemispheres the pointing movements of the arm or leg will aid in the diagnosis. The comparison of the caloric and galvanic tests on the two sides is also an aid in differentiation.

Hygiene of the Swimming Tank.—W. J. Lyster concludes that pathogenic organisms may readily find entrance to the water in swimming tanks by means other than the water-supply, and may possibly cause disease. There is a large increase in the number of organisms normal to any particular water, as well as of others, during the period that water is held in the tank. All of these organisms are quickly destroyed by small amounts of chlorine readily added to the water in the tank every morning before the usual hours of use. The accumulations of hair and other débris observable at the bottom of the tank should be removed daily by small hand pumps, these accumulations affording a favorable medium for the development of certain organisms and being less readily disinfected than the water. The hygiene of the tank is aided by the construction of troughs at the edges to afford places for expectoration and to prevent water draining back into the tank from the sides. A shower bath should be used before the swimmer enters the common tank.

Kindergarten Test Card.—W. Reber has devised a new visual test card to be used in estimating the vision of young children.

Postnasal Hemostat.—H. R. Boettcher has devised a self-retaining instrument for controlling bleeding from the postnasal space, especially following adenectomies. The instrument consists of a cannula 10 inches long, bent up to about a right angle at the small end, over which a small rubber bag is placed and fastened with a silk thread. To the large end of the cannula a rubber tube 6 inches in length, with air-bag attached, is fastened. The cannula has a stop-cock for the purpose of controlling the air.

New Forceps and Test Card.—F. Allport describes a strabismus forceps, an advancement forceps, and a new visual chart for schools.

Scalp Hemostat.—H. J. H. Hoeve has devised a scalp hemostat which fulfills the following requirements: It compresses the entire thickness of the scalp evenly at the incision with sufficient force to control all hemorrhage, but without bruising the tissues. When applied it is not in the way of the operator. It facilitates subsequent work on the skull, and the introduction of sutures.

The Lancet.

December 9, 1911.

Intrathoracic Tumors and Aneurysms in Their Clinical Aspect. G. Steell.
Some Early Signs and Symptoms in Nervous Disease. J. Taylor.
Venereal Disease: Its Present and Future. D. White and C. H. Melville.
Treatment of Graves' Disease with the Milk of Thyroidless Goats. W. Edmunds.
Enuresis and Thyroid Extract. A. C. D. Firth.
The Use of Rosenbach Tuberculin in Surgical Tuberculosis. F. J. Rosenbach.

Intrathoracic Tumors and Aneurysms.—G. Steell states that pain is seldom altogether absent in the course of intrathoracic tumors. Aneurysmal tumors are the more productive of pain, the frequency, intensity, and persistency of which are also greater. The pain is either referred or due to direct pressure on somatic nerves or on bone. Another important symptom is dyspnea. As regards the pulmonary changes, it is noted that preceding the development of dullness there is an increase of resonance caused by overdistention of the lung from interference with the escape of air. The dullness resulting from intrathoracic neoplasms and aneurysms may be caused by pulmonary collapse, "retention pneumonia," dilatation of the bronchial tubes, fibroid thickening of the lung, secondary infections resulting in breaking down of the lung, gangrene, or pleurisy and empyema. Paresis or paralysis of a vocal cord is more common than it is generally believed to be. The cervical sympathetic nerves may be implicated, causing changes in the pupil and palpebral fissure and in the secretion of sweat. There may be affection of the brachial plexus, causing weakness and sensory disturbance of the arm. There may be paraplegia, dysphagia, hemoptysis, hematemesis, and cutaneous hemorrhage. Inspection of the chest may show bulging, the presence of distended veins, immobility, and retraction of one side of the chest, and the "tracheal tug." On palpation one may note that the entire heart is thrust forward by the pulsations of an aneurysm of the descending portion of the aortic arch. A diastolic shock is felt over a superficial aneurysmal sac. It represents the closure of the semilunar valve. A difference in the two radial pulses is a familiar sign of aortic aneurysm. The most valuable auscultatory sign of aortic aneurysm is accentuation of the second aortic sound, though murmurs are very common.

Early Signs and Symptoms of Nervous Disease.—J. Taylor notes the difficulty frequently experienced in differentiating between an organic and a functional disease of the nervous system. He cites the case of a young girl who had difficulty in walking quickly. This was due to a slight toe-drop on one side. Examination showed a marked ankle-clonus on this side and a distinct extensor response from each sole. In a few months the characteristics of disseminated sclerosis developed. In patients complaining of difficulty in walking one should bear in mind the possibility of spinal caries with pressure myelitis. In subacute combined sclerosis an early sign may be a peculiarity in walking which resembles somewhat the walk in tabes. Gastric crises may be an early sign of tabes. In acute visual disseminated sclerosis loss of vision may be the first sign. Cases of tachycardia with a history of wasting, severe attacks of diarrhea and considerable cardiac and abdominal discomfort justify a diagnosis of Graves' disease.

Venereal Disease.—D. White and C. H. Melville note that the annual toll to venereal diseases in the United Kingdom amounts to half a million of infected individuals.

Treatment of Graves' Disease with the Milk of Thyroidless Goats.—W. Edmunds reports six cases in addition to the thirteen which he has previously reported showing the good results obtained by this treatment.

Thyroid Extract in Enuresis.—A. C. D. Firth reports a series of sixteen cases of enuresis in which thyroid extract was administered. Two of the cases were cured and 60 per cent. showed marked improvement. The initial dose was one-quarter or one-half grain daily.

The Use of Rosenbach Tuberculin in Surgical Tuberculosis.—F. J. Rosenbach states that a study of the biochemical reciprocal effects of bacteria and plants led him to submit a culture of tubercle bacilli to the action of a trichophyton. From this resulted the preparation of a new tuberculin, in which the poisonous constituents are destroyed and the immunizing constituents preserved. This tuberculin is used in two ways: the first is by means of subcutaneous introduction into the circulation for the treatment of inaccessible local tuberculosis. The second method of administration is by means of direct injection into the diseased foci—*e. g.* joints, tendon sheaths, lupus, etc. In this case the tuberculin produces the same process, but much more intensely. The author reports favorable results in the treatment of forty-seven cases.

British Medical Journal.

December 9, 1911.

The Surgery of the Abdominal Wall. Sir A. P. Gould.
Certain Operative Procedures in the Paralysis of Children. With Special Reference to Poliomyelitis. R. Jones.
Neurotic Dyspepsia. G. Rankin.
Radium in Malignant Disease and Varicose Ulceration. T. Ross Macdonald.
A Case of Rodent Ulcer Presenting Some Unusual Features. R. Farrant.
The Bacteriology of the Cockroach. C. C. Morrell.

The Surgery of the Abdominal Wall.—Sir. A. P. Gould states that the first points to be determined in any operation on the abdominal contents are the position and the extent of the incision. The incision should be, whenever possible and as much as possible, directly over the organ or lesion which has to be dealt with internally. One should always think of the abdominal wall as one of the most important muscles of the body, and remember that the aim of the surgeon in operating through the abdominal wall should be to make such a wound as will not injuriously interfere with this muscular apparatus or will interfere with it as little as possible. Upon the integrity of the linea alba, therefore, depends the perfect function of the whole of the abdominal wall. Anything which weakens the linea alba is liable to cause much more apparent and more serious mischief than that which weakens other parts of the abdominal wall. In renal surgery, it is well in exposing the kidney not to make a transverse cut regardless of the direction of the fibers of the muscles in the loin. The incision should be oblique, and made parallel with the fibers of the external oblique muscle, and the surgeon should separate the fibers of this muscle, and should be careful not to cut the twelfth dorsal nerve.

Operative Procedures in the Paralysis of Children.—R. Jones discusses this subject with special reference to the deformities of poliomyelitis.

Neurotic Dyspepsia.—G. Rankin notes that the function of any organ can be disturbed only in one of three ways—by excess, by default, or by perversion. According to this proposition he accepts Robin's classification of dyspepsia under three primary headings, according as it is caused by hyperfunction, hypofunction, or abnormal fermentations. Neurotic dyspepsia is frequently mistaken for duodenal ulcer, and differentiation is not always possible.

Radium in Cancer and Varicose Ulcers.—T. Ross Macdonald states that in many cases the maximum benefit is to be obtained only by the use of relatively large amounts and by the application of these over relatively prolonged periods of time. In reference to the amount of radium employed, the author generally uses tubes containing 250 to 300 milligrams of pure radium bromide. The initial expense is enormous, this quantity of pure radium bromide being worth nearly $25,000, but, if inoperable malignant disease can be cured or even greatly relieved, the gain manifestly counterbalances the outlay. With regard to filtration and dose, the author uses tubes containing 250 milligrams of pure radium bromide, which, for deep-seated cancers, he screens with 2½ millimeters of platinum, leaving them in position from twenty-four to forty-eight hours. When possible, and with the assistance of a surgeon, he inserts the tubes with the same filtration into the tumors for forty-eight hours. He also tries to get cross rays by applying tubes above and beneath the growths, which methods have so far given the best results. For superficial lesions he has used the radium unscreened for half an hour, repeated every other day for a week.

Rodent Ulcer.—R. Farrant reports an unusual case of this condition in a man aged 62 years. There were three ulcers. One appeared on the lip fifteen years ago and healed spontaneously. Another ulcer had appeared shortly before this time on the face and remained stationary ever since. Nearly two years ago a boil in the inguinal region existed for six weeks and then ulcerated, forming a typical rodent ulcer.

Bacteriology of the Cockroach.—C. C. Morrell reports the following results of his experiments: The common cockroach is able by contamination with its feces to bring about the souring of milk, to infect food and milk with intestinal bacilli, to transmit the tubercle bacillus, to disseminate pathogenic staphylococci, and to transmit from place to place destructive moulds. These facts, taken in conjunction with the life-habits of the insect, lead to the conclusion that the cockroach is able to, and may possibly, play a small part in the dissemination of tuberculosis and in the transmission of pyogenic organisms; that the insect is in all probability an active agent in the souring of milk kept in kitchens and larders; and that it is undoubtedly a very important factor in the distribution of moulds to food, especially when it is kept in dark cupboards and cellars where cockroaches abound.

Berliner klinische Wochenschrift.

December 4, 1911.

Nature of Paget's Disease of the Nipple.—Kreibich decides that this affection cannot be conceived anatomically as an eczema which becomes carcinomatous. The inflated cell which is typical of this affection may be shown to be a melanoblast in which ordinarily the formation of pigment has ceased. Exceptionally it persists, and occurs with the development of non-pigmented malignant tumors in pigment nevi. The so-called Paget cell tumor is not necessarily confined to the nipple. We are therefore forced to conclude that the Paget cell is an anaplastic melanoblast in which the lipoid function is for the most part retained while the pigmentation is very largely abolished. Paget's disease represents a superficial melanoblastoma which stands in definite relationship to deep melanoblastoma (formerly known as melanosarcoma). The author would always extirpate these growths with the knife.

Pregnancy and Cardiac Disease.—Rosenthal reports two instructive cases of this association. In the first labor was followed by acute cardiac insufficiency resulting from the mitral valvular lesion. The child was extracted by means of colpohysterotomy, narsosis being contraindicated. The striking feature of the case was the nonresponse of the heart to the action of roborants. She had gone through several labors successfully with the mitral lesion present. She recovered from the present labor and left the clinic with good compensation. In the second case it was not labor *per se* but labor with twins of unusual size which precipitated a crisis in the gravida with vitium cordis. This patient was also delivered by means of anterior colpohysterotomy without narcosis.

Hodgkin's Disease.—Rosenthal relates a case of this affection which he sums up as follows: A young man, previously healthy and of sound stock, was seized suddenly with chill and fever, at first thought to be of pulmonary origin. A large, firm lymphnode appeared in the neck, the spleen found enlarged, likewise the liver. A second enlarged lymphnode was found beneath the sternum. The fever assumed a recurrent type. In the intervals the spleen and liver became smaller. Leucopenia. Death took place after progressive cardiac failure, patient surviving seven months. The case was of the acute type due apparently to the liberation of some toxic agent in the blood. The only bacterium found in the lesions was the Much bacillus. As the affection remains as obscure as ever in character, the author thinks we might do worse than reconsider the old hypothesis of the tuberculous origin of the malady. Tuberculous fowls with leucemia may be made to convey the latter to other fowls. But the lymphoid swellings in Hodgkin's disease show affinities with malignant growths and no one view can be made to harmonize with all the facts.

Two Cases of Optic Neuritis after Injection of Salvarsan.—Cohen reports these cases which were evidently of the toxic type judged from the fundal finds, but

whether syphilotoxic or arsenotoxic could hardly be determined. The first case having proved refractory to antiluetic measures salvarsan was injected once. Two months later right neuritis optica appeared. The left side was affected later, but resolution followed in both eyes. A recurrence took place in the right eye, this time with permanent injury to the nerve. At the same time serous infiltration of the uvea developed, this proving readily amenable to Hg and KI which had exerted no influence on the neuritis. Arguments are adduced which make for either side of the case; these if arranged in parallel columns seem to show that the weight of evidence favors the syphilotoxic theory of the nerve lesion. Many cases must accumulate before the nature of the latter can be determined.

Münchener medizinische Wochenschrift.

December 5, 1911.

Blastophthoric Degeneration.—Forel so terms the poisoning of the genital glands and germinal cells by alcohol, syphilis, opium, etc. His article is confined entirely to the effects of alcohol in this direction. That our cultured races have degenerated is shown by the increase of insanity and neuropathy, of tuberculosis, of inability of mothers to suckle, of dental caries, of percentage of army recruits rejected, etc., etc. This is due in part to the inverted selection of society which kills off its soundest men in warfare and preserves its weaklings; and in part to alcoholism. We have two resources to offset, to wit, abstinence and eugenics. Much remains to be done before the *modus operandi* of alcohol in producing blastophthoria can be completely worked out. The good ultimate results of reducing the consumption of alcohol seem to be in evidence in Sweden.

Friedländer Pneumonia.—Toenniessen as a result of clinical and experimental studies comes to the conclusion that Friedländer's bacillus can alone and of itself cause a pneumonia which pursues a characteristic course with grave prognosis. There is a notable tendency to softening, unaccompanied by any corresponding general reaction. A chill is often absent, as is also herpes. Temperatures are often low, and the prelethal rise is missed. The sputum is tenacious and rusty, at times grey. As in the case of pneumococcus pneumonia, this is due to the vast numbers of bacteria in the alveoli. However, the pneumococcus may be present in such amounts and associations that absolute causal diagnosis may be difficult. When Friedländer pneumonia does not quickly kill, passing the critical period does not greatly aid the prognosis, for fever persists, pneumonia extends, and softening occurs, until death from heart failure results, perhaps not until the fourth or sixth week. In the infrequent cases in which recovery occurs the convalescent period is prolonged, with likelihood of complications. The presence of pus often escapes recognition during life. The deadliness of Friedländer pneumonia is well shown by a material of 48 cases with but 7 recoveries.

Operative Treatment of Regular Astigmatism.—Levinsohn states that as a result of animal experiment it is now possible to operate successfully on astigmatism. He operated upon a chauffeur, whose successful employment demanded that he be able to see well without glasses, and secured a favorable result. The operation is extremely simple, consisting of a slight incision in the cornea which should always be perpendicular to the most highly refracting meridian. The author is not the first to operate, but most of our knowledge of the subject is derived from the collateral results of cataract incisions and this is not much. In animal experiment the wound is made with the galvanocautery, but the author, who operated on one of his patient's eyes in this manner, would henceforth rely wholly on the simple incision. After the latter, improvement sets in spontaneously and at once, as shown by the correction and the use of the ophthalmometer. A second incision would doubtless produce further improvement.

Deutsche medizinische Wochenschrift.

December 7, 1911.

Adrenalinemia in Pregnancy.—Neubauer and Novak refer to the diminished carbohydrate tolerance of the gravida and the alleged increased adrenalin content of the blood serum of the latter, as shown by physiological tests. The two phenomena are believed to stand in some necessary relation to each other. It has even been thought that the progressive increase of adrenalin in the blood might be held responsible for the onset of labor. The failure to oxidize normal quantities of sugar would naturally be set down to the fact that the overproduction of adrenalin overantagonizes the action of the internal secretion of the pancreas, which is responsible for the proper carrying out of sugar metabolism. These conjectures are highly significant but, unfortunately, there is much evidence which tends to discredit them. The authors therefore proposed to revise the subject by proper experimentation, and employed as a physiological test for adrenalin the action of blood serum on the frog's blood-vessels. The rabbit's uterus method used by their predecessors was found to be much inferior to the latter. Under this method the whole superstructure previously erected appears to collapse. There is evidently no such thing as an adrenalinemia of pregnancy. Other modified tests appear to show that, as a rule, there is no essential hyperglycemia of pregnancy, although now and then a gravida may show a notably increased sugar value.

Pituitrin as an Oxytocic.—Voigt has tested pituitrin thoroughly in Prof. Bumm's clinic, Berlin, and appears to be enthusiastic over the results. Not only is the oxytocic action almost always in evidence, but by simple resort to this drug we may often dispense with metreurysis, colpeurysis, and the use of forceps. Thus far there has been little observation of unpleasant collateral or after-effects. There should be no objection to its use in private practice. The medical attendant should remain at the bedside for half an hour after the injection. The author has not yet succeeded in provoking labor by the use of pituitrin. One c.cm. was found to be a satisfactory dose in most cases. The total material comprised sixty cases, and labor pains set in in from two to ten minutes after the injection. The cases of failure were of such a type that they could be readily explained by insufficient dosage or by the fact that labor had not yet set in. In two or three cases the ordinary dose seemed to be overactive, with tendency to precipitate labor, tetanoid contractions, premature detachment of placenta, fetal asphyxia, etc., while the mother showed a tendency to collapse. These effects, however formidable, were productive of no ill consequences, but it appears that despite the severity and acuteness of the rupture of the membranes and incomplete dilatation of the os. Two children required reanimation.

Acute Pancreatitis.—Liek, in an article on the surgery of pancreatic disease reports several cases from which it appears that despite the severity and acuteness of the process a slow pulse may be present from vagus irritation. The association of slow pulse, anemia, and intestinal obstruction should suggest a possible acute hemorrhagic pancreatitis. In a second case this lesion was followed by cyst formation which being seated well toward the right side simulated dropsy of the gall bladder. The cyst, sutured to the abdominal wall and incised, gave rise to a pancreatic fistula. The latter closed for the time under Wohlgemuth's diet, but as colic and jaundice developed it recurred and was closed by operation. Pancreatic diabetes and pulmonary tuberculosis developed. Autopsy showed fibrosis of the head of the pancreas with disappearance of its body and tail.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

UNCLASSIFIED DISEASES.—Certain disorders which are treated in regularly defined groups in the textbooks may be considered under the head of "Unclassified Diseases in Insurance Medicine" as a matter of convenience.

Malaria.—The severe forms of malaria are seldom encountered in the northern part of the United States, though a few sporadic cases appear and run a typical course in certain localities, but they practically never terminate fatally. In the South and Southwest, however, malaria of all types is so prevalent, even the dangerous forms occurring too often, that the people living there have become accustomed and indifferent to it and consequently inclined at times to ignore it when questioned by the examiner. The visitor in the South is often assured that everyone has some malaria, but that it is of no importance and does not shorten life. Nevertheless one has only to go through the hospitals in the larger cities of the South for an opportunity to study aggravated cases of malaria. Moreover, a fair proportion of death claims is presented at the home office in which malaria is given as the cause of death.

There are sections of the South and Southwest where malaria with hematuria is common, and in some spots the attacks are so pernicious and dangerous, the writer has been assured by local physicians of unquestioned authority, that the white people have had to keep out. Some years ago the writer had a large and interesting correspondence on this subject with representative physicians throughout the South and Southwest. The answers to certain interrogatories were complete and almost unanimous, to the effect that fatal cases, specially those associated with hematuria, coma, or both, still occur, but it was also explained that the diagnoses were faulty at times and that the real trouble in some instances was either incipient phthisis, gallstones, typhoid fever, intestinal autointoxication, appendicitis, or some other trouble. It was the opinion of the various writers that blood tests were seldom resorted to and that the erroneous diagnoses were entirely based on the clinical aspects of the cases.

There is no doubt that the violent and pernicious forms of malaria in the South are decidedly less frequent than in former years and that a great change has been brought about by the clearing of forests, drainage of swamps, the use of artesian wells and screening. But it must be remembered that men, while they will clear off the land and drain it for agricultural purposes, are apt to neglect their health and let up on the eternal vigilance which is required to prevent the entrance and propagation of the malaria-bearing mosquito by properly screening the houses and all vessels holding water.

The question of malaria has been dwelt on, as it is an important one not merely from its death-dealing qualities directly, but also because of its power to lower the general tone of the patients and render them less able to withstand the attacks of other diseases. As stated in the preceding lines, many individuals who have lived all their lives in malarious districts, have become as accustomed to its presence as to the air they breathe and honestly forget to acknowledge that they are or have been victims to the disease. While, then, it is undoubtedly true that deadly malaria of twenty or thirty years ago has become very much modified, it is important to get a full history of the disease, especially as to the number, dates, duration, and frequently of the attacks. The examiner should also always ascertain if there was any hematuria and, if so, whether the applicant still lives in the same locality where he originally contracted the illness; furthermore, whether the malaria was of the intermittent or remittent type, as the final decision at the home office in regard to the issuance of the policy will be largely influenced by these facts.

Infectious Fevers.—When there is a history of any acute infectious fever always ascertain the date and duration and whether there were any complications or after effects. Also state whether the applicant has fully recovered his former weight and health. In measles it is desirable to know if any pulmonary complaint followed. In scarlet fever the officials at the home office will want to know if there were any renal complications and will probably require a sample of urine sent to them for microscopical examination in recent cases.

An Endorsement of the Insurance Department.—At a meeting of the Texas Association of Medical Directors, held at Fort Worth on December 12, a resolution was unanimously passed, "endorsing the advanced stand taken by the MEDICAL RECORD in giving publication to papers and discussions dealing with the question of medical insurance work."

Reporting Diseases of Occupation.—J. B. Andrews presents a summary of recent legislation regarding the notification of the diseases of occupation. In 1911, for the first time in America, six states—California, Connecticut, Illinois, Michigan, New York and Wisconsin—enacted laws requiring physicians to report cases of occupational disease. These laws have much in common, and the diseases usually specified are anthrax, caisson disease, and lead, phosphorus, arsenic, and mercury poisoning. In Wisconsin anthrax is omitted and in Illinois the law is not quite clear in every respect, but seems to cover the usual disorders. In most cases the notification is to include the name, address, place of employment, and disease of the patient. Michigan requires, in addition, the length of time of such employment, and in New York such other information must be given as may be required by the Commissioner of Labor. In every state but Connecticut there is a penalty for failure to report, but only in California and Connecticut is compensation given for reporting. This legislation is the result of an attempt to excite interest among medical men, and for this purpose a tentative bill based on twelve years of English experience was introduced into eight state legislatures. In Minnesota action was postponed after it had been passed in one house, and in Pennsylvania it was vetoed on account of an amendment considered to be unconstitutional. The educational work, it is understood, is only begun by the enacting of these laws, and already in several states much valuable information has been obtained and boards of health and physicians are taking up the study of the subject.—*Journal of the American Medical Association*, December 16, 1911.

Accidents.—More than 35,000 deaths, it is estimated, occur every year in this country as a result of accident, and those more or less seriously injured, though not killed, number at least 2,000,000.

Book Reviews.

THE PRACTICAL MEDICINE SERIES. VOLUME VI. GENERAL MEDICINE. Edited by FRANK BILLINGS, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago; and J. H. SALISBURY, A.M., M.D., Professor of Medicine, Chicago Clinical School, Series 1911. Price $1.50. Chicago: The Year Book Publishers.

THIS is the second volume of the series devoted to general medicine. In it are found articles on the infectious diseases, diseases of the mouth, esophagus, stomach, intestines, liver, pancreas, and miscellaneous diseases. The book is valuable, as it covers the advances made in the diagnosis and treatment of these diseases during the past year.

THE PRACTICAL MEDICINE SERIES Volume VII. PEDIATRICS. Edited by ISAAC A. ABT, M.D., Professor of Pediatrics, Northwestern University Medical School; Attending Physician Michael Reese Hospital. With the Collaboration of MAY MICHAEL, M.D. ORTHOPEDIC SURGERY. Edited by JOHN RIDLON, A.M., M.D., Professor of Orthopedic Surgery, Rush Medical College. With the Collaboration of CHARLES A. PARKER, M.D. Series 1911. Price $1.25. Chicago: The Year Book Publishers.

THE summary of the literature of the past year covers nearly the entire field of pediatrics. An interesting case recorded is that of a transfusion performed in a newborn. The part of the book devoted to orthopedic surgery is enlivened by the critical remarks of the editors.

KURZGEFASSTE CHIRURGISCHE OPERATIONSLEHRE (OPERATIONSKURS) FÜR STUDIERENDE UND ARZTE. Von Dr. AD. OBERST, I. Assistent an der Chirurg. Klinik und Privatdozent für Chirurgie an der Universität Freiburg I. Br. With 232 illustrations, many in colors. Berlin: S. Karger, 1911.

IN this book is presented an excellent course in operative surgery on the cadaver, in which the author goes somewhat beyond the scope of most books on this subject, by calling attention in his technical instructions to the reasons why the particular operations are done in a particular manner. For this purpose he makes frequent references to the historical development of the various surgical procedures. The book is satisfactorily illustrated, although living subjects seem to serve for many of the pictures. In the section on amputations one is struck with certain of the methods employed, especially the use of the double edged transfixion knife in exarticulation of the hip, which is certainly, at the present time, not generally employed. The use of the Wyeth pins in these operations is also not referred to. This, with a number of other points, may be regarded as faults of omission, rather than of commission, and the book as a whole is very creditable.

HYMN TO HYGEIA, English and German Texts, Words, and Music. By JOHN C. HEMMETER, M.D., Ph.D., LL.D., Professor of Physiology, University of Maryland, Baltimore. Score $1.00; Parts $.50. New York: Carl Fischer, 1911.

DARWIN'S conception that the pursuit of science is necessarily associated with an atrophy of the esthetic faculties has been amply controverted by the example of many men who have achieved eminence in medical science, and who at the same time have gained recognition for their attainments in literature, music, and in the plastic and graphic arts. Holmes and Weir Mitchell are America's most shining examples of this versatility. Those of us who worship at the shrine of St. Cecilia will at once add the name of Hemmeter, whose busy professional life has not inhibited the exercise of the gift of musical composition, as exemplified in the Hymn to Hygeia.

CRIME, ITS CAUSES AND REMEDIES. By CESARE LOMBROSO, M.D., Professor of Psychiatry and Criminal Anthropology in the University of Turin. Translated by HENRY P. HORTON, M.A. With an Introduction by MAURICE PARMELEE, Ph.D., Assistant Professor of Sociology in the University of Missouri; Author of Principles of Criminal Anthropology. Boston: Little, Brown and Company, 1911.

THIS work is based upon the French version published in 1899, which was afterwards embodied by Lombroso in the third volume of the latest Italian edition of "L'Uomo Delinquente," published in 1906 and 1907. The present English translation, therefore, is the first attempt to present to English readers one of the most important of Lombroso's works, and one which was the fruit of his latest years. Although originally he had conceived the criminal as a victim of atavism, insanity, or epilepsy, presenting a distinct anthropological type, he later modified his views under the searchlight of criticism, and finally recognized the extreme importance of environmental factors in the production of criminality. The description of the economic and social causes of crime takes up the greater part of the present volume. This is divided into three parts: the first deals with the etiology of crime; the second with its prophylaxis and therapeusis; and the third with synthesis and application. In discussing the etiology of crime, the author takes up in detail and with the presentation of many statistical tables the influence of climate, race, civilization, density of population, immigration and emigration, subsistence, alcoholism, education, economic conditions, religion, profession, heredity, age, sex, civil status, prisons, and associations of criminals and the causes of political crimes. The section on the prophylaxis and therapeusis of crime deals with penology and the various substitutes for penal measures. The third part of the work discusses the relation of atavism and epilepsy in crime and in punishment, the infliction of penalties according to criminal anthropology, fines, probation systems, sex, etc.; practical applications to the criticism of criminal law, expert testimony, pedagogy, art, and science; and a chapter on the utilization of crime, *i. e.* symbiosis. This work is a veritable mine of information, arranged with the painstaking method characteristic of the scientific worker; it is replete with interest to the physician, lawyer, jurist, legislator, and sociologist. The views of Lombroso may in some instances be challenged by many readers who will not agree, for instance, with the statement that a woman convicted of infanticide should merely be put on probation with security of good behavior. Nevertheless, in the breadth of wisdom and humanity pervading his advocacy of reform in the treatment of offenders, Lombroso occupied an impregnable position and lived to see the application of his reforms in many parts of the world. Scientific penology was rendered possible only by the distinction, originally made by Lombroso, between the criminaloid, the occasional criminal, the criminal by passion, and the born criminal. In his share in the preparation of this work, the translator is to be commended for the lucidity and elegance of style with which he clothes the author's meaning. The typography, paper, and binding are in keeping with the importance of this publication.

VERÖFFENTLICHUNGEN AUS DEM GEBIETE DES MILITÄR-SANITÄTSWESEN. Herausgegeben von der Medizinal-Abteilung des Königlich Preussischen Kriegsministeriums. Heft 47. Das Königlich Hauptsanitätsdepot in Berlin. Mit 3 Tafeln und 24 Abbildungen im Text. Price 2 marks. Berlin: August Hirschwald, 1911.

THIS is a pamphlet of thirty-eight pages, describing the headquarters in Berlin of the medical division of the German army. The various forms of apparatus employed in the preparation of surgical dressings and their sterilization indicate that the German army is alive to the most modern developments in the technical phases of medical industry. This pamphlet will be found of value to army surgeons and apothecaries.

A MANUAL OF FEVERS. By CLAUDE BUCHANAN KER, M. D. (Ed.), F.R.C.P. (Ed.); Medical Superintendent, City Hospital, Edinburgh, and Lecturer on Infectious Diseases to the University of Edinburgh; Author of "Infectious Diseases: A Practical Text-Book." Price $2.50. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, 1911.

THIS compact manual of 314 pages is devoted to a clinical consideration of the various exanthemata and of typhoid fever, diphtheria, erysipelas, whooping cough, mumps, and cerebrospinal meningitis. The first two chapters describe the general aspects of fever and the interpretation of rashes and of throat manifestations. Some important distinctions are made. Thus it is pointed out that fever is something more than mere pyrexia: the former is a "response in metaholism to the invasion of microorganisms and a toxic disturbance of the regulation of temperature." The statement is made that "fever can occur in persons who manifest no pyrexia, and conversely pyrexia is met with in certain nervous and hysterical conditions which do not present the other signs of true fever." As regards nomeclature the author prefers the terms "morbilli" for measles and "rubella" for German measles. The excellence of this manual consists chiefly in its careful description of the clinical signs of the common fevers, and in the emphasis placed upon the points of differentiation. Both student and practitioner will find this book a helpful guide.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held December 1, 1911.

Dr. George Woolsey in the Chair.

A Case of Retrograde Incarceration in an Inguino-Femoral Hernia.—Dr. A. V. Moschcowitz presented this patient, a woman, who was admitted to Mount Sinai Hospital on November 18, with symptoms of strangulated hernia. She had had the hernia for twenty years but it had given her no trouble until eleven hours before her admission to the hospital, when she was suddenly seized with severe pain in the abdomen, followed by vomiting which soon became fecal. Prior to operation, Dr. Moschcowitz had made a diagnosis of retrograde strangulation in W-shape, in an inguino-superficial hernia. The diagnosis was partially correct. At operation only one loop of intestine was found in the sac. As the proximal loop was pulled upon for purposes of examination, there followed a blue-black, much thickened, and infiltrated loop of intestine about one and one-half yards in length. Resection was considered, but on account of the condition of the patient was decided against, and the intestine was replaced. The patient made a perfect recovery. The anatomy of the parts was most extraordinary, if not unique. The hernia was inguino-superficial, because after it escaped from the external inguinal aperture the sac turned upward and outward, and lay upon the aponeurosis of the external oblique. The hernia was of the direct variety, because the deep epigastric vessels were to its outer side. There was a complete absence of Poupart's ligament from about opposite the femoral artery to the spine of the pubis. In other words the ring through which this hernia made its escape was bounded above by the conjoined tendon, to the outer side by the deep epigastric vessels, to the inner side by the rectus, and below by the pectineus. This peculiar ring had suggested to Dr. Moschcowitz the name of "inguino-femoral hernia."

Complete Report on Bone Lesion Previously Shown.—Dr. John Gerster made this report. The patient was a boy, 10 years of age, who had been well until two months ago. His parents were intelligent and stated that he had no chronic or acute illness. After a fall his one leg became swollen and apparently longer than the other. Examination showed that the one leg was actually longer than the other. Two bony tumors were also present. The *x*-ray examination showed that there was an actual lengthening of the long bones of one and one-quarter inches and that there were two bony subperiosteal tumors of the tibia away from the epiphysis. In a child of ten, twelve, or fourteen years there were lines in the long bones parallel to the epiphyses, and as in this case in the longer side these lines were farther apart. The fibula had a uniform thickening, and there was some slight thickening of the tibia and the bones of the foot were enlarged. Both the Wassermann and the Noguchi tests were negative. Pathological examination of the bony tumors showed nothing indicative of sarcoma. They had tried 606 and this had not in any way affected the tumors, so it seemed that sarcoma and syphilis which had been suggested at the last meeting must be excluded. A search of the literature had led him to the belief that this was a case of false gigantism or hypertrophy of the bony elements. The distance apart of the lines above the epiphysis seemed to indicate that the condition was not of sudden occurrence but had been progressing for a long time. False gigantism was much more frequent than true. Congenital hypertrophy was almost never known. The bony tumors might be due to a collection of blood under the periosteum which had gradually been transformed into bony tissue. He considered the case one of false gigantism complicated by periosteal tumor.

A Cured Case of Prolapse of the Rectum.—Dr. A. V. Moschcowitz presented a young man, 23 years of age, who had had the prolapse since he was six years old. Dr. Moshcowitz said that the various operations tried to correct this condition resulted almost uniformly in failure within a few months. In thinking over these failures, he had concluded that they must consider more carefully the pathology of prolapse of the rectum, if permanent benefit was to be derived. This patient had a prolapse eight inches in length and was operated upon April 19, 1911, by the following method: Through a median laparotomy the cul-de-sac of Douglas was obliterated by several rows of purse string sutures, inserted so as to include also the deep fascia; of course care was taken not to injure the internal iliac vessels and the ureters. These were merely the fundamental principles of the operation the detailed steps of which would be published in a subsequent communication.

Dr. Howard Lilienthal said he believed that Dr. Moschcowitz was on the right track in his operations for hernia. He was much interested as he had furnished the first patient upon whom Dr. Moschcowitz had performed the operation. As to the operation for prolapse of the rectum there was no doubt but that a combined colopexy and laparotomy was the best method.

Dr. Woolsey asked Dr. Moschcowitz if he intended to state that operations for prolapse on young children were usually unsuccessful.

Dr. Moschcowitz replied that he referred only to prolapses of the rectum where all of the parts were prolapsed. With the transversalis fascia underneath the levator ani he simply formed a row of shelves which obliterated the hole that made a hernia possible. It was very difficult to repair from below; in one case he had resected the coccyx and this was not easy.

Dr. Leon T. Le Wald said that Dr. Gerster's case gave a good opportunity for calling attention to the advisability of always comparing both sides in examining a case of this kind. Many mistakes might be made by neglecting to observe this point.

The Question of Transplantation of the Cord in Operations for Hernia, with a Note on the Rôle of the Transversalis Fascia in the Production of Abdominal Hernia.—Dr. A. V. Moschcowitz read this paper. (See page 1319.)

Dr. William A. Downes said that he did not think any of them doubted the advisability of transplanting the cord. He thought the important point was to determine whether they had a direct, or a direct and an indirect hernia; in the latter case there would be weakness in the muscles of the deep epigastrium. They might leave a weak area in the transversalis fascia and most recurrences would be at that weak point. It was difficult to determine where that weak area was and if transplantation of the cord did no harm, and he could not see that it did any harm, then why not always do a transplantation?

Dr. W. C. Lusk said that in oblique inguinal hernia he had practised Halsted's technique of resecting the spermatic vessels without stripping the vas deferens together with its blood supply or the cremaster muscle out of the inguinal canal. The raising of the cord might be mutilating to the cremaster. He said furthermore that he closed the opening in the transversalis fascia at the internal ring, by including its upper edge in the sutures which united the overlying arched fibers of the internal oblique and transversalis muscles to Poupart's ligament. After the hernial sac was dissected free, a reflection of the transversalis fascia from the abdominal wall could usually be found

crossing the front of its neck, which should be cut across a little below the arched fibers, stripped it up from the peritoneal layer, and caught with a forceps for its identification when the stitches were inserted. A stitch was placed at each lateral limit of the fascial opening. Two layers of transversalis fascia might be found at this situation. Since all of the floor of the inguinal canal internal to the site of hernial protrusion in indirect herniæ was formed by transversalis fascia, which gave normally the support to the abdominal wall at this situation, it would seem that an important point in technique in reestablishing support at the internal ring would be to suture the transversalis fascia to Poupart's ligament so that it would lie closely around the cord. Dr. Lusk said he believed that recurrences were often due to an early giving way of the sutures following operation, since in most of the cases that came to a second operation the arched fibers and conjoined tendon were found back in their normal relation to the inguinal canal well above Poupart's ligament.

Dr. Howard Lilienthal said the question as to whether trauma to the cord was an evil or possibly a good thing was open to discussion. He did not mean any violence but a certain amount of surgical irritation. Slight trauma might give rise to more adhesions and thus strengthen the tissues. The lower down the opening was the greater was the care required. Whether the hernia was direct or indirect the cord should be transplanted. For a time he practised transplanting the cord and then for a time he did not do it, and he found that he had more recurrences when he did not do a transplantation. Now he transplanted in every case. He was not sure that the transplantation was responsible for the fewer number of recurrences, but it was his experience that in his cases there were fewer recurrences when the spermatic cord was transplanted.

Dr. William A. Downes said that the hernia would of course follow the line of least resistance and that would be along the spermatic cord. In doing hernia operations he had put his finger through the internal ring and had been surprised at the weakness of the transversalis fascia.

Dr. John A. Hartwell said they should remember that after operation the internal ring did not come at the original spot; they closed it and made a new spot in firmer tissue further out.

Dr. George Woolsey said that results with transplantation were as good as without. The recurrences that they saw were almost always at the inner side. If they did not transplant they could not close the opening through which the spermatic cord originally passed. As for trauma, he had seen more swollen testicles without transplantation than with it.

Dr. Moschcowitz stated that 95 per cent. of cures were claimed and conceded by everybody, but he was after the 5 per cent. of the failures. Dr. Lusk, in his remarks, had said "to close the hole in the transversalis fascia"; but they could not do this, unless they did a high castration, as room must be left for the escape of the cord into the scrotum. Dr. Downes had raised the point of weakness of the transversalis fascia to the inner side of the deep epigastric vessels; in Dr. Moschcowitz's experience, this part of the transversalis fascia was unusually strong, unless there was a direct hernia present.

Non-Suppurative Subphrenic Peritonitis Complicating Appendicitis.—Dr. Harold Neuhof presented this paper. He called attention to the fact that, while subphrenic abscess had been the subject of many communications, the possibility of the existence of a non-suppurative variety seemed to have been overlooked. A search of the literature revealed the fact that very little attention had been given to any form of subphrenic diseases other than the suppurative. The reasons that non-suppurative subphrenic peritonitis had escaped attention were that it was not fatal and therefore did not reach the autopsy room, and that exploratory punctures were far more frequently resorted to than exploratory incisions. A search of the records of the Second Surgical Service of Mount Sinai Hospital for the years 1904 to 1910, inclusive, had yielded 15 cases, which were reported in detail. Because of its greater frequency and importance, Dr. Neuhof confined himself to a consideration of this condition following appendicitis. An analysis of these cases showed that the onset of the symptoms occurred shortly after an appendiceal affection and that there was an area of localized pain and tenderness. Perihepatic friction sounds were occasionally present. The fever and blood examination together with the other symptoms indicated an intraperitoneal infection in the subphrenic region. They were apparently dealing with a variety of localized peritonitis which might be termed subphrenic peritonitis. Since subphrenic abscess might be intraperitoneally or extraperitoneally situated, it was reasonable to believe that non-suppurative subphrenic inflammations were similarly situated. He however had not seen any instance of the extraperitoneal variety of non-suppurative subphrenic inflammation, and consequently would for the time being term the condition subphrenic peritonitis. It might be argued that in the condition described as non-suppurative one or more small abscesses were formed which were not found with the aspirating needle, and that they subsided spontaneously. The history of at least one of the cases seemed to favor such a view. A parallel might be drawn between subphrenic peritonitis and pelvic peritonitis, in which condition collections of sterile pus might be found a long time after an apparently non-suppurative affection had in large part subsided. Clinically, however, both diseases ran the course of an inflammatory non-suppurative process. If a small collection of pus formed it was only secondary. In one of the cases reported such a small collection of pus was considered so incidental that the remainder of the subphrenic space, and the liver as well, were explored to find the suspected main abscess. It was most improbable that aspiration had any effect in cases in which an abscess was the central, causative factor of a subphrenic intraperitoneal exudate, unless the abscess was aspirated; yet striking effects of negative aspirations were to be seen in several instances in the cases reported. He believed, therefore, that the affection under consideration was a non-purulent one. The 15 cases occurred among 972 cases of acute appendicitis and this made its incidence about 1.5 per cent. Attempts to experimentally produce a non-suppurative subphrenic peritonitis were unsuccessful. It seemed likely that the non-suppurative condition occurred only by intraperitoneal extension. The history of two of the cases indicated that the course of the infection began in the appendiceal region, extended along the ascending colon, and terminated above the liver. The possibility of a subphrenic lymphangitis being the occasional primary lesion could not be gainsaid, and future observations might prove that the intraperitoneal subphrenic exudate was invariably due to a subperitoneal lymphangitis in that region. The physical signs in most of the cases indicated that the exudate was generally situated between the upper surface of the liver and the dome of the diaphragm. In one of the patients the inflammatory tract could be followed over the free edge of the liver to its superior surface. In another instance the entire posterior and lateral, as well as the superior, portions of the right subphrenic space appeared involved. It seemed justifiable to state that the site of election for a subphrenic exudate was that part of the space below the highest portion of the diaphragm. However, the subphrenic space appeared more widely involved in the non-suppurative than in the suppurative affection in most instances. The contents of the subphrenic exudate probably resembled

those of any other form of localized peritonitis. The right half of the diaphragm was most affected by the inflammatory process. The physical signs in this condition indicated a pronounced elevation of the diaphragm in most of the cases observed. Although no fluid was found in the pleura in any of the patients upon whom aspiration was practised, the physical signs pointed to inflammation of the pleura in several instances. An abnormally placed appendix did not seem to favor the development of the non-suppurative subphrenic affection as it did the suppurative. The symptoms of this affection were a high fever which continued to rise for several days though it could not be accounted for by retention of purulent discharge in the wound, pelvic exudate, intrapulmonary disease, etc. (in some instances the fever might be low and not of characteristic type); pain in the right lower chest, occasionally radiating to the right shoulder; possibly tenderness in one or more of the intercostal spaces near the base of the right axilla, perihepatic friction sounds, and some dullness to percussion at the base of the right axillary zone. The patient might cough, usually without expectoration. The fever pursued a high and irregular course in typical cases. The pulse was slow in proportion to the temperature, and respirations were normal in rate. The patients were usually not profoundly prostrated. The blood examination almost invariably indicated an acute inflammatory process. Intercostal tenderness and rigidity were most pronounced in the 7th, 8th, and 9th spaces. The liver percussion was normal, but the edge of the liver might be felt a short distance below the costal margin. There was dullness to percussion over the lower part of the right chest. The area of dullness was greatest in the axilla and might reach as high as the level of the angle of the scapula; under such circumstances a pleural effusion was probably present, although fluid might not be found in the pleura at any of the exploratory aspirations. Vocal fremitus, voice, and the respiratory murmur were diminished over the dull area; the voice sounds were often faintly tubular in character. The physical examination did not always reveal these typical findings.

The course of non-suppurative subphrenic peritonitis appeared to be very variable, lasting from five to thirty days. As to the after effects of the affection, only seven patients could be traced after leaving the hospital; all of these remained free from symptoms except one. In this instance some permanent change had apparently occurred in the subphrenic space. The differential diagnosis between suppurative and non-suppurative subphrenic inflammation was not always an easy matter, but in general an appendix abnormally situated favored subphrenic abscess and in the suppurative affection the symptoms did not usually appear until weeks, even months, after the appendiceal attack or operation. The symptoms in patients who were the subjects of subphrenic abscess were decidedly more serious in most instances. In typical instances of subphrenic abscess the liver was considerably displaced, intercostal tenderness was often localized in two or three points, not widespread as in the non-suppurative process; there might be bulging of the lower part of the thorax on the right side, the physical signs in the chest were more pronounced, and considerable fluid might be found in the pleural cavity. Aspiration had no effect on the subphrenic abscess, while it appeared to decidedly influence the non-suppurative variety. There should be little difficulty in differentiating liver abscess, complicating appendicitis, from non-suppurative subphrenic peritonitis. In the suppurative and non-suppurative subphrenic inflammations pain was elicited upon intercostal pressure, especially in the 7th, 8th, and 9th spaces in the axillary zone, but not upon pressure over the lower right thoracic wall with the flat of the hand. The latter procedure, on the contrary, elicited pain in patients having a liver abscess, acute hepatitis, congestion of the liver, whereas intercostal pressure might be quite painless in these hepatic affections. Although aspiration was only employed for diagnostic purposes, it appeared to have been followed by a distinct therapeutic result in seven of the nine cases in which it was employed. In these instances the procedure was followed by an almost critical drop in temperature and a recession in the symptoms. It was impossible to offer an adequate explanation of this phenomenon. Whatever the explanation might be, however, Dr. Neuhof said, aspiration certainly seemed to have a salutary effect on the course of the disease.

Dr. Robert T. Morris said that the question as to the route by which infection traveled was not as important as that of resistance. They were well aware of how an active colony of colon bacilli were taken up by the afferent vessels and carried along. When the bacilli traveled over a free surface the places where they were intercepted and met resistance on the part of the protective cells were shown by adhesions. While bacilli might not cause a terminal suppurative process, they might travel quite freely over the free surface of the peritoneum and find that same lack of protection which was often found to exist in relation to the colon bacilli traveling on the free surface of the pylorus.

Dr. Howard Lilienthal said that it seemed odd that the possibility of non-suppurative peritonitis in this region had not occurred to them before. The paper reminded him of two cases in his experience. In one there was certainly a non-suppurative collection of fluid in the subphrenic region. After an operation the patient had high fever and it looked as though there was suppuration somewhere. They aspirated the subphrenic region and got about two drams of a clear straw-colored fluid. True to the type referred to in the paper, the patient immediately got well. In the short time of twenty-four hours the improvement was so great that there was no longer any cause for alarm. His opinion of the case at the time was that the fluid would have become purulent if there had been no interference. The second case was that of a pregnant woman, who had been operated upon for appendicitis, aborted, and then developed a pneumonia. After the pneumonia, the solidification in the chest did not disappear. The liver was swollen but was not pushed downward. They aspirated many times with negative findings and the patient did not improve. Finally they opened the chest and found a superphrenic abscess containing four or five ounces of pus. In this case he thought there was a non-suppurative process at first which later caused the thoracic abscess. He recalled several other cases that got well after being aspirated.

Dr. Neuhof, in closing the discussion, said that the way in which the subphrenic space became involved in an infective process recalled to his mind an experiment by which lampblack was introduced in the femoral region and it was found that it traveled up on the surface of the peritoneum; the leucocytes high up in the abdomen contained more or less lamp black.

Acute Hemorrhagic Pancreatitis.—Dr. Charles E. Farr presented this specimen, which had been removed from a woman, 45 years of age, who had gall-bladder trouble for two years, but who persistently refused operation. Finally, when her condition became desperate, she agreed to the operation and thirty-five gallstones were removed from the gall-bladder and common duct. The patient did not survive; at autopsy they found forty-six gallstones. The pancreas showed an acute hemorrhagic inflammation. The duct of the pancreas opened into the duodenum but had no opening into the common duct of the gall-bladder.

Election of Officers.—*Chairman*, Dr. Lucius Wales Hotchkiss; *Secretary*, Dr. Arthur Seymour Vosburgh.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

STATE OF MISSISSIPPI.

October 10-11, 1911.

ANATOMY.

1. Explain bone development and give examples.
2. Describe hip joint, naming its ligaments.
3. Give origin, course, and distribution of third cranial nerve.
4. Name the preaxial muscles, giving the insertion of any one of them.
5. What constitutes the lymphatic system, and how connected?
6. Locate the emissary veins and give clinical importance.
7. Name abdominal viscera wholly covered by peritoneum.
8. Give nerve and blood supply of the rectum.

PHYSIOLOGY.

1. Describe the sounds of the heart and give causes.
2. Describe and give function of the Haversian canal.
3. Discuss (*a*) emulsification and (*b*) saponification.
4. Discuss fully rigor mortis.
5. Discuss minutely the excretion of urine.
6. Give the secretions of the alimentary canal, give the reaction and active principles of each one.
7. Discuss, fully, respiration.
8. Give function of adipose tissues.

CHEMISTRY.

1. Give the chemical formulæ of the following substances: (*a*) Iron sulphate, (*b*) hydrocyanic acid, (*c*) corrosive sublimate, (*d*) zinc sulphate.
2. What test would you use or employ to determine the presence of organic matter in drinking water?
3. In what combination is phosphorus found in nature?
4. Give antidote for corrosive sublimate, and explain its action.
5. Give the name and general physical and chemical properties of the halogens.
6. What physical actions have a tendency to decompose compound substances?
7. Name four chief elements entering into the formation of organic compounds.
8. In testing urine for sugar explain the reaction where Haines' solution is used.

MATERIA MEDICA.

1. Give source and uses in medicine of ichthyol.
2. Give the official name, composition, and usual dose of Fowler's solution and Donovan's solution.
3. Name the two alkaloids of opium usually used, and give doses. Also name and give doses of two derivatives of morphine.
4. What active principles are found in digitalis? Name the official preparations and doses; and say in what conditions digitalis is contraindicated.
5. Give hypodermic doses of the following: Strychnine sulphate, atropine sulphate, nitroglycerin, physostigmine; and compare the therapeutic uses of atropine with nitroglycerin.
6. Give the common name, therapeutic uses, and dose of sodium sulphate.
7. Name the principal alkaloid and official preparations of aconite, and state their doses, and give physiological action, and name conditions that contraindicate the use of aconite. Name antidotes.
8. Give source, dose, and indications for salol, and name the drugs it is subdivided into after administration.

PATHOLOGY.

1. What conditions might cause cyanosis of the face, jugular pulsation, and general anasarca?
2. What is the pathology of suppurative inflammation, and of plastic inflammation?
3. What is the pathology of a decayed tooth (physiological)?
4. What is the gross pathology of arthritis deformans?
5. Give pathological characteristics of medullary type of carcinoma of the breast.
6. Enumerate the pathological sequences of diphtheria.
7. Give gross pathology of endocarditis and mention most frequent causes.
8. Describe step by step the process involved in simple inflammation.

SURGERY.

1. Name all the agents employed for the production of general and local anesthesia, and give treatment for overdose of each.
2. Name in order of their virulence the bacteria of suppuration.
3. Name all the conditions requiring trephining, and describe the operation.
4. Give symptoms and treatment of psoas abscess.
5. Describe an osteoclast, and give indications for its use.
6. Give a clear description of a perineal prostatectomy.
7. Give cause and treatment of esophageal stricture.
8. Describe paracentesis tympani, and give indications for the procedure.

OBSTETRICS.

1. Describe methods to determine position of the fetus previous to labor.
2. State the danger to the cord in the various stages of labor and describe the methods of overcoming these dangers.
3. For what conditions and at what periods of time should cesarean section be performed?
4. Name four causes of dystocia with treatment of any one form.
5. Describe delivery in a case of breech presentation requiring the application of forceps.
6. Define involution and subinvolution.
7. What are after-pains? State their cause and give treatment.
8. Name the fetal evelopes from without inward.

HYGIENE.

1. What are the reasons for abolishing the common drinking cup?
2. Name and describe three intestinal parasites, and how would you prevent infection by each?
3. What hygienic instructions should be given to patients with tuberculosis?
4. What are the principal adulterations of milk?
5. Describe in detail the methods of transmission of yellow fever and malarial fever.
6. Give period of incubation, time for quarantining and mode of disinfecting after five diseases.
7. When should persons who have been infected with gonorrhea or syphilis be permitted to marry?
8. Differentiate between endemic and epidemic diseases.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

STATE OF MISSISSIPPI.

October 10-11, 1911.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), pages 73 and 74; or Gray's "Anatomy" (1910), pages 42 and 44.
2. See Cunningham's "Anatomy" (1909), page 293; or Gray's "Anatomy" (1910), page 322.
3. See Cunningham's "Anatomy" (1909), page 676; or Gray's "Anatomy" (1910), page 979.
4. *The preaxial muscles* are: Pectoralis major, pectoralis minor, subclavius, coracobrachialis, biceps, brachialis anticus, pronator radii teres, flexor carpi radialis, palmaris longus, flexor carpi ulnaris, flexor sublimis digitorum, flexor profundus digitorum, flexor longus pollicis, pronator quadratus, palmaris brevis, abductor pollicis, opponens pollicis, flexor brevis pollicis, abductor minimi digiti, opponens minimi digiti, flexor brevis minimi digiti, adductor pollicis, interosseous, psoas magnus, iliacus, pectineus, gracilis, adductor longus, adductor brevis, adductor magnus, quadratus femoris, obturator externus, obturator internus, gemellus superior, gemellus inferior, biceps femoris, semitendinosus, semimembranosus, gastrocnemius, soleus, plantaris, flexor longus digitorum, flexor longus hallucis, tibialis, posticus, flexor accessorius, popliteus, flexor brevis digitorum, flexor brevis hallucis, abductor hallucis, abductor minimi digiti, lumbricales, adductor hallucis, interosseous, flexor brevis minimi digiti.

The pectoralis minor is inserted into the coracoid process of the scapula.

5. See Cunningham's "Anatomy" (1909), page 904; or Gray's "Anatomy" (1910), page 770.
6. *Emissary veins:* "These are communications between the sinuses within and the veins outside the cranium. Most of them are temporary, corresponding to the chief period of growth of the brain. Thus in early life, when the development of the brain has to be very rapid, owing to the approaching closure of its case, a free escape of

blood is most essential, especially in children, with their sudden explosions of laughter and passionate crying. (1) Vein through the foramen cæcum, between the anterior extremity of the superior longitudinal sinus and the nasal mucous membrane. The value of this temporary outlet is well seen in the timely profuse epistaxis of children. Other more permanent communications between the skull cavity and nasal mucous membrane pass through the ethmoid and internal orbital foramina. The fact that the nasal mucous membrane is loose and ill supported on the turbinated bones allows its vessels to give way readily, and thus forms a salutary safeguard to the brain, warding off many an attack of apoplexy. (2) Vein through the mastoid foramen, between the lateral sinus and the posterior auricular and occipital veins. This is the largest, the most constant, and the most superficial of the emissary veins. Hence the old rule of applying blisters or leeches over it in cerebral congestion. (3) Vein through the posterior-superior angle of the parietal between the superior longitudinal sinus and the veins of the scalp. (4) Vein through the posterior condyloid foramen between the lateral sinus and the deep veins of the neck. (5) Vein through the anterior condyloid foramen between the occipital sinus and the deep veins of the neck. (6) Ophthalmic veins communicating with the cavernous sinus and the angular vein. These veins may be the source of fatal blood-poisoning, by conveying out of reach septic material, in acute periostitis of the orbit, or in osteitis, of dental origin, of the jaws. (7) Minute veins through the foramen ovale between the cavernous sinus and the pharyngeal and pterygoid veins. (8) Communications between the frontal diploic and supraorbital veins, between the anterior temporal diploic and deep temporal veins, and between the posterior temporal and occipital diploic veins and the lateral sinus. The gravity of these emissary veins and their free communications with others is shown by the readiness with which they become the seat of septic thrombosis, and thus of blood-poisoning, in cranial injuries, erysipelas, suppuration of the scalp, and necrosis of the skull." (Morris' *Anatomy.*)

7. *Abdominal viscera wholly covered by peritoneum:* Stomach, first part of duodenum, jejunum, ileum, cecum, transverse colon, sigmoid flexure, first part of rectum, liver.

8. RECTUM. *Nerve supply:* Sympathetic plexuses (inferior mesenteric and hypogastric), fibers from the second third, and fourth sacral nerves. *Blood supply:* Superior, middle, and inferior hemorrhoidal arteries and veins.

PHYSIOLOGY.

1. There are two normal heart sounds which follow in quick succession, and are succeeded by a pause. The first, or systolic, sound is dull and somewhat prolonged, the second, or diastolic, sound is sharper and shorter. The sounds may be expressed by the syllables *lubb—dup.*

The first sound is heard best at the apex beat in the fifth left intercostal space; the second sound is heard best over the second right costal cartilage.

The *causes* producing the *first* sound of the heart are not definitely ascertained; the following are supposed to be causatory factors: (1) The vibration and closure of the auriculo-ventricular valves, (2) the muscular sound produced by the contraction of the ventricles, and (3) the cardiac impulse against the chest wall.

The *second* sound is caused by the vibration due to the closure of the semilunar valves.

2. See Cunningham's "Anatomy" (1909), page 72; or Gray's "Anatomy" (1910), page 39. *The function of the Haversian canals:* They serve to conduct arteries, veins, lymphatics, and nerves to and from the bone substance.

3. *Emulsification* is a physical process by which fat globules are split up into very minute particles capable of being absorbed by the villi of the intestine.

Saponification is a chemical process by which a fatty acid in combination with an alkali produces a soap and glycerin.

Both of these processes are accomplished by the steapsin of the pancreatic juice.

4. *Rigor mortis* is a condition of rigidity assumed by the muscles after death. It is supposed to be due to the coagulation of the myosinogen. The muscles lose their irritability and pass into a condition of contraction. Heat is evolved, carbon dioxide is given off, and the muscles become acid in reaction due to the development of sarcolactic acid. Rigor mortis usually sets in first in the muscles of the lower jaw, face, and neck, then in those of the thorax, abdomen, upper extremity and lower extremity. It usually lasts for from twenty-four to forty-eight hours, and disappears in the same order as the onset.

5. *Excretion of urine:* According to Bowman's theory, the watery part of the urine (with the soluble inorganic salts) is filtered from the capillaries in the glomerulus through the flattened epithelial cells of Bowman's capsule, into the lumen of the uriniferous tubule; and the nitrogenous substances (urea, uric acid, creatinin, etc.) are excreted by the cubical cells lining the tubules.

6. SECRETIONS OF ALIMENTARY CANAL. (1) *Saliva,* alkaline; active principle, ptyalin. (2) *Gastric juice,* acid; active principles, pepsin and rennin. (3) *Pancreatic juice,* alkaline; active principles, trypsin, amylopsin, steapsin, and a milk-curdling ferment. (4) *Succus entericus,* alkaline; active principle, invertin. (5) *Bile,* alkaline; it contains no "active principles," but bile salts (sodium taurocholate and sodium glycocholate), and bile pigments (bilirubin and biliverdin).

7. *Respi ation* is the process by which an interchange of gases takes place in the lungs; so that oxygen is introduced and carried to the tissues, and carbon dioxide is expelled. See Gray's "Anatomy" (1910), page 423.

The changes produced in the *air* by respiration are:

	INSPIRED AIR.	EXPIRED AIR.
Oxygen	21 per cent.	16.6 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide...	0.04 per cent.	4.4 per cent.
Other gases.....	Rare.	Often present.
Watery vapor....	Variable.	Saturated.
Temperature	Variable.	That of the body.
Volume	Varies.	Diminished.
Bacteria	Always present.	None.
Dust	Always present.	None.

8. *Function of adipose tissue:* (1) It is a reserve store of food; (2) it serves as a protection for delicate structures; (3) it preserves the heat of the body.

CHEMISTRY.

1. Chemical formula, of iron sulphate, $FeSO_4$; of hydrocyanic acid, HCN; of corrosive sublimate, $HgCl_2$; of zinc sulphate, $ZnSO_4$.

2. As a rule a solution of potassium permanganate will be rapidly decolorized in the presence of organic matters. If such organic matter is nitrogenous it can be detected by the Wanklyn or Frankland method.

3. Phosphorus is found in nature as phosphate (chiefly calcium phosphate).

4. Antidote for corrosive sublimate is milk or white of egg; this forms the albuminate of mercury, which is insoluble.

5. The *halogens* are: Fluorine, chlorine, bromine, and iodine. They are all univalent; they form hydracids; they are all irritant and corrosive; they all possess bleaching and disinfecting properties; their hydroxides (except fluorin, which has none) are monobasic acids.

6. *Physical actions which have a tendency to decompose compound substances:* Light, heat, and electricity.

7. *Four chief elements entering into the formation of organic compounds:* Carbon, hydrogen, oxygen, and nitrogen.

8. In testing urine for sugar, with Haines' solution: By the action of the boiling alkaline solution glucose is converted into substances which (being prone to oxidation) are good reducing agents. These latter reduce the cupric sulphate into cuprous sulphate, and this in time is decomposed with the deposition of cuprous oxide.

MATERIA MEDICA.

1. Ichthyol is obtained from ichthyosulphuric acid, which comes from a crude oil obtained by destructive distillation of fossil fish found in the earth in the mountains of Tyrol. It is used in inflammatory conditions generally, erysipelas, ulcers, indurated glands, joint affections, rheumatism, certain chronic skin diseases, chronic inflammations of the pelvic viscera, and in gynecological practice.

2. FOWLER'S SOLUTION. *Official name:* Liquor potassii arsenitis. *Composition:* Arsenic trioxide 10, potassium bicarbonate 20, compound tincture of lavender 30, and distilled water to 1,000. *Dose:* Three minims.

DONOVAN'S SOLUTION. *Official name:* Liquor arseni et hydrargyri iodidi. *Composition:* Arsenous iodide 10, red mercuric iodide 10, distilled water to 1,000. *Dose:* One and a half minims.

3. *Two alkaloids of opium:* Morphine, *dose* gr. ¼; and codeine, *dose* gr. ½.

Two derivatives of morphine: Apomorphine, dose of the hydrochloride (as an emetic) gr. 1/10; and dionin, *dose* gr. ¼.

4. DIGITALIS. *Active principles:* Digitalin, digitalein, digitin, digitonin, and digitoxin. *Official preparations and doses:* Fluidextract, ♏j; extract, gr. 1/5; tincture, ♏xv; infusion, 5ij. *Digitalis is contraindicated* in: Diseases of the heart, (1) in aortic lesions, when uncombined with mitral lesions; (2) when the heart action is strong and arterial tension high.

5. *Hypodermic dose* of: Strychnine sulphate, gr. 1/60; atropine sulphate, gr. 1/180; nitroglycerin, ½ minim of a 1 per cent. solution; physostigmine, gr. 1/100.

Therapeutic uses of atropine: To relieve pain, relax spasm, check sweating, as a mydriatic, for night sweats, to check griping of purgatives; in asthma, to check fevers, in heart disease, shock, and collapse, acute coryza, urinary incontinence, chordee, low delirium of fevers, mania, alcoholism; as an antigalactagogue, and for spasmodic cough.

Therapeutic uses of nitroglycerin: In renal degeneration with high arterial tension, angina pectoris, cardiac dyspnea, epilepsy, various spasmodic conditions.

6. SODIUM SULPHATE. *Common name:* Glauber's salt. *Therapeutic uses:* As a saline purgative, as a cholagogue, for gallstones, also in nervous diseases. *Dose:* 5iv.

7. ACONITE.. *Principal alkaloid.* Aconitine, dose gr. 1/400. *Official preparations:* Fluidextract, dose ♏j; tincture, ♏x.

Physiological action: It first stimulates, and then paralyzes the heart and also the sensory nerves, lowers blood pressure, dilates the peripheral blood-vessels, is a respiratory sedative, reduces body temperature, is a diuretic and diaphoretic. It is *contraindicated:* In adynamia, weak cardiac action, degeneration or dilatation of the heart, and gastrointestinal irritation or inflammation. *Antidotes:* Digitalis, atropine, and strychnine.

8. SALOL. *Source:* Heating phenol and salicylic acid in the presence of phosphorus pentachloride. *Dose:* Gr. vij. *Indications:* As a disinfectant, in inflammations of the mouth and pharynx, in cystitis, as an intestinal antiseptic in typhoid fever, in muscular rheumatism, in intestinal indigestion and fermentation, and in colera. *After administration it is subdivided into:* Salicylic acid and phenol.

PATHOLOGY.

1. *Cyanosis of the face* might be caused by: Valvular disease of the heart, myocarditis, emphysema, asthma, pneumonia, phthisis, bronchitis, foreign body in the air passages.

Jugular pulsation might be caused by: Tricuspid regurgitation, anemia, thoracic aneurysm communicating with the superior vena cava.

General anasarca might be caused by: Cardiac disease, or weakness, renal disease, multiple neuritis, trichinosis, Hodgkin's disease.

2. See French's "Practice of Medicine" (1910), pages 42 and 43; or Da Costa's "Surgery" (1908), pages 77, 81, and 82.

3. *Pathology of a decayed tooth:* "The primary stage of caries is determined by the presence at a certain portion of a tooth of an acid capable of dissolving the inorganic salts. The matrix of the prisms is the first to be dissolved, and into the spaces thus formed crowd organisms which, given a suitable pabulum, produce more acid and further destruction of the surrounding tissue. There is good reason to believe that, apart from its natural resistance to solution, the enamel offers no vital resistance to attack. After the solution of the enamel the dentine is decalcified in a similar manner, and later the remaining organic portion of the tooth substance is digested by the bacteria, which perform their work by means of secreted enzymes, digesting the tissue in much the same way as the pepsin of the gastric juice acts upon albuminous materials. . . . Dental caries is, as a rule, a progressive disease, but under certain conditions its progress becomes arrested. In such cases the teeth generally show an extensive loss of tissue, the enamel of the masticating surfaces, and even of the sides, having disappeared. The exposed dentine is darkly stained, and presents to the eye a polished appearance. An examination with a probe will show that the dentine is as hard as, if not harder than, in the normal condition. This state, which is known as *spontaneous arrest of caries,* may be found in both the deciduous and permanent teeth; in the latter the condition is most frequently met with in hypoplastic first permanent molars. It occurs only in teeth with living pulps, and the appearance of the teeth suggests that the disease, when active, was of a general and rapid character. Miscroscopical examination shows that the dentine retains the color of carious dentine, or is perhaps slightly darker. The dentinal tubes, which can be easily seen in the discolored part, end apparently upon the surface."—(Colyer's *Dental Disease*).

4 See French's "Practice of Medicine" (1910), page 944; or Osler's "Practice of Medicine" (1909), page 390.

5. See Rose and Carless' "Surgery" (1908), page 215; or Da Costa's "Surgery" (1908), page 335.

6. See French's "Practice of Medicine" (1910), pages 182 and 190; or Osler's "Practice of Medicine" (1909), pages 198 and 203.

7. See French's "Practice of Medicine" (1910), pages 578 and 577; or Osler's "Practice of Medicine" (1909), pages 786 and 785.

8. See Rose and Carless' "Surgery" (1908), page 31; or Da Costa's "Surgery" (1908), page 73.

SURGERY.

1. *General anesthesia* may be produced by: Ether, chloroform, nitrous oxide, ethyl chloride; *local anesthesia,* by: Cocaine, eucaine, ethyl chloride. There are others, but these are the most commonly used. For overdose of any of the general anesthetics, remove the inhaler, and start artificial respiration, make traction on the tongue, lower the patient's head, or invert him, give hypodermic of atropine, apply faradism to the phrenic nerve, put hot water bottles to the extremities, let plenty of fresh air into the room, give an enema of hot salt solution; in some cases of chloroform poisoning direct heart massage has been employed. The sphincter ani may be stretched; and bleeding from the external jugular vein may be tried.

2. *Bacteria of suppuration: Staphylococcus pyogenes aureus, Staphylococcus pyogenes albus, Staphylococcus pyogenes citreus, Streptococcocus pyogenes. Bacillus pyocyoneus, Micrococcus tetragenas,* gonococcus, colon bacillus, typhoid bacillus, pneumococcus. The *order of virulence* is not settled.

3. *Indications for trephining:* "Intracranial hemorrhage, abscess, fracture, foreign body, evacuation of cerebrospinal fluid through the lateral ventricle, as a preliminary step to osteoplastic resection and to linear craniectomy, epilepsy, bullet and other wounds, small tumors, drainage of frontal sinus, drainage of mastoid antrum and cells, thrombosis of venous sinuses."—(Bickham's *Operative Surgery.*) See Rose and Carless' "Surgery" (1908), page 758; or Da Costa's "Surgery" (1908), page 734.

4. See Rose and Carless' "Surgery" (1908), pages 723 and 730; or Da Costa's "Surgery" (1908), pages 134, 151, and 156.

5. An *osteoclast* "is an instrument consisting of a bar on which are two padded rings, and between them a padded metal plate, connected with a screw; the pressure exerted by this screw breaks the bones of the limb placed through the rings."—(Scott's *State Board Surgery.*) *Indications for its use:* Knock-knee, bow-legs, and fractures which have united with great deformity.

6. See Rose and Carless' "Surgery" (1908), page 1230; or Da Costa's "Surgery" (1908), page 1191.

7. *Causes of esophageal stricture:* (1) *Intraesophageal* —foreign body, mass of food. (2) *Interstitial*—Neoplasm; cicatricial tissue, as from toxic gastritis, ulcer (syphilitic, peptic); esophageal abscess; diverticula filled; congenital; spastic structure. (3) *Extraesophageal*—Enlarged glands (sternal, cervical, bronchial, from tuberculosis, cancer, suppurative adenitis); mediastinal or cervical cellulitis; vertebral disease; dislocation of hyoid bone or clavicle; cancer of pleura or lung; ossification of stylohyoid; ligament, swelling of cricoid; pericardial effusion, cardiac hypertrophy, aneurysm. For *treatment,* see Rose and Carless' "Surgery" (1908), page 877; or Da Costa's "Surgery" (1908), page 803.

8. See Rose and Carless' "Surgery" (1908), page 882. *The indications for paracentesis tympani* are: Undue distention in otitis media, hyperemia, and infiltration of the membrana tympani, or for purposes of exploration.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), pages 207 and 211; or Hirst's "Obstetrics" (1909), page 389.

2. See Index of Williams' or Hirst's "Obstetrics," under heading "Umbilical Cord."

3. See Williams' "Obstetrics" (1909), page 443; or Hirst's "Obstetrics" (1909), page 857.

4. *Four causes of dystocia:* Uterine inertia, deformed pelvis, transverse presentation, and uterine displacement. For *uterine inertia,* see Williams' "Obstetrics" (1909), page 661; or Hirst's "Obstetrics" (1909), page 442.

5. See Williams' "Obstetrics" (1909), pages 419 and 429; or Hirst's "Obstetrics" (1909), pages 824 and 826.

6. *Involution* is the process by which the uterus, after labor, returns as far as possible to its original size. *Subinvolution* is any arrest or retardation of the process of involution.

7. See Williams' "Obstetrics" (1909), pages 337 and 341; or Hirst's "Obstetrics" (1909), page 356.

8. Decidua, chorion, and amnion.

HYGIENE.

1. By the use of a common drinking cup disease may be transmitted; it is also an unsanitary and unclean habit.

2. See French's "Practice of Medicine" (1909), pages 481 and 485; or Osler's "Practice of Medicine" (1909), page 28.

3. Hygienic precautions to be taken in treating a case of tuberculosis: "The patient's quarters should be free from dust and admit of spending many hours daily in the open air in all weathers, properly sheltered, and, if very ill, lying wrapped in a hammock or reclining chair. His bedroom should be well aired at night, drafts being avoided. The room should be uncarpeted and free from hangings. It should be often cleaned and periodically disinfected. All sputum should be collected in paper spit-cups, which should be burned daily. Smoking should be forbidden. Harm is done by any exercise which results in fatigue, and while fever exists it should not be attempted at all. Patients should be taught the necessity of practising lung gymnastics and breathing only through the nose, which should be kept clear and free from occlusion by secretions, or an hypertrophied catarrhal mucosa. * * * The clothing should be woolen, but not too heavy, or sweating is increased; and a flannel nightgown and loosely knit leggings should be worn at night in cool weather. The skin should be cleansed by daily sponge-baths of lukewarm alcohol and water."—(Thompson's *Practical Medicine.*)

4. *Milk may be sophisticated or adulterated* by: (1) Skimming; (2) the addition of water; (3) the addition of coloring matter, such as caramel, annatto, or methyl orange; (4) the addition of preservatives, as boric acid, formaldehyde, salicylic acid, or salicylates; (5) the addition of arrowroot, flour, sugar, glycerine, chalk, or sodium carbonate.

5. Malaria is *caused* by the *Plasmodium malariæ*, but *carried* by the anopheles mosquito. The cause of yellow fever is not yet determined, but it is *carried* by the stegomyia mosquito. And see French's "Practice of Medicine" (1910), pages 233 and 267; or Osler's "Practice of Medicine" (1909), pages 10 and 233.

6. See French's or Osler's "Practice of Medicine." For *disinfection of rooms*, use formaldehyde gas; *clothing*, use solution of phenol (5 per cent.) for an hour, then boil for an hour; *person*, wash in soap and water, and then with cresol or carbolic acid solution; *bedding*, use steam or formalin; *excreta*, etc., should be passed into vessels containing dilute solution of formalin, of greater quantity than the expected excretion.

7. "The physician consulted by a patient with *gonorrhea* who wishes a professional sanction to his marriage should demand a period on an average of six months.

"The general rule which may be formulated as safe for a *syphilitic* man to marry, so far as contagious risks to his wife are concerned, is that a period of four years should have elapsed since the chancre; that he should have been free from manifestations during the last twelve or eighteen months of this period, and that he should have received sufficient specific treatment."—(Morrow's *Social Diseases and Marriage.*)

8. An *endemic* disease is one that is always more or less prevalent in a certain locality. An *epidemic* disease is one that attacks simultaneously, or in rapid succession, many persons in the same locality; or that spreads rapidly over a large territory.

Puerperal Psychoses.—Lucien Picque distinguishes among psychoses connected with pregnancy and the puerperal state between febrile states accompanied by delirium, which he considers to be always due to an infection of the uterus of more or less degree of severity, and the afebrile ones. The febrile cases should always indicate an evacuation of the uterus and should be treated only in a hospital where surgery is done and not in an asylum. The apyretic cases may be sent to an asylum. The uterine wound should serve as a line of separation between the psychoses of pregnancy and of the puerperal state. While there must always be a predisposition to mental trouble, still it is the results of infection that make the condition incurable. If the uterus is early excuated one may get a cure, but if the condition of infection become chronic there shall get changes in the brain cells that will render the condition permanent. In the apyretic forms we generally observe meloncholia; in the febrile form confusion, hallucinations and maniacal attacks. The apyretic forms should go to an asylum, the febrile to a surgical hospital.—*L'Obstétrique*, July, 1911.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended December 23, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	436	171
Diphtheria	282	23
Measles	483	5
Scarlet Fever	180	8
Smallpox	—	—
Varicella	257	—
Typhoid Fever	70	14
Whooping Cough	20	—
Cerebrospinal Meningitis	4	3
Malarial Fever	—	—
Totals	1,732	224

Hemorrhagic Manifestations in Mental Disease.—G. Boschi describes an epidemic of hemorrhagic disease which appeared in the Provincial Insane Asylum of Sondrio. The manifestations were similar to those of peliosis, Werlhoff's disease, and scurvy and were associated in various ways. The author thinks that we are not justified in distinguishing types of disease and denominates them all hemorrhagic disease. The epidemic appeared in the spring, which was very damp and very late that year. About 25 per cent of the men and 10 per cent of the women were sick, but none of the attendants. This shows the great importance of predisposition in this kind of hemorrhagic disease, which the author thinks consists in a series of conditions having some relation to the presence of the insane. These patients had some cortical alterations due to their mental alienation. There was a vulnerability of the nervous system consequent upon or accompanying the mental disturbances, making the patient an easy prey to hemorrhagic disease. The author advances the hypothesis of a difficulty of adaptation of the vasomotor centers due to climate and altitude.—*La Riforma Medica.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended December 22, 1911:

Places	Date	Cases	Deaths
CHOLERA			
India: Calcutta	Oct. 22–Nov. 4		152
Madras	Nov. 5–18	167	126
Madras presidency, Oct. 1–31	Cases 3,043, deaths 1,675.		
Indo-China: Saigon	Oct. 23–29	2	2
Italy	Nov. 12–18	94	51
Provinces—Catania	Nov. 12–18	86	49
Rome	Nov. 12–18	8	2
Java: Batavia	Oct. 29–Nov. 4	10	2
Philippine Islands: Provinces—Union	Oct. 15–28	11	11
Siam: Bangkok	Oct. 8–Nov. 4		51
Turkey in Asia: Haifa	Nov. 13–26	2	2
Jaffa	Nov. 19–25	3	1
Medina	Nov. 2–19	36	24
Mekka	Oct. 2–Nov. 21	184	59
YELLOW FEVER			
Brazil: Para	Nov. 19–25	1	1
PLAGUE			
Chile: Iquique	Nov. 5–11	4	1
China: Hongkong	Oct. 29–Dec. 4	1	1
India: Calcutta	Oct. 22–Nov. 4		7
Karachi	Nov. 5–18	14	12
Indo-China: Saigon	Oct. 23–29	4	
Java: Pasoeroean Residency	Oct 29 Nov. 4	9	3
SMALLPOX			
Argentina: Rosario	Sept. 1–30		37
Austria-Hungary: Silesia	Nov. 19–25	5	
China: Canton	Oct. 29–Nov. 11	15	3
Gibraltar	Nov. 27–Dec. 3	2	
Hawaii: Honolulu	Dec. 17–18	7	2
India: Madras	Nov. 12–18	13	5
Indo-China: Saigon	Oct. 23–29	1	
Italy: Messina	Oct. 21–Nov. 18		1
Naples	Nov. 19–25	11	1
Palermo	Nov. 12–25	562	178
Japan: Yokohama	Nov. 15–20	1	
Java: Batavia	Oct. 29–Nov. 4	4	1
Malta	Nov. 19–25	1	
Mexico: Mazatlan	Nov. 29–Dec. 5		2
Tapachula	Oct. 1–31		5
Portuguese East Africa: Lourenco Marquez	Sept. 1–30		1
Russia: Odessa	Nov. 12–25	3	
St. Petersburg	Nov. 5–18	15	
Warsaw	Oct. 29–Nov. 4	50	23
Siam: Bangkok	Oct. 8–Nov. 4		71
Spain: Malaga	Oct. 1–31		24
Dec. 12, present.			
Valencia	Nov. 19–25	10	3
Switzerland: Zurich, canton	Nov. 12–18	1	
Turkey in Asia: Beirut	Nov. 19–25	12	4

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